Instruction in Libraries and Information Centers: An Introduction

Laura Saunders & Melissa A. Wong

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An Introduction

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FOREWORD BY LISA JANICKE HINCHLIFFE

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Contents

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Becoming a teacher is a developmental process. Our journey as teachers has been shaped by our many interactions, both formal and informal, with gifted instructors, mentors, and colleagues. We can only hope we have done justice to the examples you have set and remain grateful for your guidance and generosity.

And last but not least, we have honed our craft through countless interactions with students inside and outside the classroom. A simple thank you is inadequate to convey the depth of our gratitude. Your willingness to take risks, your contributions to discussions that pushed us outside our comfort zone, and your insightful feedback have helped us become more effective, engaging teachers and more compassionate human beings. Your passion for libraries, your commitment to serving your communities, and your desire to become the best teachers you can be inspire us every day. This book is dedicated to you.

Laura Saunders

Melissa A. Wong

Foreword

This. This is the book. This is the book we need. I needed this book two decades ago when I was teaching the introduction to library instruction course in library school. This is the book I needed ten years ago when I was helping to design the ACRL Immersion Assessment program. This is the book I needed last year when I was helping a new librarian find their way as a teacher. This is the book we needed. And, now we have it.

Libraries are increasingly educational organizations, whether they are situated within a college or school or serve a public community or corporation. It is almost inconceivable that in the 1980s there was a contentious debate about whether librarians should understand themselves as educators and be trained as educators.

What we know today is that, as information is no longer scarce, the challenge for many people is cutting through the abundance of information to find what is needed and then managing the information that is relevant to their personal, professional, and civic activities. Libraries are uniquely situated to assist with these challenges and to provide education in the skills and strategies users need.

To meet this moment, library workers need instructional design and delivery skills and to be both competent and comfortable with their teaching roles. This book supports learning these instructional skills in the context of formal library science education and, as an open access text, ensures an opportunity for learning outside of formal coursework and engaging in ongoing development of oneself as a teacher. For the library manager, this book can serve as the foundation for a training and development program to support library workers in their growth as teachers.

I take a bit of pleasure in having had a role in the origin story of the collaboration that brought this book into being. Four years ago, I posted on *Facebook* that Laura and Melissa needed to know each other and to introduce them. I can't claim that I was particularly prescient in thinking that they would eventually produce this book that I so desperately wanted us to have. But, having worked with each of them individually for many years, I knew that they would value each other's perspectives and enjoy getting to know each other's work. It has been a joy to see the fruits of their collaborations, this text being but one.

I recommend this book to all in the library community and particularly to library educators and trainers.

Lisa Janicke Hinchliffe

July 31, 2020

Preface

This book offers a comprehensive and practical introduction to instruction in all types of library and information settings and across all modalities. Unlike other guides to library instruction that focus on one type of library, or present instruction exclusively through the lens of a specific set of standards or frameworks, this book is inclusive in its approach. Readers will find standards, references, and examples drawn from many different information settings, both face-to-face and online formats, and geared toward different age groups. The book uses the terms learner, student, and patron interchangeably throughout to acknowledge that library instruction does not always take place in an academic classroom. The text also reflects our commitment to issues of diversity, equity, and inclusion as they relate to pedagogy in general and library instruction specifically, reflected in our attention to critical pedagogy, inclusive teaching strategies, and accessibility throughout the book, as well as in our decision to publish open access.

The book is divided into five parts. Part I situates instruction within library and information settings, providing an overview of the history and role of instruction within the profession and an examination of librarians' identity as teachers. It presents the various standards and frameworks for library instruction and conceptualizations of information and related literacies that guide practice, including a discussion of critical information literacy. Part II provides the foundations of teaching and learning, including classic theories of learning and critical pedagogy, with a focus on how these are put into practice using inclusive strategies and principles of universal design. These principles are then woven throughout the remainder of the text. The bulk of the text is Part III, which covers instructional design, including writing learning outcomes, developing assessment, and selecting instructional strategies. This section also offers advice on presentation skills and designing instructional materials. Part IV discusses the theories and principles of instructional design in the context of specific types of instructional offerings, including online, credit-bearing classes and one-on-one instruction. Part V takes a broader look at managing instruction programs and engaging in outreach.

While the material is sequenced to support a course on library instruction, the book can also serve as a resource for new and experienced professionals seeking best practices and selected resources. Each chapter was written to stand on its own, so readers interested in a more in-depth look at teaching online or tips to improve their presentation skills, for example, can go straight to the relevant sections.

The book takes a theory-into-practice approach aimed at empowering readers and moving them from learning to praxis. Each chapter includes practical examples, activities, and templates to aid readers in developing their own practice and materials. Appendices include sample lesson plans on a variety of topics and situated in different information settings, and a glossary of the activities presented throughout the book.

PART I

INTRODUCTION TO INSTRUCTION IN LIBRARIES

1. Introduction: Instruction in Libraries and Information Settings

Introduction

Information is essential to success in school, work, and everyday life. People need access to accurate, trustworthy information to make good decisions about their health, finances, and work. Citizens in a democracy need information to decide how to vote in elections and on ballot initiatives. People also use information in the form of books, movies, and music for entertainment and personal growth. Libraries can provide people with access to vital information through carefully selected and organized collections, but access is only a first step. People also need the knowledge and skills to find, evaluate, and use that information, a set of competencies commonly referred to as information literacy.

Instruction librarians help their patrons develop these crucial information literacy skills. We teach people how information is created and shared, how to use sophisticated search strategies and technologies to find and access information, how to evaluate the information they find, and how to use that information ethically by citing sources and respecting copyright. And while information literacy may be the first thing that comes to mind when thinking about instruction in libraries, instruction librarians help patrons develop a wealth of other skills as well. Instruction librarians plan literacy and language programs, offer workshops on résumé building and job hunting, and teach patrons to use technology from email to photo editing software to 3-D printers. Librarians even teach life skills like meal planning, sewing, and decluttering.

All of this instruction takes many different forms. We provide direct instruction to individual patrons at reference points and through research appointments, and to groups of learners in workshops and programs, one-shot sessions, and credit-bearing courses. The instruction can take place in-person and online. In addition to direct instruction, we also create learning objects, or tools and resources like instructional videos, multimedia tutorials, and library guides, that learners can access at any time and use on their own. Activity 1.1 is an opportunity to investigate instructional offerings in the information setting of your choice.

Instruction has played, and will continue to play, a vital role in library and information settings. While the mission and goals of any individual information setting will vary somewhat, most information settings include education as part of their mission, and the American Library Association (2019) identifies education and lifelong learning as a core value of librarianship. Importantly, research shows that people value the instruction that libraries provide them and want even more opportunities for learning (Pew Research Center, 2015).

Given its importance to institutions and patrons, instruction in libraries and information settings is an exciting area filled with opportunities. As instruction librarians, we embody the values of our profession, and we help our institutions fulfill their educational missions through our instructional activities. We get to help patrons learn how to navigate the world of information and technology, and we get the joy of seeing them develop and master critical skills that will serve them throughout their lives.

For many of us, the prospect might be a little scary, too. After all, schoolteachers go through rigorous degree programs with practicum experiences that help them develop their instructional skills. How can we prepare ourselves to take on these huge responsibilities? How will we know what to teach, or how to go about teaching it? How will we keep students motivated and engaged? How will we know if we are doing a good job?

This book is a first step toward answering these questions. It offers a comprehensive overview of teaching and learning, focused on the kind of instruction that takes place in libraries and information settings. This chapter sets the stage for the rest of the book. It begins by exploring the role of instruction in information settings and the larger communities they serve as a way of considering our identity as teachers, and providing an overview of the current trends, opportunities, and challenges that will then be addressed at more length in the rest of the book.

Librarians as Teachers: History and Identity

Instruction has been an integral part of library services for well over a century. The history of instruction in libraries largely reflects changes in education and technology. The earliest libraries focused on collecting and organizing materials. At that time, literacy rates were low, so most patrons of libraries were scholars who understood how to access and use library materials without assistance. However, with the spread of universal education, literacy rates began to rise, and the general public interest in books and newspapers grew. Public libraries were a place for citizens to access books and materials they needed for school,

entertainment, and everyday life information needs. Because library systems and resources were new to these patrons, librarians found they needed to spend time helping these patrons navigate the library and its materials (Tyckoson, 2020).

At roughly the same time, academic libraries were beginning to experience increased usage as well. Prior to the mid-nineteenth century, most colleges and universities relied on what was known as a "recitation model" of teaching. Students read assigned texts and listened to lectures but were not expected to do much outside reading or research. Exams consisted largely of students recalling what they had read or heard in lectures. College libraries were open limited hours and were mostly used by faculty and other scholars. By the mid-nineteenth century, however, American colleges and universities began to adopt what was known as the empirical, or German, model of education, which required students to engage in experimentation, independent reading and research, and critical thinking (Rothstein, 1955). As a result, college students needed to use their college library and, like their counterparts in the public libraries, found it difficult both to find resources and to use them once they located them.

By the end of the nineteenth century, libraries began to establish reference departments with dedicated staff to answer patrons' questions and help them navigate the library systems to find and use the resources they needed. Instruction was a part of the services provided by reference staff from the beginning. In his foundational article on the topic, written in 1876, Green acknowledged that many patrons need help in using the library, and he encouraged reference librarians to "give them as much assistance as they need, but try at the same time to teach them to rely upon themselves and become independent" (Green, 1876/1993, p. 80). Green's writing was reflective of its time in its gendered portrayal of the helpful female librarian, and the patriarchal and even condescending tone in which he suggested that librarians needed to guide patrons toward "good books" that would enlighten them. Nevertheless, his article demonstrates that as long as librarians have been directly helping patrons use library resources, they have been offering instruction to develop the skills to use the library on their own.

The focus on library instruction has shifted somewhat over time, largely in response to the changes in technology and the relative ease of access to information. Historically, information was scarce and had to be accessed through relatively complicated systems like catalogs and indexes that required at least some knowledge of classification systems and specialized terminology. Even when information first began moving online in the 1970s, the systems were difficult and expensive to search. During this time, library instruction focused largely on search skills, teaching people how to navigate these various systems and tools to find the information they needed.

Now, online search engines have become more intuitive, and the Internet and mobile devices have enabled people to access information from anywhere at any time. Although they tend to rely on relatively unsophisticated searches (Jansen & Spink, 2006), most people feel confident in their ability to find information on their own (Purcell et al., 2012). However, information overload and the ease with which information, as well as mis- and disinformation, is spread online have highlighted the need for people to carefully evaluate the information they find. Research shows that people are not very skilled at assessing information and identifying misinformation (Harrgitai et al., 2010; Lewandowski, 2008; Stanford History Education Group, 2016), and that people are confused by "fake news" and concerned about their ability to detect it (Barthel et al., 2016). While library instructors continue to teach search skills, and learners still need these skills to find information efficiently and effectively, the ease with which people can now

access information is freeing librarians to spend more time on areas that require more critical thinking, like evaluating information, developing a research topic and researchable questions, and recognizing fake news, as well as professional and life skills such as finding and applying for jobs online, researching companies and products before making important purchases, and finding trustworthy health and financial information.

While the instructional role of librarians in school and academic libraries might seem obvious, this role extends to all kinds of information settings. Research shows that information professionals across settings, including public, corporate, and special libraries, value instruction services and regard the ability to teach and knowledge of information literacy standards as important competencies for their staff (Curtis, 2019; Lai, 2011; Matarazzo & Pearlstein, 2014; Matteson & Beate, 2019; Saunders, 2014, 2019; Weiner, 2011). Instruction plays a similarly important role in archives. Because archives typically have closed stacks that preclude self-service and browsing, and strict policies and complex finding aids impacting access, most patrons must consult with an archivist for assistance in navigating and accessing the collection. Further, many high-school and undergraduate programs are increasingly adding primary-source research to their curricula. As such, archives are devoting increased attention to instruction (Anderberg et al., 2018; Krause, 2008; Schwier & Champion, 2020).

Despite this long history of instruction, some information professionals are hesitant to identify as teachers, even if they value and appreciate their instructional responsibilities. One reason for this reluctance may be that instruction librarians often report feeling under- or unprepared to take on instructional roles (Julien & Genuis, 2011; Walter, 2008; Wheeler & McKinney, 2015). Research suggests that not all LIS programs address instruction topics in depth, and the courses that exist are rarely required (Anderberg et al., 2018; Saunders, 2015). As aspiring instructional librarians or current instructors looking to improve our practice, how can we fully embrace our identities as teachers? First, we should recognize the many elements of good teaching, from knowledge of learning theory and instructional design practices to methods of engaging delivery and self-assessment. Then, we must find ways to develop and continuously improve our practice across these areas. Finally, we need to keep abreast of the trends in the field, so we are prepared to meet challenges and maximize opportunities.

The Art and Science of Teaching and Learning

We have all experienced excellent teachers who managed to grab our attention in class, pique our interest in a topic, and inspire us to work to our potential. What makes these teachers so good at what they do? Though it might sound like a truism, teaching really is both an art and a science. The science of teaching entails the research and theories upon which our best practices are based. As explained throughout this book, research has helped us to understand how people learn, including the circumstances that enable or facilitate deeper learning, and what motivates students to engage with learning activities. This research has informed the development of theories and best practices, which helps us to design effective instruction sessions and learning experiences. For instance, understanding theories of learning stages can help us to scaffold or sequence our instruction so that students are gradually introduced to more difficult concepts and to design learning activities that are neither so easy as to be boring nor so difficult as to be frustrating

and overwhelming. Similarly, knowledge of the principles of Universal Design for Learning can guide us in creating learning experiences and instructional materials, and arranging classroom spaces that are accessible to all learners. Critical pedagogy challenges us to reflect on classroom power structures and recognize our own biases and assumptions in order to create a more inclusive and democratic learning environment, and to empower learners to take action to create a more just society.

Methods of assessment and evaluation also enable better teaching. Through evaluation and assessment activities, we can see if students learned what we intended for them to learn, and whether they were satisfied with their learning experiences. This data is crucial for improving our instruction and for communicating our value and successes to stakeholders such as library directors, campus and school administrators, city councils, and boards of trustees.

We can improve our teaching and learn more about our own identity as teachers through reflection and by engaging in a community of practice. Reflective practice involves thinking critically about our experiences in the classroom, whether in-person or online, and asking ourselves questions about what went well, what could be improved, and what we might do differently next time. When we take the time to seriously consider these questions, we can use our reflections to make informed changes to our practice and shape our philosophy of teaching. This kind of reflection, like much of the planning and delivery of instruction, tends to happen alone, but teaching does not have to be a lonely endeavor. Teachers can support each other and help each other grow by working together. We can form communities of practice within our institutions or with like-minded colleagues from other settings to discuss trends in the field and get feedback on issues we have experienced in the classroom or ideas we would like to implement. We can also observe each other teach and offer constructive feedback.

But as noted above, teaching is an art as well. A perfectly planned lesson or learning resource will likely fall flat if it is not delivered well. Part of being an effective teacher involves understanding how our delivery impacts learning and finding ways to sharpen our skills. Good teachers understand that their enthusiasm for the material, along with energy, humor, and empathy, can make content more engaging and increase learning. They also understand how their body language, voice, and pacing affect their delivery of material in both in-person and online sessions.

The research and theories outlined here and discussed in depth throughout the text help us to understand not just *how* to teach but also *why* we do it that way. One of our jobs as teachers is to become familiar with the theories and research and the best practices they inform so that we can consciously incorporate them into our practice. Resources like this textbook and the credit-bearing courses with which this text might be associated are good places to start. But being a good teacher involves lifelong learning and continuous improvement. We need to seek out new opportunities for continuous learning. Books and articles, professional development courses, conferences, webinars, and even social media and blogs can provide us with new ideas, insights, and knowledge.

Audience and Outreach

Much of the work of teaching and learning discussed so far in this chapter is focused on the instructor and what the instructor needs to know, understand, and do in order to develop effective instruction and continuously improve. However, another aspect of good teaching involves looking outward in order to better understand the communities we serve and the larger field in which we work, so we can use that knowledge to mitigate challenges and maximize opportunities.

While instruction is an important service across information settings, how that instruction is implemented, what topics are covered, what kinds of instructional strategies are employed, how it is assessed, and so on will vary because each setting serves a unique community, and each community is made up of various smaller communities with their own specific information needs and behaviors. In order to meet patron needs, we need to learn more about our communities. For instance, academic and school librarians will align their instruction with the learning goals, standards, and curricular frameworks of their institution or district. Public library patrons want their libraries to offer classes and learning opportunities in a wide variety of areas, with different segments of the population interested in technology classes, job hunting resources, literacy services for children, and digital literacy programs (Pew Research Center, 2013, 2015; Rainie, 2016). Corporate library instruction will likely address the specific research tools available to employees, with a focus on increasing efficiency and return on investment (Matarazzo & Pearlstein, 2014). One of our jobs as instruction librarians is to read the literature, gather data, and talk with our patrons to find out exactly what they want and need us to address in our instruction. This process is ongoing, and community needs will evolve over time as demographics shift and technology changes.

Understanding our audience needs is not enough, however, if our audience is not aware of the instruction

services we provide or does not believe those services are relevant. In fact, a majority of the public library patrons who say they are interested in learning opportunities at the library are also unaware of the instruction programs their libraries currently provide (Pew Research Center, 2015). Academic librarians rely on invitations from faculty members who themselves already feel crunched for time in their courses and are unlikely to request library instruction if they do not see the value in it. Thus, another part of our job involves outreach to patrons in order to raise awareness about our programs and services, and targeted marketing so patrons can easily see how different programs relate directly to their needs and interests. This outreach entails knowing what outlets to use to best reach our audiences and adapting our message to each audience.

Conclusion

On the one hand, this overview of responsibilities and knowledge areas might seem daunting, but on the other hand, we can view them as opportunities. After all, the research shows that our communities value our instruction and want more of it, and our professional associations and colleagues recognize the importance of our role to the field. Our work contributes directly to the educational missions and strategic goals of the field and of our individual institutions. We can build on this support with outreach that raises awareness about our services and how they contribute to achieving institutional goals.

Most importantly, however, as instructors we help our communities develop the crucial information literacy and technology skills they need for informed decision making and lifelong learning. We have the joy of seeing when our instruction "clicks" with learners as they understand a new concept or master a new skill. We get to finish each session knowing that we are involved in important work, and through reflection, professional development, and peer support, we can keep getting better at what we do.

Suggested Readings

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> Bennet traces the evolution of three paradigms in library design, from reader- and book-centered approaches to the current learning-centered approach to services and spaces.

Green, S. S. (1993). Personal relations between librarians and readers. *Library Journal*, 118(11), S4-S5. (Reprinted from "Personal relations between librarians and readers," 1876, *Library Journal* 1, 74-81.) http://pacificreference.pbworks.com/f/Personal+Relations+Between+Librarians+and+Readers.pdf

> Green's advice to librarians to both assist patrons in finding materials and teach them to be independent users of the library is the earliest articulation of a teaching role for librarians.

Hopkins, F. L. (1982). A century of bibliographic instruction: The historical claim to professional and academic legitimacy. *College & Research Libraries*, 43, 192-198. https://doi.org/10.5860/crl_43_03_192

> Hopkins traces the history of library instruction to show that early libraries valued instruction, and after a decline in the first half of the twentieth century, changes in the profession led to its resurgence in the 1960s.

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> Todd provides a thorough review of the writing on information literacy, tracing its evolution as a concept and suggesting areas for future research. Recommended for those seeking a literature review that weaves together work from academic, school, and public-library contexts.

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2. Visions for Teaching in Libraries: Information, Technology, and Other Literacies

Introduction

While librarians offer instruction on a wide variety of topics, information literacy has become a focal point for librarians engaged in instruction. In this chapter, we will take a closer look at the concept of information literacy, including how librarians have expanded traditional definitions of information literacy to encompass technology, media, and content creation; address affective elements of the information-seeking process; and adopt critical approaches to information. In addition, we will review the standards and frameworks librarians have developed that delineate the knowledge, skills, and dispositions needed to be information literate and guide instruction efforts.

Information Literacy

In 1989, the American Library Association's (ALA) Presidential Committee on Information Literacy issued its *Final Report* and created what would become the most common definition of information literacy: "to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." The report gives several reasons why information literacy is important, including enabling people to make informed decisions about health care, education, and finances; to enhance job skills or retrain for a new career; and to participate in democratic processes. The authors also note that without information literacy, people are vulnerable to "propaganda, distortion, and other misuses and abuses of information," a statement that feels prescient in our current era, where the Internet abounds with misinformation, and politicians and pundits hurl accusations of "fake news." While the *Final Report* positioned information literacy as something that would be taught primarily within school and academic libraries, the document also presents information literacy as not merely an academic skill but an essential life skill for everyone at any age.

Since the publication of the *Final Report*, state and federal governments and international organizations have recognized the importance of information literacy (State Library of Iowa, 2013; UNESCO, 2020). In declaring October as National Information Literacy Awareness Month, President Barack Obama (Proc. No. 8429, 2009) echoed many of the same arguments as ALA, noting the problem of information overload and the need to "separate truth from fiction and signal from noise." The Alexandria Proclamation (International Federation of Library Associations and Institutions, 2005) declared that information literacy and lifelong learning are human rights that enable development, prosperity, and freedom.

Expanding Definitions of Information Literacy

Early conversations about information literacy focused on traditional research skills such as using the catalog and databases, identifying characteristics of sources such as books and periodicals, and, for students in particular, citing sources. With the advent of the web and a corresponding explosion of online and freely available information, librarians turned their attention to helping people navigate this new environment. Evaluation also took center stage as librarians became concerned with teaching people how to assess websites and other sources for credibility and cope with information overload. Librarians also began to take a more active role in teaching technology skills, including basic computer operations and email, to support individuals' ability to access and use information.

While the incorporation of evaluation and technology skills considerably expanded the instructional work many librarians were doing, it still placed patrons as information consumers who wanted to access and use information created by others. The rise of social media platforms such as blogs, *Twitter* (https://twitter.com/), *Facebook* (https://www.facebook.com/), and *YouTube* (https://www.youtube.com/) allowed anyone with access to the web to create and share information, and librarians took note. Spires and Bartlett (2012) argue that individuals need the ability to not only locate and consume information but also to create digital content and communicate online. Mihaildis and Diggs (2010, p. 280) encourage librarians to reframe school libraries as centers for learning and adopt "more dynamic and participatory approaches" to information use that give students opportunities for interaction and creation, an idea that applies equally to other types of libraries. More recently, ALA's Digital Literacy Task Force (2020) echoed the need for skills in creation and communication as well as collaboration.

Mackey and Jacobson (2011) suggest that information literacy be reframed as "metaliteracy," a set of skills that incorporates information, technology, visual, and media literacy, and supports critical thinking, creation, and collaboration. They write, "metaliteracy promotes critical thinking and collaboration in a digital age, providing a comprehensive framework to effectively participate in social media and online communities. It is a unified construct that supports the acquisition, production, and sharing of knowledge in collaborative online communities" (Mackey & Jacobson, 2011, p. 62).

While terms like digital literacy and metaliteracy have not replaced information literacy, librarians now understand information literacy as a broad set of knowledge and skills used to access and evaluate information, technology, and media on a daily basis. In addition, librarians support patrons as they become information creators, from students writing papers and presentations to researchers sharing their findings through open-access channels to patrons using makerspaces to create podcasts and experiment with 3-D printing, all under the umbrella of information literacy.

Affective Aspects of Information Literacy

At the same time that librarians were discussing the knowledge and skills that individuals would need to be information literate, some researchers focused on affective aspects of information literacy, starting with the feelings people experience during the research process. Mellon (1986) identifies library anxiety

as a common experience and attributes the emotion to unfamiliarity with library spaces, systems, and technologies. Although Mellon's research focused on undergraduate students who were new to academic libraries, Kuhlthau (1991, 2004) shows that even longtime researchers experience negative emotions such as confusion, uncertainty, frustration, and disappointment during the information-seeking process, along with positive emotions such as optimism, confidence, and satisfaction. She argues that these emotions are a natural part of information seeking since individuals go through a process of sense-making as they work to understand new information and reconcile it with their previous knowledge (1991, p. 361). Both Mellon and Kuhlthau argue that librarians need to understand and attend to learners' emotions during instruction.

Schroeder and Cahoy argue that librarians should go further and explicitly incorporate affective factors into information literacy standards in order to "reinforce for librarians and educators the importance of acknowledging and addressing students' feelings and affective behaviors" (Schroeder & Cahoy, 2010, p. 136). Like Stripling (2008), they use the term "dispositions," to refer to the habits of mind that govern behavior, such as curiosity, persistence, and flexibility (Schroeder & Cahoy, 2010, p. 136-37). Schroeder and Cahoy note that by 2007, dispositions already appeared alongside knowledge and skills in the American Association of School Librarians' (2007) *Standards for the 21st Century Learner* but had yet to appear in guiding documents from the Association of College and Research Libraries (ACRL). Dispositions eventually would appear in ACRL's (2016) *Framework for Information Literacy in Higher Education*. Activity 2.1 provides an opportunity to think about affective elements of the research process.

Activity 2.1: Affective Elements of the Research Process

Think about a recent time you had to research a paper, a health or financial question, a major purchase, etc.

Questions for Reflection and Discussion:

1. How did you feel when you realized you would need to do research?
2. Where did you begin your search, and what kind of information did you find? How did the search results impact your feelings about your research process?
3. What was the result of your research? How did you feel about the outcome?
4. When did you feel best about your process? When did you feel most frustrated?
5. Did anyone help you with your research? If so, how?
6. If not, what kind of assistance would have been helpful?

Threshold Concepts

The idea of threshold concepts has also influenced librarians' understanding of information literacy. Meyer and Land define threshold concepts as ideas that are foundational to a discipline and provide "a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress"

(2003, p. 1). They also posit that threshold concepts represent "troublesome knowledge," ideas that are challenging to understand and perhaps even counterintuitive, such as opportunity cost in economics and complex numbers in mathematics (Meyer & Land, 2003). Townsend, Brunetti, and Hofer (2011, p. 854) note that threshold concepts are so integral to a discipline that they may go unspoken by practitioners and instructors, leaving students struggling to understand key ideas and theories.

Townsend, Brunetti, and Hofer (2011, p. 861-64) argue that identifying threshold concepts for information literacy can help librarians recognize where learners struggle, thus providing avenues for more effective teaching. While early sets of standards presented information literacy as a set of discrete skills that could be acquired in an almost checklist-like fashion, threshold concepts position information literacy as a set of complex, interrelated understandings about the production, dissemination, and valuing of information that affect everything from news media to scholarly communication to social media use.

Hofer, Hanick, and Townsend (2019) used the results of a multiyear Delphi study to identify and develop five threshold concepts for information literacy in college students:

- **Authority:** Expertise is conferred through rules and systems, while also being contextual to the user's information need; information literate students know when to trust and when to question authority.
- **Format:** Formats such as books, scholarly articles, and websites reflect a specific publication process; information literate students can recognize and use format for insight into the information creation process and the author's intent.
- **Information Commodities:** Information has monetary value and is also the intellectual property of its creator; information literate students know when to respect intellectual property laws and when to push back, and can follow conventions such as citation.
- **Organizing Systems:** Tools such as catalogs, databases, and search engines are used to organize, describe, and locate information; information literate students can use appropriate tools and strategies to search for and share information.
- **Research Process:** Research is a process of inquiry that encompasses both scholarly and non-scholarly information seeking and is shaped by community and disciplinary norms; information literate students understand research as more than a linear search for sources.

While Townsend et al. (2011) and Hofer et al. (2019) focus on applying threshold concepts to information literacy in higher education, Jacobson and O'Keeffe (2014) argue that threshold concepts are equally applicable to instruction in school libraries. Additionally, some authors have begun applying them to professional education in library and information science (McLaughlin & Tucker, 2017; Tucker et al., 2014; Yukawa, 2015).

It is worth noting that some writers question the applicability of threshold concepts to information literacy. For example, Wilkinson (2016) argues that the idea of information having value is not sufficiently troublesome to warrant being considered a threshold concept. Wilkinson (2014) also questions the theory of threshold concepts more generally, arguing that it lacks empirical evidence and that notions of transformative and troublesome are relative to the individual, rather than the discipline. Despite these criticisms, the idea of threshold concepts has been particularly influential in the development of ACRL's (2016) *Framework for Information Literacy in Higher Education*, discussed in more detail later in this chapter.

Critical Information Literacy

Many authors have criticized traditional approaches to information literacy as overly positivist, treating information as a neutral good and reducing information literacy to a set of skills devoid of real-world context (Kapitzke 2001, 2003; O'Connor, 2006; Smith, 2013). Elmborg (2006, p. 193) argues that this model of information literacy reflects the "banking" model of education criticized by Paulo Freire, in which students are expected to accrue knowledge as dispensed by teachers, rather than learning to think critically for themselves.

Critical information literacy recognizes that information, both what is available to us and what we consider authoritative or correct, is shaped by cultural, political, and economic forces. Information is not neutral or objective but rather reflects and supports systems of power and privilege. Librarians who embrace a critical understanding of information literacy thus move from teaching skills for access and evaluation to helping learners understand, and perhaps question or challenge, the forces that shape information production and dissemination.

Doherty (2007) notes that critical information literacy also emphasizes the search for "Other voices," those that are outside the information seeker's personal paradigm. He suggests that too often librarians present websites and other non-scholarly sources as lacking credibility in comparison to traditionally published sources, when they should be presenting such sites as opportunities to uncover a wide array of voices and perspectives, including those that may be marginalized by Western worldviews and traditional publishing systems.

For example, a librarian teaching traditional information literacy instruction in an academic library might explain the concept of peer review, emphasize that scholarly journal articles are a preferred source for college research papers, and teach students to access and search a database with a focus on retrieving peer-reviewed articles. A librarian who embraces critical information literacy would explain the peer review process and then lead a discussion that prompts students to consider what voices might be marginalized if they are outside traditional research structures. The librarian would then teach students to access peer-reviewed literature along with non-scholarly sources that reflect a diversity of ideas relevant to their topic.

Librarians can integrate critical information literacy approaches in a variety of ways, from helping learners develop meaningful research questions to analyzing popular and freely available sources like *Wikipedia* (https://www.wikipedia.org/) as legitimate information sites to selecting search examples that highlight issues of diversity, equity, and inclusion to interrogating sources for bias (Cope, 2009; Hinchliffe, 2016; Jacobs, 2009; Pankl & Coleman, 2009). Hall (2010) argues that librarians should look for opportunities at the intersection of information literacy and praxis, where individuals can turn knowledge into action. She highlights the work of public librarians in South Africa who developed information literacy programs to address hunger through library/farm school partnerships and gardening activities.

Standards and Frameworks for Information Literacy

As part of defining information literacy, professional organizations have developed standards and frameworks that articulate the skills, knowledge, and dispositions people need in order to be information literate. Standards and frameworks are necessarily detailed, and, if you are new to working with them, may seem overwhelming. It may be helpful to think about another set of standards you are probably familiar with—those for getting a driver's license. When people apply for a driver's license, the state asks them to demonstrate that they have the necessary knowledge (the "rules of the road") and skills (such as driving within the lane lines and braking smoothly) to be a safe driver. We also expect drivers to demonstrate proper attitudes about driving, such as obeying speed limits, yielding to pedestrians, and being courteous to other drivers. Activity 2.2 encourages you to think about other familiar standards.

Activity 2.2: Standards Are All Around Us

State-sanctioned guidelines for earning a driver's license are one example of standards in daily life.

- Can you think of other standards you encounter or use on a regular basis, either in the workplace or society?
- How are these standards used to guide decision-making, regulate behavior, or promote best practices?

The information literacy standards and frameworks discussed in this chapter list the knowledge, skills, and dispositions needed to be information literate. For example, we expect students to be able to recognize when they need to cite their sources (knowledge) and formulate a proper citation (skill), and, perhaps most importantly, to have the desire to adhere to ethical conventions and actually cite their sources when necessary (a disposition). Most standards and frameworks are written with a specific patron group in mind, such as students in the K-12 system or adults and families using public libraries and museums. Most instruction librarians utilize the standards most appropriate for the patrons they serve, although some librarians may work with multiple sets of standards. For example, school librarians look to information literacy standards written by and for librarians as well as more general education standards such as *Common Core*. In addition, all information professionals can benefit from familiarity with multiple sets of standards as a guide to thinking more broadly about the role of information in their patrons' lives. Ireland (2017) writes about how the *Framework for Information Literacy in Higher Education* (ACRL, 2016) inspires her work teaching in a public library.

Standards Framework for Learners

In 2018, AASL published its *National School Library Standards for Learners, School Librarians, and School Libraries*, which included revised and interrelated standards for school libraries, competencies for school librarians, and information literacy standards for K-12 students. The information literacy standards, which are also available on AASL's website, are known as the *Standards Framework for Learners* (AASL, 2017). While written as a guide for school librarians, the *Standards Framework* is also relevant to information professionals working with children in public libraries and museums.

The standards consist of six "shared foundations" that represent core educational concepts, each defined by a "key commitment" (AASL, 2017, p. 4-5):

- **Inquire**: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.
- **Include**: Demonstrate an understanding of and commitment to inclusiveness and respect for diversity in the learning community.
- **Collaborate**: Work effectively with others to broaden perspectives and work toward common goals.
- **Curate**: Make meaning for oneself and others by collecting, organizing, and sharing resources of personal relevance.
- **Explore**: Discover and innovate in a growth mindset developed through experience and reflection.
- **Engage**: Demonstrate safe, legal, and ethical creating and sharing of knowledge products independently while engaging in a community of practice and an interconnected world.

The six shared foundations are aligned with four "learning domains" (AASL, 2017, p. 7):

- **Think:** cognitive domain
- **Create:** psychomotor domain
- **Share:** affective domain
- **Grow:** developmental domain

Where the shared foundations and learning domains intersect, specific competency statements outline the knowledge, skills, and dispositions students should master. For example, at the intersection of "Curate" and "Think," we see the competency "learners act on an information need by identifying possible sources of information" (AASL, 2017, p. 5), while at the intersection of "Include" and "Share," we see "learners exhibit empathy with and tolerance for diverse ideas by contributing to discussions in which multiple viewpoints on a topic are expressed" (AASL, 2017, p. 4). Each intersection features two to four competency statements.

The theme of inquiry runs throughout the AASL standards. In its introduction, AASL (2017, p. 3) explicitly links students' information literacy skills and the ability to persist in inquiry to college, career, and life success. In addition, the *Standards Framework* positions inquiry and information seeking as activities that happen outside of school as well as within formal school environments.

Another theme in the *Standards Framework* is that equity and inclusion should be a central feature of school librarians' work. The shared foundation "Include" specifically addresses issues of diversity, while themes

of social responsibility, equity, and inclusion appear implicitly and explicitly throughout the document. In one example, Lechtenberg and Phillips (2018, p. 58) highlight the shared foundation "Inquire" and write, "inclusive inquiry also asks us to think about how we question representation; do we teach learners to probe the stories they read, the resources they use, and the perspectives they seek for inclusiveness?" Similar connections with equity work can be made when working within the "Collaborate," "Curate," "Explore," and "Engage" foundations.

While the *Standards Framework* does not mention critical information literacy explicitly, its emphasis on inquiry, personally relevant information seeking, diverse perspectives, and equity and inclusion reflects a critical approach to information literacy. As we adopt the *Standards Framework* in our classrooms, we can use a critical information literacy lens to find ways to integrate attention to diversity, equity, and inclusion more explicitly in our practice.

Framework for Information Literacy in Higher Education

ACRL developed the *Framework for Information Literacy in Higher Education* to outline the knowledge, skills, and dispositions needed by college students. The creation of a framework made up of "interconnected core concepts" was a deliberate move away from the standards-based approach taken in the earlier *Information Literacy Competency Standards for Higher Education* (ACRL, 2000). Foasberg (2015, p. 702) argues that the *Framework* uses a social- constructivist model that positions knowledge as something "constructed and reconstructed through social interaction," in contrast to the earlier document's positivist approach "which assumes that information is objective and measurable."

The *Framework* is structured around six frames:

- **Authority Is Constructed and Contextual:** Information resources derive value from their author's expertise; what is considered authoritative may differ by community and is contextual to the learner's information need.
- **Information Creation as a Process:** Information sources are created and disseminated through varied processes; these processes affect the nature and authority of the final source.
- **Information Has Value:** Information is a commodity with financial value, governed by intellectual property laws; these affect its creation and availability.
- **Research as Inquiry:** Research is an iterative process of asking questions, developing answers, and asking new, more complex or nuanced questions.
- **Scholarship as Conversation:** Communities of scholars and professionals engage in dialogue that leads to new discoveries, insights, and interpretations over time.
- **Searching as Strategic Exploration:** The iterative nature of research requires that learners consult and evaluate a range of sources and that they evaluate and refine their search strategies as they proceed.

The *Framework* defines each frame and suggests corresponding knowledge practices (understandings and skills) and dispositions. For example, the frame "Authority Is Constructed and Contextual" includes the knowledge practice, "learners who are developing their information literate abilities define different types

of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event)," and the disposition, "learners who are developing their information literate abilities question traditional notions of granting authority and recognize the value of diverse ideas and worldviews." While the individual frames represent complex concepts, the knowledge practices and dispositions translate those concepts into knowledge, skills, and dispositions that librarians can help students develop through information literacy instruction.

While the *Framework* does not explicitly use the term "threshold concepts," it was clearly influenced by the work of Townsend, Brunetti, and Hofer (2011). Three of the frames reflect the authors' original suggestions (format as process, authority is constructed and contextual, and information as a commodity), while another frame reflects later suggestions related to understanding metadata and database structure (Townsend et al., 2011; Hofer et al., 2012).

Seeber notes that in addition to threshold concepts, the *Framework* draws directly from critical information literacy. He writes, "Researchers are encouraged to question how and why information is produced and disseminated, as well as how and why they could, or could not, use that information to achieve their goals" (Seeber, 2015, p. 159). Seeber goes on to argue that while the *Framework* was developed with academic research in mind, it positions information literacy as a real-world skill with value outside the classroom. In doing so, it challenges librarians to address the complexities of information creation and dissemination as part of their instruction, rather than offering students simple rules and guidelines that prioritize certain types of information such as scholarly journals.

Museums, Libraries, and 21st Century Skills

Information professionals in public libraries and museums can look to *Museums, Libraries, and 21st Century Skills* from the Institute for Museum and Library Services (IMLS) (n.d.) as a statement of the competencies adults need for personal and workplace success. In its report announcing the creation of the standards, IMLS notes the importance of out-of-school and lifelong learning for both children and adults (2009, p. 4) and states that through their material and digital collections, libraries and museums are uniquely positioned to "promote curiosity, learning by doing, and discovery" (2009, p. 6). They encourage librarians and museum professionals to take a more intentional approach to education, particularly in the development of lifelong learning skills (2009, p. 6).

Museums, Libraries, and 21st Century Skills takes a metaliteracy approach, folding together information, media, and technology literacy with learning and innovation skills, life and career skills, and contemporary themes such as global awareness and civic and health literacy. As the name implies, the focus is on tangible skills. However, in many areas, the document does identify dispositions. For example, under "Learning and Innovation Skills," IMLS includes the standard "demonstrate imagination and curiosity," while "Civic Literacy" includes, "exercise the rights and obligations of citizenship at local, state, national, and global levels."

Other Standards

Many other library and information science organizations have proposed information literacy standards as well. The International Federation of Library Associations and Institutions (2006) published the *Guidelines on Information Literacy for Lifelong Learning*, while in the United Kingdom and Ireland, the Society of College, National and University Libraries (SCONUL) has developed the *Seven Pillars of Information Literacy* (SCONUL, 2011). The International Society for Technology in Education (n.d.) has created the *ISTE Standards for Students*, addressing information, technology, and communication skills. These standards are clear, concise, and very relevant to librarians in school libraries and public library makerspaces.

In addition, ACRL and disciplinary associations have created numerous sets of subject-specific information literacy standards. ACRL offers standards in nine subject areas, including journalism (ACRL, 2011), psychology (ACRL, 2010), and science and technology (ACRL, 2006). These disciplinary standards are particularly relevant for academic librarians working with upper-division students in their major courses and graduate students. Law librarians, particularly those working in law schools, can look to the American Association of Law Libraries' (2013) *Principles & Standards for Legal Research Competency*. Archivists can consult the *Guidelines for Primary Source Literacy*, developed jointly by the Society of American Archivists and the Rare Book and Manuscript Section of ACRL (2018).

Librarians should also attend to educational standards that may incorporate elements of information literacy or impact their workplace and non-librarian colleagues. National standards such as the *Common Core State Standards* (National Governors Association, 2020) and the *Next Generation Science Standards* (Achieve, 2013), as well as state educational standards, have a significant influence on the curriculum in K-12 settings. In most cases, these standards are complementary to those developed by librarians, and librarians should not feel forced to choose between them but rather strive to show how their work supports students' attainment across multiple sets of standards. For example, many standards address the ability to evaluate information, as shown in Table 2.1.

Table 2.1: Comparison of Standards that Address the Ability to Evaluate Information

Standard	Age	Competency Statement
Next Generation Science Standards	High School	"Evaluate the validity and reliability of multiple claims that appear in scientific and technical texts or media reports, verifying the data when possible."
Common Core State Standards	Grades 9-10	"Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning."
Standards Framework for Learners	K-12	"Learners gather information appropriate to the task by systematically questioning and assessing the validity and accuracy of information."

Moreillon (2013) shows how librarians can develop a matrix that maps the connections among disciplinary standards, information literacy standards, and reading and learning strategies used in the classroom. AASL

(n.d.) offers crosswalks that map the commonalities among the *Standards Framework for Learners* and other well-known information and technology literacy standards. Activity 2.3 is an opportunity to explore these commonalities in more detail.

Activity 2.3: Comparing Standards

Select two sets of standards, one for information literacy and one for education. (In addition to the education standards mentioned in this chapter, you can locate standards on the websites of disciplinary organizations and your state board of education.)

1. Review both sets of standards to familiarize yourself with their format and content. In what ways are the standards similar? Different?
2. Starting with the education standards, locate a specific competency that reflects information literacy.
3. Next, review the information literacy standards. What is the corresponding competency in the information literacy standards?
4. Work with a small group of peers to compare your findings and identify additional parallels between the education and information literacy standards.
5. Having identified these parallel standards, how could you use this knowledge in your instructional design or when collaborating with non-librarian colleagues?

Most librarians will become deeply conversant with the standards that are most relevant to their daily work. However, because our patrons practice information seeking throughout their life and in varied contexts, librarians should be familiar with other pertinent standards. For example, high school librarians may work most often with the *Standards Framework* but can look to the *Framework for Information Literacy in Higher Education* and *Museums, Libraries, and 21st Century Skills* to reflect on the skills students need to be college- and career- ready, while subject liaisons in an academic library will need to be familiar with disciplinary standards as well as ACRL's *Framework*.

Working with the Standards

Because they articulate the knowledge, skills, and dispositions needed to be information literate, the standards and frameworks can guide us as we plan instruction. For example, a librarian reviewing ACRL's *Framework* might note that college students should be able to "give credit to the original ideas of others through proper attribution and citation." In reflecting on the library's instructional program, the instructor might conclude that while all course-related workshops include a short section on citations within research papers, librarians could be doing more to educate students about proper attribution practices for other situations, such as when they use images in presentations or music clips in student films. To facilitate this,

the librarian might create short lessons on attribution that can be integrated into other workshops as well as a library guide for use at the reference desk and on the library's website. Activity 2.4 is a practice exercise in using standards to design instruction.

Activity 2.4: Using Standards to Design Instruction

Select one of the following competency statements. How could you help patrons develop information literacy by integrating the stated competency into an existing workshop or developing a new workshop?

- From the *Framework for Information Literacy in Higher Education*

  ◦ Match information needs and search strategies to appropriate search tools.
  ◦ Persist in the face of search challenges and know when they have enough information to complete the information task.

- From the *Standards Framework for Learners*

  ◦ Ethically using and reproducing others' work.
  ◦ Involving diverse perspectives in their own inquiry processes.

- From the *Museums, Libraries, and 21st Century Skills*

  ◦ Use technology as a tool to research, organize, evaluate, and communicate information.
  ◦ Understand both how and why media messages are constructed and for what purposes.

Another way instruction librarians use standards is to show that their work supports broader educational or organizational goals. In this case, the librarian may start with a program or workshop idea and then identify an appropriate standard that validates its value. For example, librarians in a public library might note that they frequently receive questions about selecting health insurance at the reference desk and decide to collaborate with a local nonprofit to offer workshops on the basics of health insurance. As part of seeking a grant to support their work, the librarians point to the Institute of Museum and Library Services' *Museums, Libraries, and 21st Century Skills*, which states that people should be able to "obtain, interpret, and understand basic health information and services and use such information and services in ways that enhance health" and "use available information to make appropriate health-related decisions." Activity 2.5 is a practice activity to align a workshop idea with a standard.

Activity 2.5: Aligning Workshops with Standards

Select a set of standards appropriate for the type of library in which you would like to work. Then, select one of the following topics:

- Citing sources
- Creating a résumé
- Finding primary sources
- Using *Twitter* (https://twitter.com/home)
- Conducting genealogical research

Imagine you have been asked to teach a workshop on this topic and would like to show how the workshop aligns with the standards you have selected. Review the standards, looking for where they mention your chosen topic or related skills. What competency statements within the standards best match the knowledge, skills, or dispositions that would be taught in the class?

Patron Perspectives on Information Literacy

Most information literacy frameworks are written by librarians and information professionals and therefore reflect their conceptions of information literacy and the knowledge, skills, and dispositions they believe patrons need. However, a few researchers have investigated how users conceive of and value information literacy. Lloyd notes that such studies help librarians understand how information is used in a wide variety of educational, work, and everyday contexts, and simultaneously challenge and enrich librarians' notions of information literacy by allowing "other voices and other ways of knowing to be heard and represented" (Lloyd, 2005, p. 84). Dawes (2019) argues that understanding patrons' conceptions of information literacy can improve outreach and collaboration.

In one of the most well-known studies, Bruce interviewed faculty and staff at two Australian institutions of higher education regarding their use of information in the workplace. From their responses, she identified seven conceptions of information literacy (Bruce, 1998):

1. **Information Technology:** Using technology for communication and information retrieval
2. **Information Sources:** Knowledge of specific types of sources and how to locate them
3. **Information Process:** Planning and executing a search strategy
4. **Information Control:** Storing information for later retrieval through personal organization systems, including physical, digital, and mental systems
5. **Knowledge Construction:** Building a personal knowledge base
6. **Knowledge Extension:** Using information, prior knowledge, and personal perspectives to gain new insights
7. **Wisdom:** Using information ethically for the benefit of others

Bruce notes that for her participants, technology is a focal point for the first few conceptions but diminishes in importance in the latter conceptions as information and critical thinking become more central. Bruce argues that we need to understand how non-librarians conceptualize information use in order to teach information literacy effectively. While Bruce's findings reflect the technology available at the time and may feel dated to modern readers (for example, social media does not appear in any of the conceptions), her patron-centered approach to understanding information literacy was groundbreaking and shares a common ethos with critical information literacy's emphasis on the value of information to the user.

Subsequent researchers have found other groups hold similar conceptions to those identified by Bruce. Maybee (2006) finds that undergraduates hold three of the same conceptions: information sources, information seeking process, and building a personal knowledge base. Smith and Hepworth (2012) find that teens and adolescents share the information sources, information seeking process, knowledge control, and knowledge construction conceptions.

At the same time, researchers have uncovered additional conceptions not identified in Bruce's study. Smith and Hepworth (2012) find that the young people in their study also held conceptions related to receiving information from others and using information for a task. Lloyd (2005, p. 85-86), in her study of firefighters, finds that textual sources are viewed as limited and inadequate for the needs of the job and that social sources (information received from colleagues) and direct experience are rated as crucial ways of knowing. In a study of refugees, Lloyd and Wilkinson (2019) also identify the ability to tap into social sources as an important form of information literacy. Studies by Maybee (2007) on undergraduate women, Yates (2015) on patient experiences with health information literacy, and Dawes (2019) on college faculty also add to our understanding of patron conceptions of information literacy.

Conclusion

Instruction librarians offer workshops and course-related instruction on a wide variety of topics. Much of this work falls under the umbrella of information literacy: the knowledge, skills, and dispositions that empower individuals to use technology effectively; to locate and evaluate information in a multitude of forms, from books to social media; and to create new knowledge and solve problems for school and work assignments, in their personal lives, and in their communities.

Key takeaways from this chapter include the following:

- While early definitions of information literacy focused on search skills for library resources, librarians currently understand information literacy as encompassing a wide array of knowledge, skills, and dispositions related to information, technology, and media. Current definitions of information literacy position individuals as information creators as well as consumers.
- Critical approaches to information literacy recognize that information production systems elevate some voices while marginalizing others. Librarians should assist patrons in uncovering potentially marginalized perspectives, rather than reifying certain forms of scholarship over others. In line with critical pedagogy, discussed further in Chapter 5, critical information literacy also emphasizes inquiry

and the learner's agency in the information-seeking process.

- Professional organizations, including AASL, ACRL, and IMLS, have developed standards and frameworks that define information literacy and guide the work of instruction librarians. Standards developed by other organizations may include competencies related to information literacy and are also relevant to the work of instruction librarians.
- Research on how patrons conceive of information enriches librarians' understandings of information literacy and our ability to work effectively with learners.

Key Standards

American Association of School Librarians. (2017). *Standards framework for learners*. https://standards.aasl.org/

> While AASL's standards for school libraries and competencies for school librarians must be purchased via ALA Editions, the text of the *Standards Framework for Learners*, along with valuable explanatory material and resources for implementation, is available on its website for free.

Association of College and Research Libraries. (2016). *Framework for information literacy for higher education*. http://www.ala.org/acrl/standards/ilframework

> Essential reading for reference and instruction librarians in academic libraries, the *Framework* is also relevant to librarians working with teens and adults in special and public libraries.

Institute of Museum and Library Services. (2009). *Museums, libraries, and 21st century skills*. ED507729. https://eric.ed.gov/?id=ED507729

> This report presents the text of the standards along with a discussion of the importance of twenty-first century skills in lifelong learning, case studies of innovative programs, and a self-assessment tool for libraries and museums.

Suggested Readings

Bauder, J., & Rod, C. (2016). Crossing thresholds: Critical information literacy pedagogy and the ACRL framework. *College & Undergraduate Libraries*, 23, 252–264. https://doi.org/10.1080/10691316.2015.1025323

> Bauder and Rod provide numerous examples of teaching strategies that support critical information literacy and are compatible with the *Framework*. Useful for high school and academic librarians seeking practical teaching ideas.

Downey, A. (2016). *Critical information literacy: Foundations, inspiration, and ideas*. Library Juice Press.

Downey provides a concise, readable introduction to critical information literacy and using critical pedagogy in library instruction.

Foasberg, N. M. (2015). From standards to frameworks for IL: How the ACRL framework addresses critiques of the standards. *portal: Libraries and the Academy*, 15, 699–717. https://doi.org/10.1353/pla.2015.0045

Foasberg explores how the *Framework* positions knowledge as a social construct and students as participatory leaners. An excellent introduction to the larger ideas behind the *Framework*.

Folk, A. L. (2019). Reframing information literacy as academic cultural capital: A critical and equity-based foundation for practice, assessment, and scholarship. *College & Research Libraries*, 80, 658-673. https://doi.org/10.5860/crl.80.5.658

Folk argues that while academic librarians have embraced critical information literacy, they have not changed their assessment and scholarship practices to address issues of equity and inclusion. She presents the cultural capital model as a potential framework and makes suggestions for instructional and research practices that further equity.

Freedman, J., & Robinson, A. A. (2019). School librarians level up! *Knowledge Quest*, 47(5), 10-15.

The authors, both school librarians, outline a variety of instructional activities that support the shared foundation "Explore" in the *Standards Framework for Learners*. This short article is packed with inspiring ideas for librarians seeking to implement the *Standards Framework*.

Hofer, A. R., Hanick, S. L., & Townsend, L. (2019). *Transforming information literacy instruction: Threshold concepts in theory and practice*. Libraries Unlimited.

Following a cogent introduction to threshold concepts and their application to information literacy, the authors identify and discuss five threshold concepts. Final chapters connect threshold concepts to assessment and provide strategies for incorporating the concepts in instruction.

Lechtenberg, K., & Phillips, J. (2018). Speaking up for equity takes courage–but the standards have your back. *Knowledge Quest*, 46(5), 56-63.

Lechtenberg and Phillips show how concern with equity and inclusion runs throughout the *Standards Framework* and suggest concrete actions librarians can take to further equity through information literacy instruction. The article concludes with a helpful table of questions librarians can ask to interrogate their work.

Schroeder, R., & Cahoy, E. S. (2010). Valuing information literacy: Affective learning and the ACRL standards. *portal: Libraries and the Academy*, 10, 127-47. https://doi.org/10.1353/pla.0.0096

While the authors' recommendation that ACRL fold dispositions into a set of revised standards has come to pass, this article is still a relevant and cogent explanation of the importance of attending to affect in teaching information literacy.

Seeber, K. (2015). This is really happening: Criticality and discussions of context in ACRL's *Framework for information literacy*. *Communications in Information Literacy*, 9, 157-63.

Seeber discusses how the *Framework* incorporates critical information literacy, particularly through its emphasis on context.

Wilkinson, L. (2014). The problem with threshold concepts. In *Sense and Reference: A Philosophical Library Blog*. https://senseandreference.wordpress.com/2014/06/19/the-problem-with-threshold-concepts/

Wilkinson provides a concise and cogent critique of threshold concepts and their application to information literacy.

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FOUNDATIONS OF TEACHING AND LEARNING

3. Learning Theories: Understanding How People Learn

Introduction

Learning theories describe the conditions and processes through which learning occurs, providing teachers with models to develop instruction sessions that lead to better learning. These theories explain the processes that people engage in as they make sense of information, and how they integrate that information into their mental models so that it becomes new knowledge. Learning theories also examine what motivates people to learn, and what circumstances enable or hinder learning.

Sometimes people are skeptical of having to learn theory, believing those theories will not be relevant in the real world, but learning theories are widely applicable. The models and processes that they describe tend to apply across different populations and settings, and provide us with guidelines to develop exercises, assignments, and lesson plans that align with how our students learn best. Learning theories can also be engaging. People who enjoy teaching often find the theories interesting and will be excited when they start to see connections between the theory and the learning they see happening in their own classrooms.

Figure 3.1: Graphic Organizer for Major Learning Theories

Theory	Major Theorists	Key Concepts	Examples in Practice

This graphic organizer presents a table with columns for students to take note of the theories presented in this chapter, along with major theorists, key concepts, and examples in practice.

General Learning Theories

With a basic understanding of learning theories, we can create lessons that enhance the learning process. This understanding helps us explain our instructional choices, or the "why" behind what and how we teach. As certain learning theories resonate with us and we consciously construct lessons based on those theories, we begin to develop a personal philosophy of teaching that will guide our instructional design going forward. This chapter provides a bridge from theory to practice by providing specific examples of how the theories can be applied in the library classroom. These theories provide a foundation to guide the instructional design and reflective practices presented in the rest of this textbook.

As you read, you might consider keeping track of the key points of each theory and thinking about how these theories could be applied to your practice. Figure 3.1 provides you with an example of a graphic organizer, one of the instructional materials that will be discussed in Chapter 11, that you could use to take notes as you read this chapter. In addition to the examples in practice that are provided in this chapter, you might add some of your own.

Behaviorism

Behaviorism is based largely on the work of John B. Watson and B. F. Skinner. Behaviorists were concerned with establishing psychology as a science and focused their studies on behaviors that could be empirically observed, such as actions that could be measured and tested, rather than on internal states such as emotions (McLeod, 2015). According to behaviorists, learning is dependent on a person's interactions with their external environment. As people experience consequences from their interactions with the environment, they modify their behaviors in reaction to those consequences. For instance, if a person hurts their hand when touching a hot stove, they will learn not to touch the stove again, and if they are praised for studying for a test, they will be likely to study in the future

According to behavioral theorists, we can change people's behavior by manipulating the environment in order to encourage certain behaviors and discourage others, a process called conditioning (Popp, 1996). Perhaps the most famous example of conditioning is Pavlov's dog. In his classic experiment, Pavlov demonstrated that a dog could be conditioned to associate the sound of a bell with food, so that eventually the dog would salivate whenever it heard the bell, regardless of whether it received food. Watson adapted stimulus conditioning to humans (Jensen, 2018). He gave an 11-month-old baby a rat, and the baby seemed to enjoy playing with it. Over time, Watson caused a loud, unpleasant sound each time he brought out the rat. Eventually, the baby associated the rat with the noise and cried when he saw the rat. Although Watson's experiment is now considered ethically questionable, it did establish that people's behavior could be modified through control of environmental stimuli.

Skinner (1938) examined how conditioning could shape behavior in longer-term and more complex ways by introducing the concept of reinforcement. According to Skinner, when people receive positive reinforcement, such as praise and rewards for certain behaviors, those behaviors are strengthened, while

negative reinforcement will deter behaviors. According to Skinner, by carefully controlling the environment and establishing a system of reinforcements, teachers, parents, and others can encourage and develop desired behaviors (Jensen, 2018). A simple example of behaviorism in the classroom is a point system in which students are awarded points for good behavior and deducted points for unwanted behavior. Eventually, accumulated points might be traded in for rewards like small gifts or homework passes. This approach assumes that motivation is external, in that students will engage in certain behaviors in order to gain the rewards.

Because it emphasizes the external environment, behaviorism largely ignores or discounts the role of internal influences such as prior knowledge and emotion (Popp, 1996). To an extent, behaviorists view learners as blank slates and emphasize the role of the teacher in the classroom. In this teacher-centered approach, instructors hold the knowledge, decide what will be learned, and establish the rewards for learning. Since their experience and prior knowledge are not considered relevant, learners are passive participants simply expected to absorb the knowledge transmitted by the teacher. While the idea of learners as blank slates has fallen out of favor, many of the conditioning aspects of behaviorism remain popular. As almost any student can attest, behavioral methods of reinforcement, such as the point system described above, are still common, especially in younger grades. Recent trends toward gaming in the classroom, where certain behaviors are rewarded with points and leveling up, are based in a behaviorist approach to learning. See Activity 3.1 for a brief activity on behaviorism.

Activity 3.1: Reflecting on Behaviorism

Think of some of your own learning experiences, whether they were in a traditional classroom, through professional development training, or related to personal interests, such as dance or photography lessons. Try to identify a few examples of behaviorism from those experiences and reflect on the following questions:

- How did your instructors use behavioral practice in their classrooms?
- Did you find those practices motivating? Why or why not?
- If you can think of examples of behaviorism from several different learning experiences, were they more appropriate in some situations than others? How so?
- Have you ever used, or can you imagine using, behaviorism in your own teaching practice? How so?

Humanism

Humanism recognizes the basic dignity and worth of each individual and believes people should be able to exercise some control over their environment. Although humanism as an educational philosophy has its roots in the Italian Renaissance, the more modern theorists associated with this approach include

John Dewey, Carl Rogers, Maria Montessori, Paolo Freire, and Abraham Maslow. Humanist learning theory is a whole-person approach to education that centers on the individual learners and their needs, and that considers affective as well as cognitive aspects of learning. At its essence, "humanism in education traditionally has referred to a broad, diffuse outlook emphasizing human freedom, dignity, autonomy, and individualism" (Lucas, 1996). Within this broader context, humanism is also characterized by the following tenets (Madsen & Wilson, 2012; Sharp, 2012):

1. Students are whole people, and learning must attend to their emotional as well as their cognitive state.
2. Teachers should be empathetic.
3. Learners are self-directed and internally motivated.
4. The outcome of learning is self-actualization.

Humanism centers the individual person as the subject and recognizes learners as whole beings with emotional and affective states that accompany their cognitive development. Recognizing the role of students' emotions means understanding how those emotions impact learning. Student anxiety, say around a test or a research paper, can interfere with the cognitive processes necessary to be successful. Empathetic teachers recognize and try to understand students' emotional states, taking steps to alleviate negative emotions that might detract from learning by creating a supportive learning environment.

In a library context, Mellon (1986) identified the phenomenon of library anxiety, or the negative emotions that some people experience when doing research or interacting with library tools and services. This anxiety can distract learners and make it difficult to engage in the processes necessary to search for, evaluate, and synthesize the information they need to complete their task. Similarly, in her Information Search Process, Kuhlthau (1990) describes the affective states as well as the cognitive processes students engage in when doing research, acknowledging that their emotions fluctuate among anxiety, optimism, and, ultimately, satisfaction or disappointment.

A humanist approach to education recognizes these affective states and seeks to limit their negative impact. For instance, we can acknowledge that feelings of anxiety are common so learners recognize that they are not alone. We can also explain how the skills students learn are relevant to their lives in and outside of the classroom.

Because humanists see people as autonomous beings, they believe that learning should be self-directed, meaning students should have some choice in what and how they learn. Humanistic education is often connected with student-centered pedagogical approaches such as differentiated curricula, self-paced learning, and discovery learning (Lucas, 1996). Self-directed learning can take many forms, but it generally means that the instructor acts as a guide, and learners are given the freedom to take responsibility for their own learning. Teachers will provide the materials and opportunities for learning, but students will engage with the learning on their own terms. In a library classroom, we can give students choices about the topics they will research or offer learners different types of activities to practice skills and demonstrate what they have learned.

Humanists also believe that learning is part of a process of self-actualization. They maintain that learning should be internally motivated and driven by students' interests and goals, rather than externally motivated and focused on a material end goal such as achievement on tests, or employment (Sharp, 2012). The

expectation is that when students are allowed to follow their interests and be creative, and when learning takes place within a supportive environment, students will engage in learning for its own sake. This emphasis on self-actualization is largely based on Maslow's (1943) hierarchy of needs. Maslow identified five levels of needs: basic physiological needs such as food, water, and shelter; safety and security needs; belongingness and love needs, including friends and intimate relationships; esteem needs, including feelings of accomplishment; and self-actualization, when people achieve their full potential. Importantly, these needs are hierarchical, meaning a person cannot achieve the higher needs such as esteem and self-actualization until more basic needs such as food and safety are met. The role of the humanist teacher is to facilitate the student's self-actualization by helping to ensure needs such as safety and esteem are met through empathetic teaching and a supportive classroom.

In his book, *Pedagogy of the Oppressed*, Freire (2000) brings together many of the student-centered elements of humanistic education, with a strong emphasis on social justice aspects of learning and teaching. In contrast to behaviorist approaches, Freire emphasizes the importance of students' life experience to their learning. He criticizes what he describes as the "banking model" of education, in which students are viewed as passive and empty vessels into which teachers simply deposit bits of knowledge that students are expected to regurgitate on exams or papers without any meaningful interaction. Freire insists that learning must be relevant to the student's life and the student should be an active participant in order for learning to be meaningful. Freire also emphasized the emancipatory role of education, arguing that the purpose of education was for learners to gain agency to challenge oppressive systems and improve their lives, and praxis, in which learners put abstract and theoretical knowledge into practice in the real world.

While a student-centered approach and choice can be introduced in any classroom, observers note that in an age of curriculum frameworks and standardized tests, where teachers are often constrained by the material, the ability to provide students with choice and allow for exploration is limited (Sharp, 2012; Zucca-Scott, 2010). Librarians often face similar constraints. School librarians also must meet state and district curriculum standards. Academic librarians generally depend on faculty invitations to conduct instruction and need to adapt their sessions to fit the content, time frame, and learning objectives of the faculty member. Nevertheless, we can always find ways to integrate some self-direction. For instance, rather than using planned examples to demonstrate searches, we might have students suggest topics to search. If we plan hands-on practice activities, we could allow learners to explore their own interests as they engage in the activity, rather than limiting them to preselected topics.

Cognitivism

Cognitivism, or cognitive psychology, was pioneered in the mid-twentieth century by scientists including George Miller, Ulric Neisser, and Noam Chomsky. Whereas behaviorists focus on the external environment and observable behavior, cognitive psychologists are interested in mental processes (Codington-Lacerte, 2018). They assert that behavior and learning entail more than just response to environmental stimuli and require rational thought and active participation in the learning process (Clark, 2018). To cognitivists, learning can be described as "acquiring knowledge and skills and having them readily available from memory so you can make sense of future problems and opportunities" (Brown et al., 2014, p. 2).

Cognitivists view the brain as an information processor somewhat like a computer that functions on algorithms that it develops in order to process information and make decisions. According to cognitive psychology, people acquire and store knowledge, referred to as schema, in their long-term memory. In addition to storing knowledge, people organize their knowledge into categories, and create connections across categories or schema that help them retrieve relevant pieces of information when needed (Clark, 2018). When individuals encounter new information, they process it against their existing knowledge or schema in order to make new connections. Cognitivists are interested in the specific functions that allow the brain to store, recall, and use information, as well as in mental processes such as pattern recognition and categorization, and the circumstances that influence people's attention (Codington-Lacerte, 2018).

Because cognitivists view memory and recall as the key to learning, they are interested in the processes and conditions that enhance memory and recall. According to cognitive psychology research, traditional methods of study, including rereading texts and drilling practice, or the repetition of terms and concepts, are not effective for committing information to memory (Brown et al., 2014). Rather, cognitivists assert that activities that require learners to recall information from memory, sometimes referred to as "retrieval practice," lead to better memory and ultimately better learning. For example, they suggest that language learners use flash cards to practice vocabulary words, rather than writing the words out over and over or reading and rereading a list of words, because the flash cards force the learner to recall information from memory.

While testing has fallen out of favor with many educators and education theorists, cognitivists find tests can be beneficial as both a retrieval practice and a diagnostic tool. They view tests not only as a way to measure what has been learned but as a way to practice retrieval of important concepts, and as a way to identify gaps or weaknesses in knowledge so that learners know where to concentrate their efforts (Brown et al., 2014). Cognitivists encourage "spaced practice," or recalling previously learned information at regular intervals, and "interleaving," or learning related concepts together to establish connections among them. Their research has found that retrieval is more effective when the brain is forced to recall information after some time has passed, and when the recall involves two or more related subjects or concepts. Finally, cognitivists also promote problem-based learning, maintaining that "trying to solve a problem before being taught the solution leads to better learning, even when errors are made in the attempt" (Brown et al., 2014, p.4).

These processes that enhance memory and recall, and thus learning, have some implications for instructors in creating an optimal environment for learning. Gagné (1985) proposed nine conditions for learning, referred to as the external conditions of learning, or the nine events of instruction:

1. **Gain attention.** Engage students' attention by tying learning to relevant events in their lives and asking stimulating questions.
2. **Inform the learner of the objective.** Begin by sharing the learning goals with the students, thus setting expectations and providing a map of the learning.
3. **Stimulate recall of prior learning.** Encourage students to remember previously learned relevant skills and knowledge before introducing new information.
4. **Present the stimulus.** Share new information. This step depends on the content of the lesson. For instance, a lesson on Boolean operators might begin with a Venn diagram and examples of the uses of

and, *or*, and *not*.

5. **Provide learner guidance.** Facilitate learning by demonstration and explanation.
6. **Elicit performance.** Allow time for students to practice skills and demonstrate their abilities. Ideally, students would be given low-stakes opportunities for practice, so they feel comfortable if they do not succeed immediately.
7. **Provide feedback.** Offer students input on what they are doing well and where they can improve.
8. **Assess performance.** Employ measures such as assignments, activities, and projects to gauge whether learning has occurred.
9. **Enhance retention and transfer.** Give students opportunities to practice skills in new contexts, which improves retention and helps students see how the skills are applied to different areas.

Cognitivism remains a popular approach to learning. However, one criticism of cognitive psychology is that, unlike humanism, it does not account for the role of emotions in learning (Codington-Lacerte, 2018). Further, some critics believe that cognitivism overemphasizes memorization and recall of facts to the detriment of higher-order skills such as creativity and problem solving. However, cognitivists argue that the ability to recall facts and concepts is essential to higher-order thinking, and therefore the two are not mutually exclusive but actually interdependent (Brown et al., 2014). Finally, cognitivism is considered teacher-centered, rather than learner-centered, since it emphasizes the role of the instructor in organizing learning activities and establishing the conditions of learning (Clark, 2018). Activity 3.2 is a brief exercise on cognitivism.

Activity 3.2: Reflecting on Cognitivism

Cognitive scientists recommend retrieval practice, including spaced practice and interleaving, over drilling.

Questions for Reflection and Discussion:

1. What kind of study practices do you tend to use? Do your practices vary depending on the content or material you are studying? How so?
2. Can you think of ways to integrate retrieval practices into your work for this class?
3. Spaced practice involves returning to previously learned concepts at later times, but information professionals often teach one-shot sessions. Can you think of ways to integrate spaced practice into a one-shot session?

Constructivism

Constructivism posits that individuals create knowledge and meaning through their interactions with the world. Like cognitivism, and as opposed to behaviorism, constructivism acknowledges the role of prior knowledge in learning, believing that individuals interpret what they experience within the framework of

what they already know (Kretchmar, 2019a). Social constructs, such as commonly held beliefs, and shared expectations around behavior and values provide a framework for knowledge, but people "do not just receive this knowledge as if they were empty vessels waiting to be filled. Individuals and groups interact with each other, contributing to the common trove of information and beliefs, reaching consensus with others on what they consider is the true nature of identity, knowledge, and reality" (Mercadal, 2018). Cognitivism and constructivism overlap in a number of ways. Both approaches build on the theories of Jean Piaget, who is sometimes referred to as a cognitive constructivist. However, while cognitivism is considered teacher-centered, constructivism centers the learner by recognizing their role in engaging with content and constructing meaning. Constructivist teachers act as guides or coaches, facilitating learning by developing supportive activities and environments, and building on what students already know (Kretchmar, 2019b).

Piaget discusses the concepts of assimilation, accommodation, and disequilibrium to describe how people create knowledge. In his early work as a biologist, Piaget noticed how organisms would adapt to their environment in order to survive. Through such adaptation, the organism achieved equilibrium. Extending these observations to cognitive science, he posited that human beings also seek equilibrium (Kretchmar, 2019a).

When they encounter new situations, or new information, human beings must find a way to deal with the new information. Similar to the processes described in the section on cognitivism, people will examine their existing knowledge, or schema, to see if the new information fits into what they already know. If it does, they are able to assimilate the information relatively easily. However, if the new information does not fit into what people already know, they experience disequilibrium or cognitive conflict, and must adapt by accommodating the new information. For example, once children learn what a dog is, they might call any four-legged creature they see a dog. This is assimilation, as the children are fitting new information into their existing knowledge. However, as children learn the differences between, say, a dog and cat, they can adjust their schema to accommodate this new knowledge (Heick, 2019).

Disequilibrium and accommodation can be uncomfortable. People might be confused or anxious when they encounter information that does not fit their existing schema, and they might struggle to accommodate that new information, but disequilibrium is crucial to learning (Kretchmar, 2019a). During assimilation, people might be adding new bits of information to their knowledge store, but they are not changing their understanding of the world. During accommodation, as people change their schema, construct new knowledge, and draw new connections among existing areas of knowledge, actual learning occurs, and accommodation requires disequilibrium.

Acknowledging the role of disequilibrium is important for both instructors and students. People naturally want to avoid discomfort, but that can also mean avoiding real learning. As instructors, we can facilitate accommodation by acknowledging that the process might be challenging, and by creating conditions that allow students to feel safe exploring new information. We can reassure learners that feelings of discomfort or anxiety are normal and provide them with low-stakes opportunities to engage with new information.

Social Constructivism

Social constructivism builds on the traditions of constructivism and cognitivism; whereas those theories focus on how individuals process information and construct meaning, social constructivists also consider how people's interactions with others impact their understanding of the world. Social constructivists recognize that different people can have different reactions and develop different understandings from the same events and circumstances, and are interested in how factors such as identity, family, community, and culture help shape those understandings (Mercadal, 2018).While cognitivists and constructivists view other people as mostly incidental to an individual's learning, social constructivists see community as central. Social constructivism can be defined as "the belief that the meanings attached to experience are socially assembled, depending on the culture in which the child is reared and on the child's caretakers" (Schaffer, 2006). Like constructivism, social constructivism centers on the learners' experiences and engagement, and sees the role of the instructor as a facilitator or guide. Two of the major theorists associated with social constructivism are Pierre Bourdieu and Lev Vygotsky.

Vygotsky built on the work of Piaget and believed knowledge is constructed, but felt that prior theories overemphasized the role of the individual in that construction of knowledge. Instead, he "was most interested in the role of other people in the development and learning processes of children," including how children learn in cooperation with adults and older or more experienced peers who can guide them with more complex concepts (Kretchmar, 2019b). Vygotsky was also interested in how language and learning are related. He postulated that the ways in which people communicate their thoughts and understandings, even when talking themselves through a concept or problem, are a crucial element of learning (Kretchmar, 2019b). For Vygotsky, interaction and dialogue among students, teachers, and peers are key to how learners develop an understanding of the world and of the socially constructed meanings of their communities.

Bourdieu examined the way in which social structures influence people's values, knowledge, and beliefs, and how these structures often become so ingrained as to be invisible. People within a society become so enculturated into the systems and beliefs of that society that they often accept them as "normal" and do not see them as imposed structures (Roth, 2018). As a result, individuals might not question or challenge those structures, even when they are unfair or oppressive. In addition to examining how community and culture help shape knowledge, Bourdieu was interested in how issues of class impact learning. He observed that over time, schools developed to reflect the cultures of wealthier families, which enabled their children to succeed because they inherently understood the culture of the classroom and the system of education. We continue to see such issues today, and as discussed more in Chapter 5 and Chapter 6, part of our critical practice is to ensure that our classrooms and instructional strategies are inclusive of and responsive to all students.

Activity 3.3 explores how we can use theory to guide our practice.

Activity 3.3: Using Learning Theory to Plan Lessons

While learning theories can be interesting on their own, our goal as instructors is to apply them to classroom practice. Imagine that you are a high school librarian working with a class that has just been assigned a research paper. Your goal for this session is for students to brainstorm keywords and synonyms for their topics, and to learn how to string those words together using the Boolean operators *and*, *or*, and *not*. You want to be sure the students understand the function of the Boolean operators and can remember how to use them for future searches.

Choose one of the learning theories outlined in this chapter and design a brief lesson to teach Boolean operators from the perspective of that theory. Concentrate less on what you would teach but rather on how you would teach it in keeping with the chosen theory:

- How would you introduce the topic?
- What sort of learning activities would you use?
- What would you be doing during the lesson? What would you expect students to do?
- How might any of your answers to these questions change if you were to use a different theory as your guide?

Developmental Stages

The learning theories outlined above discuss various cognitive processes involved in learning, as well as some of the motivators and conditions that facilitate learning. While these theories attempt to describe how people learn, it is important to note that individuals are not born ready to engage in all of these processes at once, nor do they necessarily all engage in the same processes at the same time. Rather, more complex processes develop over time as people experience the world and as their brain matures. In addition to studying how people learn, some theorists have also proposed theories or frameworks to describe developmental stages, or the various points in human development when different cognitive processes are enabled, and different kinds of learning can occur.

Piaget outlined four hierarchical stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational (Clouse, 2019), illustrated in Table 3.1. In the sensorimotor stage, from birth to about two years, infants react to their environment with inherent reflexes such as sucking, swallowing, and crying. By about age two, they begin problem solving using trial and error. The preoperational stage, also sometimes called the intuitive intelligence stage, lasts from about ages two to seven. During this time, children develop language and mental imagery. They are able to use their imagination, but they view the world only from their own perspective and have trouble understanding other perspectives. Their understanding of the world during this stage is tied to their perceptions. Children are in the operational stage from about ages seven to 12, during which time they begin to think more logically about the world, can understand that objects are not always as they appear, and begin to understand other

people's perspectives. The final stage, formal operationalism, begins around age 12. At this point, individuals can think abstractly and engage in ideas that move beyond the concrete world around them, and they can use deductive reasoning and think through consequences (Clark, 2018; Clouse, 2019).

Table 3.1: Piaget's Four Stages of Cognitive Development

Stage	Age Range	Behaviors and Abilities
Sensorimotor	Birth to 18-24 months	• React to environment with inherent reflexes such as sucking, swallowing, and crying
Preoperational	18-24 months to 7 years	• Begin to develop language • Start basic problem-solving through trial and error • Engage in imaginative play but generally cannot understand perspectives other than their own
Concrete operational	7 to 12 years	• Develop logical thinking • Understand that appearance is not always reality • Develop ability to understand other's perspectives
Formal operational	12 years and up	• Engage in abstract thinking • Use deductive reasoning • Think through consequences

Perry's (1970) Scheme of Intellectual and Moral Development offers another useful framework for understanding the developmental stages of learning. Perry proposed four stages of learning. In the first stage, dualism, children generally believe that all problems can be solved, and that there are right and wrong answers to each question. At this stage, children generally look to instructors to provide them with correct answers. The second stage is multiplicity, where learners realize that there are conflicting views and controversies on topics. Learners in the multiplicity stage often have trouble assessing the authority and credibility of arguments. They tend to believe that all perspectives are equally valid and rely on their own experiences to form opinions and decide what information to trust. In the next stage, referred to as relativism, learners begin to understand that there are different lenses for understanding and evaluating information. They learn that different disciplines have their own methods of research and analysis, and they can begin to apply these perspectives as they evaluate sources and evidence. At this point, learners can understand that not all answers or perspectives are equal, but that some answers or arguments might be more valid than others. In the final stage, commitment, students integrate selected information into their knowledge base. You might notice connections between Perry and the cognitivists and constructivists described above in the way they each describe people making sense of information by comparing new

information to existing knowledge. However, Perry organizes the processes into developmental stages that outline a progression of learning.

Understanding the stages laid out by Piaget and Perry, we can develop lessons that are appropriate to learners at each stage. For example, in presenting a lesson on climate change to preoperational students using Piaget's framework, an instructor could gather pictures of different animal habitats, or take children on a nature walk to observe the surrounding environment. Instructors could ask these children to describe what they see and reflect on their personal experiences with weather, while older children could be asked to imagine how the changes are impacting other people and organisms, anticipate consequences of the impact of climate change, and perhaps use problem solving to propose steps to improve their environment. Considering Perry's Scheme, instructors might guide students from multiplicity to relativism by explaining scientific methods for measuring climate, and challenging learners to evaluate and compare different sources of information to determine which presents the strongest evidence.

Piaget and Perry offer developmental models that outline stages broadly aligned with a person's age. Both models assume a relatively linear chronological development, with children and young adults passing through different stages at roughly the same time. Vygotsky, on the other hand, describes a model that focuses more on the content being mastered rather than the age of the student. According to Vygotsky's theory, known as Zone of Proximal Development (ZPD), as learners acquire new knowledge or develop new skills, they pass through three stages, often illustrated as concentric circles, as in Figure 3.2. The center circle, or first zone, represents tasks that the learner can do on their own. The second zone, or the Zone of Proximal Development, represents an area of knowledge or set of tasks that the learner can accomplish with assistance. The tasks and knowledge in this zone require students to stretch their abilities somewhat beyond their current skill level but are not so challenging as to be completely frustrating. The outermost circle, or third zone, represents tasks that the learner cannot yet do. Vygotsky posits that by working within the ZPD, learners can continue to grow their skills and abilities and increase their knowledge (Flair, 2019).

Whereas Piaget and Perry's theories suggest that learners pass through the same stages at roughly the same time, Vygotsky maintains that the ZPD, or the zone of learning that will appropriately challenge the learner, is different for each student, depending on their background knowledge, experience, and ability (Flair, 2019). The same individual can experience different ZPDs in different subject areas; they might be advanced in math and able to take on material above their grade level but might find languages more challenging. Like with social constructivism, interaction with others is central to ZPD. According to Vygotsky, learning takes place when students interact with others who are more knowledgeable, including peers and instructors, who can provide guidance in the ZPD (Schaffer, 2006).

Math can provide a good example of working within the ZPD. Once students are comfortable with addition, they can probably learn subtraction with some help from a teacher or other peers but are probably not ready to learn long division. Our challenge as instructors is to identify the ZPD for each student so that we are neither boring learners with material that is too easy nor overwhelming them with material that is too hard. Chapter 7 discusses methods for assessing learners' background knowledge to help determine the appropriate level of learning.

Figure 3.2: The Zone of Proximal Development
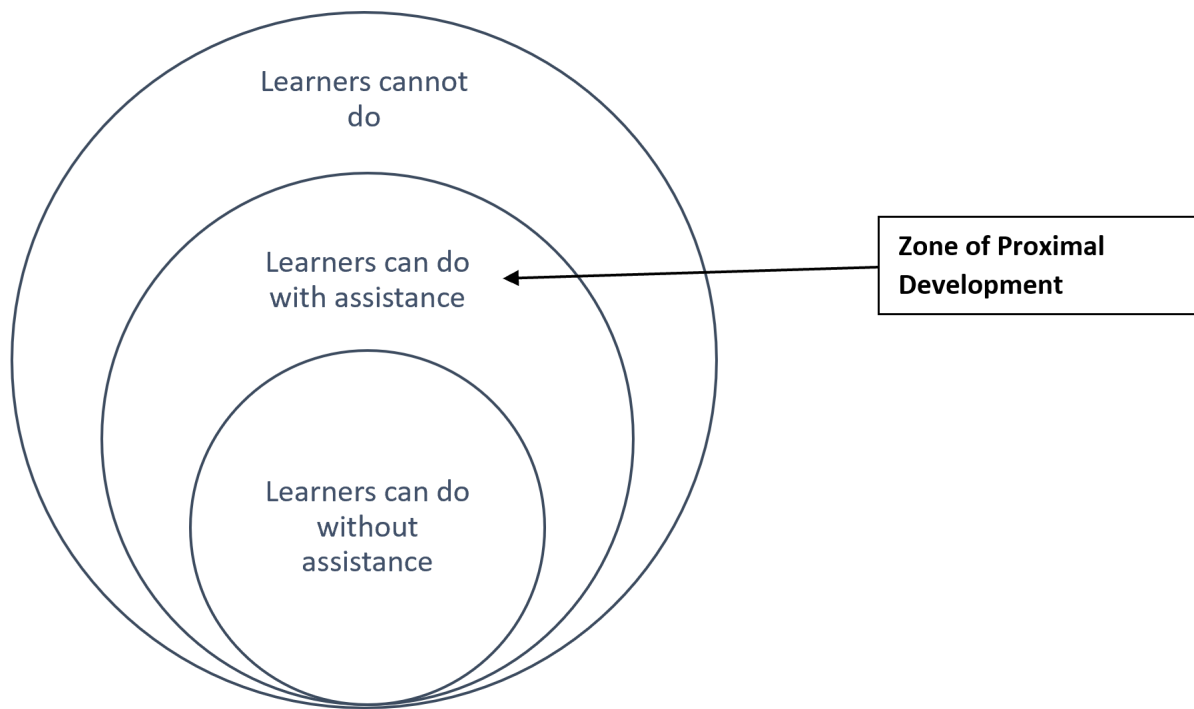
The Zone of Proximal Development is illustrated as three concentric circles. The innermost circle represents things learners can do on their own, and the outermost circle represents things the learner cannot yet do. The middle circle is the Zone of Proximal Development (ZPD), which represents things learners can do with assistance.

Andragogy

Most of the educational theories and frameworks outlined in this chapter were developed with a focus on children and young adults. While many of the principles can apply to an adult audience, they do not necessarily account for the specific issues, challenges, and motivations of adult learners. Yet, many information professionals will work mostly or even exclusively with adults. Academic librarians and archivists largely work with students who are at least 17 years old and, as the numbers of nontraditional students continue to increase, will find themselves increasingly working with older learners. Likewise, information professionals in corporations and medical and legal settings work almost exclusively with adults. Public librarians see a range of patrons, and many public libraries are increasing educational programming for their adult patrons. This section presents the educational concept of andragogy, which addresses teaching and learning for adults.

Knowles proposed andragogy as "the art and science of helping adults learn" (1988, p. 43). Andragogy is based on a set of assumptions about the ways in which adult learners' experience, motivations, and needs

differ from those of younger students, and suggests that traditional classroom approaches developed with younger students in mind will not necessarily be successful with adult learners. Perhaps one of the biggest differences between child and adult learners, according to Knowles (1988), is that adults are interested in the immediate applicability of what they are learning and are often motivated by their social roles as employees, parents, and so on. As Knowles notes, in traditional classrooms, children are usually taught discrete subjects like math, reading, and history, and their learning is focused on building up knowledge for the future. Young students might not use geometry in their everyday lives, but it forms a foundation for more complex math and for future job or life tasks like measuring materials for home repairs.

Adults, on the other hand, are already immersed in the social roles for which younger students are only preparing, and they want to see how their learning applies to those roles. Thus, Knowles suggests that adults will be interested in a competency-based, rather than a subject-based, approach to learning. Further, as autonomous individuals, adults are likely to be more self-directed in their learning. That is, they will want to, and should be encouraged to, take an active part in the design and planning of lessons, providing input on content and goals. Finally, Knowles also argues that adults' wider experience and larger store of knowledge should be a resource for learning.

Knowles (1988, p. 45) organized his approach around four assumptions of adult learners:

1. Their self-concept moves from one of being a dependent personality toward a self-directed human being.
2. They accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning.
3. Their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles.
4. Their time perspective changes from one of postponed application of knowledge to immediacy of application, and, accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness.

Later, he elaborated with two additional assumptions, summed up by Merriam et al. (2007):

5. The most potent motivations are internal rather than external.
6. Adults need to know why they need to learn something.

Certain understandings follow from Knowles' assumptions that we can use to guide our practice with adult learners. To begin with, we should recognize and respect adults' tendency to be self-motivated and self-directed learners. After all, in most states, school attendance is compulsory up to a certain age, and relatively strict curriculum standards are set by each state, meaning that children have little choice about attending school in some form or about what content they learn. At least in theory, adults have a choice about whether to attend college or engage in other kinds of learning opportunities such as workshops and professional development and continuing education courses. Presumably, adults are motivated to pursue these opportunities for a specific reason, whether out of personal curiosity, to advance in their careers, or to gain a new skill. These adult learners will likely have opinions and ideas about what they want to learn and perhaps even how they want to engage with the content, so Knowles suggests we provide adult learners with choices and opportunities for input to help shape the curriculum.

Adult learners also have a larger store of knowledge and experience than their younger counterparts. From a cognitivist or constructivist point of view, adults have a larger schema against which to compare new information and make new connections. As instructors, we should recognize this store of knowledge and find ways to integrate it into the classroom, by providing ample opportunity for reflection and using guiding questions to encourage learners to draw on that knowledge. We can approach adult learners as peers or co-learners, acting more as coaches or facilitators in the learning process than as the more directive teacher associated with a traditional school classroom. This focus on learner-centered approaches and a democratic environment overlaps with humanistic and constructivist approaches to teaching.

Points three, four, and six in Knowles' list of assumptions underscore the importance of relevance and transparency for adult learners. Knowles suggests that adults have different priorities in learning, perhaps in part because they are learning by choice and are in a better position to direct their own learning. Adult learners also tend to have more demands on their time than younger students; they may have families and jobs that impact the time they have to devote to their studies. Thus, adult learners want to see the applicability of what they are learning and might be resistant to work or information that seems incidental. We should be transparent with our adult students, both about what they will learn and how that learning is important and relevant. Sharing learning goals is an important step toward transparency, as it can help set expectations so that students understand the purpose of the lesson and activities. To illustrate relevance, we can provide concrete examples of how the learning can be applied in practice. One could argue that all students, not just adults, deserve transparency and to see the relevance of lesson goals and learning. Knowles' point is that adults are more likely to expect, and perhaps appreciate, such transparency.

While some controversy exists over whether andragogy really constitutes a theory per se or is more a set of guiding principles or best practices, the assumptions provide helpful guidance to instructors not just in how they organize content but also in how they frame the lesson and its purposes. Based on these assumptions, we can take certain steps to set an appropriate environment for adult education (Bartle, 2019):

1. Set a cooperative learning climate.
2. Create mechanisms for input.
3. Arrange for a diagnosis of learner needs and interests.
4. Enable the formulation of learning objectives based on the diagnosed needs and interests.
5. Design sequential activities for achieving the objectives.
6. Execute the design by selecting methods, materials, and resources.
7. Evaluate the quality of the learning experience while rediagnosing needs for further learning.

As noted above, andragogy overlaps with other theories such as humanism and constructivism, and some of the principles of andragogy, like transparency, would benefit all learners. Still, this framework is useful in reminding instructors that adult learners likely have different priorities and motivations, and thus some differences in classroom approach might be warranted.

Motivation

In addition to *how* people learn, we should also know something about *why* people learn. What motivates a student to put the time and effort into learning a skill or topic, and what can we do to cultivate that motivation? Svinicki (2004) offers an intriguing model that amalgamates some of the prevailing theories of motivation in learning. She suggests that motivation is a factor of the perceived value of the learning, along with students' belief in their own self-efficacy, or their belief in their ability to achieve the goal. As Svinicki explains, "motivation involves a constant balancing of these two factors of value and expectations for success" (2004, p. 146). Most of the learning theories outlined above address motivation implicitly or explicitly. For instance, behaviorists talk in terms of reinforcement, or external motivators, as students strive to avoid negative consequences and achieve the rewards of good work. Humanists, on the other hand, focus on the internal motivation of self-actualization. As instructors, we can create environments to increase our learners' motivation or their perception of the value of the goal and their self-efficacy:

- **Emphasize the relevance of the material.** As outlined in the section on andragogy, learners are motivated when they see the benefits of learning and understand why the material is important. Instructors should explain how the effort individuals put into learning can help them achieve personal goals, such as getting a good grade on a paper or finding a job.
- **Make the material appropriately challenging.** Reminiscent of the Zone of Proximal Development, material that is too easy will be boring for learners, while material that is too challenging will be overwhelming and frustrating.
- **Give learners a sense of choice and control.** Choice allows learners to have a stake in the class, while control helps them determine the level of risk they will take and thus increase their confidence. We can foster choice and control by allowing learners options in the types of activities and assignments they engage in, or in the topics they research.
- **Set learners up for success.** Clear expectations for the class or the assignment help learners understand what a successful performance or project looks like. By providing meaningful feedback, we can guide learners toward success.
- **Guide self-assessment.** When learners accurately assess their current level of knowledge and skill, they can make reasonable predictions of the likelihood of their success with the current material.

Activity 3.4 offers an opportunity to reflect on motivation in learning.

Activity 3.4: What Motivates You?

Think back on learning experiences such as courses or workshops where you felt more or less motivated as a learner. These experiences could be related to academics, hobbies, sports, or other interests.

Questions for Reflection and Discussion:

1. In the experiences in which you felt motivated, what steps did the instructor take that helped you feel motivated?
2. In the experiences where you felt less motivated, what could the instructor have done differently?
3. In each case, what role did self-efficacy, or your confidence in your own abilities, play?

Growth Mindset

Dweck's (2016) mindset theory has gained much attention in the field of education over the last few decades and has some implications for student motivation. Although this theory is somewhat different in its conceptualizations than those described in the rest of this chapter, it is included here both because of its popularity and because it provides interesting insight into how instructors can coach learners to understand and build on their potential. Dweck's theory is less about how people learn and more about how their attitude toward learning and their self-concept can impact their ability and willingness to learn. According to Dweck, people tend to approach learning with a fixed mindset or a growth mindset. Those with more of a fixed mindset tend to believe that ability is innate; either people are born with a certain talent and ability, or they are not. If individuals are not born with natural ability in a certain area, they would waste time working on that area because they will never truly be successful. People with more of a growth mindset, on the other hand, tend to believe that ability is the outcome of hard work and effort. These people see value in working at areas in which they are not immediately successful because they believe they can improve. Even when they are good at something, they are willing to continue to work at it because they believe they can continue to get better (Dweck, 2016).

These mindsets can have a profound impact on how a person approaches learning (Dweck, 2016). People with a fixed mindset will view low grades or poor test performance as a sign of their lack of natural ability and are likely to become discouraged. They might try to avoid that subject altogether or resign themselves to failure because they do not believe that practice or study will help them improve. Instead, they will tend to stick to subjects in which they already perform well. People with a growth mindset take an opposite view. They tend to view low grades or poor performance as a diagnostic tool that helps them see where they need to concentrate their efforts in order to get better. They are willing to put in extra effort because they believe that their hard work will lead to improved performance. They are also willing to take risks because they understand that failure is just part of the process of learning. We can see connections between Dweck's theory and Piaget's argument that the discomfort of disequilibrium is necessary to learning.

Understandably, people with a growth mindset are usually more successful learners because they believe in their own ability to learn and grow. Luckily, Dweck maintains that these mindsets themselves are not necessarily immutable. That is, a person with a fixed mindset can be coached to adopt a growth mindset. Learners can begin by recognizing when they are engaging in fixed mindset thinking, for instance

when getting anxious about mistakes or telling themselves that they are "no good" at something. Once learners understand that this thinking is counterproductive, they can change their thinking to adopt a more encouraging voice.

Importantly, Dweck notes that encouraging a growth mindset in the classroom does not mean lowering standards for learning. She maintains that instructors should have high standards but also create a supportive and nurturing atmosphere. To begin with, instructors themselves must believe that learning and growth are possible, and not give up on students who are struggling. Instructors can model this belief for students by replacing fixed mindset feedback with growth mindset feedback. For example, Dweck suggests that if learners are struggling, instructors can respond by telling them they have not succeeded yet. The word "yet" implies that they will achieve the necessary learning; they just need to keep working at it. In that way, instructors can reframe mistakes and struggles as opportunities to learn rather than as failures. Instructors should encourage and appreciate effort as well as learning. In other words, rather than focusing only on a student's achievement, instructors can praise the effort and hard work that led to that achievement. At the same time, Dweck (2015) notes that a growth mindset is not just about effort. In addition to putting in the work, learners must also be willing to try different strategies and be open to feedback on their performance. The goal is to help students view challenges as part of the learning process and to work with them rather than to fear or avoid them.

Conclusion

Learning theories are meant to help instructors understand the processes and circumstances that enable learning and, by extension, offer guidance in developing activities and environments that best support learning. But what to make of the fact that there are so many different theories and that some contradict each other? The truth is that the human brain and its cognitive processes are incredibly complex and not yet fully understood. Learning theorists do their best to describe how people learn based on careful observation and experimentation, but no learning theory is perfect. Indeed, each theory has its critics, and the various theories go in and out of favor over time. Even so, the theories provide us with an empirically based understanding of how learning occurs.

Further, these theories are not mutually exclusive. We do not have to strictly adhere to one theory but can combine elements across theories in ways that resonate with our teaching styles and reflect our best understanding of our students. For instance, a teacher might draw on elements of cognitivism to enhance students' retention and recall but also develop group activities that promote social constructivism through peer-to-peer communication. Especially with younger children, instructors might draw on behaviorism by using rewards and positive reinforcement to motivate student engagement with the content, but also integrate humanism by empathizing with students and use constructive feedback to encourage a growth mindset. We can use our understanding of developmental stages to create lessons and activities that provide an appropriate level of challenge to help students grow in their understanding. Ultimately, we should view learning theories as guidelines, not rules, and draw on them in ways that reflect our own values and understandings.

Keeping this idea of learning across theories in mind, we can sum up the key takeaways from this chapter:

- Learning is the change in knowledge, behavior, or understanding that occurs when people make connections between new information and their existing knowledge. Various theories attempt to describe the factors that enable the learning process.
- Learning does not happen in the same way or at the same time for all students. Understanding developmental stages can help instructors align instruction with student readiness. Adult learners may have needs and constraints that differ from younger learners.
- The learning process is influenced by internal factors such as the student's level of motivation and feelings of self-efficacy, and external factors such as the classroom environment and the adults and peers with whom the learner interacts.
- Instructors can take steps to foster better learning, including:
  - Creating a democratic, empathetic, and supportive learning environment
  - Assisting students in becoming self-directed learners and enhancing their motivation by offering a sense of control and choice in their learning
  - Acknowledging that learning can be challenging, and helping students develop the mindset and self-efficacy that will support their persistence
  - Offering regular and meaningful feedback

Suggested Readings

Brown, P. C., Roediger, H. L. III, & McDaniel, M. A. (2014). *Make it stick: The science of successful learning.* Belknap Press.

> Brown, Roediger, and McDaniel present an engaging and accessible overview of current research in cognitive psychology. In addition to the science, the authors offer clear examples of how recommended recall and retrieval practices can be integrated into teaching.

Cooke, N. A. (2010). Becoming an andragogical librarian: Using library instruction as a tool to combat library anxiety and empower adult learners. *New Review of Academic Librarianship*, 16(2), 208-227. https://doi.org/10.1080/13614533.2010.507388

> This article offers a thorough overview of andragogy and the characteristics and motivators of adult learners and offers library-specific advice for teaching adult students.

Curtis, J. A. (2019). *Teaching adult learners: A guide for public librarians*. Libraries Unlimited.

> Curtis provides a clear introduction to andragogy to contextualize instruction in public libraries. She also addresses issues of culture and generational differences in teaching adults. Covering many aspects of instruction, including developing learning objects and teaching online, this book is valuable as one of the few to focus exclusively on issues of teaching and learning in public libraries.

Dweck, C. S. (2016). *Mindset: The new psychology of success* (Updated ed.). Penguin Random House.

> In this book, Dweck defines fixed and growth mindsets and how they can influence people's feelings of motivation and self-efficacy in learning. She also offers guidance on how to facilitate the development of a growth mindset for better learning.

Freire, P. (2000). *Pedagogy of the oppressed* (30th Anniversary Edition). Bloomsbury.

> In this foundational work, Freire presents the concept of the banking model of education. This book provides a social justice foundation for a humanistic approach to education.

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. Jossey-Bass.

> The authors provide a clear, concise, and engaging overview of both traditional and current theories of adult learning. The book includes activities and concrete examples for implementing the theories in the classroom.

Roy, L., & Novotny, E. (2000). How do we learn? Contributions of learning theory to reference services and library instruction. *Reference Librarian*, 33(69/70), 129-139. https://doi.org/10.1300/J120v33n69_13

> The authors provide an overview of some of the major learning theories, followed by specific ideas and advice for applying the theory to reference and library instruction.

Svinicki, M. D. (2004). *Learning and motivation in the postsecondary classroom*. Bolton, MA: Anker Publishing.

> This book takes a student-centered approach to describing learning theory. Chapter 7 provides an excellent overview of motivation and self-efficacy, including implications for practice.

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4. Active Learning: Engaging People in the Learning Process

Introduction

Active learning, as the name implies, is any type of learning that involves direct interaction with the content or materials. Active learning has seen increasing popularity over the past few decades, beginning in 1984 with a report from the National Institute of Education which identified student involvement in learning as a condition of success in education. The report promoted active learning as a way to encourage more student involvement and called on faculty to "make greater use of active modes of teaching and require that students take greater responsibility for their learning" (p. 38). Likewise, in 1987, Chickering and Gamson listed active learning as one of the seven principles to improve undergraduate education. In recent decades, proponents have recommended the integration of active learning techniques in virtually any learning environment and with all age groups, from preschool through higher education, as well as continuing education and professional development. This chapter begins with an overview of active learning, including arguments for implementing it throughout learning experiences, as well as some of the concerns or challenges to integrating the techniques into the classroom. The chapter concludes with examples of some common active learning approaches and techniques.

What Is Active Learning?

Active learning involves direct engagement with course material, such as discussion, debate, role playing, and hands-on practice. In contrast, passive learning does not directly involve the student; examples of passive learning include lecture or demonstration, where students listen and watch but do not actively participate. Bonwell and Eison (1991, p. iii) define active learning as "instructional activities involving students in doing things and thinking about what they are doing." In other words, active learning includes direct interaction with content but also has a metacognitive element that promotes reflection on learning. While we can use active learning approaches with individual learners, many of the techniques emphasize group work and collaboration. In addition to classroom activities, active learning can take place outside the classroom through experiences like internships, service-learning opportunities, and assignments that involve interaction and reflection. However, this chapter will focus on instructor-designed active learning that takes place in venues such as classrooms, workshops, and webinars, as these are the experiences with which information professionals will most likely be involved.

Active learning has its roots in several of the theories described in Chapter 3. Humanists reject the notion that learners are blank slates that passively receive information transmitted from teachers. Constructivists

believe that learners construct knowledge, which presupposes active engagement with information in order to create new meanings and understandings, while social constructivists emphasize the importance of interactions with other people in constructing knowledge. According to cognitive scientists, learners actively engage with material as they retrieve information from long-term memory and make connections between new information and existing knowledge.

Active learning approaches challenge the traditional, or "banking," model of education, in which learners are generally passive; they are expected to listen and take notes, but they are not required to interact with or think deeply about the content. At most, students are asked to recall and repeat what they have learned in an exam or paper. Active learning centers on the learner and encourages interaction, engagement, and reflection. The emphasis with active learning is less on content and more on skills and concepts, or learning how to learn (Thomas, 2009). This does not mean that active learning does not involve content, but more time is typically devoted to solving problems, analyzing issues, and reflecting on learning than, say, learning rote facts.

Despite the history and current popularity of active learning, the concept remains somewhat elusive. There is no unified theory or single set of practices for active learning. In a sense, active learning is an umbrella term that encompasses a range of approaches to teaching and learning and a wide variety of specific techniques. Prince (2004) identifies three of the most common approaches to active learning as collaborative learning, cooperative learning, and problem-based learning, each of which has different applications and implementations. Collaborative learning, according to Prince, is any type of learning in which students work together on a project or toward the same learning outcome. Cooperative learning is also collaborative, but the emphasis is on joint incentives and common goals, whereas collaborative learning is sometimes centered on competition. In problem-based learning, the instructor presents students with a challenge or scenario, often drawn from the real world, and students must develop solutions to the problem. Problem-based learning is often self-directed, with the instructor acting as a guide and facilitator rather than an expert with answers. Cattaneo (2017) classifies active learning activities as problem-based learning, discovery-based learning, inquiry-based learning, project-based learning, and case-based learning. She finds that each of these approaches is student-centered, but they vary quite widely in their implementation.

Finally, Graffam (2007) suggests that active learning has three components: intentional engagement, purposeful observation, and critical reflection. Intentional engagement is hands-on practice, where students perform the tasks or engage the skills they are expected to learn. For instance, LIS students might role play a reference interview, or a library instructor might have a group of undergraduates evaluate a website. In purposeful observation, students watch demonstrations or observe interactions in order to learn skills, tasks, or procedures. Demonstrations are quite common in library instruction, as when library instructors walk students through Boolean searching. Another example is having LIS students watch a reference interview in order to learn techniques for clarifying questions. The difference between demonstration and purposeful observation is that purposeful observation shifts the focus from the instructor, or demonstrator, to the learner, putting responsibility on the learner to pay attention and glean important information. Instructors can facilitate the process by describing each step in a demonstration and debriefing or asking questions after a simulation to draw attention to the important aspects. Finally, critical reflection is a metacognitive act in which students reflect on their learning. This step is crucial because it encourages students to make connections and helps to deepen the learning.

Ultimately, we can think of active learning as a set of best practices based on these broad, student-centered approaches. We can implement active learning in both face to face and online classrooms using specific methods and techniques such as discussions, think-pair-share, role playing, case studies, and jigsaws, as described in more detail later in this chapter. Activity 4.1 is a reflective exercise on active learning.

Activity 4.1: Active Learning: What Has Been Your Experience?

Think back on some of the learning experiences you have had in the past one or two semesters. These might include lectures, discussions, debates, writing exercises, videos, readings, demonstrations, role plays, and presentations, and they might have taken place in face to face or online courses, workshops, and conferences.

Questions for Reflection and Discussion:

1. Would you characterize these various activities as active or passive?
2. Did you find one type of experience more engaging?
3. Did you feel as if you learned more with one type of experience than the other?
4. Do you prefer one type of learning experience over the other? If so, why?
5. Think about the different learning settings you've experienced: elementary school, high school, undergraduate, graduate, study abroad, professional development, workshops, online, face to face, and so on. Do you find that some of these experiences use active learning more than others? Why might that be?
6. Could you imagine ways of incorporating active learning into some of the more passive experiences you have had?

The Case for Active Learning

Support for active learning abounds, but does this approach really work to engage students and increase learning? Bonwell and Eison (1991) state that students prefer active learning and that students in active learning classrooms are more engaged and motivated than those who are required only to passively listen to a lecture. They also maintain that active learning can promote higher-order thinking skills such as analysis, synthesis, and evaluation, while still achieving the same mastery of content as lectures. Overall, their claims seem to be supported. Prince (2004) found that collaborative and cooperative learning improved academic performance and led to better learning outcomes. Hake (1998) similarly found that active learning led to better test scores and increased problem-solving abilities, while Harris and Bacon (2019) indicate that active learning produces results at least as good as traditional, passive learning, and that it promotes both lower-order and higher-order critical thinking skills. Similarly, Freeman et al. (2014) found active learning to be beneficial, leading to improved exam scores. In fact, they went so far as to say that "if the experiments analyzed here had been conducted as randomized controlled trials of medical interventions, they may have

been stopped for benefit—meaning that enrolling patients in the control condition might be discontinued because the treatment being tested was clearly more beneficial" (Freeman et al., 2014, p. 8413). The majority of studies on active learning have looked at children and young adults, but Uemura et al. (2018) found that active learning increased health literacy in older adults.

The benefits of active learning techniques do not seem to be limited to improved learning outcomes. For example, students in active learning classrooms tend to report more positive attitudes (Freeman et al., 2014), and there is some evidence that active learning reduces student attrition, meaning students are less likely to drop out of courses that utilize active learning techniques (Freeman et al., 2014: Prince, 2004). Prince (2004) also found evidence that cooperative learning improved students' interpersonal skills and teamwork. Importantly, some evidence suggests that active learning might be more inclusive and benefit traditionally underrepresented and marginalized students in particular (Berry, 1991; Frederickson, 1998; Lorenzo et al., 2006; Rainey et al., 2019).

While the evidence for active learning seems positive, both Prince (2004) and Bernstein (2018) note that it is challenging to truly assess its impact because of the wide variety of approaches and techniques involved. Many studies assess only one small aspect of active learning or the implementation of a specific technique, and such studies are usually small and lack controlled variables, making comparisons across studies or generalizations of findings difficult. Bernstein (2018) suggests that rather than asking whether active learning works, instructors should consider which techniques work best under which circumstances. He finds that active learning needs to be highly structured and is most effective when students are required to engage, and suggests that instructors new to active learning take an incremental approach to integrating the techniques. In general, however, research suggests that in the best case, active learning leads to better performance, and at the very least, the performance of students in active learning classrooms is equivalent to their peers in more traditional contexts (Thomas, 2009).

Concerns and Challenges

Despite the popularity of active learning in the literature, and evidence of its effectiveness, lecture still seems to be the dominant form of instruction, especially in higher education. One reason for this might be familiarity. Most instructors teaching today learned through lecture, and it is natural for them to replicate what they know, especially if they have never been introduced to theories and pedagogies that promote other forms of learning. Bonwell and Eison (1991) identified a number of other barriers to adoption of active learning techniques. They note that change involves risk and can lead to uncertainty or anxiousness. New techniques rarely succeed perfectly on the first try, and instructors may have little incentive to innovate or try new teaching techniques, especially if they believe that their current approach is effective. Further, the lecture is familiar not just to instructors but also to students. Each is familiar with the role they are expected to play in a lecture-based classroom, making it comfortable, if not necessarily engaging.

Other common barriers to active learning include (Bonwell & Eison, 1991, p.59):

- Pressure to cover content

- Class sizes that are not conducive to active learning
- Time and planning involved in active learning
- Lack of materials or equipment

Instructors often feel that they have more material to cover than time in which to cover it. While this feeling is common across fields and grade levels, it is perhaps especially true of elementary and high school teachers, as well as college faculty in licensed fields such as nursing, all of whom need to teach specific content to prepare students to pass standardized exams. Lectures are a very efficient way of transmitting content. Active learning techniques, which require learner participation and often build in time for reflection, take up class time and leave less time to cover content. Librarians are not immune to this concern. In fact, because librarians generally have less time with students than a regular classroom teacher does, they might feel even more pressure to cram as much material as they can into the limited time that they have, resulting in sessions that are overpacked and rushed, as well as lacking in meaningful learning activities.

Active learning requires a shift in thinking as well as in techniques. The emphasis in active learning is on skills and competencies rather than on content. Through the various activities, students develop problem-solving, critical thinking, and reflection skills. In addition to learning specific content, students are putting skills into practice and learning how to learn. With that in mind, instructors may need to reduce the amount of material covered in class in order to make time for such skill building. However, this approach does not mean that the content is not covered at all. Rather, it might be delivered in different ways, often outside of regular classroom time. For instance, in a traditional classroom, instructors deliver content through lecture and demonstration, and then give students homework such as worksheets or other assignments where they practice or apply what they learned in class. However, instructors could have students read texts and watch videos outside of class that cover the same content the instructor might normally have delivered through an in-class lecture, then use class time for practice problems and skill building. This approach, sometimes referred to as the "flipped classroom," is covered in more detail in Chapter 10.

Some instructors, especially at the college level, will find themselves in large classes of 100 or more students. Though such class sizes are less conducive to active learning than smaller classes are, it is not impossible to integrate some active learning even with hundreds of students (Harrington & Zakrajsek, 2017). One technique is a lecture pause, in which instructors stop the lecture and ask students to write down everything they remember from the lecture up to that point (or the two or three most important things they remember). The activity could end there, or the instructor could have students pair up to compare answers and perhaps fill in gaps in each other's notes. This simple activity engages the students and entails the kind of retrieval practice that increases memory and retention of information.

Instructors can also be hesitant to try active learning because of the time involved or their own anxiety about trying a new activity. However, integrating active learning does not have to entail changing an entire workshop, session, or course; instructors can integrate active learning activities slowly over time. New activities will rarely work perfectly the first time through, so it makes sense to integrate a single activity, assess it, and make adjustments as necessary before adding more activities. Some experienced teachers might be able to add activities spontaneously. For instance, a confident and seasoned instructor might feel comfortable leading an unplanned discussion about a recent news story. But most instructors,

especially those new to active learning, will find that each activity will take some time to plan ahead of its implementation. Ultimately, however, planning active learning activities is no more time-consuming than planning a detailed lecture.

Similarly, active learning does not have to depend on expensive materials and equipment. Technology can certainly enhance active learning, and many tools exist to increase student engagement. For example, many elearning platforms include online discussion boards, polling tools, document sharing, and even conferencing tools. However, many activities can be undertaken with few or no materials, such as the lecture pause described earlier that requires only a paper and pencil.

In addition to these four barriers, some teachers question the premise of active learning itself (Graffam, 2007; Thomas, 2009). Generally, these instructors are deeply rooted in traditional modes of teaching and understand instruction as the transmission of knowledge. This perspective can pose special challenges for academic and some school librarians, who are often guests in other teachers' classrooms. If a librarian is invited to speak in the class of an instructor who does not view active learning as "real" teaching, the librarian might be hesitant to incorporate such techniques even if they support them. On the other hand, the librarian could view this as an opportunity to model good instructional practice. One or two judiciously chosen activities that engage students could demonstrate the effectiveness of active learning, and the librarian could enhance the technique by being transparent in their instruction. By explaining why they incorporated a particular activity, identifying its learning outcomes and the ways in which the activity achieves those outcomes, and by having students reflect on their learning, the librarian can help both the student and a reluctant instructor see how the techniques work.

Finally, students can also be resistant to active learning (Bonwell & Eison, 1991; Thomas, 2009). After all, active learning requires learners to engage and participate, and puts more responsibility on them. Students who are used to listening to lectures and taking notes might be confused or put off by active learning activities, at least at first. In fact, some students believe they learn less in active learning classrooms than they do from lectures, even though the research suggests the opposite (Miller, 2019). Just as engaging in active learning entails some risk for the instructor, it also can feel risky to the learner. Active learning often requires students to share thoughts, ideas, and answers in small and large groups, and some learners might be nervous about giving a "wrong" answer or sharing an unpopular idea. Further, the interaction with peers might be stressful for some people, especially shy, introverted, and neurodiverse students for whom social interaction can be anxiety-inducing (Cohen et al., 2019; Cooper et al., 2018; Monahan, 2017).

Certain active learning techniques, such as cold-calling, or randomly calling on a student who has not volunteered to answer a question, are particularly likely to be stressful for learners (Cooper et al., 2018). Most other techniques, however, can be implemented so as not to cause such anxiety. For instance, low-stakes activities that have little impact on a students' grade reduce the potential for anxiety. Learners also tend to feel more comfortable when they are familiar with an activity (Bonwell & Eison, 1991), so introducing an activity by explaining its purpose, how it will be implemented, and what the expectations of students are can help ease fears. Bonwell and Eison (1991, p. 69) classify a range of instructional learning techniques according to the amount of risk they present to students. Activities that involve less speaking or presenting, such as lecture pauses, self-assessment activities, and structured small group discussions, are lower risk and lower stress. Higher risk, higher stress activities like role playing and presentations are more often group- or whole-class-based and require more speaking or interaction.

Activity 4.2: Engaging Students in Active Learning

Read through the brief scenarios below and answer the questions that follow:

Scenario 1: Lisa is a user services librarian in a public library. She leads a popular series of job hunting workshops and has always had positive reviews. In the past, Lisa would mostly lecture, but recently she decided to incorporate some active learning. During one session, she had patrons pair off to practice answering interview questions and giving each other feedback on the answers. After the workshop, a patron complained that she had come to the workshop to learn from Lisa, not from other students who did not know any more than she did. She felt that Lisa was not "teaching" them how to do a good job interview.

- Why might the patron feel this way?
- Why might Lisa believe this is a good activity for this workshop?
- What might Lisa do or say to persuade this patron that such peer interaction and role playing is a legitimate teaching and learning activity?

Scenario 2: Ben is a school librarian who believes in the value of active learning and peer-to-peer instruction. During class, he always asks students to come to the front of the room to demonstrate different skills and tasks like keyword and subject searching, rather than leading the demonstration himself. He likes the fact that the peers show each other how to do these tasks by explaining what they are doing and why they are doing it, and he can act as a coach, guiding and correcting them as needed. However, Ben has noticed that when he asks for volunteers, only a few students raise their hands, and it is usually the same students who volunteer every time.

- Why might some learners be hesitant to volunteer in Ben's class?
- Even if more students volunteer, Ben probably has time to let only two or three students demonstrate in each class. Is there a way to structure this activity so more students could participate?
- Some people might find demonstrating in front of the class stressful or scary. Are there ways in which Ben could structure his activity to make it less stressful or lower stakes?

Developing trust between the instructor and students and among the students themselves can be crucial to successful active learning, especially when the activities will require students to interact with one another. Many of the techniques already mentioned, such as being clear about expectations and using low-stakes activities, can help build trust. We can also work with learners to establish ground rules for interactions—for example, encouraging active listening and respect during discussions. It can be helpful to give students time to get to know each other before assigning group work, and allowing students to choose their own groups so that they can find peers with whom they are comfortable (Cohen et al., 2019). Having people work in pairs rather than larger groups might also be less intimidating for some. Finally, simply allowing learners time to gather their thoughts before expecting them to join a discussion can be helpful. For instance, after asking a question of the class, try waiting a few extra seconds before choosing a volunteer, or give students time

to reflect and jot down their thoughts before launching a discussion. Activity 4.2 addresses strategies to overcome faculty and student resistance to active learning.

Most of the literature suggests that best practice both for instructors and for students new to active learning is to ease into the practice. Bonwell and Eison (1991) recommend that, when possible, instructors assess students' background knowledge on the topic ahead of time in order to plan activities at the appropriate knowledge and developmental level. Chapter 7 offers an overview of techniques for this kind of assessment. Bonwell and Eison also acknowledge that not all instructors are equally comfortable with all techniques, and advise instructors to begin with activities they find comfortable. Harris and Bacon (2019) note that more advanced learners find greater benefit from active learning, leading them to suggest that the activities should be scaffolded, meaning that the class should begin with easier, lower-risk activities while students are still learning basic content, and then gradually move to more complex tasks as learners develop mastery.

Examples of Active Learning Techniques and Strategies

Literally dozens of examples of active learning techniques and strategies exist. Part III of this textbook will offer more details about designing and implementing instruction sessions, including active learning strategies. This section provides short descriptions of some of the more popular activity examples, with a focus on those most suited to a typical library instruction session.

Think-Pair-Share

Perhaps one of the most widely recognized active learning techniques, think-pair-share can be used in classes of all sizes, with all different ages. Because it requires learners to interact only with one other person, it is relatively low risk even for introverted or anxious students. In this activity, instructors pose a question or provide another prompt such as a brief scenario. Next, they pause for a minute or two, giving students time to think about their responses. Students might just reflect or might jot down their thoughts. After a few minutes, learners pair up with a peer to share their responses and discuss their thoughts and reactions. Instructors might also encourage students to identify any questions that arose for them. Depending on the size of the class, the instructor might have each student share thoughts with the class or ask for a few volunteers to share ideas from their discussion with the whole group.

Discussion

Discussions are another popular and well-known active learning technique. Discussions can be carried out in large- or small-group formats, although smaller groups are generally more conducive to in-depth

discussions and allow for more student participation. During discussions, learners reflect on and respond to readings, questions, or other prompts. Specific implementation strategies are detailed in Chapter 10.

Brainstorm/Carousel Brainstorm

Brainstorming activities encourage students to identify anything they can think of related to a topic. These activities can be done individually, or students can work in groups to pool their knowledge. A fun variation on a collective brainstorm is the carousel brainstorm. In this version, the teacher identifies different aspects or subtopics of the subject under study, perhaps posted on large sheets around the room. Small groups of learners are assigned to brainstorm a single subtopic. After a few minutes, the groups rotate to a new subtopic and add what they can to the previous group's work. When each group has had a turn at each subtopic, the original group reviews and synthesizes the full class brainstorm of their subtopic and presents the information to the class. Activity 4.3 is an example of a brainstorming activity.

Activity 4.3: Instruction Brainstorm

Choose an information setting in which you would like to work and a patron group you would likely encounter there. Brainstorm as many different instruction topics as you can that would be relevant to that group and setting. You might extend the brainstorm by thinking of active learning techniques that could be used to learn about those topics.

Pair up with a classmate and exchange brainstorms. Review your peer's paper and see if you can add any additional topics or active learning techniques.

Concept Mapping

In concept mapping, learners create visual displays of the connections or relationships among ideas. Generally, a learner will begin with a single idea and brainstorm to identify other words and concepts, which they arrange around the original idea, with lines illustrating how the concepts relate. The new words might describe subtopics, broader topics, and related topics. Depending on the original idea, students might identify research questions on the topic, audiences concerned with or impacted by the topics, action steps, and so on. Concept maps are a great activity for students who are just beginning a research paper, as they can help identify areas of focus, as well as keywords and synonyms for searching. Concept mapping can be created by individuals or groups. Figure 4.1 shows a concept map of information literacy terms created by using the free tool MindMup (https://www.mindmup.com/).

Figure 4.1: Information Literacy Concept Map
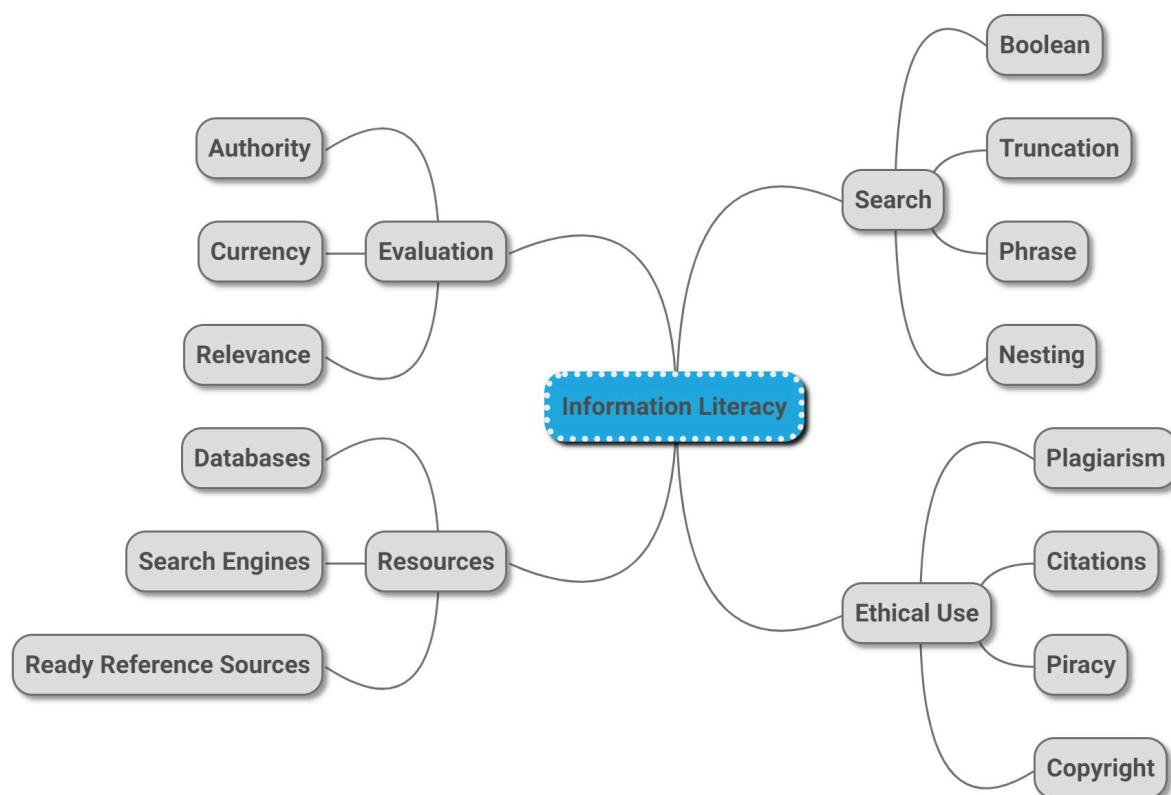
The figure shows a concept map. The central term, information literacy, is surrounded by related topics and subtopics, such as evaluation and searching, with lines indicating the connections among topics.

Student Demonstration

Rather than lecturing or leading the class through a demonstration, we can turn the class over to the students to show one another how to work through a particular task or problem. For instance, a library instructor could ask learners to demonstrate the steps they took to locate a book or article, or to share the criteria they used to evaluate a website. This way, the learners take on a teaching role, and the instructor can act as a coach from the sidelines, offering feedback or suggestions if the learner gets stuck. One drawback of student demonstrations is that unless the class is very small or a significant amount of time is set aside, it is unlikely that all students will have a chance to demonstrate. A workaround might be to have students work in small groups or pairs.

Jigsaw

The jigsaw activity has students assigned to groups, with each group working on a different aspect of a larger

project. Once groups complete their assigned task, the instructor shuffles the students into new groups comprising at least one representative from each of the initial groups. In this new group, learners piece together the work from their original groups to complete the larger project. The jigsaw is a collaborative effort, and each student has a chance to act as an expert or instructor when bringing the knowledge from the original group to the new group. As an example, imagine a class of second graders doing a unit on the life cycle of the frog. The librarian could create groups and ask each group to research and describe one stage of the cycle. Once the groups have completed this task, the instructor would create new groups with at least one student from each of the stages. Now, the new groups could compile their research and present a completed life cycle.

Role Play and Skits

Role playing can be an effective way for learners to test their skills and abilities with the kinds of roles or positions they anticipate encountering in the real world. Role playing requires students to think on their feet and draw on the ideas or knowledge they have acquired to address a problem or issue. This technique is often associated with professional programs such as nursing, where students might take turns playing the nurse and patient roles to practice doing a patient intake. However, this technique can be effective in many classrooms. For instance, a public librarian leading a session on job hunting could have students pair off and answer sample interview questions. Because role playing requires spontaneous thinking and interacting with peers who might or might not be familiar, it can feel a little risky, especially for shy students. Giving people time to get to know one another and keeping the activity low stakes can help make the experience more comfortable. Skits are a variation on role playing, in which learners develop a brief play illustrating a relevant situation, scenario, or process to act out in front of the class. For instance, after having students role play a job interview in pairs, the instructor could have learners finalize a script and perform for the class, opening up opportunities for wider discussion and more peer feedback.

Lecture Pause

Described briefly earlier, the lecture pause is a relatively easy technique to integrate and can work well even in very large classes. Using this technique, the instructor will pause every so often during the lecture to allow students to reflect on their learning. During the pause, the instructor might ask students to jot down the key points of the lecture, answer a specific question, or generate their own questions about the material. Students can work individually or pair up to share their reflections and answers. Pairing up can be effective, as learners might be able to answer one another's questions, or fill in gaps in each other's recollections of key points.

Peer Instruction

Instructors will often find they have classes of mixed abilities. Some students will be familiar with certain content, while for others it will be completely new. Instructors can find it challenging in such circumstances to present material in a way that is not too advanced for some or too easy (and likely boring) for others. This is common in public libraries where learners self-select into a session, and in academic libraries, where library instruction often is not fully integrated into the curriculum. Because some faculty request library instruction regularly, while others might never have a librarian visit their class, in any one class we will find some students who have sat through multiple similar sessions and some for whom this is a first. Peer instruction can be effective for such mixed classrooms. Instructors can pair or group learners who have more experience with the content together with those who have less, allowing the experienced students to do some of the instruction. Not only is this approach more engaging for all involved, but it has the added benefit that teaching is actually a great way to reinforce knowledge. The students engaging in instruction are deepening their own learning even as they offer instruction. While this approach can be ideal for groups of mixed levels, it is not always necessary for the students doing instruction to be more knowledgeable or advanced. After introducing a new concept or skill, instructors could have students take turns explaining or demonstrating for one another what they have just learned. In all cases, the instructor should stay engaged and offer feedback or redirect if the peer instructors are providing inaccurate information.

Minute Paper

The minute paper is a brief activity that asks students to reflect on their learning by taking roughly one minute to react to the day's lesson. Instructors often guide the reflection by asking students to recall one or two new things they have learned and/or to identify the "muddiest point" of the lesson, or the section they found most confusing or about which they still have questions. This activity can be done anonymously, thus keeping stakes low and allowing students to be more honest in their reflection. If time allows, the instructor can review the papers and address some of the outstanding questions before the class ends. Another option is to have students add their name to the paper, and then return the paper with comments and answers to questions. The minute paper takes very little class time and can be done in classes of any size.

Scavenger Hunt

A scavenger hunt can be a great way to introduce people to the layout, services, and materials of the library. As in any scavenger hunt, participants in a library scavenger hunt will receive a list of items to find within the physical library. Rather than objects, this list could include recording the call number of a certain item, getting a pass signed by a reference librarian, or checking out a book. Participants could work individually or in teams.

This list is only a small sampling of active learning activities, and each of these has many possible variations.

One of the best things about active learning is that it is not only engaging for the students, but it allows the instructor to be creative as well. As discussed in Chapter 9, many active learning techniques can also double as assessment tools, as the activities require students to demonstrate knowledge and ability. See Activity 4.4 for a brief activity on implementing active learning techniques.

Activity 4.4: Integrating Active Learning Techniques

Below are several descriptions of library classroom settings. See if you can think of at least two active learning technique for each example. You do not have to limit yourself to the techniques described in this chapter. There are many more examples available online and in the literature. Do a quick web search and see what other ideas you can find.

- A high school librarian is teaching a class on how to spot "fake news." By the end of the session, he wants his students to check the domain name of the site, research the author or organization that created the site, and use additional sources to verify facts.
- A public librarian is running a workshop on online safety and privacy, which includes setting up a password manager. Her audience is mostly adults with at least a high school education.
- A college librarian is teaching a session for undergraduate students who have just been assigned a research paper. He plans to teach the students about Boolean operators and search limiters.
- A librarian at a legal firm is running a session to train lawyers on a new version of *Westlaw* (https://legal.thomsonreuters.com/en/products/westlaw). A few of the staff members who graduated recently are already familiar with this version from their law school.

Conclusion

Active learning is widely considered a best practice in teaching and learning, and both instructors and learners find active instructional strategies more engaging. Although active learning shifts much of the responsibility for learning from the instructor to the student, these techniques take at least as much planning and involvement on the part of the instructor as more traditional strategies like lecture. However, the work involved in active learning can offer great returns in the form of increased motivation and learning.

The major takeaways from this chapter are:

- Active learning techniques involve students directly with the content and can lead to deeper learning.
- An array of active learning techniques exists, with varying levels of complexity, the amount of class time they require, and whether they are intended for group or individual work. This variety and flexibility mean that active learning can be integrated into virtually any lesson, regardless of the size of the group, the amount of content to be covered, or the length of the session.

- Active learning techniques such as think-pair-share and lecture pause can be adopted even in large, lecture-based courses.
- Instructors new to active learning might start with brief, more simple techniques such as think-pair-share.

Suggested Readings

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. Jossey-Bass.

> This classic handbook offers myriad examples of active learning techniques. Although they are presented as methods of assessing student learning, the strategies in this book could be used as classroom activities as well, and most could be easily adapted for online sessions. A selection of 50 activities from this book are available at no cost online from the University of San Diego. (https://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf)

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom.* Association for the Study of Higher Education (ED336049). ERIC. https://eric.ed.gov/?id=ED336049

> Another classic text, this brief monograph provides a clear overview of a variety of active learning techniques, including problem solving, case studies, games, and peer teaching. The section on computer-based learning is extremely dated, but other techniques continue to be relevant. Bonwell and Eison also summarize the benefits of and challenges to implementing active learning.

Brame, C. (2016). *Active learning*. Vanderbilt Center for Teaching. https://cft.vanderbilt.edu/guides-sub-pages/active-learning/

> This teaching guide from Vanderbilt University gives a clear and concise overview of active learning, including its theoretical basis, and research into its effectiveness. The author also gives several examples of active learning activities and advice on how to implement them.

Harrington, C., & Zakrajsek, T. (2017). *Dynamic lecturing: Research-based strategies to enhance lecture effectiveness*. Stylus Publishing.

> In this volume, authors Harrington and Zakrajsek make the case that lectures can be active and engaging. They offer clear, research-based advice on how to plan, structure, and deliver a lecture that engages learners and incorporates activity and reflection.

Hinson-Williams, J. (2020). *Active learning in library instruction: Getting started.* Boston College Libraries. https://libguides.bc.edu/activelearning/gettingstarted

> This *LibGuide* is an excellent resource for library instructors interested in integrating active learning into their sessions. The guide offers an overview of a range of active learning activities, organized by the amount of class time they take to implement. Additional tabs provide guidance on choosing an activity based on learning goals, and a short list of tech tools for active learning.

University of San Diego, Student Affairs. (n.d.) 50 *classroom assessment techniques by Angelo and Cross.* https://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf

> This freely available resource offers a brief overview of 50 of the active learning techniques described in Angelo and Cross' (1993) classic handbook of classroom assessment techniques cited above.

Walsh, A, & Inala, P. (2010). *Active learning techniques for librarians: Practical examples.* Chandos Publishing.

> This book offers examples of over three dozen active learning techniques for the library classroom. Each technique is outlined with its uses, required materials, notes, advice on how to implement it, suggestions for variations, and pitfalls to avoid. Activities are organized by those meant to be used at the start, middle, or end of a lesson. Separate sections offer tech tools and a set of lesson plans.

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5. Critical Pedagogy: Challenging Bias and Creating Inclusive Classrooms

Introduction

Regardless of the type of library you work in, your learners will come from varied backgrounds, identities, and life experiences, and will bring different interests and educational needs to the classroom. These experiences shape how learners experience the classroom, the content, and the learning activities, and ultimately impact what they learn and how they use that knowledge. As instructors, we need not only to recognize these differences and how they influence learning but also acknowledge and honor the richness of experience our learners bring. We need to create an inclusive classroom environment where everyone feels welcome and valued, and where our content is relevant to our learners' diverse identities and interests.

In order to be effective in this role, we must better understand how existing educational, social, and political systems shape our learners' experiences from their earliest moments and continue to influence what and how they learn inside and outside of the classroom through the rest of their lives. We must recognize how bias has impacted and continues to impact both our learners' and our own experiences, and develop culturally competent and inclusive practices in order to mitigate bias in the classroom and interact effectively with learners from varied cultural backgrounds.

Critical pedagogy provides a theoretical framework to examine issues of power in the classroom, and to surface and challenge the biases and oppressive structures that can undermine learning and alienate students. Inclusive teaching offers strategies for translating that theoretical knowledge into action. This chapter begins with a brief overview of critical pedagogy, followed by an examination of some of the biases critical pedagogy uncovers and how those biases can impact the work we do as instructors. Next, the chapter presents strategies for mitigating bias, improving our cultural competence, and creating inclusive classrooms where all learners are able to engage with relevant content and effective pedagogies. Chapter 6 extends the discussion of inclusion to address specific issues of accessibility and universal design for learners with disabilities.

Critical Pedagogy

As discussed briefly in Chapter 3, social constructivists in particular recognize that learners' cultures, including shared values, behaviors, and beliefs, shape their knowledge. However, no society is made up of a single, monolithic culture; rather, different communities reflect different values and beliefs, and encourage and discourage different behaviors. Political, social, and educational systems tend to reflect the dominant culture, and over time the values, behaviors, and beliefs associated with that culture become so ingrained as

to be invisible. Those living within the dominant culture do not recognize it as a system but simply see it as "normal," and anything outside of that system is "other" than normal. Some educational theorists recognized that these differences have a profound impact on education.

Bourdieu (see, e.g., Bourdieu & Passeron, 2000) and Freire (2000), for instance, saw that traditional educational systems tended to reflect and favor the experiences of children from wealthy families. Because these children understood that system and saw themselves reflected in it, they thrived and were successful, while children from poorer families struggled. Since the dominant systems are essentially invisible, those in power tend to attribute the challenges faced by marginalized individuals as inherent to the person. In other words, if a child from a poor family struggles to learn to read, teachers will often assume the issue is with the child's innate ability to learn, rather than recognize that the child might not have had the same preliteracy experiences and current support systems that other children have. Because they do not recognize the root issue, these educational models tend to replicate rather than challenge the existing systems, so learners from the dominant culture continue to succeed while those from marginalized communities continue to struggle, a phenomenon that Bourdieu refers to as cultural reproduction. While earlier theorists tended to focus mostly on the impact of economic disparities in education, other writers and educators like bell hooks, Henry Giroux, and Ileana Jiménez have applied feminist, queer, and critical race theory to examine how existing classroom power structures marginalize women, people of color, individuals who identify as LGBTQIA+, and other learners as well.

Importantly, critical pedagogy does not end with theory but rather focuses on praxis, or translating knowledge into action. Critical pedagogy sees education as a tool for empowerment, a place where learners develop the knowledge and skills they need to undo oppressive structures and achieve liberation (Freire, 2000; Tewell, 2015). Unlike the traditional "banking" model of education that positions learners as passive recipients of information, in a classroom guided by critical pedagogy, learners engage with problems that are personally meaningful and are active agents in their own education, and through that education gain agency to enact change in the world beyond the classroom (Elmborg, 2006; Freire, 2000; Tewell, 2015).

Critical pedagogy informs the critical approaches to information literacy discussed in Chapter 2, which urge us to move away from a skills-based, teacher-centered approach to information literacy toward one that questions dominant information structures and adopts student-centered teaching methods. Building on the ideas of agency and empowerment, critical information literacy encourages learners to see themselves as part of the "scholarly conversation" and as creators of information, rather than just consumers, and provides them with ways to recognize and challenge dominant powers within the current systems of creating, sharing, and evaluating information. Thus, for instructors, critical pedagogy pushes us to surface power dynamics in the classroom and the larger communities in which our learners live, and to reflect on how our own culture and biases color our approach to the classroom. In doing so, it offers a model for a more inclusive teaching practice.

Bias in the Classroom

We all have bias. These biases might be based on gender, race or ethnicity, class, religion, sexual orientation,

gender identity, body type, or other elements of people's personal identity. In some cases, we may be aware that we have a bias, while in other cases, we hold unconscious biases that we have unwittingly picked up over the course of our lifetime. Banaji and Greenwald (2013) show that our unconscious biases are particularly pernicious because we are unaware of the effect they have on our thoughts and actions, resulting in discriminatory judgments and behaviors that are automatic and hard to recognize. For example, research shows that when given résumés with equivalent qualifications from applicants with stereotypically white names and stereotypically Black names, search committees will favor applicants with stereotypically white names (Bertrand & Mullainathan, 2003) and that orchestras have historically favored men over women in auditions (Goldin & Rouse, 2000). Unconscious bias also affects library services. Shachaf and Horowitz (2006) found differences in librarians' replies to email reference queries based on the patron's perceived ethnicity and religious affiliation, including the time taken to reply, length and quality of answers, and the use of welcoming, professional greetings and conclusions. These examples demonstrate one of Banaji and Greenwald's important findings–that hidden biases result in acts of commission, such as favoring men or whites in hiring, as well as acts of omission, such as providing less thorough service to some patrons.

It can be uncomfortable and even challenging to recognize our own bias. As Sue (2010a) notes, most people "see themselves as fair-minded individuals who would never consciously discriminate" and "their self-image of being 'a good moral human being' is assailed if they realize and acknowledge that they possess biased thoughts, attitudes and feelings." As we grapple with our own biases, it can be helpful to remember that our brains evolved to develop heuristics that allow us to function effectively and safely in our environment. These heuristics often operate at an unconscious level; if you have ever seen a snake and instinctively jumped back even before you could assess whether the snake was venomous, you have experienced an unconscious heuristic that told you snakes are dangerous. Unfortunately, unconscious thoughts and biases influence how we react to people as well, particularly when we perceive those people as "different" from ourselves. If we want to be fair-minded, rational people, it is essential that we identify and reflect on our unconscious biases, including recognizing how our society shapes and influences those biases, in order to mitigate the effect they have on our thoughts and actions (Banaji and Greenwald, 2013). Activity 5.1 provides an opportunity to learn more about unconscious biases you may hold.

Activity 5.1: Take an Implicit Bias Test

As part of its research on implicit bias, Project Implicit at Harvard University offers tests that attempt to measure personal biases. While these tests are not perfect measures, they offer a starting point for reflecting on how we might be impacted by unconscious bias. Visit Project Implicit (https://implicit.harvard.edu/implicit/takeatest.html) and try one or more of the available tests.

Questions for Reflection and Discussion:

1. How did you feel about your results? Were you surprised or uncomfortable? Did other feelings emerge?
2. If your test results revealed a personal bias, how might that bias affect your work in the classroom? What strategies could you use to mitigate this bias and deliver high-quality instruction to all your learners?

Microaggressions

One manifestation of bias is microaggressions, which Sue (2010a) defines as "the everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, which communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership." Microaggressions may be aimed at women, people of color, individuals who identify (or are perceived) as LGBTQIA+, and people with disabilities, among others. Microaggressions come in many forms, including verbal (e.g., "Where are you from?" which implies a person of color must be a foreigner; telling a woman to smile), nonverbal (e.g., clutching one's purse more tightly or crossing the street around a person of color), or environmental (e.g., Native American mascots) (Sue, 2010b). While microaggressions may appear minor, they create hostile classroom environments, perpetuate stereotype threat, lower workplace productivity, and cause mental and physical health problems (Sue et al., 2009, p. 183).

Because microaggressions often reflect our unconscious biases, they can be hard to eliminate. Princing (2019) notes that when we first meet someone new, we tend to notice what makes them different from us. She recommends we reflect on those thoughts and question any beliefs or stereotypes that may accompany them. The Reinert Center for Transformative Teaching and Learning (n.d.) also recommends that instructors reflect on their assumptions and expectations as a first step to avoid committing microaggressions. For example, an instructor who assumes that learners from first-generation or lower socioeconomic backgrounds are less prepared for college might make a comment to that effect in the classroom, making students hesitant to attend office hours lest they confirm the instructor's negative belief. Additional strategies instructors can use:

- **Resist the myth of color blindness.** Unconscious bias makes it difficult to be truly colorblind. In addition, claims of color blindness obscure structural disadvantages and the very real differences in the experiences of people from marginalized groups (Princing, 2019).
- **Believe the stories of people from marginalized groups.** We can learn more about everyday bias by listening to and learning from the stories of individuals who have firsthand experience with bias. We must take care not to dismiss those stories as exaggerations, misunderstandings, or isolated incidents.
- **Do not ask students to speak for their entire racial or culture group.** As noted elsewhere in this chapter, learners from the same broad cultural group will not necessarily share all of the same values, beliefs, and understandings, and students may not feel capable of speaking for the experience of others (Reinert Center, n.d.). In addition, singling out learners in this way can make it appear that the instructor sees them as a one-dimensional representative of a particular identity, rather than as an individual bringing varied strengths, interests, and experiences to the classroom.
- **Assume groups you are talking about are represented in the classroom.** Treating every classroom interaction as if we were speaking with a member of the group under discussion can remind us to choose our words with care (Reinert Center, n.d.).
- **Remain open to learning about microaggressions and yourself.** While it is natural to feel defensive when others point out that we have said something problematic or offensive, we can approach such instances as learning opportunities.

In addition to recognizing the role that bias might play in our own actions, instructors should be aware that

students will bring their own biases to the classroom. These biases will affect how learners understand and interact with instructional content, peers, and instructors, and instructors should be attentive to instances where learners commit microaggressions against one another. Microaggressions can be awkward and even challenging to address, especially if they were framed as a compliment (e.g., "You speak English so well") or reflect commonly accepted stereotypes. Offenders may be unaware of the offense they have caused and because they did not intend to offend others, may be reluctant to accept responsibility for having done so. However, it is important to address such events clearly and promptly. Sue et al. (2019, p. 134) note that when microaggressions occur, small interventions by allies and bystanders have a "profound positive effect in creating an inclusive and welcoming environment" and discouraging further microaggressions. Strategies for addressing microaggressions in the classroom include:

- **Make the "invisible" visible.** Create awareness by naming the microaggression with statements such as "I think that's a stereotype I just heard" (Sue et al., 2019, p. 136).
- **Disarm the microaggression.** Statements such as "I don't agree" or "I don't see it that way" and actions such as shaking one's head communicate to the perpetrator and others that the microaggression is not acceptable (Sue et al., 2019, p. 136).
- **Take an educational, nonpunitive approach.** Turn microaggressions into teachable moments by asking learners to reflect on their assumptions (Center for Teaching and Learning, n.d., p. 11). Phrases like "it sounds like you think" or "Could there be another way to look at this?" can prompt speakers to identify and question their unconscious biases (Gonzaga et al., 2019). Ferguson (2015) suggests we approach microaggressions in the spirit of "calling in" rather than "calling out."
- **Redirect.** When students are asked to speak for all members of their racial or cultural group, we can redirect the conversation with statements such as "Let's open this question up to others" (Gonzaga et al., 2019).
- **Use "I" statements.** The use of "I" statements such as "I felt uncomfortable when you said . . . " communicate impact while minimizing blame (Gonzaga et al., 2019).
- **Discuss intent versus impact.** Instructors can use statements like "I know you meant to be funny, but you hurt . . . " to help learners recognize the impact of something they said. If learners struggle with the idea that they may have offended or harmed someone despite not intending to cause offense, instructors can use metaphors such as bumping someone in the grocery store or causing a car accident to explain the difference between intent and impact (and the need to make amends).
- **Rewind.** Sometimes microaggressions happen so quickly, the conversation moves on before they are addressed. Statements like "I'd like to revisit something that was said earlier" allow us to step back and address these microaggressions **(**Gonzaga et al., 2019).

Othering

Another manifestation of bias can be "othering," or treating the history and experiences of white, middle-class, heterosexual, cisgender, able-bodied people as universal or the norm, while presenting the history and experiences of other groups as unusual, exceptional, or only of interest to members of those communities. For example, displaying books by Black authors in February, but not at other times, sends an implicit

message that the history of America is the actions and accomplishments of whites and that the accomplishments of others are of limited value or interest. While special displays and programs are an important way to recognize and support events like Black History Month, Women's History Month, and Pride Month, librarians should also integrate materials by individuals of color, women, and LGBTQIA+ authors into displays year-round.

In some cases, the systems that are foundational to libraries treat selected groups as the other. For example, the Dewey Decimal System reserves 200-289 for topics related to Christianity and the Bible, leaving only the 290s for all other religions; Schingler (2015) points out that this reflects an underlying assumption that Christianity not only has more to say on theological topics, what it has to say is more valuable. Library of Congress Subject Headings (LCSH) are notoriously problematic in their treatment of women and people of color (Berman, 1969, 1993; Drabinski, 2008; Knowlton, 2005). The presence of subject headings such as "women astronauts" and "African American business enterprises" reveals an assumption that these professions are for white men and that the presence of others is unusual or remarkable, while subject headings that utilize biased terminology, such as "illegal aliens," send a message about who belongs in America.

These instances of bias and othering can create barriers to information seeking. Howard and Knowlton (2018) point out that Library of Congress Classification distributes materials related to African American and LGBTQIA+ issues throughout the collection, making browsing or even grasping the scope of the topic challenging for researchers. Even when controlled vocabulary uses neutral terminology, the accompanying thesauri can obscure topics for patrons trying to identify the database's preferred subject heading. For example, a search for "queer" in the *ERIC* thesaurus returns "the term(s) you entered could not be found" with no suggestions for next steps (*ERIC* uses the subject heading "homosexuality"). In comparison, a search for "queer" in the thesaurus for *PubMed* takes one to the preferred subject heading, "sexual and gender minorities," along with notes about how the term is applied and related/narrower terms.

As part of creating inclusive classrooms, we must be aware of the ways in which library systems and spaces can "other" marginalized groups, and take steps to improve equity and inclusion in our spaces and collections. For example, when creating lessons, we can plan search examples that reflect the diversity of our community and learners' interests. As appropriate, we can surface and acknowledge problematic practices, and engage students in a dialogue about the impact of those practices and how they might be changed. Integrating diversity into curricular content is addressed in more detail later in this chapter.

Deficit-Based Thinking

Learners, by their very nature, come to our libraries and classrooms with gaps in their knowledge and skills. Oftentimes, instructors seek out research that will help them identify these gaps in order to develop relevant content. While this research can provide valuable guidance for instructors, it is sometimes framed solely in terms of what learners are lacking and can lead us to focus exclusively on students' weaknesses, an approach termed deficit-based thinking.

Increasingly, educators are taking an asset-based approach that recognizes and builds on the strengths

students bring to the classroom (Heinbach, 2019; Ilett, 2019; Kocevar-Weidinger et al., 2019; Matteson & Gersch, 2019; Tewell, 2020). For example, research on returning adult learners may show that they lack up-to-date research and citation skills, framing this as a problem that will hinder academic success. An asset-based approach recognizes that adult learners, by virtue of having spent time in the workforce, bring valuable life experience that can enrich classroom discussions, along with strong collaborative and interpersonal skills developed in the workplace. In addition, adult learners tend to have clear educational and career goals and are highly motivated to develop the knowledge and skills they need to succeed in higher education. As another example, Kocevar-Weidinger et al. (2019) show that despite the stereotype that first-year college students lack research skills, they actually have extensive everyday research experience that can serve as a starting point for academic information literacy instruction.

Sometimes things characterized as weaknesses or deficits are in fact strengths if we recast our narrative. For instance, research on first-generation students may focus on the challenges they encounter because their families are unable to advise them on how to navigate the academic and social aspects of college. Research also shows that first-generation undergraduate students are less likely to use campus support services (Longwell-Grice et al., 2016; Portnoi & Kwong, 2011). An asset-based approach recognizes that families of first-generation students are often very supportive of their students' academic endeavors and, if given information about support services on campus, will recommend their students take advantage of such services. Thus, while they lack firsthand knowledge of higher education, family members can be a conduit to connecting first-generation students to campus resources. Activity 5.2 asks you to think more deeply about asset-based approaches.

Activity 5.2: Reflecting on Asset-Based Thinking

Individually or with a group of classmates, select a group of learners you might work with, such as recent immigrants, English-language learners, international students, or older adults.

Questions for Reflection and Discussion:

1. What gaps in knowledge or skills are typically ascribed to this group? Are these viewed as simple gaps or as deficits?
2. What strengths will this group of learners bring to the classroom?
3. How could you use an asset-based approach to build on these strengths in designing instruction?

Cultural Competency

Cultural competency is the ability to work effectively with people from varied cultural backgrounds. Cultural competency is an essential skill for librarians; it prepares us to recognize barriers to information use, to

work with colleagues and patrons of diverse backgrounds, and to develop culturally responsive services and programs (Cooke et al., 2017; Kim & Sin, 2006; Morris, 2007; Overall, 2009). Instructors who are culturally competent understand how culture influences teaching and learning, and are able to engage learners from diverse backgrounds in the classroom.

Cultural differences can emerge in our classrooms in numerous ways. For example, contemporary American classrooms tend to be student-centered; students are expected to ask questions during lectures, discuss ideas and even disagree with instructors and peers, and engage in self-directed learning activities. In contrast, some cultures value teacher-centered classrooms where learners are expected to listen respectfully as teachers share their expertise. International students and recent immigrants who are accustomed to teacher-centered instruction may be uncomfortable during discussions and student-led activities and may even feel instructors are abdicating their responsibility to share expertise. They may also be reluctant to "bother" the instructor by asking questions or admitting they did not understand something. Culturally competent instructors can attend to these differences by interspersing discussion and active learning with direct instruction, encouraging questions and participation in discussions, and explaining how the planned activities support learning. In addition, librarians can create more culturally inclusive classrooms by:

- Speaking slowly and clearly, especially when working with learners from different cultures and language backgrounds.
- Avoiding slang, idioms, and sarcasm, none of which translates well across cultures, and using humor judiciously.
- Avoiding library jargon, which is likely to be unfamiliar to international students and recent immigrants, as well as to novice learners in general.
- Respecting cross-cultural rules for personal space and touching.
- Making expectations for participation explicit.

Cultural differences may surface in surprising ways. Bunner (2017, p. 43) provides an example of a student who got in trouble for answering a question in class, not realizing that the teacher was asking a rhetorical question, something that does not exist in his culture. The student explained, "in my culture when an adult asks you a question, you are supposed to answer." Osa et al. (2006) highlight the care we must take in using or interpreting body language and facial expressions; they provide the example of raised eyebrows, which can indicate surprise, interest, approval, skepticism, or disapproval, depending on the culture of the speaker. Whether or not to make eye contact as a sign of respect and the appropriate finger with which to point also differ by culture.

These are only a few examples of cultural differences. Cultural differences also influence written and conversational communication styles, preferences for individual or cooperative problem solving and study, tolerance for uncertainty, conventions of politeness, and expectations for how children will interact with adults (Brook et al., 2015; Cifuentes & Ozel, 2006; Gay, 2002; Weinstein et al., 2003). Activity 5.3 asks you to think about cultural differences you have experienced.

In order to provide culturally competent instruction, librarians must develop their cultural knowledge and translate that knowledge into strategies for action. Villagran (2018) suggests librarians use the Cultural Intelligence (CQ) model as a framework for reflection and professional development. This model, shown in Figure 5.1, has four components: drive, knowledge, strategy, and action (Cultural Intelligence Center, n.d.).

- **Drive:** This component reflects our interest, persistence, and confidence in learning about other cultures and working in culturally diverse environments. For example, librarians might be motivated to learn about other cultures in order to improve their ability to design and deliver inclusive services for members of their community.
- **Knowledge:** This component is our understanding of cultural similarities and differences. Instruction librarians who want to improve their cross-cultural knowledge might seek out readings and professional development opportunities on how culture impacts teaching and learning.
- **Strategy:** This component reflects the metacognitive element of cultural competence; it is our ability to plan for and reflect on multicultural encounters. Culturally competent instruction librarians recognize their learners will come from varied backgrounds, develop strategies to create inclusive instruction, and reflect on their teaching experiences in order to identify areas for improvement.
- **Action:** This component is our ability to use appropriate behaviors during multicultural interactions. Instruction librarians can translate cultural competence into action through their instructional design and delivery and through their interactions with individual learners.

An example may demonstrate how librarians can use the Cultural Intelligence model as a guide to professional development. Early in her career as an academic librarian, one of the authors, Melissa, heard that international students from Asia would answer questions such as "Do you understand?" with "yes" out of politeness, whether or not they understood the material being taught. Concerned that she might not be teaching international students effectively (drive), Melissa sought out articles about library services for international students and talked with a colleague with expertise in the area (knowledge). This research helped her better understand cultural differences in teaching and learning, and confirmed the need to modify the instructional strategies she used in the classroom and at the reference desk (strategy). As a

result, Melissa became conscientious about speaking slowly, avoiding slang and library jargon, using open-ended questions that could not be answered with "yes," providing written handouts, and using a pencil or her entire hand to point, instead of the index finger (action).

Figure 5.1: The Cultural Intelligence Model

The figure shows the four components of drive, knowledge, strategy, and action (Cultural Intelligence Center, n.d.; Villagran, 2018).

Librarians can use a number of strategies to develop their cultural knowledge, including reading books and articles, participating in relevant conferences and webinars, and attending cultural events such as festivals, museum exhibits, and film screenings. Reflection is an important part of cultural competence; a teaching journal, discussed in more detail in Chapter 14, can prompt librarians to reflect on classroom experiences, record teaching success, and identify areas for improvement. Conversations with colleagues are also a way to increase cultural knowledge, reflect on one's teaching, and develop new strategies for inclusive pedagogy. Activity 5.4 is an exercise to reflect on your own learning and instructional practices using the Cultural Intelligence model.

Activity 5.4: Building Cultural Competency

Using the Cultural Intelligence Model shown in Figure 5.1, reflect on your cultural competence, either in general or with regard to a specific patron group with whom you anticipate working.

Questions for Reflection and Discussion:

- How would you rate your cultural competence? Are you stronger in some areas, such as Drive or Knowledge, than others?
- What motivates you to improve your cultural competency?
- How have you built your cultural knowledge? What resources can you use to continue building your knowledge?
- Do you feel confident applying your cultural competence in the classroom? What strategies would you use as you plan and deliver instruction?

While learning about different cultures can empower librarians to provide more culturally relevant instruction, librarians should avoid categorizing or stereotyping specific learners. Cultural groups are not static or homogeneous, meaning learners from the same broad cultural group will not necessarily share all of the same values, beliefs, and understandings, or react in exactly the same way to instructional experiences. In addition, learners are comprised of multiple identities, of which culture is only one aspect. Thus, we should use the knowledge we develop about different cultures as a way to be alert to potential differences that could lead to misunderstandings, but not to pigeonhole or predict the behavior and experience of an individual learner.

Strategies for Inclusive Teaching

Increasing our knowledge and understanding of other cultures is only a first step toward cultural competence and inclusive teaching. We also need to parlay that understanding into instructional practices that acknowledge, appreciate, and attend to the rich diversity of our classrooms. This section presents strategies for inclusive teaching, including fostering a positive classroom climate, integrating diverse content, and using inclusive pedagogies.

Fostering a Positive Classroom Climate

Our sense of belonging in the classroom influences our motivation to learn. The Center for Teaching and Learning (2019) at Columbia University identifies four types of classroom environments:

- **Explicitly Marginalizing:** The instructor or other students say or do things, such as committing

microaggressions or repeating stereotypes, that exclude learners and perspectives from marginalized backgrounds.

- **Implicitly Marginalizing:** The instructor excludes some learners through subtle actions such as calling primarily on male students or using examples solely from the predominant culture.
- **Implicitly Centralizing:** The instructor will discuss issues of marginalization and diversity if a student raises the topic, but such conversations are not planned or presented as essential.
- **Explicitly Centralizing:** The instructor intentionally integrates marginalized perspectives into course content, raises issues of diversity and inclusion, and takes action to foster sensitivity, such as establishing norms for discussion and group work.

While the environment in any classroom can fluctuate, the overall classroom climate is often less inclusive and welcoming than instructors realize. In one study, instructors rated their course as falling midway between implicitly and explicitly centralizing, while learners rated the same course as implicitly marginalizing (Center for Teaching and Learning, 2019).

One conclusion we might take away from this research is the need for critical self-reflection on the part of instructors. In addition, the research suggests that instructors must make a concerted effort to create an inclusive classroom environment. Some strategies we can use include:

- **Express interest in students.** Welcoming participants as they enter the room and learning their names helps participants feel recognized (if you are worried about remembering names, you can have them create a table tent or name tag). In addition, instructors should come out from behind podiums, which can be perceived as distancing, to engage with participants. Reflective activities such as minute papers also offer opportunities to respond to individuals and demonstrate interest in their learning (Center for Teaching and Learning, n.d.; Bunner, 2017).
- **Establish ground rules for discussions.** Establishing guidelines for civil, constructive interaction is becoming more common in credit courses; oftentimes, instructors engage students in creating these guidelines in order to foster a sense of ownership. The time constraints of library workshops may not allow for lengthy or collaborative agreements; however, librarians can establish simple ground rules, such as respecting the opinions of others and valuing diverse perspectives, at the beginning of sessions (Watts, 2017).
- **Foster student-to-student relationships.** Instructional strategies that foster interaction such as think-pair-share, small group work, and class discussions promote positive classroom relationships.
- **Make expectations explicit.** As mentioned earlier, cultural background can influence classroom behaviors such as participation styles and how, or whether, to ask questions. Instructors should make their expectations explicit with comments such as "I hope you will ask a lot of questions as we go along," or "Right now we are going to work independently, but later we'll share our work with others."
- **Express high expectations for all students.** Instructors should use an encouraging, positive tone, while also setting high expectations for all learners. Gay (2002) and Weinstein et al. (2003) point out that stereotypes based on race and/or gender can cause instructors to lower expectations for certain groups of students. Weinstein et al. (2003) offer the example of a non-native speaker of English who was offended when a teacher told him his English was "good," rather than suggesting he continue to practice. He felt the former was patronizing and did not help him improve his language skills.

- **Address microaggressions and other forms of bias.** As discussed earlier, instructors should be mindful of stereotypes and take care not to perpetuate them, and to practice intervention strategies that can be used when microaggressions occur in the classroom.
- **Ask for feedback.** Instructors can use course evaluations and classroom observations to gather feedback on how well they foster an inclusive classroom environment.

Integrating Diverse Content

All learners have a right to instructional offerings that address their needs and interests. At the program level, we should offer workshops and other instructional resources on a wide variety of topics that are suitable for patrons of varied ages and ability levels. We should take care to schedule classes and programs at varied times to ensure access for the widest number of people. For example, a traditional storytime program on a weekday morning will serve families with a stay-at-home parent as well as families where parents work the late shift or on weekends, while a pajama storytime held in the evening will serve families where parents and other caregivers work during the day.

In addition, our course content should reflect the diversity of our communities and the larger world. Not only does this allow learners to "see" themselves in the curriculum, it provides opportunities for all learners to learn about diversity and equity and to develop cultural competence. In addition, integrating discussions of diversity and equity throughout the curriculum ensures these issues are not "othered" or treated as an addendum to a curriculum where whiteness and heterosexuality are the norm. Further, we must engage these topics in authentic ways, rather than with benign or superficial celebrations of multiculturalism (Bunner, 2017, p. 42; Kumasi & Hill, 2011, p. 252). Some strategies librarians can use to integrate diversity and inclusion into instructional content:

- **Use diverse examples.** For instance, a librarian teaching a workshop on Overdrive can conduct sample searches featuring authors of diverse identities. An academic librarian or archivist teaching students to locate primary documents from World War II might highlight sites with materials from the Tuskegee Airmen or the all Japanese-American 442nd Regiment. Hinchliffe (2016) notes that librarians can call attention to issues of human rights through the examples used in class.
- **Choose metaphors and analogies carefully.** While metaphors and analogies can help learners build on prior knowledge and make concepts more concrete, they are often embedded in cultural knowledge or experiences that not everyone will share. Similarly, pop culture references may exclude learners based on their age or cultural background, although in some cases librarians can pause to offer a brief explanation.
- **Discuss how issues of race, class, and gender impact the material being covered.** Gorski and Swalwell (2015, p. 36) argue, "at the heart of a curriculum that is meaningfully multicultural lie principles of equity and social justice—purposeful attention to issues like racism, homophobia, sexism, and economic inequality." Gay (2002) suggests that instructors address topics such as racism, historical atrocities, and structures of power, and contextualize issues within race, class, and gender. While librarians may initially feel uncomfortable discussing challenging topics in the classroom, Bunner (2017, p. 43) found that ignoring issues of race is more problematic for students of color than imperfect

conversations.

- **Model how participants can seek out marginalized voices and perspectives.** In addition to incorporating a wide range of perspectives into our own teaching, we can encourage others to adopt a wider perspective and demonstrate resources and search strategies to uncover marginalized voices.

As part of creating a more inclusive curriculum, librarians will need to build collections that incorporate the histories and voices of marginalized groups. After all, it will be difficult to use diverse examples or demonstrate strategies for surfacing marginalized voices if our print and online collections do not contain that material. In addition, we need to be skilled at working within these collections. Curry (2005, p. 70) found that small behaviors like raised eyebrows, biting one's lip, or a reserved or even neutral affect communicated discomfort while helping a patron research LGBTQIA+ topics, leading the patron to be less likely to ask for help in the future. In the same study, Curry (2005, p. 71) found that even librarians who indicated a willingness to help the patron lacked the necessary knowledge to identify appropriate sources of information. While Curry's study focused on assisting patrons at the reference desk, her findings are very applicable to the classroom.

Part and parcel with building our knowledge of resources, we must understand the biases and weaknesses built into existing search systems, and develop strategies to find information within (or despite) those systems. Drabinski (2008) shares her experience of teaching with a colleague who incorrectly assumed that if LCSH has a heading for "African American women," it must also have a heading for "white women" and advised students to use that phrase when searching. Noble (2012, 2018) shows that search engines such as *Google* are not neutral; rather, they replicate the biases inherent in society, delivering search results that reinforce stereotypical depictions of women and people of color. Ultimately, librarians who are committed to integrating equity and inclusion into the classroom must step back to look at the totality of their library's spaces, collections, and systems.

Inclusive Pedagogy

Pedagogy is our approach to teaching. It reflects our understanding of the learning process, our goals for the classroom environment and student learning, and, subsequently, the activities one plans for the classroom. Instructors who practice inclusive pedagogy recognize that students have varied preferences for and comfort levels with different learning activities such as lecture, whole-class discussion, and small group work, and offer varied ways for learners to engage in the classroom.

Instructors can select from a wide variety of activities when planning instructional sessions. In fact, novice instructors are sometimes overwhelmed by the seemingly endless array of options. Chávez and Longerbeam (2016, pp. 8-9) suggest cultural approaches to teaching and learning range from "individuated," which tend to compartmentalize content and treat learning as an individual experience, to "integrated," which are more interconnected and focus on shared learning experiences. Instructors might seek to balance activities that reflect an individuated approach such as lecture, independent practice, and reflective writing, with activities that reflect an integrated approach such as discussion, case studies, and collaborative work.

Another approach we can take is balancing instructor-centered and learner-centered activities. Instructor-centered activities are those in which the instructor has a strong role in directing course content and the process of student learning, such as lecture and demonstration. In student-centered activities, students direct and shape their own learning; examples of student-centered activities include small group work, case-based and problem-based learning, and practice exercises that allow students to explore their own interests.

In addition to varying classroom activities, instructors can offer learners choices. For example, during an online searching activity, we might give learners the option of trying a task on their own or collaborating with their neighbor. Instructors can also adapt activities to create a more inclusive environment. For example, workshop participants might be reluctant to engage in a discussion with others they do not know well, especially if the topic is sensitive. A think-pair-share, which offers time for individual reflection and ordering one's thoughts, or a small group discussion, where one shares ideas with just a few others, may feel safer for participants and can be used as a lead-in to a whole-class discussion or activity.

Emancipatory Education

While inclusive pedagogy outlines the strategies we can take as instructors to honor our learners' experiences and make our classrooms and instruction welcoming and accessible to all learners, critical pedagogy also recognizes learners as agents in the classroom and in the world. In *Pedagogy of the Oppressed*, Freire (2000) discusses the emancipatory aspects of education, or how education can be structured so as to empower marginalized and oppressed communities to liberate themselves from systems of oppression. Crucial to Freire's approach is that the learners are the agents of their own liberation. Instructors can facilitate this process by recognizing and mitigating bias and through the inclusive strategies outlined in this chapter, but ultimately, learners should be empowered to act on their own behalf.

We can foster emancipatory education within the library classroom by surfacing oppressive practices not only within education but within library systems and structures, facilitating dialogues about these practices, and encouraging students to imagine and adopt roles for themselves in challenging those systems. Chapter 2 outlines steps we could take in the context of critical information literacy, such as helping students recognize how prevailing publishing practices and notions of authority favor some voices and marginalize others, and encouraging them to seek out those voices that have been marginalized to include their perspectives. We can also work with learners to take action in the wider world, as librarians at Dartmouth College did when they collaborated with students to petition the Library of Congress to eliminate the term "illegal aliens" from its official subject headings (Albright, 2019).

Conclusion

Our learners bring varied backgrounds, identities, and educational needs to the classroom. Using critical

pedagogy as a guide, librarians can adopt inclusive teaching practices that create classrooms, libraries, and, ultimately, communities that are more just and equitable for all members.

Key takeaways from this chapter include:

- Instructors should understand the role unconscious bias plays in discrimination and inequity, and develop strategies to prevent and address microaggressions, othering, and deficit thinking.
- Cultural competence is a set of knowledge, skills, and dispositions that enable librarians to interact effectively with patrons from diverse backgrounds. Instruction librarians need to understand how culture affects teaching and learning, and develop strategies for inclusive pedagogy.
- Elements of inclusive teaching include fostering a positive classroom climate, integrating diverse perspectives and issues of diversity and equity into course content, and using inclusive pedagogies.

Activity 5.5 asks you to reflect on inclusive teaching.

Activity 5.5: Reflecting on Inclusive Teaching

Find (or draw) an image, photo, gif, etc., that captures your thoughts on inclusive teaching. Share your image and a brief explanation with your classmates.

Suggested Readings

Accardi, M. T., Drabinski, E., & Kumbier, A. (Eds.). (2010). *Critical library instruction: Theories and methods.* Library Juice Press.

> Edited by leading writers on issues of diversity, equity, and inclusion in LIS, this book offers a series of authored chapters that apply feminist, critical race, queer, and anti-oppressive theory and strategies to the library classroom. Chapters range from a broad examination of social power in the library classroom to application of specific strategies such as service learning and problem-based learning.

Adichie, C. N. (2009). The Danger of a Single Story. *TED: Ideas Worth Spreading.* https://www.ted.com/talks/chimamanda_ngozi_adichie_the_danger_of_a_single_story

> Adichie's warning about how seeing others through a "single story" reflects systems of power and leads to deficit thinking is an important one for instruction librarians.

Banaji, M. R., & Greenwald, A. G. (2013). *Blind spot: Hidden biases of good people.* Delacorte.

Based on the authors' extensive research, this is an excellent and highly readable introduction to unconscious bias.

Bunner, T. (2017). When we listen: Using student voices to design culturally responsive and just schools. *Knowledge Quest*, 45(3), 38–45.

Bunner worked with students in grades 4 through 12 to identify strategies for culturally responsive teaching. In this article, she outlines six strategies and uses student voices to illustrate their importance and examples of successful implementation. The article includes an activity where instructors can reflect on their own practice.

Ettarh, F. (2018). Vocational awe and librarianship: The lies we tell ourselves. *In the Library with the Lead Pipe*. http://www.inthelibrarywiththeleadpipe.org/2018/vocational-awe/

Ettarh coined the term "vocational awe" to describe the perception that librarianship is a calling that requires sacrifice. As a result of vocational awe, librarians are hesitant or unable to critique libraries and the work of librarians, not only leading to workplace problems but oftentimes preventing us from solving (or even acknowledging) those problems.

Feminist Teacher. https://feministteacher.com.

By noted critical pedagogist Ileana Jiménez, this blog explores a variety of issues around critical pedagogy, diversity, equity, and inclusion in teaching, with a focus on the K-12 classroom.

Freire, P. (2000). *Pedagogy of the oppressed* (30th anniversary edition). Bloomsbury.

Freire's foundational text examines the ways in which traditional models of education replicate oppressive structures and argues for an educational model that centers the learners' experiences in order to empower them to challenge those systems.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53(2), 106-116. https://doi.org/10.1177/0022487102053002003

Gay provides four strategies for culturally responsive pedagogy: developing knowledge about cultural diversity, designing culturally relevant curricula, developing cross-cultural communication skills, and demonstrating caring.

Inclusive teaching: Supporting all students in the college classroom. Center for Teaching. Columbia University. https://www.edx.org/course/inclusive-teaching-supporting-all-students-in-the

Available from edX, this professional development course offers a thoughtful introduction to inclusive teaching. Although aimed at faculty teaching credit courses, instructors in all types of libraries will find valuable tips for creating an inclusive classroom environment, diversifying content, and engaging in critical self-reflection. A print resource with similar information, *Guide to inclusive teaching at Columbia*, is available online at https://ctl.columbia.edu/resources-and-technology/inclusive-teaching-resources/ and numerous videos from the course are available from Columbia Learn on *YouTube* at https://www.youtube.com/user/CCNMTL/playlists?view=50&sort=dd&shelf_id=26

Jensen, R. (2004). The myth of the neutral professional. *Progressive Librarian*, 24, 28-34. http://www.progressivelibrariansguild.org/PL/PL24/028.pdf

> Jensen challenges the myth of neutrality within libraries, arguing that to claim to be neutral is to support the existing political system. His critique of library programming is particularly relevant for instruction librarians.

Leckie, G. J., Given, L. M, & Buschman, J. E. (2010). *Critical theory for library and information science: Exploring the social from across the disciplines*. Libraries Unlimited.

> Through a series of essays, chapter authors explore various aspects of library and information science through different critical lenses and apply the work of specific theorists to examine current practices in LIS. Chapter 8 proposes a model for transformative pedagogy based on the work of Freire, but readers will find inspiration and ideas for integrating critical theory into their work throughout the text.

McCombs School of Business. (2018). Implicit bias. University of Texas. https://ethicsunwrapped.utexas.edu/video/implicit-bias

> This brief, nine-minute video offers a cogent introduction to unconscious bias.

Southern Poverty Law Center. (2015). Speaking up: Responding to everyday bigotry. https://www.splcenter.org/20150125/speak-responding-everyday-bigotry

> The Southern Poverty Law Center offers strategies and scripts for responding to microaggressions and other forms of bigotry in workplace, educational, social, and family settings.

Souza, T. (2018, April 30). Responding to microaggressions in the classroom: Taking ACTION. *Faculty Focus*. https://www.facultyfocus.com/articles/effective-classroom-management/responding-to-microaggressions-in-the-classroom

> Souza provides a framework and helpful scripts for instructors to address microaggressions.

Storti, C. (1997). Culture matters: The Peace Corps cross-cultural workbook. Peace Corps Information Collection and Exchange. https://files.peacecorps.gov/multimedia/pdf/library/T0087_culturematters.pdf

> Developed for Peace Corps volunteers, this interactive workbook is an excellent introduction to cultural competence. Chapters address how people of different cultures understand the concept of self, personal and social obligations, time, and locus of control, and how these differences impact communication, interpersonal relationships, and the workplace.

Sue, D. W., Alsaidi, S., Awad, M. N., Glaeser, E., Calle, C. Z., & Mendez, N. (2019). Disarming racial microaggressions: Microintervention strategies for targets, white allies, and bystanders. *American Psychologist*, 74(1), 128-42. https://doi.org/10.1037/amp0000296

> Sue et al. provide a concise introduction to microaggressions and the harm they cause and suggest strategies that targets, allies, and bystanders can use to disarm them. Although the discussion

and examples focus on racial microaggressions, the strategies are applicable to all types of microaggressions.

Tewell, E. (2015). A decade of critical information literacy: A review of the literature. *Communications in Information Literacy*, 9(1), 24-43. https://doi.org/10.15760/comminfolit.2015.9.1.174

Tewell provides a concise, cogent explanation of critical pedagogy and its application to library instruction.

Weinstein, C., Curran, M., & Tomlinson-Clarke, S. (2003). Culturally responsive classroom management: Awareness into action. *Theory into Practice*, 42(4), 269-276. https://doi.org/10.1207/s15430421tip4204_2

This article is rich with examples of how culture affects expectations for teaching and learning, and provides strategies for developing a culturally responsive classroom practice.

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6. Accessibility and Universal Design for Learning: Serving Students with Disabilities

Introduction

Librarians pride themselves on offering equitable access to resources and services for all patrons. For instruction librarians, one aspect of equitable access is ensuring that instructional programs and resources are accessible to people with disabilities. The Census Bureau (Taylor, 2018) reports that 27.2 percent of Americans have a disability, including 17.1 percent of children, 30.3 percent of adults aged 18-64, and 58.5 percent of adults aged 65 and older. These statistics reflect individuals living with permanent disabilities and chronic conditions; additionally, patrons experience temporary disabilities, such as a broken bone or recovery from illness or surgery. Thus, instruction librarians should assume that a substantial number of potential learners have, or will develop, a disability.

Unfortunately, in many cases, the accessibility of workshops and programs is an after-thought, something instructors address only after they receive a request for an accommodation from a patron. This accommodations-based approach can be unwelcoming and alienating to individuals with disabilities and may result in patrons skipping programs and services altogether. Librarians can adopt a more inclusive model using the ethos of universal design, a framework for making spaces and services usable by the widest array of individuals.

This chapter begins with an introduction to legal requirements for accessibility and then explores both the accommodations and universal design models for serving patrons with disabilities. Building on that background, the chapter examines specific disabilities, their effect on learning, and strategies instructors can use to support learners. Finally, it introduces more comprehensive strategies for ensuring accessibility through attention to four areas: pedagogy, physical space design, instructional delivery, and instructional materials.

Approaches to Accessibility: Accommodations and Universal Design

The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination on the basis of disability and requires that institutions make their facilities, services, and programs accessible to individuals with disabilities. Educational institutions must also comply with Section 504 of the Rehabilitation Act of 1973, which mandates that institutions receiving federal funds provide all students with equitable access to educational programs and activities. Both the ADA and Section 504 require equal access to online information, including institutional web pages (Bradbard & Peters, 2010).

The Accommodations Model

Traditionally, many educational and civic institutions have provided equitable access by implementing accommodations at the request of an individual with a disability. For example, a deaf patron who plans to attend a lecture can call ahead to arrange for a sign language interpreter to be present. Individual accommodations are very common in educational settings. Both K-12 schools and colleges and universities have established processes for identifying students with disabilities and arranging for accommodations.

In the K-12 educational system, accommodations for students with disabilities are handled at the school level. Although the exact process will differ from district to district, generally speaking the school system is responsible for identifying students with potential disabilities, testing students, and working with parents and teachers to develop appropriate accommodations. Parents may also recognize that their child has a disability and seek private testing or work with the school to arrange for testing. In many cases, teachers play a role in recognizing a potential problem and arranging for testing. Once in place, an accommodation plan will follow a student from grade to grade. School administrators must notify teachers if a student has an accommodation plan, and teachers are responsible for implementing the required accommodations in the classroom. Older students may participate in arranging some of their accommodations (e.g., reminding a teacher that they will need extended time on a test); however, overall the responsibility for identification and accommodation lies with the school. School librarians who work with the same groups of students on a regular basis can discuss the needs of individual students with teachers and school administrators.

Once they enroll in college, students are responsible for requesting accommodations at both the institutional and course level. Typically, students provide documentation of their disability to a central office for students with disabilities, and a staff member determines what accommodations will be offered. The staff member gives the student a letter outlining the accommodations, and each semester students approach individual faculty members to make arrangements for those accommodations within the course.

Public libraries and museums typically require that patrons contact the institution in advance of a program to request accommodations. The institution may have processes in place for common accommodations, such as sign language interpretation, or a staff member will work with the patron to make appropriate arrangements, such as sound amplification or large-print handouts.

While seemingly straightforward, the accommodations model can be complex to navigate. Patrons may be unaware of how to request accommodations, be reluctant to share personal medical information, or lack documentation that is recent enough to satisfy institutional requirements. In addition, many individuals with disabilities are reluctant to request accommodations for fear of being stigmatized by instructors and peers. Cost and time can also be a barrier; in higher education, students who lack recent documentation may need to arrange multiple medical appointments for updated documentation, and testing may not be covered by insurance. One study found that only 23 percent of college students who qualify for accommodations request disability-related support services (Roberts et al., 2011, p. 246). And school and academic librarians should be aware that even when students are registered for accommodations, teachers and faculty may not convey this information to librarians teaching workshops and course-related instruction.

Universal Design

Another problem with the accommodations model is its focus on making one-time changes for individual learners. These changes may not appear in the next iteration of the workshop or course, at least until another request is received and the instructor implements the same accommodations all over again. It is as if the library installed a ramp at the request of a wheelchair user, then removed the ramp when the patron left the library, reinstalling it each time a patron calls ahead to ask for it. Such last-minute modifications can be time-consuming, expensive, and stressful.

Librarians can improve the accessibility of programs and services, and minimize the need for last minute accommodations, by following the ethos of universal design. Universal design is an approach to architecture and design that emphasizes creating spaces and products that are usable by the widest number of individuals. The National Disability Authority (2020) explains:

> Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. If an environment is accessible, usable, convenient and a pleasure to use, everyone benefits. By considering the diverse needs and abilities of all throughout the design process, universal design creates products, services and environments that meet peoples' needs. Simply put, universal design is good design.

Universal Design has seven principles for creating equitable and accessible environments (Center for Universal Design, 1997):

1. **Equitable Use:** The design is useful and marketable to people with diverse abilities.
2. **Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.
3. **Simple and Intuitive Use:** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. **Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. **Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. **Low Physical Effort:** The design can be used efficiently and comfortably and with a minimum of fatigue.
7. **Size and Space for Approach and Use:** Appropriate size and space [are] provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

Curb cuts are an excellent example of universal design. They make sidewalks and buildings accessible for people using wheelchairs and other mobility aids, and are also used by delivery people, bikers and skateboarders, and caregivers pushing strollers. Kitchen appliances with large, soft touch buttons are another example of universal design; they can be used by people with arthritis or other fine motor

disabilities as well as able-bodied individuals. Activity 6.1 asks you to think more deeply about universal design in everyday life.

Activity 6.1: Universal Design in Everyday Life

The principles of universal design guide us in creating environments and experiences that are accessible to all users. The ethos of universal design maintains that planning for accessibility is not a special requirement because all users benefit when environments are accessible.

Questions for Reflection and Discussion:

1. The chapter provides a few examples of universal design. What other architectural features or products exemplify universal design?
2. Think about a space or product you use on a regular basis. Does it employ universal design and if so, how? Is there room for improvement?

While created with architecture and product design in mind, the proactive approach of universal design is equally applicable to instruction. For example, patrons should not have to request that captions be added to an instructional video; rather, captions should be created for all of the library's videos as part of the production process. And just as curb cuts benefit all citizens who move around public spaces, closed captions will be used by a wide variety of learners, including students studying in noisy coffee shops, parents working while their children nap, and non-native speakers of English who want to see the spelling of unfamiliar vocabulary. As we will see in the remainder of this chapter, adopting a universal design approach to instruction will create a more inclusive instructional environment for all patrons and, by mitigating the need for after-the-fact accommodations, save time and minimize stress for instruction librarians.

Types of Disabilities

This section of the chapter provides a brief introduction to specific disabilities and how they may affect a patron's ability to access instructional spaces and materials as well as the learning process. While knowledge of specific disabilities can assist librarians in implementing universal design practices, it is important to avoid making assumptions about an individual's abilities or preferred accommodations. For example, people with hearing disabilities use a variety of strategies to operate in the hearing world, and not everyone uses sign language or lip-reading. Librarians should take their cues from patrons or explicitly ask what accommodations or support strategies would be most helpful, rather than imposing accommodations or insisting learners use specific strategies or supports.

Librarians should also recognize that patrons with disabilities are individuals who are more than their disability. One way to acknowledge the primacy of the individual is by using person-first language, such as "patron in a wheelchair" or "learner with a visual disability." At the same time, some individuals and communities see identity-first language, such as "disabled people" or "autistic," to be both accurate and empowering (Liebowitz, 2015; Kimura, 2018, p. 427). Pionke (2018, p. 245) recommends the term "functionally diverse" because it implies a spectrum of abilities, rather than the binary of disabled/able-bodied, and recognizes the diversity of ways people function in the world. In all cases, librarians should avoid terminology that is patronizing, such as "special"; that evokes pity, such as "afflicted with" or "suffering from"; or that places individuals on a pedestal, such as "courageous" or "inspirational" (Disability Resources & Educational Services, 2020).

Visual Disabilities

Visual disabilities encompass a range of conditions, from low or partial vision to blindness. Common conditions such as nearsightedness and farsightedness also qualify as visual disabilities (Berman, n.d.), as does color blindness. A visual disability may affect the learner's ability to see information on a whiteboard or slides, view information in print or on a computer monitor, or read and interpret color-coded charts and tables.

Hearing Disabilities

Hearing disabilities also encompass a range of conditions from mild hearing loss, common as we age and often mitigated through the use of hearing aids, to deafness. Patrons may have difficulty hearing the instructor's presentation or student contributions, engaging in conversations in small group work, or hearing the narration in instructional videos and tutorials.

Physical Disabilities

Physical disabilities can affect gross motor skills, such as walking or standing, or fine motor skills, such as writing, using a computer mouse, and manipulating small objects. Patrons who use mobility aids such as wheelchairs and walkers will need wide, clear aisles and flexible seating arrangements in classrooms. In addition, instructors should be attentive to activities that require moving around the classroom or library or standing for long periods of time, and provide flexible options for participation. Instructors can ease processes that require fine motor skills such as note taking by providing outlines, handouts, and copies of slides, and highlight labor-saving devices such as citation management software and shortcut keys (Chodock & Dolinger, 2009).

Attention Deficit/Hyperactivity Disorders

Attention-deficit/hyperactivity disorders result in a pattern of inattentiveness, hyperactivity-impulsivity, or both (National Institutes of Health, 2016). Individuals may be easily distracted, be disorganized or forgetful, have poor awareness of the passage of time or difficulty with long-term planning, exhibit restless and repetitive movements, be overly talkative, and/or be prone to interrupting or blurting out answers (Smith & Strick, 2010, p. 44-45). Instructors should take care to minimize distractions in the classroom and present only one activity or piece of information at a time. Agendas, outlines, handouts, and copies of slides can help learners stay focused, organize content, and fill in information gaps caused by momentary distractions. In school and academic settings, where students may have difficulty planning and completing complex assignments, librarians can break down the steps of research assignments and introduce assignment calculators that allocate sufficient time for each task (for an example, see University of Minnesota Libraries, 2020).

Learning Disabilities

Learning disabilities affect the ability to comprehend and retain information in particular ways and include conditions such as dyslexia and visual and auditory processing disorders. Learning disabilities are not intellectual disabilities; individuals with learning disabilities have normal to gifted intelligence. As Chodock and Dolinger (2009, p. 25) point out, a student with dyslexia may struggle with written text but comprehend lectures and audiobooks on par with students without dyslexia.

Learning disabilities can result in decreased reading speed, poor auditory or reading comprehension, and/or difficulty writing, among other problems. Learners may have difficulty remembering instructions or working as quickly as their peers. Instructors can support individuals with learning disabilities by providing agendas, outlines, and note-taking guides; giving written instructions for activities and assignments; breaking large assignments into smaller steps; and emphasizing learning and quality of ideas over speed or the mechanics of writing.

Intellectual or Cognitive Disabilities

Individuals with intellectual or cognitive disabilities learn more slowly than their peers and may require extra time to process information or perform tasks (Association of Specialized Government and Cooperative Library Agencies, n.d.). They may also have difficulty with communication and/or self-care tasks such as cooking or living independently. Nord notes that individuals with developmental disabilities have an emotional maturity on par with their peers (2014, p. 29) and want "a safe place to continue learning, sharing, and growing intellectually throughout their lives" (Nord, 2014, p. 32). Libraries can help meet this need through their programs and instructional services.

The Association of Specialized Government and Cooperative Library Agencies (n.d.) recommends that librarians working with learners with intellectual disabilities use graphical representation on signage; give concrete, step-by-step directions; and demonstrate tasks, rather than describing what to do. Because patrons with intellectual disabilities read at varied levels, audiovisual materials are valuable resources for information and programming. For example, instead of a book club, libraries can host film discussion programs. Nord (2014) describes one such program where participants watched documentary and feature films and then analyzed the films' themes and their personal reactions. Librarians should also take care to talk directly to patrons, rather than to caregivers.

Nord (2014) and Brady et al. (2014) describe ways to make makerspaces and craft projects more accessible to patrons with developmental disabilities. Both note the importance of respecting individuals' autonomy and recommend librarians resist the urge to step in and take over for a struggling participant. Rather, librarians can ask guiding questions, give advice, and demonstrate techniques (Brady et al., 2014, p. 337), while allowing participants to do the hands-on work of their own project.

Chronic Illness

Chronic physical and mental illnesses also encompass a wide range of conditions from autoimmune disorders to diabetes, and depression or anxiety to post-traumatic stress disorder. With both physical and mental illnesses, symptoms can wax and wane; individuals may be in good health for an extended period of time and then experience a flare-up of their condition. Symptoms of chronic illness can be debilitating, and medications may cause side effects, such as drowsiness or difficulty concentrating, that affect learning.

Instructors should be conscious of activities that require physical effort, such as touring the library, carrying heavy items, or standing for long periods of time, and be prepared with alternatives. Librarians can also advertise the availability of online learning objects such as videos and tutorials that patrons can access from home and at their convenience. In order to be mindful of patrons with mental health issues, librarians can avoid potentially disturbing search examples or, when necessary, provide advance warning of potentially disturbing content.

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a developmental disorder "characterized by repetitive and characteristic patterns of behavior and difficulties with social communication and interaction" (National Institutes of Health, 2018). Many in the autism community refer to themselves as "neurodiverse," a term that recognizes the unique experiences and strengths that accompany ASD (individuals without ASD are referred to as "neurotypical").

Individuals with an autism spectrum disorder often prefer familiar routines and may struggle in unstructured situations; providing an agenda for the session, giving ample warning before switching

activities, and establishing predictable routines when possible (for example, in school libraries where classes visit the library weekly) are all helpful strategies. Difficulty with social interaction is common (Kuder & Accardo, 2018, p. 723), and individuals may find it challenging to interact with peers and instructors. Following the Universal Design model and giving learners varied ways to engage with classroom materials and activities will create a more accessible classroom. Librarians can also stress varied ways to contact librarians with follow-up questions, such as via chat and e-mail.

Individuals may be highly sensitive to stimuli such as light and noise, leading them to be easily distracted or overwhelmed (Cai & Richdale, 2016, p. 35); in the classroom, librarians can dim lights or pull shades, lower the volume of multimedia, or offer noise-canceling headphones. Some public libraries and museums offer "sensory-friendly" programming specifically for patrons with ASD, providing maps of sensory-friendly spaces, toning down stimuli such as bright lights and loud sounds, and even creating opportunities for families to visit before regular hours to avoid large crowds (Cottrell, 2016; Shrikant, 2018; Metropolitan Museum of Art, n.d.).

Inclusive Pedagogy

As a first step in creating a more equitable classroom, librarians can examine and enhance their pedagogy, or the ways they design and teach classes. As discussed in Chapter 5, inclusive pedagogical practices mirror many other best practices in instructional design and create a more engaging, memorable learning experience for learners of all ages and backgrounds, including learners with disabilities.

A powerful framework for thinking about inclusive pedagogy is Universal Design for Learning (UDL). Created by the Center for Applied Special Technology (CAST), UDL is a three-part framework that recommends instructors vary how they engage and motivate students, present information, and allow students to demonstrate what they have learned (CAST, 2018). The three principles of UDL are Multiple Means of Engagement, Multiple Means of Representation, and Multiple Means of Action and Expression.

The principle of Multiple Means of Engagement suggests that instructors provide "flexible options for generating and sustaining motivation, the *why* of learning" (Hall et al., 2012, p. 2). Instructors should share their instructional goals, emphasize relevant content, and use real-world examples. For example, a school or academic librarian teaching course-related instruction might begin by asking learners to share their research topics and any challenges they have encountered, then use that information to suggest appropriate databases and search strategies that address students' needs (even when the librarian has preplanned the resources and strategies they would like to teach, a discussion of student needs gives the librarian an opportunity to frame that content in ways that resonate with students).

Since classroom environment also plays a role in motivation, instructors should create a safe, welcoming environment and foster collaboration among learners. Learners vary in terms of what they find motivating and engaging, from those who are comfortable with risk taking to those who want more guidance and support, and those who thrive on competition to those who prefer collaboration. To engage students across

these preferences, instructors should use a variety of learning activities. Feedback that focuses on individual learning also supports student motivation.

The Multiple Means of Engagement principle also emphasizes the importance of student agency and encourages instructors to give students choices about their own learning. In credit courses, instructors can allow learners to make assignment-related choices, such as identifying a topic of personal interest or selecting between a research paper or presentation. In workshops, librarians can allow students to choose the topics they research, the examples used in class, or how they participate, such as working on a practice activity alone or with a partner.

The principle of Multiple Means of Representation suggests that instructors use "flexible ways to present *what* we teach" (Hall et al., 2012, p. 2). Instructors should provide information in multiple modalities, for example by accompanying a verbal explanation with a textual and/or graphic representation and highlighting the availability of varied media in the library's collection, including print materials at varied reading levels, online resources, audiobooks, and video resources. Additional strategies include using concrete, relevant, and diverse examples to illustrate concepts; highlighting main ideas, patterns, and relationships; scaffolding new knowledge and skills in small steps; and providing learning supports such as graphic organizers and glossaries.

The principle of Multiple Means of Action and Expression suggests that instructors provide flexible options for *how* students learn and express what they know (Hall et al., 2012, p. 2). As noted earlier, instructors should use a variety of learning activities within instructional sessions, including lecture and discussion, as well as individual, pair, and small group work. Activities such as collaborative notes, polling, and games can also add variety to sessions and provide students with flexible ways to engage in learning. When asking for feedback, librarians can offer learners the option to write a brief textual reflection, capture their thoughts in bullet points, or draw a picture to convey their thoughts. School and academic librarians can work with classroom teachers to incorporate alternatives to the research paper, such as multimedia projects (Robinson, 2017), infographics, and presentations. Activity 6.2 is an opportunity to apply UDL's three principles to an instruction session.

Activity 6.2: Using UDL in Lesson Planning

Review the following lesson on search strategies designed for graduate students in library science. With a small group of peers, brainstorm ways to enhance the lesson using UDL's three principles of Multiple Means of Engagement, Representation, and Action and Expression. Try to develop at least two ideas for each principle.

Pre-class work: Students read textbook chapter on online searching.

Lesson outline:

1. Instructor gives daily welcome and announcements.

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2. Students complete a practice problem in *Dissertation and Theses* using limiters; then the instructor models an effective search.
3. Students complete a practice problem in *Ethnic Newswatch* using limiters; then the instructor models an effective search.
4. Instructor delivers a short lecture on keywords and subject headings using slides with screenshots.
5. Students practice searching database thesauri for subject headings.
6. Students complete a practice problem in *PsycInfo* using subject headings; then the instructor models an effective search.
7. Instructor delivers a short lecture (accompanied by slides) on Boolean operators, phrase searching, truncation, and wildcards.
8. Students complete a practice problem in *Academic Search Complete* using Boolean operators, etc.; then the instructor models an effective search.
9. Students complete one to two additional practice problems, time permitting.

Homework: Students complete a practice problem and post their answer to a forum.

If you are new to UDL, it can be overwhelming to think about all the changes you could make in your instructional design. Tobin and Behling (2018, p. 134) recommend an approach they call Plus-One: "is there just one more way that you can help keep learners on task, just one more way that you could give them information, just one more way that they could demonstrate their skills?" They go on to suggest that instructors identify "pinch points," the areas where students regularly ask questions, exhibit confusion, or struggle, and implement UDL by adding an additional option for learning and engagement at that point. For example, if learners struggle to understand a complex concept despite your best explanation, you could add a metaphor to tap into prior knowledge, develop a conceptual illustration, add a short pause for reflective writing and processing, or have a brief activity where students develop their own metaphor or illustration. Activity 6.3 asks you to think about "pinch points" in information literacy and apply a UDL lens.

Activity 6.3: Using UDL to Address "Pinch Points"

Select one of the following topics, all of which can be challenging for new learners:

- Distinguishing between primary and secondary sources
- Composing citations
- Identifying "fake news"
- Identifying spam and phishing e-mails
- Organizing and managing electronic files

Brainstorm ways to teach this concept or skill using UDL's three principles of Multiple Means of Engagement, Representation, and Action and Expression. Try to develop at least two ideas for each principle.

While much of the writing on UDL focuses on face-to-face instruction, UDL is equally applicable to other modalities. Smith and Harvey (2014) argue that online instruction offers unique opportunities for personalized education, including multiple means of representation for content and the ability for students to demonstrate learning in nontraditional ways. Webb and Hoover (2015) show how the principle of Multiple Means of Representation can be applied to multimedia tutorials.

Physical Spaces

In order for learners with disabilities to participate in instruction programs, they must be able to access and work comfortably in the library's classroom spaces. While we will not always have the ability to remodel or completely control our classroom spaces, we should be familiar with best practices and use them to adapt the spaces we have as best we can.

Classrooms should be conveniently located with clearly labeled accessible routes, level floors, and wide aisles. Entrances should be wide enough to accommodate wheelchairs and scooters, and doors should be lightweight with large, easy-to-grasp handles or electronic door openers. Instructors can offer preferred seating near the front of the classroom for learners with visual or auditory disabilities, while students with learning disabilities may prefer to sit in the rear of the room or along the sides, where there are fewer distractions. If learners have interpreters or aides, they will need a seat as well.

Classrooms with flexible seating, such as lightweight, movable tables and chairs, will accommodate the widest variety of learners. If furniture is moved during a session, the room should be returned to its original configuration to ensure easy access for the next group of learners. In computer classrooms, at least a few stations should be on an adjustable-height desk and offer an alternative input device such as a trackball mouse. Librarians can install adaptive software and/or make use of options for magnifying and reading text that are now included in many operating systems and applications. Whether offering adaptive software or utilizing built-in options, librarians should take time to learn how to use these technologies, rather than relying on patrons to figure it out on their own.

Adjustable lighting will allow instructors to vary illumination according to learner needs. In all cases, whiteboards and the instructor's face should be well lit. Display screens should be large enough that content is easily readable; many libraries now equip classrooms with multiple displays so that information can be

easily viewed from any seat. Librarians should seek to minimize environmental noises that distract or make it difficult to hear the instructor.

Librarians involved in the construction or renovation of library spaces should be sure to consult both the requirements of the Americans with Disabilities Act of 1990 and individuals familiar with accessible design to ensure new spaces meet both legal requirements and the ethos of accessibility (Stochl, 2020). Kowalski and Woodruff (2018) include a chapter on designing library facilities that are accessible to and inclusive of a wide range of learners.

Delivery

While librarians may feel constrained by the classroom spaces available to them, we have a great deal of control over how we deliver instruction, and our choices can make the difference between a learning experience that is accessible and inclusive and one that is not.

You should always face the audience when speaking. This benefits not only those who are hard of hearing but also students with learning disabilities and attention deficit disorders who may need a visual cue that you are speaking. One place many librarians forget this practice is when writing on the whiteboard; although it may feel awkward initially, it is essential to remember to pause, turn to write on the whiteboard, then turn back to the audience to resume speaking. Avoid placing hands, pencils, and other obstructions in front of your face, or standing in front of windows, as backlighting and glare will make it difficult to see your face. In large spaces, instructors should use a microphone to ensure everyone can easily hear instructions and lecture content.

For individual conversations, gain learners' attention before speaking by saying their name, approaching them, or touching their shoulder or desktop. To get the attention of the entire class, flickering the lights as you speak is more inclusive for those with auditory disabilities. If the patron has an interpreter, speak directly to the patron, not the interpreter.

When writing on the whiteboard, use dark ink and print clearly. Letters or images should be large enough to be seen clearly from anywhere in the room. If the room is large and more than one whiteboard is available, you can repeat information in two locations (right/left or front/back). If you are using multimedia materials, turn on closed captions. If closed captions are not available, select alternative materials that are accessible.

Keep activity and assignment instructions simple and brief. Written directions, distributed as a handout or displayed on a slide, will support learners with attention or memory difficulties while also helping all students stay on task. Instructors should also be flexible with activities. For example, if an activity calls for learners to stand, they can raise their hand instead, or students can pair up and have only one partner move around the room.

Since students may have difficulty maintaining focus or sitting still for long periods, instructors can intersperse different types of activities (Part III of this book provides numerous ideas for classroom

activities). Invite students to take breaks as needed, and in long classes, schedule formal stretch breaks. Chapter 12 provides additional advice on delivering instruction in ways that are engaging and effective.

Instructional Materials

Instructional materials such as handouts, slides, online guides, and videos should be designed for accessibility at the time of creation. Not only does this create a more inclusive classroom by serving learners who chose not to self-disclose a disability, it prevents the need for later revisions, which can be time-consuming and expensive. Chapter 11 on instructional materials and Chapter 16 on creating learning objects such as instructional videos and multimedia tutorials provide more detail on designing accessible instructional materials.

In some cases, instruction librarians may want to use materials created by others. While it is tempting to assume our colleagues would be mindful of accessibility practices, this is often not the case. Clossen and Proces (2017, p. 814-18) reviewed videos and multimedia tutorials from academic library websites and found that 48 percent of videos and 60 percent of tutorials lacked accessibility features. Librarians should carefully evaluate any materials created by others to ensure they follow accessibility guidelines.

Communicating Accessibility Information to Patrons

A final step in creating accessible, inclusive instruction and welcoming learners with disabilities is making the library's practices transparent. Brady et al. (2014, p. 337) write that people with disabilities may find travel more difficult and will not just drop by the library to see if a program or makerspace is accessible. Graves and German (2018) reviewed the websites of 68 academic libraries and found that fewer than half contained information on whether instruction sessions would be accessible or how to request accommodations. When information was available, it was most often on pages devoted to disability services, rather than "on instruction sites at the point of need" (Graves and German, 2018, p. 568).

Librarians should review their websites with an eye to ensuring that any web pages for the library's disability services include information related to instruction, including the physical accessibility of classrooms, the availability of adaptive workstations and software, and a link to request services such as sign language interpretation. Web pages devoted to instructional services, including events calendars, should include similar information. Graves and German (2018, p. 563) also recommend that pages for instructional services include a clear statement on accommodations for patrons with disabilities, noting that such statements "can go a long way toward creating an inclusive environment." Brady et al (2014, p. 337) recommend librarians provide images or video tours of spaces, writing "a video tour would allow people with disabilities to view the space and assess for themselves how well it would work for them."

In school and academic libraries, any forms used by instructors to request course-related instruction should

include a space for requesting accommodations. While this chapter advocates a universal design approach to minimize the need for individual accommodations, patrons may have unique needs, and librarians should make the process of requesting such accommodations as clear and easy as possible. Even in the absence of formal requests, librarians can communicate accessibility information to learners prior to any course-related instruction. Wong and Myhill (2019) suggest that librarians prepare a brief email or handout, such as that seen in Example 6.1, and ask that the regular instructor distribute it to students a week in advance. The document should provide information on the classroom's location, layout, and equipment, along with planned accessibility measures and contact information for the librarian.

Example 6.1: Accessibility Statement for Library Instruction

<div align="center">

Research Instruction for History 380: U.S. Civil War

Tuesday, March 12, 1:00-2:40 p.m.

Jemisin Library, Room 212

</div>

Location:

Accessible entrances to Jemisin Library are located on the south (Quad) and north (Butler Street) sides. From either entrance, elevators in the main foyer will take you to the second floor. As you exit the elevators, turn right to enter Room 212.

Classroom:

Room 212 is on one level with a level floor. The room contains 25 student workstations with lightweight, movable chairs; two of the workstations are on adjustable-height tables. Additional tables can accommodate students who wish to bring their own laptops. The librarian will display their computer on a large screen at the front of the room and two oversize screens located halfway back. Lighting includes a large wall of windows facing west (with shades) and overhead fluorescent lighting (shaded and dimmable).

Restrooms:

Accessible gender-specific and gender-neutral restrooms are located across from the elevators on both floors.

Instructional Materials:

All visual information will be described, and video content will include captions. An advance agenda, as well as electronic and/or large print versions of handouts, are available upon request.

Accommodation Requests:

For additional information or accommodations, please contact Anne Liu at aliu@university.edu or 555-123-4567 by March 5.

(Adapted from Wong & Myhill, 2019)

Conclusion

While some patrons will seek out information about the accessibility of an instructional offering or make a formal request for an accommodation, oftentimes librarians will not receive advance notice or even know that a learner has a disability. Patrons may prefer not to disclose their disability, may assume that the library cannot or will not provide accommodations, or may be unaware of how to request accommodations. Thus, it is imperative that instructors in all types of libraries be attentive to issues of accessibility and create inclusive instructional services and materials.

Key strategies librarians can use include:

- Apply the Universal Design for Learning framework of Multiple Means of Engagement, Representation, and Action and Expression when designing lessons and courses.
- In the classroom, practice inclusive delivery strategies, such as facing the audience when speaking and providing written directions and ample time for activities.
- Maintain the accessibility of existing physical spaces, and when planning for remodels or new construction, consult experts on accessibility.
- Ensure instructional materials such as handouts, videos, and multimedia tutorials meet accessibility guidelines.
- Publicize accessibility practices on websites and promotional materials and through direct communications with learners.

Suggested Readings

Brady, T., Salas, C., Nuriddin, A., Rodgers, W., & Subramaniam, M. (2014). MakeAbility: Creating accessible makerspace events in a public library. *Public Library Quarterly*, 33(4), 330-347. https://doi.org/10.1080/01616846.2014.970425

> The authors explore how the makerspace movement's emphasis on problem- solving, as well as learning, fun, and social interaction, aligns with the needs of individuals with disabilities. They describe successful makerspace activities for people with visual and developmental disabilities and provide recommendations for successful programs.

CAST. (2018). http://udlguidelines.cast.org

> Researchers at CAST created the Universal Design for Learning framework. This site includes the complete framework, explanations of each principle, and numerous ideas and resources for implementation. The site also provides relevant publications and professional development resources and is a rich resource for those who want to learn more about UDL.

Chodock, T., & Dolinger, E. (2009). Applying universal design to information literacy: Teaching students who learn differently at Landmark College. *Reference & User Services Quarterly*, 49(1), 24-32.

> Chodock and Dolinger provide a concise introduction to learning disabilities and then outline numerous strategies librarians can use in the classroom. Although written from a higher education perspective, the recommendations in this article are applicable to any setting. Highly recommended for readers seeking to better understand learning disabilities and/or find actionable strategies to support learners.

Disabilities, Opportunities, Internetworking, and Technology (DO-IT). https://www.washington.edu/doit/.

> The University of Washington's DO-IT focuses on making education and the workplace more inclusive. The site offers information on invisible disabilities and universal design, along with tip sheets on designing accessible course materials.

McGowan, S., Martinez, H., & Marcilla, M. (2018). AnyAbility: Creating a library service model for adults with disabilities. *Reference Services Review*, 46(3), 350-63. https://doi.org/10.1108/RSR-03-2018-0034

> The authors outline a program that aims to eliminate bias and develop services for adults with cognitive and developmental disabilities. This is a useful model for other public libraries.

Palacios, K. (2015, July 30). *The 7 principles of universal design* [Video]. *YouTube*. https://www.youtube.com/watch?time_continue=3&v=d-GzKyK0iw4

> Palacios provides a concise introduction and numerous examples of Universal Design.

Pionke, J. J. (2017). Beyond ADA compliance: The library as a place for all. *Urban Library Journal*, 23(1), 1-17. https://academicworks.cuny.edu/ulj/vol23/iss1/3

> Pionke argues that when librarians focus accessibility efforts on compliance with the law, they miss opportunities for true accessibility and inclusion. They advocate for the use of universal design in all areas of library services. This is a valuable introduction to taking a social justice approach to services for functionally diverse users.

Pionke, J. J. (2018). Functional diversity literacy. *Reference Services Review*, 46(2), 242-250. https://doi.org/10.1108/RSR-02-2018-0024

> Pionke looks at the language used to describe patrons with disabilities and how it reveals dismissive or patronizing attitudes on the part of librarians. They advocate for the term "functionally diverse" as well as the need for greater awareness and understanding of disability and accessibility in the profession.

Project Enable. https://projectenable.syr.edu/

> Project Enable provides free professional development resources on designing accessible, inclusive services for school, public, and academic librarians.

Remy, C., & Seaman, P. (2014). Evolving from disability to diversity: How to better serve high-functioning autistic students. *Reference & User Services Quarterly*, 54(1), 24-28. https://doi.org/10.5860/rusq.54n1.24

This article provides a thoughtful introduction to autism and how librarians can best serve adults with autism in reference and instruction.

Smith, C., & Strick, L. (2010). *Learning disabilities A to Z: A complete guide to learning disabilities from preschool to adulthood.* Free Press.

Smith and Strick offer an excellent introduction to learning disabilities and how they affect learning. Although the support strategies are aimed at parents and K-8 teachers, librarians in all types of libraries will find ideas of value.

Tobin, T. J., & Behling, K. T. (2018). *Reach everyone, teach everyone: Universal design for learning in higher education.* West Virginia University Press.

Tobin and Behling explain UDL, argue for its benefits in better serving all learners, and provide concrete strategies for implementing UDL across campus. Written primarily for experienced faculty and administrators in higher education, it contains a wealth of ideas that will be useful for librarians teaching credit courses.

W3C Web Accessibility Initiative. (2018). How to make your presentations accessible to all. https://www.w3.org/WAI/teach-advocate/accessible-presentations/

This website offers clear, concise advice on developing accessible presentations and events; very applicable to instructional offerings such as workshops.

WebAIM. https://webaim.org.

WebAIM is devoted to accessibility for websites and online materials. An excellent resource for information on accessibility standards, accessibility technology, and training.

Zhong, Y. (2012). Universal design for learning (UDL) in library instruction. *College & Undergraduate Libraries*, 19(1), 33–45. https://doi.org/10.1080/10691316.2012.652549

Zhong presents a case study in applying UDL to information literacy instruction, specifically exploring how to improve instruction in Boolean searching by applying the three principles.

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Brady, T., Salas, C., Nuriddin, A., Rodgers, W., & Subramaniam, M. (2014). MakeAbility: Creating accessible makerspace events in a public library. *Public Library Quarterly*, 33(4), 330-347. https://doi.org/10.1080/01616846.2014.970425

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PART III
INSTRUCTIONAL DESIGN

7. Identifying Audience Needs

Introduction

Understanding our audience, their interests, needs, and information behaviors, is an important part of instructional planning. The more we know about our learners, the better we can tailor our instruction to meet their interests and needs. We would not plan a session on job hunting or retirement planning for an audience of middle school students, but we might try to link a library session to a classroom lesson on the life cycle of a frog. Likewise, we know that older adults in a public library setting are unlikely to be writing a research paper or worrying about citing sources for that paper, but they might be interested in learning about health or financial-planning resources.

McTighe and O'Connor (2005, p. 14) remind us that "diagnostic assessment is as important to teaching as a physical exam is to prescribing an appropriate medical regimen." Before any instruction session, we should ask ourselves: "Who will be in my audience?" "What sorts of topics are they interested in?" What interests them about those topics?" "What do they already know?" and "What do they want to learn?" But how do we discover this information about our learners? Answering these questions can be especially challenging for librarians outside of the K–12 school system. School librarians have some advantages in getting to know their students. They are typically working within a curriculum framework, whether set by the state, district, or school, that broadly indicates the level of knowledge students should have across various subjects at each grade level. Also, school librarians have an entire year with each class; therefore, they have time to get to know the students as a group and individually, and make incremental adjustments to their instruction as they learn more about their students' knowledge and abilities.

Most other librarians rely on the "one-shot" instruction session, or workshop model, in which they meet with the specific audience as a group only once and often for a relatively short time period. Typically, we will not have an opportunity to communicate with the audience prior to the session, giving us little time to learn about our students. Yet, even with a one-shot session, techniques exist to help us gather information about our audience. The rest of this chapter provides an overview of those techniques, beginning with broad approaches to learning about communities and moving to more specialized methods to learn about individual students and groups. See Activity 7.1 for a brief exercise on audience assessment.

Activity 7.1: Learning About Audiences

Before reading the rest of this chapter, take a moment to reflect on the concept of audience assessment by answering the following questions. If possible, keep track of your answers so you can come back to them at the end of the chapter.

Begin by choosing an information setting such as an archive or a public, academic, or corporate library, and

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think about a specific population with whom you might work, such as elementary school children, lawyers, graduate students, or older adults. As you answer the following questions, try to frame your answers in terms of that setting and patron group.

Questions for Reflection and Discussion:

1. What are some ways you could learn more about your audience's instructional needs, interests, or challenges? Write down as many methods as you can think of.
2. What are some existing sources of information about this audience?
3. How could you use the information you gather to plan better instruction sessions?

Learning About Audiences Through Research

Research studies and reports can be an excellent way to learn about learners; these resources can provide an overview of the specific needs, challenges, and behaviors of our audience so we can plan sessions that will address those areas, and they often identify the common misunderstandings and stumbling blocks learners face (Guskey, 2018). One classic example is Kuhlthau's (1988) research on the Information Search Process (ISP). Through a series of studies, Kuhlthau demonstrated that people undertaking a research project typically progress through seven steps:

1. **Initiation:** Beginning to search for information
2. **Topic selection:** Identifying a topic
3. **Exploration:** Learning more about the selected topic
4. **Formulation:** Narrowing the focus
5. **Collection:** Gathering and organizing information
6. **Presentation:** Synthesizing and sharing the information
7. **Assessment:** Reflecting on their learning

In addition to identifying these cognitive stages, Kuhlthau (1988) uncovered the affective behaviors or feelings that researchers experience during each stage. She found that students fluctuated among feelings of doubt, confusion, uncertainty, confidence, clarity, and optimism as they progressed through the research steps. Using this research, we can plan instruction that not only targets the tasks involved in each step of the research process but also supports the students' affective states. Kuhlthau (2004) describes "zones of intervention" in which she offers specific guidance to librarians that suppport both the cognitive and affective aspects of the information search process.

Project Information Literacy (PIL) is a wealth of research on the information behaviors of undergraduates. Through years of research, PIL has uncovered valuable insights into learners' research processes, including common challenges and stumbling blocks. For instance, early studies revealed that college students are overwhelmed with the amount of information available to them, and that getting started on a research

project is one of the most difficult steps for them (Head, 2013; Head & Eisenberg, 2009). The studies found that because undergraduates generally lack the background knowledge and specialized vocabulary of the field, they have trouble identifying and narrowing down a topic. This information could be invaluable to academic librarians. Often, these librarians start instruction sessions by discussing how to search for articles for a research paper, assuming students have already selected a topic. But this research suggests that, at least in some cases, the session might be more helpful if the librarian begins at an earlier point in the research process and guides students through the steps of gathering background information in order to develop a paper topic.

PIL also has explored the information behaviors and needs of people in the early stages of their careers, finding that recent graduates are adept at finding information, though they tend to rely on relatively simple techniques and sources, and they are less skilled at solving information problems and asking probing questions (Head, 2012). This information on workplace information literacy could be useful for special and public librarians. In addition to research reports, PIL publishes interviews with researchers and educators, video overviews of research findings, and guides to using the research; all of their publications are freely available online.

The Pew Research Center is another excellent source of information about attitudes, interests, and information concerns across a variety of relevant topics, including media, news, and technology, and its research reports also are available freely online. Pew generally focuses on the general American adult population, making its findings especially of interest to public librarians. Several of its reports have focused specifically on American adults' attitude toward and use of public libraries. For instance, surveys found that just over 60 percent of American adults would like libraries to offer training on digital literacy topics, including how to find trustworthy information (Geiger, 2017; Horrigan & Gramlich, 2017). Other relevant reports include information on issues of health literacy, how Americans use social media, where Americans get their news, their attitudes and concerns about "fake news," and general information seeking behaviors. Some reports focus on the concerns and behaviors of specific populations, such as older adults or teens.

Finding Relevant Research

Librarians are known for their research skills, and as instruction librarians we can put those skills to work learning about our potential audiences. As librarians or library school students, readers of this book are well versed in resources and search techniques, but this section will offer some suggestions for where and how to find information about our learners. Of course, research studies must be used judiciously. Some research studies involve small samples, lack random samples, or are otherwise limited in their generalizability. We need to evaluate the merits of any study and be cautious of overgeneralizing the findings, but these studies offer some broad insight into a community.

Within library and information science, hundreds of studies have examined how people search for, locate, access, evaluate, and use information, and have proposed models to understand these processes. Some studies describe information behaviors generally, while others look at specific populations, ranging from Spanish speakers, immigrants, and older adults to historians and scientists.

Scholarly journals and research reports are a natural starting point for evidence-based information about potential audiences. A range of LIS journals frequently publish articles on the information behaviors, needs, interests, and challenges of a wide variety of patron communities. Journals such as *Library and Information Science Research* and *Library Quarterly* publish articles about many different user groups and information settings, while other titles focus on specific settings, such as academic libraries or archives, or certain functional areas, such as reference and user services. We can search for information using terms like "information behavior" or "information needs" or terms related to specific aspects of information literacy, such as "search," "evaluation," and "fake news" to find related studies. We might also add audience descriptors, such as "youth," "undergraduate," "historian," or "English language learner" to limit our results. Keep in mind that we can find relevant information outside of LIS literature. Discipline-specific journals and databases will offer insight into the needs and interests of different communities of practice. Fields such as education, psychology, political science, and health include studies about learning, literacy, and information behaviors as well.

In addition to the Pew Research Center and PIL mentioned earlier, several other research organizations publish reports that offer insight into our potential audiences. Editorial Projects in Education publishes *Education Week* along with special reports that focus on K-12 education, while Ithaka S+R publishes open access research on higher education, including a triennial report on faculty perspectives on the library. The Media Insight Project was launched to study news consumption and includes reports on the general adult population that could be of interest to public librarians. Researchers from the Stanford History Education Group published a study in which they tested the ability of over 7,000 middle school, high school and college students to evaluate online information and identify fake news (Wineburg et al., 2016). The report provides an overview of student abilities and identified specific strengths and weaknesses at each level.

Professional associations can also be good sources to learn about potential audiences, and students can often get discounted memberships in these organizations. Many professional associations publish journals, newsletters, and research reports which are usually a benefit of membership, some of which might also be available as open access publications. In addition, most professional associations run one or more conferences a year often featuring paper presentations, later published as conference proceedings. For instance, recent Association of College and Research Libraries conferences have included papers such as "1G Needs Are Student Needs: Understanding the Experiences of First-Generation Students" (Daly et al., 2019), and "Learning What They Want: Chinese Students' Perceptions of Electronic Library Services" (Michalak & Rysavy, 2019). Each of these papers provides a research-based overview of a specific group's needs and experiences on which other practitioners could draw. Even when they are not research-based, conference presentations might share best practices related to interacting with audiences, and alert us to the trends that are concerning our colleagues on these topics.

Most information professionals are likely to find relevant information through the American Library Association (ALA), which has a section called the Library Instruction Round Table (LIRT) devoted specifically to issues of instruction and pedagogy. LIRT publishes an annual list of the best articles related to library instruction, called the LIRT Top Twenty. Academic librarians might consider the Association of College and Research Libraries (ACRL), including its Instruction Section. School librarians will be interested in the American Association of School Librarians (AASL). In addition to the Public Library Association (PLA), public librarians can find interesting reports through the Urban Libraries Council. As with scholarly journals,

however, we should not necessarily limit ourselves to LIS associations. For example, academic librarians might explore general higher education associations, such as the Association of American Colleges & Universities (AAC&U) and the Council of Independent Colleges (CIC), while school librarians will find relevant information through the Association of American Educators.

Assessment Through Demographics and Community Organizations

Often, we can find excellent sources of audience information in our own communities. At the broadest level, public librarians can use tools from the U.S. Census Bureau to get basic demographic information about their city or town, including a breakdown of the population by age, gender, race, education levels, income levels, languages spoken at home, and numbers of households with school-aged children. While this information is broad, it offers a helpful overview. A public library in a city with a high percentage of older adults and few families with children might plan different programming and events than a librarian in a town with a lot of young families. In planning programs, librarians might also consider what languages their patrons speak and investigate the possibility of offering interpreter services or programs in languages other than English. Many cities and towns are launching data portals that provide additional demographic information about their community beyond the national census.

Remember that census data is only a starting point. Once you have a sense of the broad demographics of your community, you can take steps to learn more specifics. For instance, once you have a sense of the number of households with children in your community, you might investigate whether the schools have libraries and whether those libraries are staffed by professional librarians; the breakdown of children attending public, charter, or private schools, or being homeschooled; and where the local preschools and child care centers are located in relation to the library branches. This information can help inform the instruction program. For instance, if libraries in the public schools are under- or unstaffed, the public library can fill a gap by developing instruction to support the curriculum and provide help to students as they complete assignments.

School and public librarians should also build relationships with community and social service organizations. Not only can these organizations help the library reach new audiences and partner with the library in providing programming and instruction, they can be additional sources of community information. Community health centers might have information on overall health literacy, common health-care questions, and information needs and concerns of the homeless, underhoused, and food-insecure populations. Immigration-support centers tend to have more detailed and current information than the census does on race, national origin, ethnicity, and languages spoken of those newly arrived to the community.

Similarly, academic librarians can work with campus offices to learn more about their students. Admissions offices should have detailed information about the general profile of admitted students, including average high school GPAs, entrance exam scores, international status, first-generation status, and so on. Academic librarians will want to pay attention to the number of nontraditional students. The definition of nontraditional students varies but typically includes learners who meet one or more of the following

characteristics: they are financially independent of parents or guardians; work full time; have one or more dependents and/or are a single caregiver; did not complete high school; and/or delayed entrance to college, often taken to mean that they are age 24 or older at the time they begin college (U.S. Department of Education, 2015). Roughly 70 percent of undergraduates meet at least some of the criteria of a nontraditional student, and the added work and family responsibilities these students face can impact their instructional needs.

Academic support services, such as the writing center and tutoring services, can help the library identify general areas of concern for learners who might warrant instructional support. For instance, writing coaches might notice that students are including dubious sources in their papers, or that they have trouble properly formatting citations. Disability services should have aggregate information about the number and types of disabilities reported on campus, which can help librarians plan accessible instruction sessions, as discussed in Chapter 6. An international student office can help the library pinpoint the specific needs of learners from outside of the United States. Finally, academic departments and faculty can be key informants as to the specific needs of their majors. For instance, the history department might want their students to learn to find and use primary sources, while science students might need to access data sets.

While all of these sources of information are useful, they must be used carefully. We must take care to always respect patron privacy when gathering information. Not only is patron privacy an ethical obligation of the library field, it is also ensured by many state and federal laws such as the Family Education Rights and Privacy Act (FERPA), which protects student data. When working with community and campus offices to access demographic data or other information about patron needs and interests, we should be clear that we want only aggregate data, not personally identifiable information.

Pre-Assessment Techniques

While research literature and community demographics can offer valuable insight into our audiences, they tend to lack nuance and treat broad communities as if they are a monolithic or homogeneous group. We have to remember that this information provides a broad picture of a community but cannot describe any one individual. While it may be true that many older adults are interested in health information, individual needs and interests within this group could vary widely. One patron might be struggling to understand her Medicare benefits, while another might be the primary caretaker for a grandchild and need pediatric health information. A school or academic campus might have a certain number of students with a specific learning disability, but that disability could manifest differently for each student, and each student could need or prefer different accommodations or teaching approaches. We need to remember that people are intersectional; that is, they have many different parts to their identities and are not defined by any one single characteristic such as race, age, or disability status. We should use demographic and community data as a starting point that can help us understand our broad community but not to limit or pigeon-hole individual patrons. The pre-assessment techniques outlined below can help us to move beyond the general overviews available from research and community data to discover more about our specific group of learners.

Pre-assessments are a set of methods for gauging learners' knowledge and abilities before beginning a

new instruction session. For example, teachers can give students a brief quiz at the beginning of a unit to determine what they already know about the unit topic, or a librarian might poll a class to find out how many students have experience with certain databases or search strategies like Boolean operators. Because they engage directly with learners, pre-assessments can offer instructors targeted insight into a group of students' existing knowledge about a topic and allow the instructor to adjust the lesson to meet the learners' current needs. Pre-assessments are "a way to gather evidence of students' readiness, interests, or learning profiles before beginning a lesson or unit and then using that evidence to plan instruction that will meet learners' needs" (Hockett & Doubet, 2013).

Pre-assessments are commonly used to gauge students' knowledge or abilities, including how much learners recall from past lessons, how much they know about a new topic, or how well they have mastered a certain skill. They can also act as a diagnostic tool to identify gaps in student knowledge or misconceptions about a topic. Hockett and Doubet (2013) stress that pre-assessments should not be used only to measure knowledge in the sense of recall of facts, but they should also attempt to gauge student understanding and ability. Although learners in a library classroom might be able to name the Boolean operators, they might not know how to use those operators properly to broaden or limit their searches. A good pre-assessment will uncover understanding. Otherwise, instructors might assume that students' knowledge of facts implies their understanding and plan an instruction session for which learners are not ready.

Pre-assessments can be formal or informal, high or low stakes. Formal pre-assessments could consist of quizzes, worksheets, or performances that require students to demonstrate their knowledge, ability, and understanding. Informal pre-assessments could include a brief in-class discussion in which learners answer questions about their knowledge of a topic, or a quick poll to check knowledge of a topic. Most pre-assessments, especially in information settings, are low stakes since the goal is to understand students' prior knowledge, rather than assess their performance.

The use of pre-assessments aligns well with the cognitivist approach to teaching as described in Chapter 3. According to cognitivist learning theory, people create knowledge by associating new information with their existing knowledge base. Pre-assessments encourage learners to recall and reflect on what they already know, which can facilitate connections to the new information introduced in the current lesson. Once we are aware of our students' existing knowledge and experiences, we can weave those into the lesson, increasing the relevance of the material and making the connections between the new information and the existing knowledge even more explicit (Hockett and Doubet, 2013). Guskey (2018) points to rigorous research suggesting that when teachers use pre-assessments as a diagnostic tool and use the data to create lessons that address gaps in understanding and reinforce the mastery of relevant knowledge and skills, student learning increases (Leyton-Soto, 1983). Finally, when used appropriately, pre-assessments offer learners a little preview of upcoming topics and can be used to build interest and excitement. Instructors can use the pre-assessments to set expectations by indicating what students will be learning and explaining why these topics are important (Guskey, 2018; Hockett & Doubet, 2013).

While useful, pre-assessments can take up valuable instruction time. Occasionally, academic librarians might persuade an instructor to administer a pre-assessment before a library instruction session or to assign the pre-assessment as homework. A public librarian could possibly send a pre-assessment by email to workshop participants if those participants had to register for the session. Even if these options are possible, however, participants might not feel obligated or motivated to engage, resulting in few or no responses.

Usually, librarians will have to use their own class time for pre-assessments, and when limited to a 45- to 60-minute one-shot session, losing even 5 or 10 minutes of instruction time can have a big impact. Thus, we need to carefully design assessments that uncover useful information with minimal use of class time.

Designing Meaningful Pre-assessments

Hockett and Doubet (2013) recommend pre-assessments start with the learning goals or outcomes of the lesson. Once we know what students should know or be able to do by the end of a lesson, we can determine what knowledge or skills they need in place to get started and then develop assessment tools to explore students' current knowledge and abilities. Wiggins and McTighe (2005) describe this as determining where learners are coming from before focusing on where they need to go next.

Often, pre-assessments are relatively short and simple. Instructors may be tempted to collect a lot of information, but since the purpose is to guide the upcoming lesson, these assessments should focus only on content or skills that are directly relevant to that lesson. If you have only one meeting with a group of learners, it might seem like a good use of time to find out as much as you can about that group, but long and complex assessments run the risk of alienating students and generating data that is not relevant to the lesson and therefore not useful in planning. Specific examples of pre-assessment tools and strategies are offered later in this chapter.

Using Pre-assessment Data

The goal of pre-assessment is to create a better learning experience for students. The information gained through pre-assessments can guide our decision making not only "into *what to teach*, by knowing what skill gaps to address or by skipping material previously mastered," but also into "*how to connect* the content to students' interests and talents" (McTighe & O'Connor, 2005, p.14).

One obvious use of pre-assessment data is to guide content. Once we know what knowledge our learners lack or what abilities they have not yet mastered, we can make an informed decision about where to begin a lesson and spend time reviewing content as necessary. For instance, one of the book authors, Laura, prepared a workshop on job hunting for a public library audience. She planned to begin by demonstrating how to search for job postings but realized at the beginning of the session that many of the learners were unsure how to find a job bank in which to search, so she quickly adjusted her lesson and began with a general web search to find job banks. Hockett and Doubet (2013) provide a detailed example of a high school assessment focused on World War II. Using carefully constructed questions, the teacher identified areas students were familiar with, along with some misconceptions they held, and was able to adjust her plan accordingly.

Pre-assessments can also guide our overall approach to the classroom, including which activities we use

to present content, and how we might group learners to best match their current levels of knowledge. For instance, a seventh-grade science teacher used a pre-assessment to determine each student's level of knowledge for a lesson on the nervous system (Pendergrass, 2013/2014). Based on the results, the teacher broke students up into several groups. While students who did well on the pre-assessment worked on more advanced activities, the teacher gathered the students who were struggling with the content and spent time reviewing concepts with them. Further, she previewed content from the next lesson so these students could have extra time to begin mastering the new information.

Pre-assessments can give teachers ideas to connect with and engage their students. In the World War II example, the teacher asked students for examples, either from their own lives or from books and films, of one conflict causing another. As a result, she learned that many learners were familiar with the *Hunger Games*, and she was able to use themes of conflict and penalties from that series (and from other personal experiences that students provided) to connect with lesson content. The familiar examples made the lesson more engaging and facilitated student connections of new information to their existing schema.

Some pre-assessments also surface worries, frustrations, or lack of confidence on the part of learners, which can help the instructor create a supportive and empathetic environment. For instance, a group of college undergraduates discussing an upcoming research paper might reveal that they feel pressured to get the work done on time or are not confident in their ability to find good information. The library instructor could use this information to emphasize time-saving techniques, to reassure learners about their concerns, and to provide positive and encouraging feedback when they are successful in their searching.

Pre-Assessment Examples

Dozens of pre-assessment tools and ideas exist. In fact, many of the active learning techniques described in Chapter 4 could double as pre-assessment tools. The main requirement of a pre-assessment is that it gathers data about what students already know, understand, and are able to do. This section provides a few examples of pre-assessment tools, with an emphasis on informal, low-stakes, and relatively quick methods that are most likely to be useful in a library classroom.

K-W-L

One popular pre-assessment is the K-W-L, which stands for know, want to learn, and learned (Wiggins & McTighe, 2005). The instructor begins by asking learners to reflect on what they already know (or believe they know) about a topic. The students could work individually or together to brainstorm their thoughts, showing the instructor their current knowledge and revealing any gaps or misunderstandings.

In the next step, the instructor asks students what they want to learn about the topic, which might be presented in the form of questions they have. This step helps the learners begin to engage with the topic and can build some excitement about what is to come. The instructor can also use this step to link the

students' interests and questions to the learning goals of the lesson. Throughout the lesson and at the end of the instruction, the teacher asks the students to reflect on what they are learning. This step helps the students (and instructor) track progress toward learning goals and encourages the kind of reflection and recall that can deepen learning. Although the K-W-L method is often associated with younger children, as in the example provided by Pattee (2008), it works equally well with older children and adults. Example 7.1 provides a sample K-W-L worksheet, while Activity 7.2 offers an opportunity to use the K-W-L worksheet to plan instruction.

Example 7.1: K-W-L Worksheet

What You Know	What You Want to Learn	What You Learned
People need to eat more vegetables.	Are vegetarians healthier than other people? Which vegetables are the healthiest?	
Calcium is an important nutrient.	Does drinking milk make you grow taller?	
People should eat foods high in fiber and whole grains.	Which foods have high fiber?	

Activity 7.2: Using a K-W-L Worksheet to Plan Instruction

In the K-W-L chart shown in Example 7.1, middle school students worked in groups to identify what they know and what they want to learn about nutrition. Next, the librarian will help them research the answers to what they want to learn. After the lesson, students will reflect on what they have learned and fill in the rest of the chart.

Questions for Reflection and Discussion:

1. What does the information on this chart reveal about learner knowledge of the topic?
2. Where do you see strengths in the students' knowledge, and where do you see gaps or misconceptions?
3. How could a library instructor use this chart to plan an instruction session? What topics, activities, or resources might the lesson cover, and why?

Worksheets

Library instructors can use worksheets to probe student knowledge and understanding of a topic. In

developing questions or tasks for a worksheet, we should focus on recall, reflection, and potential for learning. See Activity 7.3 for an excerpt of a sample library worksheet and reflection questions.

Activity 7.3: Using a Pre-assessment Worksheet

The following pre-assessment worksheet could be used to gauge undergraduates' understanding of search strategies prior to a library instruction session.

Questions for Reflection and Discussion:

1. What would a library instructor learn about knowledge levels or gaps from student answers to these questions?
2. How might a library instructor use the information from this worksheet to plan a lesson?

LIBRARY 101 WORKSHEET

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1. Conduct the following searches in **Library Catalog**:

   ◦ Type in each of these searches exactly as written and record the number of results for each search:

     ▪ libraries and children
     ▪ libraries or children
     ▪ libraries not children
     ▪ librar* and child*

   ◦ Do the same for the following searches:

     ▪ social media
     ▪ social not media
     ▪ "social media"

2. Why do you think each search returns a different number of results? How do the "ands," "ors," "nots," asterisks, and quotation marks work to change the search?
3. Now, imagine you wanted to do a search on how libraries are helping children learn about and use social media. What would be the best way to write out that search?

Brainstorm

Instructors could use brainstorming activities to encourage learners to write down anything they know about a topic prior to beginning a new lesson. Students might work individually or in groups to pool their knowledge.

Concept Map

Like a brainstorm, concept maps ask learners to identify as many relevant aspects or subtopics of a concept as they can but also to show the various connections between and among the topics. Instructors could probe student understanding by asking them to explain the connections. Figure 7.1 shows a sample concept map created by using a free version of *MindMeister* [(https://www.mindmeister.com/)](https://www.mindmeister.com/).

Figure 7.1: Climate Change Concept Map
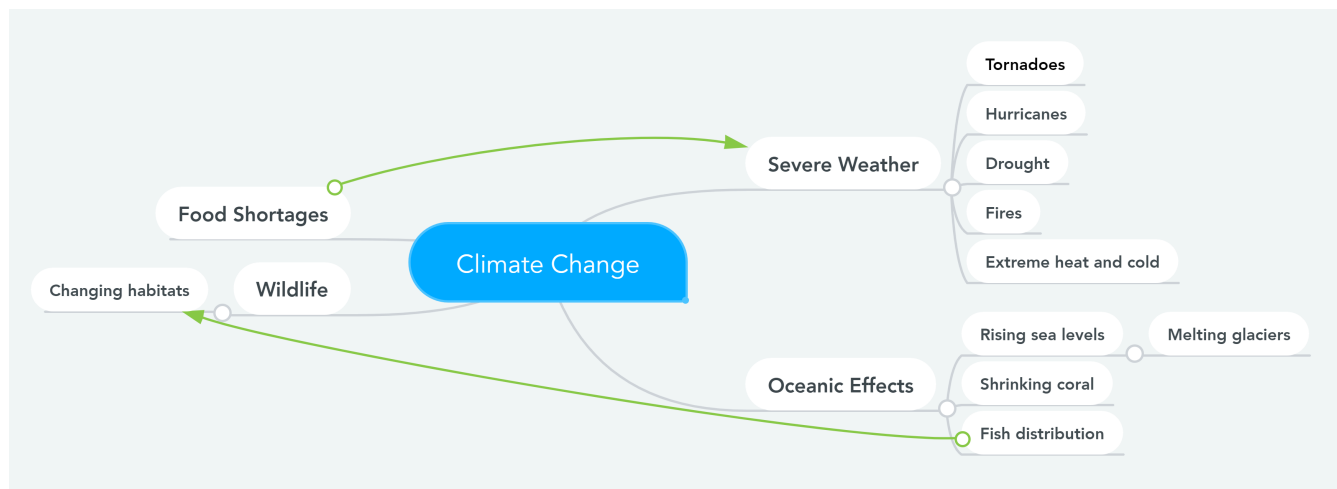
In this example of a concept map, the learner has brainstormed the effects of climate, identifying topics such as food shortages, wildlife, severe weather, and oceanic effects.

Polls

Polls are a relatively simple and quick way to get a broad sense of the knowledge level of the class. Poll questions could be content questions with right and wrong answers, self-perception questions which ask learners to indicate what they know about a topic, or even affective questions asking students, for instance, if they are excited or nervous about a topic. Some examples of polling questions include:

- Have you ever downloaded an app before?
- Have you ever used *Google Scholar* before?

- Do you feel confident that you can identify "fake news"?
- If you want to search for a phrase in a library database, what symbol should you use:
  - Quotation marks
  - Asterisk
  - Question mark
- Which of these is NOT a sign of a scholarly article:
  - List of references
  - Authors with special credentials or affiliations to research institutions
  - Charts and graphs
  - Colorful pictures

We can use polling software or a simple show of hands to answer questions. One advantage of polling software is that it is usually anonymous, which might allow learners to be more honest in their answers. In addition, electronic polls might offer an option for multiple-choice answers, which can allow instructors to be more specific. Some of the products, like *Poll Everywhere* (https://www.polleverywhere.com/) and *AnswerGarden* (https://answergarden.ch/), allow for open-ended questions and can even display answers as a word cloud. Gewirtz (2012) gives an overview of polling in the library classroom. Although her article focuses on *Poll Everywhere*, her general advice could be applied to other polling products, and her guidance on questions is relevant even for polling the class without software. Keep in mind that even if the polling software itself is free, students need access to a device such as a smartphone or tablet to enter their answers. Activity 7.4 provides an opportunity to develop some of your own polling questions.

Activity 7:4: Developing Polling Questions

Polling the class is a quick and easy way to get a sense of student knowledge before beginning a lesson. We can ask learners to answer poll questions by raising their hands, or we can use polling products like *Poll Everywhere* to gather answers electronically.

Imagine that you are preparing a library instruction session for one of the scenarios below. Try to think of two or three poll questions you could ask your learners as a pre-assessment before beginning the lesson.

- A voter registration session for young adults at a public library or high school
- A session for political science majors writing a paper exploring the impact of disinformation campaigns on elections in the 21st century
- A health literacy session in a public library for older adults with chronic health issues
- A workshop for company staff on using the new Bloomberg terminal

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Analyzing Pre-Assessment Data

Because we often administer pre-assessments at the start of the class, we will need to analyze the data very quickly if we are going to use it to tweak that session. The first step is to recognize how much time different tools entail, both for the learners to complete and for us to analyze the results, and to choose a tool appropriate to the audience, venue, and time frame. In general, open-ended pre-assessments, like concept maps, brainstorms, and K-W-Ls, will take longer to analyze because we have to look for patterns in the learners' written responses. However, even with limited time we can use these tools if the group is relatively small. An experienced instructor can read through 10 or 15 concept maps or K-W-L charts and identify issues in a matter of minutes. With large groups or shorter time frames, we can limit ourselves to a quick show of hands or use worksheets or polls with close-ended or multiple-choice questions to speed the analysis. In such cases, we can skim through the answers quickly to identify common mistakes or issues to address. While challenging, we can make sense of the information quickly and decide how to use it in real time, and the analysis and decision making get easier with experience.

Conclusion

The purpose of library instruction is to help students and patrons gain the skills and knowledge they need to be successful in their information endeavors, whether that endeavor is completing a research paper, understanding their health-care options, or finding a new job. Since patron needs are at the heart of our instruction, any lesson plan should begin with steps to better understand the needs, interests, and prior knowledge of those patrons so that we can develop instruction that best suits those needs.

When gathering information about learners, keep the following points in mind:

- Pre-assessments help us understand our learners by gauging their current levels of knowledge and understanding on a topic. With this information, we can meet students where they are and plan a lesson that builds on that knowledge and understanding.
- A wide variety of pre-assessment tools exist, including worksheets, concept maps, polling, K-W-L sheets, and brainstorms. Many active learning techniques can double as pre-assessments.
- Research literature and community organizations can give us an overview of our broader community, and what the needs and interests of various groups might be.
- While research and demographics are useful, we must remember that these broad overviews do not apply to every individual within a group. Ideally, librarians will use research literature and community demographics to develop that broad picture of the community, and then implement pre-assessments in class to pinpoint the knowledge levels of that particular group of students.

See Activity 7.5 for a final activity on pre-assessments.

Activity 7.5: Reflecting on Pre-assessments

Jot down your answers to the following questions (you might recognize these questions from Activity 7.1. Try to answer them again here without your notes).

1. What are some ways that librarians could learn more about their audience's instructional needs, interests, or challenges? Write down as many methods as you can think of.
2. What are some existing sources of information about our audiences? You might choose a particular audience and focus on sources relevant to them.
3. How can librarians use the information they gather to plan better instruction sessions?
4. How confident do you feel about your ability to learn about the audiences you'll have in your classrooms?

Now, return to your answers to these questions from Activity 7.1.

1. Have your answers to any of these questions changed from the first time you answered them? If so, how?
2. Were there any gaps in your initial answers to the questions that were addressed in your final answers?
3. Do your answers to the second round of questions suggest any change of knowledge or understanding after reading the chapter?

Suggested Readings

Brooks, A. (2013). Maximizing one-shot impact: Using pre-test responses in the information literacy classroom. *The Southeastern Librarian*, 61(1), 41-43. https://digitalcommons.kennesaw.edu/seln/vol61/iss1/6

> This brief article provides a library-specific look at implementing a pre-test to learn about the audience for a one-shot academic library instruction session. It outlines the reasons for using a pre-test, the design of the test, and how to use the test responses to guide instruction. Although the author uses the word "test," the method used is actually low stakes and more like a survey.

Campbell, M. L., & Campbell, B. (2008). *Mindful learning: 101 proven strategies for student and teacher success*. SAGE. https://www.corwin.com/sites/default/files/upm-binaries/25914_081222_Campbell_Ch1_excerpt.pdf

> Chapter 1 of this book is devoted to prior learning. The authors give a solid, research-based overview of the need to assess prior learning, followed by several examples of assessment techniques. The text includes helpful graphics and templates.

Curtis, J.A. (2019). *Teaching adult learners: A guide for public librarians*. Libraries Unlimited.

Curtis provides a clear introduction to andragogy to contextualize instruction in public libraries. She also addresses issues of culture and generational differences in teaching adults. Covering many aspects of instruction, including developing learning objects and teaching online, this book is valuable as one of the few to focus exclusively on issues of teaching and learning in public libraries.

Hockett, J. A., & Doubet, K. J. (2013). Turning on the lights: What pre-assessments can do. *Educational Leadership*, 71(4), 50–54. http://www.ascd.org/publications/educational_leadership/dec13/vol71/num04/Turning_on_the_Lights@_What_Pre-Assessments_Can_Do.aspx

This article gives a concise overview of pre-assessments along with some clear, real-life examples of how they have been used. The authors also offer useful guidance on designing your own pre-assessment

Lutzke, A. (n.d.). Library programs: What brings 'em in the doors? *Humanities Booyah*. https://www.wisconsinhumanities.org/library-programs-what-brings-em-in-the-doors/

In this blog post, a public librarian shares her methods for learning what interests her audiences. She discusses reaching out to community groups, talking to patrons, and conducting surveys. Although the ideas are not discussed in depth, this post is a good starting point for ideas.

Project Information Literacy. (n.d.) https://www.projectinfolit.org/

This website is a wealth of research reports, videos, and other materials focused on the information behaviors of college undergraduates and recent graduates. This information can guide academic librarians as they plan instruction sessions. All materials are freely available.

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8. Establishing Learning Goals and Outcomes

Introduction

As instructors, we are probably excited to get into the classroom, but we might also feel overwhelmed by the idea of planning our session. How will we fill up the time? What material should we focus on? Will the students be engaged? When answering these questions, most instructors focus on what they will teach, often asking themselves what content they need to cover. This approach puts the emphasis on teaching, rather than learning, and often leads to sessions that are packed with too much information. In such cases, students may feel overwhelmed by the amount of material presented and fail to see connections between various parts of the lesson and among the discrete pieces of information. Learners leave these sessions without clear takeaways in the form of new knowledge, abilities, or skills.

Wiggins and McTighe (2005) argue that instructors can avoid these pitfalls through Backward Design, an approach to instructional design that encourages us to begin planning a class by thinking about what we intend students to know, understand, or be able to do by the end of the session. Only after these learning outcomes are established do we begin to think about what material we will teach, how we will teach it, and what methods we will use to determine if our lessons are successful. In each of these successive steps, we can return to the learning outcomes to ensure that the activities and assessments we select are relevant to our final learning goals. By beginning at the end, Backward Design centers on student learning. This chapter offers an overview of the Backward Design model and provides an in-depth look at the first step in the design process: developing learning outcomes or goals. The chapter discusses how to write clear learning outcomes, how to identify appropriate content, and how to make the outcomes relevant and meaningful to learners. Later chapters will address the next two steps on identifying assessments and learning activities.

Backward Design

Backward Design is a three-stage approach to instructional design that shifts the focus of the design process from content and teaching to outcomes and learning (Wiggins & McTighe, 2005). The three stages of Backward Design, shown in Figure 8.1 as well, are:

1. Identify desired results
2. Determine acceptable evidence
3. Plan learning experiences and instruction

Figure 8.1: The Stages of Backward Design
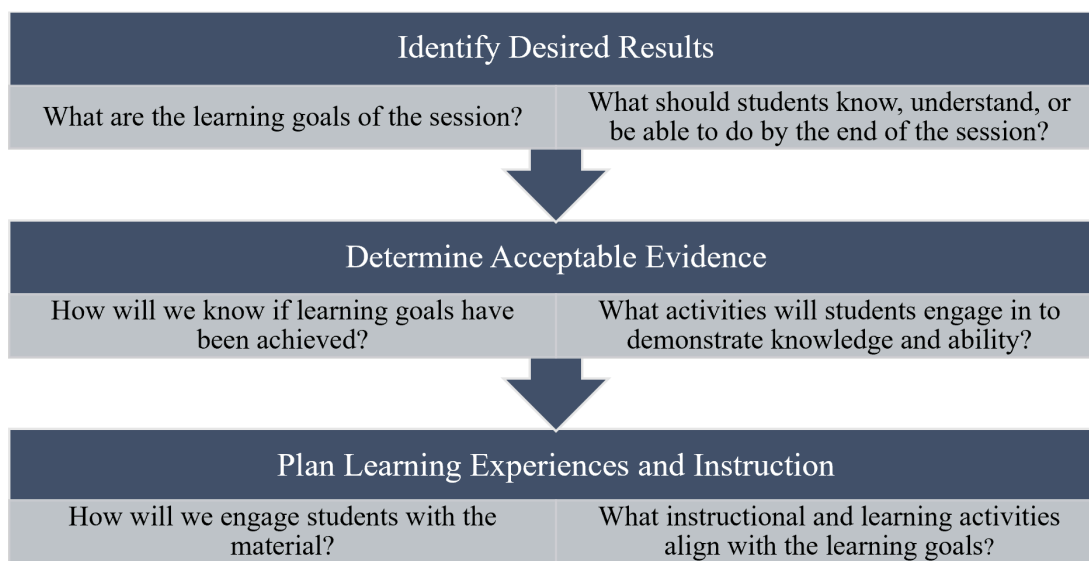
The figure illustrates in sequence the three steps of Backward Design: identify desired results, determine acceptable evidence, and plan learning experiences and instruction. (Adapted from Wiggins & McTighe, 2005)

Identify Desired Results by Writing Learning Outcomes

Before thinking about how we will teach, or even what we will teach, the Backward Design approach asks us to determine the intended results of the session by writing learning outcomes. Learning outcomes, sometimes called learning goals or learning objectives, "identify what a student should be able to demonstrate or represent or produce as a result of what and how they have learned … that is, they translate learning into actions, behaviors, and other texts from which observers can draw inferences about the breadth and depth of student learning" (Maki, 2010, p. 89). As part of course planning, we should explicitly define what students will know, understand, or be able to do at the end of the session, workshop, or course. Table 8.1 gives a few examples of learning outcomes related to library content areas.

Determine Acceptable Evidence or Assessment

How will we know if students actually achieve the goals we set for our lesson? During stage two, instructors identify assessments, or activities, experiments, performances, or tasks in which students could engage to demonstrate their learning. These assessments provide us with data to measure student achievement of the learning goals. Table 8.2 provides some samples assessment activities drawing on the learning outcomes from Table 8.1. Chapter 9 offers an in-depth examination of assessment methods and techniques.

Table 8.1: Learning Outcome Examples

Content Area	Sample Learning Outcome
Searching	1. Identify Boolean operators. 2. Implement Boolean operators appropriately to broaden and narrow searches.
Evaluating information	1. Compare and contrast popular and scholarly articles. 2. Evaluate articles for authority and relevance.
Citing sources	1. Recognize when citations are needed. 2. Format citations correctly following a standard citation style.

Table 8.2: Sample Assessment Activities

Learning Outcome	Sample Assessment Activity
Implement Boolean operators appropriately to broaden and narrow searches.	Have learners brainstorm keywords related to a topic of interest. Ask learners to conduct a search online or fill out a worksheet showing how they would combine the terms using the operators *and*, *or*, and *not*. Ask learners to explain whether they expect each search string to bring broaden or narrow their search, and why.
Compare and contrast popular and scholarly articles.Recognize when citations are needed.	Provide learners with one scholarly and one popular article on the same topic. Ask learners to identify each as scholarly or popular, and list as many reasons as possible to support their decision.
Recognize when citations are needed.	Provide learners with a brief article, followed by sample passages from a research paper that quote the article, paraphrase it, and provide an original opinion; ask learners to identify which passages need citations.

Plan Learning Experiences and Instruction

The third step is likely the one that first comes to mind for most of us when we think about teaching, and yet it is the last stage of Backward Design. According to Wiggins and McTighe (2005), we should begin to think about the specific content of the session and how that content will be delivered only after we have identified the learning outcomes and how those outcomes will be assessed. At this stage in the design process, instructors choose the specific instructional activities and teaching methods they plan to implement in the classroom or online, such as lectures, discussions, and active learning techniques. They plan the sequence of material and activities and think about the steps they will take to capture learners' interest and keep them engaged throughout the lesson. The selection and implementation of instructional strategies is covered in depth in Chapter 10.

Why Backward Design?

Wiggins and McTighe refer to the three-stage approach as "Backward" Design because they ask instructors to begin their planning with the end of the lesson by identifying the results or outcomes of the instruction session. What knowledge or understandings will learners have gained through the session? What skills will they develop? While this approach might seem counterintuitive at first, the authors explain that identifying the intended results puts the rest of the session into perspective and ultimately should lead to a better session and better learning.

We can think of the process like taking a drive. If we have a destination in mind, we can plan our trip carefully to take the shortest route, avoid the traffic, or pass our favorite lunch spot. If we have additional goals, like arriving by a certain time or seeing certain sights, we can factor those goals into our planning as well. Arriving at our intended destination is evidence that we achieved our main goal, and we can also consider how well we met other goals along the way. Did we arrive on time? Did we pass the sights we intended to see? The clearer we are about what we want to accomplish, the better our planning can be. We could certainly go for a drive without a destination in mind, and the ride might even be enjoyable, but it will be harder to know if we accomplished anything because we did not have a clear goal. A number of case studies suggest that Backward Design is an effective approach (Shah et al., 2018; Shaker & Nathan, 2018) and might lead to improved learning (Hosseini et al., 2019; Yurtseven & Altun, 2017).

Wiggins and McTighe argue that using the Backward Design approach can help us avoid what they call the "twin sins" of coverage-based and activity-based instruction (2005, p.16). Coverage-based instruction is typically the result of instructors feeling pressure to cover a certain amount of content in a restricted time period. As a result, they pack as much content as possible into their sessions, often resorting to rigid lectures, without any direct engagement of the students, and potentially focusing more on discrete facts and ideas than on bigger concepts and questions. Such an approach ignores the cognitivist and constructivist theories that tell us that learners need to interact with content and with each other in order to make meaning and transfer information to long-term memory. While instructors in these classes might feel relieved that they "talked about" all of the necessary content, the question is whether students learned what they needed to learn.

The coverage-based approach impacts librarians just as it does any other instructor. When we know that the session we are leading might be our only interaction with some patrons, we are often tempted to cram as much information as possible into that single session. Indeed, the authors of this textbook have observed 50-minute library sessions in which the librarian has started with an overview of the library website, explained how to submit an interlibrary loan request, pointed out the chat reference link, demonstrated how to search the library catalog and at least one library database, while explaining keyword versus subject searching, Boolean operators, and nesting strategies!

On the other hand, some instructors focus so much attention on activities that the purpose and meaning behind those activities get lost. As we learned in Chapter 4, active learning is considered a best practice, and it aligns with theories of learning that emphasize the need for students to engage directly with material. However, if those activities are not clearly linked to learning outcomes, students might enjoy them and might acquire some basic facts and skills, but they are unlikely to see the connection between the new

information they are learning and their existing knowledge. This could limit their ability to apply the knowledge and skills in new contexts or integrate them into their daily lives. As an example, we can spend an hour showing learners how to search library databases and giving them opportunities to practice searching on their own, but if they do not see the connection between that activity and their current search practices, they will probably go right back to *Google* when the session ends. We showed them *how* to search a database, but we did not help them to understand *when* or *why* to search a database, and in the end our instruction did not change their behavior. Identifying learning outcomes provides us and our students with context for the learning activities, helping to explain why we are engaging in those activities, and how the learning is relevant beyond the current session.

For instructors, learning goals provide us with the destination which helps us plan our road map. When learning goals are explicitly stated and shared, they help set learners' expectations. Students will enter the session understanding what they are expected to learn. If learners are attending by choice, those outcomes can help them decide if the session is relevant and at an appropriate level for them. In addition, if learners understand what they were meant to learn in a session, they can engage in self-assessment by reflecting on their learning and monitoring whether they achieved the outcomes.

Writing Outcomes

Clear, strong, well-written learning outcomes are an essential part of instructional planning for both the instructor and the learners. Well-written learning outcomes have several elements. They should:

- Clearly identify what a student will know, understand, or be able to do by the end of a session.
- Be appropriate to the audience and time frame of the lesson.
- Be measurable.

The main purpose of learning outcomes is to describe what learners will gain by engaging with the instruction. Remember that we are describing what learners should understand and be able to do after the session is over, so it can help to think about the long-term needs and personal goals of our learners, rather than just the short-term goals of an assignment or task. What will be important for the learners to take away from the lesson? What do we want them to remember and be able to do when the lesson has ended and we are not there to guide or assist them? And what specific skills and knowledge do they need to achieve those goals? For instance, if we are running a session on using email, our learners will need to be able to set up an email account, create and send a message, and open incoming mail. College students writing a research paper will need to be able to search databases effectively and identify and evaluate scholarly information. Our learning outcomes should clearly reflect these skills and knowledge areas.

As we write our learning outcomes, we need to keep our audience and time frame in mind. Our learners will come with various levels of experience and background knowledge, and we want to ensure that our lesson is neither too challenging nor too easy. Using the techniques discussed in Chapter 7, we can learn about our

audience members prior to the session and use that information to guide us in creating learning outcomes appropriate to their level of understanding and development.

We also need to consider how much time we have in our session, and how much time we need to devote to each outcome. The time required depends on the scope of the outcome; gauging the amount of time to spend on any one outcome is challenging, especially for new instructors. However, in general, we should be able to address three to four outcomes in a 60-minute session.

Part of the purpose of learning outcomes is to provide a goal against which to measure learning. To do this, the outcomes should describe the learning in terms of observable actions or performances that will allow students to demonstrate that learning. Vague, unclear, or overly broad goals are hard to measure, so clear and precise language is important. The next section explains how to craft clear and measurable outcomes.

Using Active Verbs

Learning outcomes should be written with active verbs that describe with precision what a learner will know or be able to do by the end of the session. Often, outcomes are written as bulleted phrases that follow an opening statement, such as "By the end of this session (or course, workshop, tutorial, etc.) learners will be able to …" Each phrase following that statement begins with an active verb such as "examine," "analyze," "discuss," or "create." Within this construction, "the verb generally describes the intended cognitive process, and the noun generally describes the knowledge students are expected to acquire or construct" (Anderson & Krathwohl, 2001).

One verb that instructors are discouraged from using when writing learning outcomes is "understand," along with similar verbs and phrases such as "know" and "be familiar with." As Wiggins and McTighe (2005) explain, these verbs and phrases are often used imprecisely and do not clearly convey the expected learning. For instance, suppose one of the learning outcomes in a library session is for students to "understand Boolean operators." If the learners are able to name the three Boolean operators, does that mean they understand them and have achieved the outcome? Most of us would probably argue that it does not. Just because students can list the operators does not mean that they can explain how they work or use them correctly to broaden and narrow searches. So, when we use the word "understand" with regard to learning, we often mean something deeper and more complex than a recall of facts. However, that deeper and more complex meaning is not clearly conveyed by the word "understand" and, most importantly, students might believe it to mean recall of facts.

More precise language clarifies expectations for learners and leads to better and easier assessment in stage two of the Backward Design process. Going back to the Boolean operator example, rather than saying students will "understand" Boolean operators, we might identify outcomes like students will be able to "explain" the purpose of Boolean operators and "apply" them appropriately to broaden and narrow searches. Table 8.3 provides some examples of poorly written and strongly worded outcomes, and Activity 8.1 offers a brief related exercise.

Table 8.3: Examples of Poorly Written and Strongly Worded Learning Outcomes

Poorly Worded	Strongly Worded
Be able to search databases	Apply Boolean search strategies effectively to broaden and narrow searches.
Evaluate a website	Evaluate websites for authority, reliability, and accuracy; identify trustworthy sites.
Understand how databases work	Describe how information is parsed and stored in a database.
Understand primary sources	Define primary, secondary, and tertiary sources; identify examples of each.

Activity 8.1: Writing Strongly Worded Learning Outcomes

Drawing on the examples of poorly written and strongly worded learning outcomes from Table 8.3, try to rewrite the following poorly worded outcomes to strengthen them:

- Find scholarly articles
- Learn to use *Overdrive* (https://www.overdrive.com/)
- Understand call numbers

Questions for Reflection and Discussion:

1. What made the poorly worded questions weak?
2. How did the rewrites improve them?

Bloom's Taxonomy

Frameworks and models can guide us in developing clear and specific learning outcomes. The most frequently used general framework is Bloom's Taxonomy, which presents six levels of learning: remember, understand, apply, analyze, evaluate, and create. Each level encompasses a set of skills and abilities that reflects learning at that level:

- **Remember:** Learners can recall facts and concepts.
- **Understand:** Learners can explain ideas and concepts in their own words.
- **Apply:** Learners can transfer information and skills to use in new contexts.
- **Analyze:** Learners can synthesize information, identify patterns, and draw conclusions.
- **Evaluate:** Learners can assess arguments, and choose and justify a position.
- **Create:** Learners can use what they have learned to produce new ideas and original work.

These areas of learning are hierarchical: remembering, understanding, and applying represent lower-order thinking skills, while analyzing, evaluating, and creating are considered higher order. These levels of learning are often depicted as a pyramid, as in Figure 8.2. The original taxonomy, created by Bloom et al. in 1956, identified evaluation as the highest-level skill followed by creation, but a 2001 revision by Anderson and Krathwohl flips these two, making creation the highest-order skill. Because deeper knowledge and understanding are reflected in the higher-order levels, instructors are generally encouraged to focus on those levels when writing outcomes. Nevertheless, arguments can be made that, since the levels are hierarchical, students might need to develop the lower-order skills before they can progress to the higher orders. The key is for instructors to focus the outcomes on levels that are appropriate to the audience.

Figure 8.2: Bloom's Taxonomy of Learning

- **Create**: Learners can use what they have learned to produce new ideas and original work.
- **Evaluate**: Learners can assess arguments, choose and justify a position.
- **Analyze**: Learners can synthesize information, identify patterns, draw conclusions.
- **Apply**: Learners can transfer information and skills to use in new contexts.
- **Understand**: Learners can explain ideas and concepts in their own words.
- **Remember**: Learners can recall facts and concepts.

The figure illustrates Bloom's Taxonomy of skills as a pyramid. The lowest-order skill is remembering, which forms the base of the pyramid, progressing to understanding, applying, analyzing, and evaluating. Creating is the highest-order skill, forming the peak of the pyramid.

Instructors can use this framework as a starting point to write clear and specific outcomes that indicate how students will demonstrate their learning. The hierarchy can help us think about and identify appropriate levels of learning for our audience, and also suggest the sort of action verbs we could use to describe our outcomes. We can brainstorm synonyms for each level. For instance, "remember" is associated with verbs like "recall," "list," and "state." Verbs associated with "understand" include "explain," "discuss," and "describe"; verbs for "analyze" might include "examine," "compare and contrast," and "critique," and so on. You can find

many lists of verbs arranged by the levels of Bloom's Taxonomy online. See Activity 8.2 for a brief exercise in writing learning outcomes using Bloom's Taxonomy.

Activity 8.2: Writing Learning Outcomes with Bloom's Taxonomy

Below is a list of brief scenarios describing an information setting, audience, and library instruction content area. Choose one of the scenarios and write two to three learning outcomes for an instruction session appropriate for that scenario. Use Bloom's Taxonomy from Figure 8.2 as a guide for thinking about learning levels and brainstorming action verbs.

- Older adults at a public library want to find quality health information.
- High school seniors have to find at least two scholarly articles to include in a research paper.
- History undergraduates are expected to incorporate primary sources into their project on civil rights.
- Adults want guidance on finding and applying for jobs online.
- Health-care professionals need to find clinical trials and research reports for evidence-based practice.

If possible, share your answers with a classmate and critique each other's outcomes:

1. Are the outcomes clear and precise? Is it obvious what learners are expected to know, understand, or be able to do by the end of the session?
2. Are the levels of learning appropriate for the intended audience?
3. Do the action verbs for each outcome align with the intended level of learning?

While Bloom's is by far the most commonly used taxonomy for learning, it is not the only one. University College Dublin (O'Neill & Murphy, 2010) offers a guide to additional taxonomies, including Krathwohl's Taxonomy of the Affective Domain (Krathwohl et al., 1964), which incorporates attention to learners' values and attitudes, and Fink's (2013) Taxonomy of Significant Learning, which incorporates humanistic elements of caring and learning about one's self and others. These taxonomies can be helpful in adopting a critical approach to teaching by encouraging learners to consider the impact of what they learn beyond themselves and the classroom, and Fink suggests the taxonomies can be motivating to students as well.

Affective aspects like caring might not appear to be relevant to the kinds of content we typically teach in information settings, but if we dig deeper, we can find connections. For example, when teaching citation styles, we usually focus on the fact that if students plagiarize, they are in violation of the honor code and might receive a failing grade; however, we could recast that lesson around the idea that citation is a way of acknowledging other's work and its influence on us. We could ask learners to think about how they would feel if a fellow student got a good grade or won an award by using their work without giving them credit. Examples like this would bring a human dimension to an otherwise dry and off-putting topic and might help students understand the purpose of citations and thus care more about the practice than they would otherwise. When developing outcomes, the specific taxonomy we use to guide us is less important than carefully describing the goal of the learning.

Making Outcomes Relevant and Meaningful

As noted earlier, many instructors feel pressured to cover enormous amounts of content. The issue for many of us is not identifying content related to our outcomes but narrowing that content down to fit our time frame and audience. The *Framework for Information Literacy for Higher Education* (ACRL, 2016) and the American Association of School Librarians' *Standards Framework* (AASL, 2017) serve as good examples. The ACRL *Framework* consists of six frames, each of which is accompanied by four or more knowledge indicators, and four or more dispositions. The AASL S*tandards Framework* includes six shared foundations that together include more than five dozen competencies. Needless to say, either of these frameworks would require full courses, if not entire programs, to address fully. Yet, most library instructors are limited to one-shot sessions. How can we make the most of the time we have?

Big Ideas and Enduring Understandings

Wiggins and McTighe (2005) encourage instructors to narrow down content and prioritize learning by focusing on big ideas and enduring understandings. Big ideas are the core knowledge and skills within a discipline or content area that lead to enduring understandings, or deep learning. These ideas and understandings go beyond recall of basic facts or replication of tasks and processes and form the foundation of knowledge and skill essential to success in a discipline or content area (Wiggins & McTighe, 2005). Importantly, Wiggins and McTighe acknowledge that a big idea is not necessarily "big" in the sense of size or scope, but that it must "have pedagogical power … a big idea is not just another fact or a vague abstraction but a conceptual tool for sharpening thinking, connecting discrepant pieces of knowledge, and equipping learners for transferable applications" (2005, p. 70).

At the same time, certain knowledge and skills, or basic ideas, are necessary to attain the enduring understandings implied in the big ideas. In other words, big ideas are broad, conceptual understandings, while basic ideas are the building blocks upon which big ideas rest. Wiggins and McTighe (2005, p. 67) offer a few examples of the relationship between basic and big ideas from several disciplines, as shown in Table 8.4.

Table 8.4: Examples of Basic and Big Ideas

Basic Idea	Big Idea
Ecosystem	Natural selection
Graph	"Best fit" curve of the data
Story	Meaning as projected onto a story

Table 8.5 shows examples of basic and big ideas as they might apply to information literacy.

Table 8.5: Examples of Basic and Big Ideas for Information Literacy

Basic Idea	Big Idea
Authority	Credible sources
Dewey Decimal System	Organization of information
Citing sources	Ethical and legal use of information

Once we know which big ideas will underpin our instruction, we must identify the basic knowledge and skills, necessary to attain these big ideas. For example, in order to efficiently and effectively access information, learners need to grasp how libraries, indexes, and search engines organize information. Students need to understand the structures and classification systems that are used, and they must be able to implement appropriate search strategies to retrieve relevant information from those systems. In this case, a basic understanding of library classification systems like the Dewey Decimal System, an ability to differentiate between keyword and subject headings, and the ability to use limiters to search the catalog can lead to understanding the big idea of organization of information.

Figure 8.3: Enduring Understandings
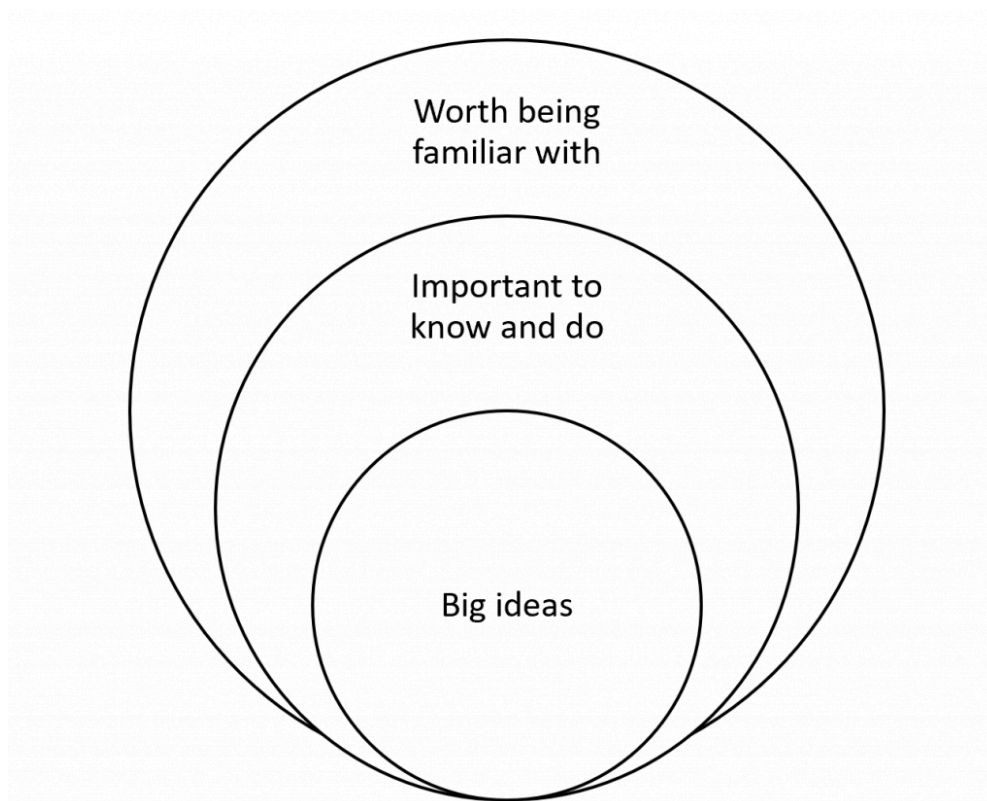
The figure shows three concentric circles. The inner circle represents big ideas, or the enduring understandings students should gain from a lesson. The second circle represents basic understandings, or the things learners must know or be able to do to achieve big ideas. The outermost circle represents things that are worth knowing but not essential. (Adapted from Wiggins & McTighe, 2005, p. 71)

Beyond the big ideas and enduring understandings that are contextualized by necessary knowledge and skills are the things that are "worth being familiar with" but are not absolutely necessary. Information that is worth knowing, but not essential, could include technical jargon or key figures from history. For example, knowledge of the Dewey Decimal System (basic idea) is a stepping stone to understanding organization of information (big idea), but students learning to navigate classification systems do not need to know the name Melvil Dewey. Similarly, patrons do not need to know the term OPAC in order to learn how to search the catalog. This prioritization of knowledge and skills can be visualized, as in Figure 8.3. See Activity 8.3 for an exercise on writing learning outcomes based on big ideas and enduring understandings.

Activity 8.3: Writing Learning Outcomes Based on Big Ideas

In this activity, you will draw on the concepts of big ideas and enduring understandings to identify essential knowledge and skills for a library instruction session, and develop relevant learning outcomes. Begin by choosing one of the following scenarios:

- Finding reliable health information for older adults at a public library
- Providing an orientation to the library for first-generation students at an academic library
- Finding information for a biographical report for elementary school students
- Finding research articles for a thesis project for college seniors
- Avoiding plagiarism and citing sources for high school students
- Beginning genealogical research for adults at a public library or archive

Instructions:

1. Brainstorm the topics, ideas, and concepts you might want to address in the session. At this point, include anything that seems relevant.
2. Prioritize the list, using the big ideas and enduring understandings model from Figure 8.3. Which items on the list might represent big ideas? Which are essential knowledge or skills necessary to understand those big ideas? Which are just "nice to know"?
3. Write two to three learning outcomes for your instruction session, drawing on the essential skills and knowledge you have identified. Assume you have one hour for your session. Keep your audience and setting in mind.

Questions for Reflection and Discussion:

1. How did you decide what was essential and what was just "nice to know"? What role did audience and setting play in making those decisions?
2. Were you able to address all of the essential skills and knowledge in two to three learning outcomes? If not, how did you decide what to include and what to leave out?
3. If you had 90 minutes for your session, what learning outcomes would you add, and why?

Essential Questions

Another way to identify big ideas and enduring understandings is to frame content around essential questions or questions that help contextualize the big ideas (Wiggins & McTighe, 2005). As with big ideas, essential questions are usually overarching and conceptual, but they do not have to be very broad in scope. The point of essential questions is to provoke students to think more deeply about the content, and to see how the content relates to the larger world. Typically, essential questions move beyond the specific content of the lesson to more universal ideas. For example, history or civics lessons on the development of the U.S. Constitution could be framed around broader questions about whether democracy is a preferable form of government (Wiggins & McTighe, 2005).

We can discover essential questions within big ideas by examining content and standards documents like the ACRL (2016) *Framework* or AASL (2017) *Standards Framework*, and asking ourselves questions such as why study this topic, what larger concepts and issues underlie this topic, and how does this topic apply to the larger world. Once we have identified the essential questions, they can help us make the broader relevance of the topic more explicit for learners. Table 8.6 provides examples of essential questions related to library instruction, and Activity 8.4 is a brief exercise for developing essential questions.

Table 8.6: Examples of Essential Questions for Library Instruction

Basic Ideas and Standards	Essential Questions
Search strategies (Boolean, truncation, quotes, etc.)	What does research look like? How do we do research? Why do we do research? How do you know when you are "done" searching?
Evaluating information (authority, currency, sources, etc.)	How do we know when information is credible? Should we care about the spread of disinformation? How do we deal with conflicting information?
Information has value (ACRL, 2016)	What kind of value does information have? How does the value of information impact access? Should access to information be a human right? How could we ensure that?

Activity 8.4: Developing Essential Questions

As noted, we can often develop essential questions by extrapolating from standards and frameworks. Following are a few basic ideas and standards. What essential questions can you derive from these examples?

- Information creation as a process (ACRL, 2016)
- Using evidence to investigate questions (AASL, 2017)
- Classification systems
- Citation styles

Conclusion

Learning outcomes provide us with a destination for our instruction sessions and allow us to construct the road map that will help students arrive at those outcomes. Once we have identified learning outcomes, the content, learning activities, and instructional strategies become more readily apparent. Building on our learning outcomes, we can determine what evidence students can produce to demonstrate their learning so we can assess progress toward the learning goals. Arguably, identifying learning outcomes is one of the, if not the, most important steps in instructional design. Yet, too often, instructors never clearly and explicitly define those outcomes, or they try to retrofit outcomes onto an existing curriculum, whether appropriate or not. Backward Design challenges us to shift our approach to instructional planning so that we begin with the learning outcomes and work backward from there to assessment and content. Several best practices can help us develop clear, precise, and meaningful learning outcomes:

- Focus on the knowledge and skills that learners should develop through the instruction.
- Use action verbs to indicate in precise language the actions, habits of mind, or skills that demonstrate achievement of those outcomes.
- Draw on Bloom's Taxonomy or other relevant taxonomies to determine the appropriate level of learning and to find verbs to convey the actions relevant to that level.
- Focus content on big ideas, enduring understandings, and essential questions to get at core knowledge and help students see how to transfer learning to new contexts.

Suggested Readings

American Association of School Librarians. (n.d.). *Standards Crosswalks*. https://standards.aasl.org/project/crosswalks/

> AASL offers a set of handouts mapping the AASL *Standards Frameworks* to various curricular standards, such as the Next Generation Science Standards. These crosswalks provide a guide for developing relevant learning outcomes for school librarians.

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revisions of Bloom's taxonomy of educational objectives*. Longman.

> This revised version of Bloom's original taxonomy provides clear guidance and useful examples for writing learning outcomes. The text includes a number of templates and worksheets to help instructors create outcomes that are clear and measurable.

ASCD. (2019). *Understanding by design*. http://www.ascd.org/research-a-topic/understanding-by-design-resources.aspx

> The publisher of Wiggins and McTighe's handbook provides a number of free resources that explain

and help instructors implement Backward Design. A PDF guide offers a solid overview of the Understanding by Design Framework, including a description of each of the three stages and information on developing essential questions. The site also features free articles and webinars on various aspects of Backward Design.

Fink, L. D. (2003). A *self-directed guide to designing courses for significant learning.* https://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf

The author of *Creating significant learning experiences* developed this open access resource that offers a concise but thorough overview of his unique approach to creating significant learning. The text offers a brief overview of Backward Design and guides instructors through the process of writing learning outcomes, with a focus on aspects of significant learning experiences. Although the resource is geared toward course development, most of the advice could be adapted for workshops and one-shot sessions.

Fink, L. D. (2013). *Creating significant learning experiences*. Jossey-Bass.

For those looking to move beyond Bloom's Taxonomy, this handbook guides instructors through the process of instructional design with a focus on Fink's unique approach to creating significant learning. In addition to a focus on more traditional learning areas such as foundational knowledge and application, Fink encourages instructors to integrate outcomes related to caring and human dimensions of learning. Fink argues that these areas of focus can help students care more about a topic, which will motivate them to continue learning.

Hosier, A. (2017). Creating learning outcomes from threshold concepts for information literacy instruction. *College & Undergraduate Libraries*, 24(1), 1–13. https://doi.org/10.1080/10691316.2017.1246396

The author provides useful guidance on translating the ACRL *Framework* into learning outcomes, using threshold concepts as a lens.

O'Neill, G., & Murphy, F. (2010). *Assessment: Guide to taxonomies of learning*. University College Dublin Teaching and Learning. http://www.ucd.ie/t4cms/ucdtla0034.pdf

A clear and concise guide to Bloom's and other taxonomies of learning. The authors provide a succinct description of each taxonomy, accompanied by a chart outlining its characteristics and sample action verbs. This is a useful guide for writing clear and meaningful learning outcomes.

Wessinger, G. (2018). Working backward to move forward: Backward design in the public library. In C.H. Rawsen (Ed.), *Instruction and pedagogy for youth in public libraries* (pp. 37-66). UNC Chapel Hill. http://publiclibraryinstruction.web.unc.edu/files/2018/10/instruction_for_youth_color_website-1.pdf

Part of an open access publication, this chapter explains how to apply Backward Design principles to public library instruction sessions. Throughout the book, readers will find useful pedagogical advice contextualized for public libraries.

Wiggins, G., & McTighe, J. (2005). *Understanding by design*. ASCD.

The official handbook of Backward Design, this text provides a comprehensive overview of Wiggins and McTighe's approach to instructional design. The book is clearly written and includes numerous figures, templates, and worksheets to assist the instructor in course planning. Some materials are available for free from the ASCD publisher website listed earlier.

Ziegenfuss, D. H., & LeMire, S. (2019). Backward design: A must-have library instructional design strategy for your pedagogical and teaching toolbox. *Reference & User Services Quarterly*, 59(2), 307–112. https://doi.org/10.5860/rusq.59.2.7275

Drawing on a variation of Backward Design from L.D. Fink (cited earlier), this article provides useful advice on developing meaningful and relevant learning outcomes. The "dream exercise" is particularly powerful for envisioning long-term goals.

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9. Assessing Learning

Introduction

In stage one of Backward Design, we identified learning goals that clearly and precisely defined what students would know, understand, and be able to do at the end of our instruction. But how will we know if we have achieved those outcomes? How will we know if our lessons "worked," or if our students are "getting it"? Assessment, or finding ways to determine whether our students are learning what we intended them to learn, is a crucial part of instruction. Assessment involves developing activities that will allow our learners to demonstrate their knowledge, skills, and abilities and then analyzing those activities for evidence of how well students have achieved the learning outcomes.

No matter how carefully we plan a session, we cannot assume that by the end students have necessarily learned what we intended them to learn. Maybe some part of our lesson was unclear. Maybe we moved through some material too quickly or did not give learners enough time to absorb information and practice skills. By illuminating where students are learning, and where they are not, assessment "provides important feedback that librarians can use to improve their teaching" (Oakleaf & Kaske, 2009, p. 276). We can use assessment data to revise our instruction in order to better meet the goals, leading to both better teaching and better learning.

In addition to measuring achievement of outcomes, "assessments can be tools for learning, and students can learn by completing an assessment" (Oakleaf, 2009, p. 540). Because assessment activities typically require students to apply or reflect on knowledge and skills, Grassian and Kaplowitz (2001, p. 287) assert that a strong assessment activity "benefits the learner and helps to reinforce the material that was taught. Research has indicated that people who become aware of themselves as learners—that is, those who are self-reflective and analytic about their own learning process—become better learners." Similarly, assessment encourages instructors to reflect on their practice and can lead to better teaching. As we review assessment data, think about what worked well and what did not, and make changes to our practice, our skill as instructors increases (Oakleaf, 2009). Ideally, instruction and assessment should be inseparable.

Assessment, Evaluation, and Grading

The words "assessment" and "evaluation" are often used interchangeably. Although they are related, the terms do not mean exactly the same thing. Assessment is a process of measuring progress toward learning outcomes with a focus on improving teaching and learning. Evaluation seeks to place a value on a service or program, often as part of determining whether to continue that service or program, or how best to allocate resources among programs and services. In their simplest terms, assessments are measures directly tied

to learning outcomes, while evaluation focuses on learners' satisfaction with or perceptions of the session. Evaluation of instruction is explored in more detail in Chapter 13.

Instructors associate assessment with grading but they are not the same, and we must be careful to differentiate the two. Outside of the K-12 school system, librarians are rarely in a position to assign grades, but that does not mean we should not care about assessment. Assessment simply means finding a way to determine if students have achieved the outcomes we set and, as such, is applicable to all instructors, regardless of whether they are assigning grades.

While assessment focuses on progress toward goals and seeks ways to improve learning, grades are used to make an overall determination of a learner's performance. Grades often address areas such as attendance, effort, or conduct, which are not reflective of whether students learned what they were supposed to learn. For instance, a "B" grade could indicate that students' work was satisfactory and they participated in class, but that grade might not reflect their ability to recall and apply knowledge and skills in new contexts.

Grades are usually assigned at the end of the learning process, giving an overall picture of student performance. Typical examples include grades on final exams or projects, or end-of-term grades. Assessment can, and should, take place at other points in the lesson, in addition to the end, thereby showing us if learners made progress over the course of the instruction. Overall, assessment is generally a better measure of learning than grades are, and more useful in making decisions for improving teaching and learning.

The Assessment Cycle

Assessment is meant to be iterative as we make incremental adjustments and keep improving our practice (Oakleaf, 2009; Oakleaf & Kaske, 2009). We can think of assessment as a cycle having five steps:

- **Set learning outcomes.** Setting learning outcomes is the first stage of Backward Design and is also the first step of the assessment cycle. These outcomes are the goals against which we will measure progress.
- **Identify and/or develop assessment tools and activities.** The second step of the assessment cycle, as with Backward Design, is to identify assessment measures. These measures are usually activities that allow learners to demonstrate and reflect on their knowledge, skills, and abilities. Often, we develop our own assessment tools, such as surveys, writing exercises, or worksheets, for assessment. Examples of assessment activities are provided later in this chapter.
- **Collect data.** The third step is to implement the assessment activities and collect the data they provide.
- **Analyze data.** Once we have assessment data, we need to analyze it by looking for evidence that learners are achieving the outcomes we set. In cases where students are not fully achieving outcomes, we should try to identify the gaps, misunderstandings, or challenges that are preventing achievement.
- **Revisit outcomes and reflect on instruction.** Assessment data should inform decision making. Once we know how well learners are meeting outcomes, we can revisit and, if necessary, revise those outcomes. If a large majority of students are consistently achieving an outcome, we might consider

tweaking that outcome to make it slightly more challenging. On the other hand, if a large group of students is not meeting the outcome, we might revise the outcome to better align with our learners' developmental stages and abilities, or review our teaching methods and instructional strategies to see if we could clarify concepts. Naturally, it is unlikely that all learners will successfully achieve all outcomes. In analyzing the data, we can look for patterns where students are consistently hitting roadblocks so we can address those. When we find outliers, or individuals and small groups that are not achieving outcomes, we can reach out to those learners directly to offer extra support. Figure 9.1 illustrates the cycle of assessment.

Figure 9.1: The Assessment Cycle
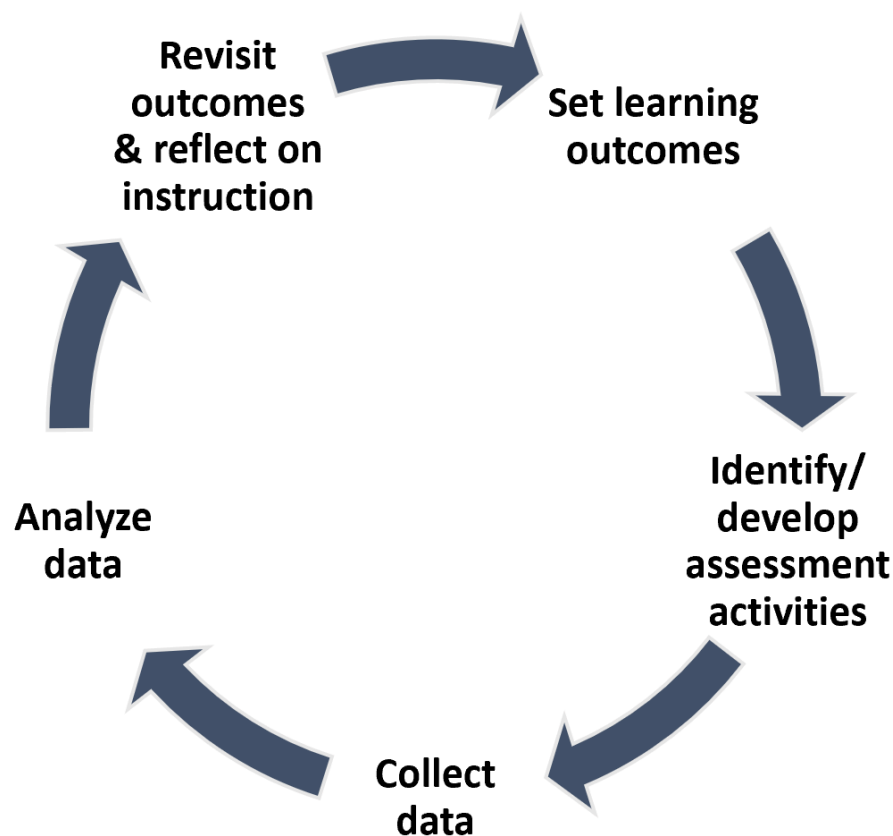
The figure shows a circle illustrating the ongoing stages of assessment: set learning outcomes, identify and develop assessment activities, collect data, analyze data, and revisit outcomes and reflect on instruction.

Types of Assessment

Assessment activities fall into several categories, including summative or formative, direct or indirect, and formal or informal. Each type of assessment serves a purpose, and each has its advantages and

disadvantages. When selecting or designing assessment activities, we should consider what types of activities are most appropriate for our audience, content, and time frame.

Summative and Formative Assessment

Summative assessment comes at the end of a session or unit and gives a final overview of whether learners fully achieved the outcomes (you can think of it as "summing up" the session). Summative assessments can take many different forms, but some common examples are a final project, test, or presentation. Summative assessments provide us with a broad overview of student learning and the overall success of the lesson. Depending on their design, they can also give students an opportunity to synthesize the knowledge and skills they learned throughout the session, and to reflect on their learning. However, because summative assessments come at the end of the session, we generally will not have time to address any gaps, questions, or misunderstandings that the assessment reveals. We can use the information to improve our lesson for next time, but that will not benefit the current group of learners.

Formative assessment takes place during the session. Some people refer to formative assessments as "taking the temperature of the class" or as a "dipstick test" because they let us quickly check how students are doing, just as a dipstick can quickly check the level of oil in your car. The purpose of formative assessment is to diagnose issues during the course of the lesson so that you can make incremental adjustments as you go. For instance, during a lesson on plagiarism and citation styles, you might ask students to identify instances of plagiarism from a list of examples or give them a worksheet to format citation styles. As the students answer the questions, you will be able to see if they are understanding the lesson, and, if not, you can review or clarify as necessary.

Formative assessment gives us time to address issues before the session is over and learners move on. It can also ensure that students have mastered a certain concept or "chunk" of a lesson before we try to build on that knowledge or skill. However, by itself, formative assessment might not show us whether students fully achieved the learning goals for the session. Ideally, we should use both formative and summative assessments in our lessons.

Direct and Indirect Assessment

Assessment activities can be either direct or indirect. Direct assessments require students to demonstrate their knowledge, skills, and abilities, while indirect assessments ask students to self-report on their perceptions of what they learned. Direct assessments can include worksheets, tasks, or "performances" such as having students walk us through a search strategy or the evaluation of a resource and explain their reasoning. Indirect assessments are generally more reflective and involve self-assessment by the students. These assessments can include questionnaires or reflective papers that ask students to describe what they have learned, how well they feel they have achieved learning outcomes, or how confident they feel in their knowledge and skills. The important difference is that while students tell us that they have learned

something through indirect assessment, they are not showing us what they have learned, and we cannot be certain that students are accurate in their reflections or self-perceptions.

Research suggests that people are not necessarily very good at assessing their own abilities (Brown et al., 2015; Ross, 2006) and that the people with less well-developed skills and knowledge are even more likely to overestimate their abilities (Campbell, 2018). Even though students' assessments of their own abilities might not be accurate, indirect assessments are still useful tools because they give learners an opportunity to reflect on the lesson which might help them make new connections and recognize areas for improvement. Also, if instructors provide students with feedback on their self-assessments, they can help learners identify areas where their self-perception varies from what the instructor has observed, which can "lead to productive teacher-student conversations about student learning needs" (Ross, 2006, p. 9). After reviewing the literature on student self-assessments, Ross concluded that "there is persuasive evidence, across several grades and subjects, that self-assessment contributes to student learning" (2006, p. 9).

Formal and Informal Assessment

Formal assessments are usually planned in advance and intended to reach all students, and they typically result in hard data. Formal assessments could include worksheets, reflective papers or journals, projects, and quizzes. Informal assessments are usually just quick check-ins meant to give the instructor a sense that the class is on track. For instance, an instructor can take a quick poll of the classroom, pause and check for questions during a lecture, or observe learners engaged in hands-on practice. Academic librarians who have been invited into a classroom could also ask for informal feedback from the faculty member whose class they are visiting. Formal assessments will usually give us more information, but they are also generally more time-consuming. Informal assessments are less reliable, but they are usually quick and can be a good supplement to formal assessment.

Authentic Assessment

Assessments that provide students with opportunities to demonstrate their learning are sometimes called "authentic" assessments and are contrasted with "traditional" assessments. Traditional assessment refers to the closed-ended or forced-choice activities, such as tests, that require students only to select the correct answer form a fixed list of choices (Mueller, 2018). Fixed-choice tests can be reliable data-collection instruments, are quick and easy for instructors to score, and remain popular assessment tools. However, traditional assessments have been criticized because they focus solely on students' recall of basic facts rather than higher-order thinking skills. Further, the highly controlled, timed environment in which tests are typically given is largely removed from the real-world environments in which learners would employ the knowledge and skills being tested (Oakleaf, 2008). A student could score well on a test but not be able to transfer that knowledge to other situations. To avoid these limitations, we should focus our efforts on authentic assessments whenever possible. Keep in mind that these examples are not mutually exclusive. We could create an assessment that combines both traditional, recall-based questions, along with more

authentic activities. For instance, a worksheet could ask learners to list the Boolean operators (traditional), followed by a question asking them to use those operators to create a logical search string or telling us when and how they would use the operators in their own searching (authentic).

Developing Assessment Activities

The first step to developing or selecting assessment activities is to reflect on our learning outcomes. Some assessment tools and activities are better suited than others to certain learning outcomes, and each one will give us somewhat different information. For example, if one of our outcomes is for students to use Boolean operators to broaden and narrow searches, an activity that requires them to create search strings with Boolean operators will tell us more than a quiz that asks them to name the operators or identify which search strings will bring back more or fewer results. A short reflective paper asking learners when and why they would use Boolean operators can help us determine if they are ready to transfer the skills they have learned to other contexts. Our task is to decide exactly what we want to learn from our students and then select or create an activity that will allow us to gather that information.

The range of possible assessment activities is wide. This section provides a brief overview of a variety of assessment activities, with an emphasis on those most likely to be used for library instruction. Some of the activities listed here are duplicated in Chapter 4, but they are repeated here because many active learning techniques work equally well as assessments. Many more examples of assessment activities can be found online and in the Suggested Readings at the end of this chapter.

Worksheets

We can ask learners to complete worksheets with questions or tasks that require them to use the skills they have learned in class. We can ask almost any type of question on a worksheet, including closed-ended questions like multiple choice and true/false, fact-based questions with a single right answer, or short-answer questions that require learners to explain a concept or justify their reasoning. The specific questions should relate to the learning outcomes and session content and focus on what we want to know about our students' learning.

Completed worksheets will show us how well individual students are performing, and, whenever possible, we should offer students feedback on what they did well and correct errors and misunderstandings. In addition to assessing individual learners, we can look at a set of worksheets as a whole for patterns. If several students perform poorly on a certain section or get the same question wrong, that can be a signal that we need to review that material and perhaps revise our instructional approach. Example 9.1 and Example 9.2 show two worksheets, one from an academic session for undergraduates beginning a research paper and one from a public library session on online security.

Example 9.1: Academic Library Instruction Session Worksheet

This worksheet is an example of an assessment activity for undergraduates beginning a research paper. According to the lesson plan, by the end of the session the students will be able to:

- Identify appropriate keywords relevant to their topic.
- Use Boolean operators appropriately to broaden and narrow searches.
- Find scholarly articles relevant to their topic.

Research Paper Worksheet

1. Describe your topic in one sentence, or list your research question here:
2. Select the main keywords from your topic, and brainstorm synonyms for each keyword.
3. Using your keywords and synonyms, create two to three search strings you can use to search for articles on your topic. List your search strings here:
4. Using your search strings in the *Academic Search Complete* (https://www.ebsco.com/products/research-databases/academic-search-complete) database, find two or three scholarly articles that seem appropriate to use in your paper, and list their citations here:
5. For each article, list two or three criteria that show it is a scholarly article.

Example 9.2: Public Library Instruction Session Worksheet

This worksheet example is from a public library workshop on creating an email account. According to the learning outcomes, by the end of this workshop learners should be able to:

- Create a strong password for their accounts.
- Discuss how their data is used online.
- Identify safer/secure browsing options.

Online Security Worksheet

1. Name two things you can do to create a strong password.
2. Which of the following is the strongest password, and why?

    ◦ Password1234
    ◦ Lunch@noon
    ◦ 10282000 (the date of your birthday or anniversary)
    ◦ KXjlm4pz.900my$?

3. Many online services such as browsers and social media track your activities and gather your data. Name two things that these companies might do with your data.
4. Which of the following internet browsers does NOT track your search activities?

   ◦ Chrome
   ◦ Safari
   ◦ Edge
   ◦ TOR

5. Some web addresses begin with "https://" instead of "http://." What does the "s" mean?

   ◦ It is a commercial website.
   ◦ The site is in high definition.
   ◦ It has faster download times.
   ◦ The information on the website is encrypted.

Tasks and Demonstrations

Worksheets are useful when learning can be explained clearly through written answers, but sometimes we can gain a better understanding of learning by having our students carry out a task or demonstrate a process. For instance, imagine a public library instruction session on using email in which the outcomes are for learners to be able to send and reply to messages and include attachments with their messages. Asking students to write out the steps to attach an image to an email would be burdensome. Instead, the instructor could have the learners send her a test email with an attachment so that she could see if they are successful or have them demonstrate the steps for her.

Pre- and Post-Tests

Chapter 7 describes pre-assessments, including pre-tests that can probe what learners already know about a topic before the start of a lesson. We can pair pre-tests with a post-test that asks identical or similar questions at the end of the lesson to gauge student learning. Instructors can review question by question to see if learners generally were able to answer questions correctly on the post-test that they did not answer correctly on the pre-test, and can look across sets of tests to see if students scored higher on the post-test. A number of librarians have used pre- and post-tests with varying success to show gains in learning from library instruction (Bryan & Karshmer, 2013; Sobel & Wolf, 2011; Walker & Pierce, 2014). Using the construction of a "test" can be problematic, as learners may not expect to take a test as part of library instruction and may find the experience stressful and off-putting. However, while this assessment approach uses the term "test," the actual activity does not have to take the form of a graded test but could be

presented as a low-stakes worksheet or questionnaire. Keep in mind that tests that focus on recall of facts are not considered authentic forms of assessment.

Graphic Representations

Figure 9.2: Assessment with Graphic Representations

Popular	Scholarly
Provocative headlines or titles	Lengthy, descriptive titles
Overview/broad range of topics	In-depth/research articles
Staff writers	Credentialed authors
Lots of pictures or graphics	Charts, graphs, statistics
No bibliography or sources	Bibliographies, references
Examples: Newsweek, Time	Examples: JAMA, MLA

Popular	Scholarly
Provocative headlines or titles	
Staff writers	Credentialed authors
No bibliography or sources	
Examples:	Examples:

Two infographics outline how to differentiate between scholarly and popular sources. One is complete; the other is missing some information and could be given to learners as an assessment.

Infographics and other graphic representations of information are becoming increasingly popular in teaching, and they can be used as assessment tools as well. Instructors can provide learners with a partially completed graphic representation of a concept or process and ask them to fill in the missing information. A variety of graphic representations could work, including infographics, flowcharts, outlines, and grids. For example, you could use an infographic to outline the steps learners would use to fact-check a news story and assess its reliability. After reviewing each step and offering examples, you could give students a hard copy of the graphic with some parts missing and ask them to fill in the blanks. When using graphic organizers as assessments, you could provide learners with a list of the missing information so they need only put items in the appropriate place, or you could ask them to recall information from memory. See Figure 9.2 for an example and Activity 9.1 for a related exercise.

Activity 9.1: Graphic Assessment

Your turn! In Chapter 8 you were introduced to Bloom's Taxonomy, including a figure depicting the levels of learning. Figure 9.3 shows the same figure with some of the information missing. See if you can complete it without looking back; then check your answers.

Figure 9.3: Graphic Assessment for Bloom's Taxonomy
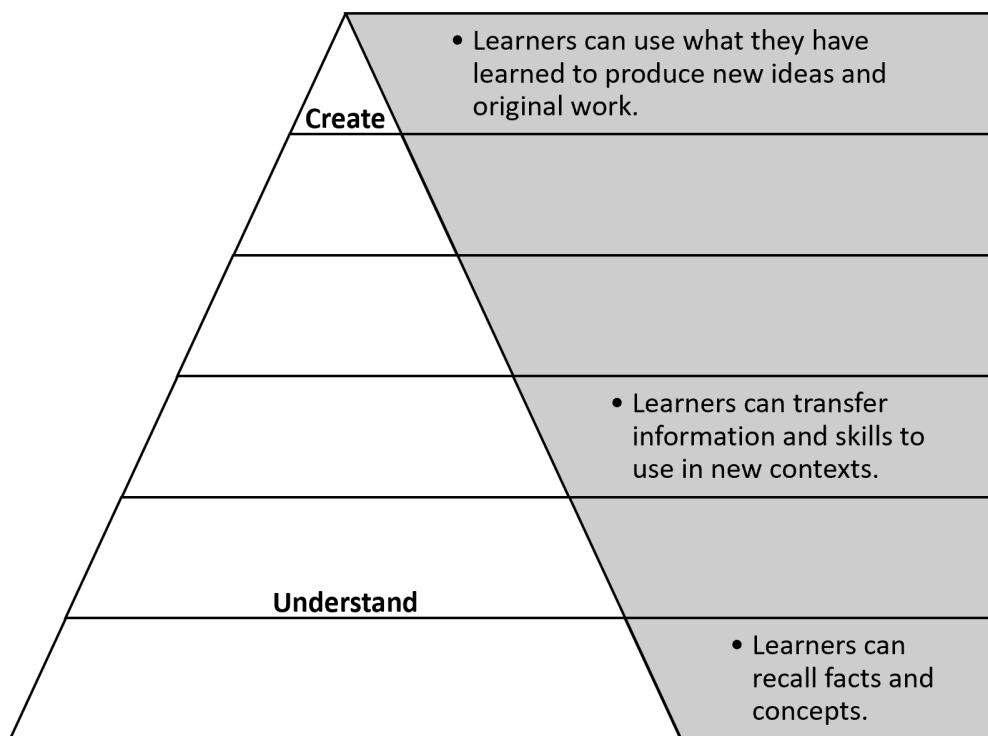
A graphic illustration shows a pyramid depicting the levels of learning from Bloom's Taxonomy with some information missing.

Pro/Con Charts

Many library instruction sessions try to get learners to rethink their search behaviors. We often discuss the relative advantages and disadvantages of keyword versus subject searching, or of searching the general web as opposed to subscription databases for scholarly information. After such a session, we could assess students' learning by asking them to fill out a chart listing the pros and cons of each of the methods discussed. For example, the ability to use natural language is an advantage of keyword searching, but the greater number of irrelevant results is a disadvantage. Subject searching is more precise, but it requires knowledge of a specialized vocabulary. To push students a little further, after reviewing the pros and cons we might ask learners to choose which method they would use and why. This follow-up question will show that they are not just recalling the advantages and disadvantages but that they understand how to apply the underlying concepts to make a good choice.

Annotated Bibliography

If our session focuses on skills related to evaluating and selecting trustworthy information, including identifying scholarly versus popular articles, assessing "fake news" and other general information, or finding appropriate articles for a research paper, we can have learners create an annotated bibliography to demonstrate their ability to evaluate sources and select quality information. We could give students time to search for their own materials or provide them with a list of resources to review, and ask them to select a certain number of sources that they believe are trustworthy and appropriate for their purpose. For each selection, students would write two to three sentences explaining why they selected that source, including how they evaluated it.

Short Writing Exercises

Brief writing exercises, of which many examples exist, give students an opportunity to reflect on and demonstrate learning. *Exit tickets* ask students to provide a brief answer to a question, summarize key points, or solve a problem related to the session outcomes and turn it in on their way out of class. *Directed paraphrasing* asks learners to explain a concept in their own words. Instructors will sometimes ask learners to "explain the idea to me as if I were five years old," encouraging the learner to use clear and simple language. The learners' ability to translate a new idea into their own words demonstrates a different level of understanding than simply reiterating a definition, and also suggests an ability to transfer the learning to new contexts. A similar exercise asks students to distill a lesson, idea, or concept into a *one-sentence summary*, showing not only their recall of the lesson but their ability to extract the most important ideas. An *application card* asks learners to write down one (or two or three) ways that they can use their new knowledge or skills. This exercise helps with transfer, as it encourages students to consider when and where they would use their knowledge and skills beyond the specific context in which it was learned.

Writing exercises can also be self-reflective. Instructors can ask students to describe one or two new things they learned, consider what questions they still have, or describe how their learning might change their behavior or strategies going forward. While these examples are all described as writing exercises, all of them can be done orally as well. Further, learners could discuss their answers in pairs or groups.

Selecting Assessment Activities

Activity 9.2: Creating Assessment Activities

Listed below are sample learning outcomes related to library instruction across various settings. Choose one of these examples and create two activities that you could use to assess student learning for the outcome in your scenario. Try to create one formative and one summative assessment. You can draw from examples in this chapter or search the web for other ideas. Keywords like "classroom assessment," "learning assessment," and "assessment techniques" will bring back many results.

- **Scenario 1:** By the end of a library instruction session for first-year college students, learners should be able to identify and select appropriate articles for a research paper.
- **Scenario 2:** By the end of a public library session for older adults, learners should be able to search for and download selected titles on *Overdrive*.
- **Scenario 3:** By the end of a high school library instruction session, students should be able to identify passages that need citations and cite sources using MLA format.
- **Scenario 4:** By the end of a public library session on "fake news," learners should be able to discuss criteria for identifying and evaluating mis- and disinformation.
- **Scenario 5:** By the end of a session at an academic archive, history students should be able to identify primary and secondary sources and use a finding aid to locate documents on their topic.
- **Scenario 6:** By the end of a session at a law library, staff should be able to customize their *Westlaw* (https://legal.thomsonreuters.com/en/products/westlaw) interface to highlight preferred resources and use the KeyCite feature to check current status of cases and statutes.

What factors should we consider when deciding which assessment activities to use? We want to choose activities that will be engaging and motivating for the learners. However, we should not choose an activity merely because it sounds fun. The first consideration should be to align the assessment with the session's learning outcomes. Some assessment tools are better suited for knowledge and some for skills and processes. For instance, a writing exercise is appropriate if we want learners to explain how they would evaluate sources for a paper, but an activity or worksheet might be more appropriate if we want students to demonstrate how they would create search strings to find those sources. We also need to consider what aspects of learning we are most interested in assessing. Do we want to see if students remember information or whether they can apply it? Are we more interested in whether learners can perform a task or whether

they know when and why to perform it? For example, in a plagiarism lesson, we could ask students to create a citation for an article or list three situations when a citation is needed. Both of these activities could tell us something about what students learned about citation, but only the former would be an assessment of the outcome "students will be able to create citations using APA style." These goals are not mutually exclusive. We can create assessments that combine approaches, such as a worksheet that asks learners to format a citation and explain when to use citations. We just have to remember that different assessment activities produce different data and answer different questions.

While gathering the best and most appropriate data to measure learning is the most important factor in choosing an assessment activity, we should also consider our audience and logistics such as materials and time frame. For instance, complicated writing exercises might not be appropriate for younger students, English-language learners, or learners with certain disabilities. A short quiz might be fine for students in a school setting but off-putting to adults attending a workshop at a public library. If the activity is computer-based, such as submitting a web form, we need to be sure that all learners have access to an appropriate device for completing the task. Finally, some activities take more time than others, so we need to consider our time constraints. We probably do not want to plan an assessment activity that will take 15 or 20 minutes out of a 45-minute, one-shot session. See Activity 9.2 for an exercise on creating assessment activities.

Using Rubrics for Assessment

Assessing learning outcomes can seem ambiguous at times. Think about some of the assessment activities just discussed. The graphic organizer and some of the worksheet questions have clear right answers, so instructors would not find it hard to analyze those activities and decide if learners supplied the correct responses. In fact, provided with an answer key, a person unfamiliar with the lesson could complete the analysis. But other activities are not as clear. Entries in an annotated bibliography are less likely to be completely right or wrong, although some answers might be better than others. But what criteria, exactly, make a better or worse answer? Is a current review of a scientific breakthrough in a popular magazine better than a decades-old journal article on the same topic? Ambiguities like these can be frustrating for both students and instructors. Worse, they can lead to discrepancies in how student learning is assessed, since one instructor might judge the same student work differently from another instructor. The use of rubrics for assessment or "scoring" of student work can help minimize ambiguities and frustrations.

What Are Rubrics?

Rubrics are tools that describe different levels of performance for an activity, task, or assignment, and these descriptions can guide our assessment of student performance. People might use different labels to describe points along the continuum, but commonly, rubrics describe novice, intermediate, and advanced levels of performance. We can use swimming as an example: a novice swimmer might just be able to stay afloat doing the doggie paddle, while an intermediate swimmer can do the crawl, and an expert swimmer

can do the breaststroke. To use a library instruction-related example, a novice searcher might use simple keyword searches, while an intermediate searcher can use Boolean operators and quotation marks correctly, and an expert searcher can nest terms and use truncation as well. Example 9.3 gives a simple example of a rubric on plagiarism. As the sample rubric illustrates, rubrics detail successful performances by identifying the various criteria used to judge the knowledge, understanding, and abilities we are examining, and then describing levels of performance for each criterion. Rubrics tell us (Wiggins & McTighe, 2005, p. 173):

- By what criteria we should judge performance.
- Where we should look and what we should look for to judge performance success.
- How the different levels of quality, proficiency, or understanding can be described and distinguished from one another.

Example 9.3: Plagiarism Rubric

Criterion	Novice	Intermediate	Advanced
Topical knowledge	Can identify a definition of plagiarism	Can explain plagiarism in own words	Can explain plagiarism in own words and provide examples
Application	Cannot identify instances of plagiarism from examples	Identifies some instances of plagiarism from examples	Consistently identifies instances of plagiarism from examples
	Cannot identify passages that require citations	Identifies some passages that require citations	Consistently identifies passages that require citations
Execution	Does not format citations properly	Formats most citations properly	Consistently formats citations properly

Why Use Rubrics?

Rubrics offer many advantages for both instructors and learners (Oakleaf, 2008). Perhaps most importantly, rubrics reduce ambiguity by defining what successful performance looks like. Too often instructors do not take the time to describe in detail what constitutes an expert performance or an "A" paper. When asked, these instructors often demur and say that "they know it when they see it." While seasoned instructors probably do know intuitively what makes a good performance or paper, if they do not describe it, others, including students, cannot be sure they understand what is necessary to be successful. By defining measures of quality and proficiency, rubrics act as guides for both students and instructors.

Rubrics give learners "the rules for how their products and performances will be judged," and, as such, empower students to meet the standards (Oakleaf, 2008, p. 245). These levels of performance might seem especially important when students are receiving grades, but even in one-shot sessions and workshops or for ungraded assignments, rubrics can facilitate learning and self-assessment. Once students understand the criteria and standards in rubrics, they can use them to reflect on their learning and engage in an honest assessment of their own work (Oakleaf, 2008).

For instructors, rubrics encourage reflection and promote standardization. Defining the criteria and

describing the levels of performance force instructors to be clear with themselves, and, ultimately, their students and colleagues, about what aspects of the learning really matter. Using the rubric as a guide, instructors can be more consistent in how they assess each piece of student work. In fact, if rubrics are clear and detailed, they "come close to assuring that inadequate, satisfactory, and excellent mean the same thing on the same skill set from one group of students to a similar group regardless of who makes the evaluation" (Callison, 2000, p. 35). In this way, rubrics help standardize assessment and make the process less ambiguous and arbitrary.

Developing Rubrics

Rubrics are often laid out as tables or grids. The columns of the table identify the various levels of proficiency, while the rows identify the criteria by which the performance is assessed. The first step to developing a rubric is to identify the criteria by which we will evaluate performance. What knowledge or understandings should learners have? What skills should they be able to demonstrate? What should we look for in their performances, activities, or assignments that would illustrate the required knowledge, understanding, or skills? Criteria for assessment could relate to Bloom's Taxonomy, with sections for basic knowledge, application of knowledge, and analysis. We might also focus on steps in a process or task, or evidence of critical thinking. Depending on the assignment and related learning outcomes, written skills or public speaking and presentation skills might be important. One area to generally avoid in rubrics is effort, as it is usually difficult to infer how much effort went into an activity, and effort is rarely related to the learning outcomes.

We can see examples of criteria in the first column of the rubric in Example 9.3. In order to avoid plagiarism, learners must know what plagiarism is and know when and how to cite their sources. Thus, the criteria for evaluating student understanding of plagiarism are topical knowledge (defining plagiarism), application (knowing when to cite sources), and execution (accurately formatting citations). These criteria head the rows of the table.

Once we have the criteria, we can describe the levels of performance. In theory, we can define as many levels of performance as we want, but most instructors limit themselves to three or four levels. Describing the levels of performance in clear and precise terms is both important and often rather challenging. We must provide enough detail that learners can understand the expectations for performance, while leaving some flexibility to accommodate the range of work we are likely to see. One pitfall that novice instructors often make is quantifying criteria. For instance, we might be tempted to separate novice, intermediate, and advanced research papers by the number of scholarly references they include. However, a rubric that indicates a paper with, say, three scholarly references is a novice while one with five is advanced can be overly restrictive and puts the emphasis on quantity over quality. After all, are we more concerned with how many articles students can find, or whether they are selecting articles that are appropriate to their assignment and topic? Since we are probably more concerned with the latter, we should relay that in our delineation of the criteria. Rather than focusing on numbers of articles, we might assess the learners by the types of articles they are citing. Have they found articles that are relevant, timely, and appropriately scholarly?

Vague or ambiguous descriptions are another common pitfall in rubrics. Instructors often have a hard time articulating what distinguishes the different levels of performance and, as a result, default to words like "many," "some," "often," or "sometimes." For example, an instructor might say that a novice searcher rarely uses Boolean operators, while an intermediate searcher sometimes uses them, and an advanced searcher often does. But what is the difference between rarely, sometimes, and often? If a searcher uses Boolean operators 25 percent of the time, would that be considered novice or intermediate? Avoiding such language is challenging, but we should strive to make our descriptions as precise as possible. See Activity 9.3 for an exercise on developing rubrics.

Activity 9.3: Creating Rubrics

In Activity 9.2 you were given several scenarios of library-related learning outcomes, and you developed two assessment activities to measure one of those outcomes. Review the outcome and assessment activities from that section, and then design a rubric that you could use to assess student performance on one of your activities.

As you create your rubric, consider the following:

1. What would a "quality" or "successful" performance of that activity look like?
2. What criteria could you use to judge or assess that performance? Try to identify two or three criteria relevant to your outcome and activity.
3. What aspects of the performance or activity should you focus on as you assess?
4. How would you distinguish different levels of quality or proficiency for this outcome? Try to describe three levels of performance for each criterion.

Providing Feedback

Remember that assessment is not just for the instructor. Students can also benefit from assessments by learning what they are doing well and where there are gaps in their knowledge, skills, or abilities. While students might reflect on their learning and recognize areas for improvement simply by engaging in the assessment, instructor feedback is important for ensuring that students continue to learn and make progress. Whenever feasible, we should provide learners with feedback on their performance on any assessment activity. Feedback should be both positive and constructive. We should tell students what they did well, in addition to identifying areas for improvement. When we do identify gaps, errors, or misconceptions, we should focus on how to improve. For instance, if students choose a problematic resource for a research paper, we should help them understand why that resource is not appropriate, and help them figure out how to make a better choice by discussing appropriate outlets to search and by reviewing the criteria for evaluation.

Rubrics can also be used for feedback. Many instructors will return a copy of the rubric with an assignment or feedback sheet and highlight the learners' performance along the continuum. Because rubrics already outline performance expectations, instructors can sometimes point to the language on the rubric rather than rewriting comments, thus streamlining the feedback process. Some instructors will add blank columns to the rubric where they can write additional comments to elaborate on the assessment.

This personalized and detailed feedback can be difficult to implement in a one-shot session or workshop where we typically do not have sustained contact with the learners after the class ends. Some librarians develop worksheets as web forms or have learners email their activities so that they can provide feedback after class. In school and academic libraries, we can ask students to write their names on worksheets and writing exercises, and then return the worksheets with feedback via the regular classroom teacher. If individual feedback is not possible, we can offer broad, generalized feedback to the group. For instance, we can circulate as students engage in in-class activities and then address common mistakes or issues that we observed, or we can distribute an answer key of correct answers for learners to review after class.

Conclusion

Assessment is a crucial step in instructional design that can lead to improved teaching and increased learning. Developing a well-designed assessment tool that provides us with accurate evidence of student learning takes time, but the benefits to both students and instructor make that time a worthwhile investment.

The key points of assessment include:

1. Assessment activities gather evidence of progress toward learning outcomes. Using the data from assessment activities, we can determine where gaps in learning exist and tweak our lessons to address these gaps, leading to improved instruction.
2. Assessment also leads to improved learning in several ways. First, as we adjust our instruction based on assessment data, we can ensure students continue to learn and make progress. Also, students can learn from the assessment activities themselves.
3. A variety of assessment activities exist. In selecting assessments, we should look for activities that align closely with the stated learning outcomes of the lesson. We should also be sure that the activities are appropriate for our audience and time frame.
4. Feedback helps learners recognize what they are doing well and where they can improve. We should strive to give feedback that is both positive and constructive, and that offers guidance not just on where to improve but how to improve.
5. Rubrics are a useful assessment tool that can reduce ambiguity, increase consistency of assessment, and streamline feedback.

Suggested Readings

ACRL *Framework for Information Literacy Sandbox*. (n.d.). https://sandbox.acrl.org/resources

> The Association of College & Research Libraries has compiled this open-access collection of instructional materials focused on *The Framework for Information Literacy*. Users can search for assessment materials and rubrics on a variety of information-literacy topics. Many of the classroom activities could also function as assessment tools. All materials are licensed through Creative Commons and can be reused and adapted with limited restrictions. All of the materials are designed for a college audience, but many could be adapted for other audiences.

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques*. Jossey-Bass.

> This classic handbook offers myriad examples of classroom assessment techniques, with concrete advice on how to implement them. The book begins with an introduction to classroom assessment and offers clear guidance on how to integrate assessment into your practice. Although the text was written for higher education instructors, many of the techniques could be adapted to a younger or more general adult audience. A selection of 50 activities from this book is available freely online from the University of San Diego (https://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf)

Arcuria, P., & Chaaban, M. (2019, February 8). Best practices for designing effective rubrics. *Teach Online*. https://teachonline.asu.edu/2019/02/best-practices-for-designing-effective-rubrics/

> This brief article offers a clear and concise definition of rubrics, plus a useful guide to creating and using your own rubrics.

Bowles-Terry, M., & Kvenild, C. (2015). *Classroom assessment techniques for librarians*. ACRL.

> This book is a wealth of examples and ideas for a range of assessment activities, tailored specifically for the library classroom. An appendix addresses the use of rubrics and how to create them.

Dobbs, A. W. (2017). *The library assessment cookbook*. Association of College & Research Libraries.

> Although not exclusively focused on instruction, this text compiles a wealth of assessment activities and examples, many of which are targeted to or could be adapted for instruction. Each assessment is presented as a recipe of one to three pages and includes reasons for using the assessment, links to professional standards and frameworks, an overview of how to implement the activity, and suggestions for adapting the activity to different settings.

McCain, L. F., & Dineed, R. (2018). *Toward a critical-inclusive assessment practice for library instruction*. Litwin Press.

> This slim volume provides advice and strategy for assessing library teaching and learning through the lens of critical pedagogy, critical information literacy, and inclusive teaching. The authors provide an overview of critical practice and critical-inclusive assessment, along with examples of assessment in

action in real classrooms. Although geared toward librarians teaching credit-bearing courses, many of the strategies could be adapted for other venues.

University of Iowa Libraries. (2018). *Library instruction assessment toolkit.* https://guides.lib.uiowa.edu/assessment

This *LibGuide* offers a selection of sample assessment and evaluation tools that can be downloaded and adapted, including minute papers, worksheets, and guidelines for peer review. Additional guides offer advice on providing written feedback and constructive criticism as part of assessment.

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Walker, K. W., & Pierce, M. (2014). Student engagement in one-shot library instruction. *The Journal of Academic Librarianship, 40*(3/4), 281-290. https://doi.org/10.1016/j.acalib.2014.04.004

Wiggins, G., & McTighe, J. (2005). *Understanding by design.* ASCD.

10. Selecting Instructional Strategies and Creating Lesson Plans

Introduction

In stage three of Backward Design we plan instructional strategies, or the specific activities we will use to present content and engage our students, ranging from more traditional methods, such as lecture, to the active learning techniques discussed in Chapter 4. This part of instructional planning can be exciting as we start to think about how we will interact with learners. But, for the same reason, it can also be a little scary. How do we choose among all the possible activities and strategies? Which activities will allow us to achieve the learning goals and keep our students interested?

This chapter addresses these questions by delving into the various instructional strategies available to us. The chapter begins with an overview of some general best practices that apply across teaching strategies, followed by a review of a variety of specific strategies and suggestions on how to implement them. The final section discusses how to pull the three stages of Backward Design together into a lesson plan.

Instructional Strategies: Best Practices

Regardless of which instructional strategies we employ, a few general best practices should guide us. These practices facilitate student learning and increase engagement and motivation, and they apply equally well to both online and face-to-face modalities.

Active Learning

The premise of active learning is that students learn better and are more engaged when they interact directly with material than when they sit passively and only watch or listen. As instructors, we can find myriad ways to integrate active learning into our sessions. Active learning was covered in depth in Chapter 4, but it is such a popular topic and so highly recommended that it bears repeating here as a best practice.

Scaffolding

Scaffolding acknowledges the role that prior experience and prerequisite knowledge play in learning and can be understood through the lens of Vygotsky's Zone of Proximal Development (ZPD), discussed in Chapter 3. According to Vygotsky's theory, there are three zones of development. The first zone represents tasks and activities that learners can accomplish on their own without help. The third zone represents tasks and activities which the learner cannot yet accomplish, even with guidance. The second area, the ZPD, represents the area of optimal learning. This area represents the tasks and activities that learners can accomplish with some guidance from instructors or more experienced peers. Students should find the work in this zone appropriately challenging; it is not so easy as to be boring nor so hard as to be overwhelming. In the ZPD, students are drawing on prior learning and adding new information in order to move to a different level of knowledge.

Scaffolding learning means to consciously present information in a sequence so that students are introduced to, and have time to become competent with, foundational knowledge or simpler skills before progressing to more complex information and skills. Beyond just sequencing material appropriately, scaffolding involves providing support to learners as they progress through the various stages. As the students gain in competence, the supports are gradually removed, and the students assume more responsibility for their learning (Larkin, 2002). Ellis and Larkin (1998) suggest a framework of four steps for scaffolded learning:

1. **The teacher demonstrates a skill.** For instance, an instructor might demonstrate how to conduct a search in the library catalog or download an ebook on an app.
2. **The class practices the skill as a large group.** In a session on searching, the instructor might lead the search and ask students for suggestions of search terms or limiters to narrow results.
3. **Students continue their practice.** Working in pairs or small groups, students practice the skills, offering each other help and feedback.
4. **Individual students practice the skill on their own.** At this point, students should be ready to search for and find materials for their projects.

Instructors can also offer scaffolding by breaking larger projects or assignments into smaller pieces and offering feedback at each step. For instance, rather than just assigning a research paper due at the end of the semester, the instructor could have students identify their paper topic early in the semester and help them refine their focus by providing feedback if the topic is too broad or narrow. Next, the teacher might ask students to submit an annotated bibliography of the sources they intend to use, again providing feedback if the sources are not appropriate or need to be supplemented. Finally, the teacher might ask for an outline of the paper to see how students are structuring their argument. In this way, learners should have more confidence and skill by the time they write the full paper because they have had support and feedback along the way. See Activity 10.1 for a brief example and activity related to ZPD and scaffolding.

Activity 10.1: ZPD and Scaffolding

One of the book authors, Laura, recently took a 10-week painting class. When reviewing Laura's canvas one night, the art teacher told her she needed to do some shading. The teacher had discussed color and composition, but she had never talked about shading, and while Laura had a sense of what shading was, she did not know how to do it. After a few frustrating attempts, Laura explained she did not know what to do, so the teacher took the brush and did it for her. Later, when Laura told the story to a friend with an art background, he asked Laura to think about how light and shadow impact what we see, used examples from around the room, demonstrated how to replicate that lighting with a quick sketch on scrap paper, and invited Laura to try on her own while he offered advice.

Questions for Reflection and Discussion:

1. How does this story reflect the Zones of Proximal Development and scaffolding, both with positive and negative examples?
2. Think of some examples from your own experience as a learner. Have you had experiences where you were being asked to work beyond your ZPD? What feelings did you experience? What could the instructor have done to adjust the content or help you move to the next level?
3. Have you had experiences where an instructor has provided the right level of support to help you move to a new level of understanding? What did that support look like?
4. As you think about the learners or topics you anticipate teaching, how might you connect to prior learning or provide scaffolding in your own instruction sessions?

Drawing Connections to Existing Knowledge

According to several of the learning theories discussed in Chapter 3, including cognitivism and constructivism, learning occurs when students make connections between new information and existing knowledge. Cognitive scientists also argue that these connections between pieces of information improve memory, making it easier to recall facts and concepts. While students will make some of these connections on their own, instructors can facilitate the process by explicitly drawing on students' own experiences or using metaphors and analogies to compare a new concept to something students already know. For example, if you are teaching a group how to use an ebook lending service like Overdrive, you could compare it to using an online retail site with which students might already be familiar, like Amazon. In both cases there are options to search and to browse, and users can narrow their search using different filters. An example of a metaphor would be saying that call numbers are the address of a book. As described in Chapter 7, we can use audience assessments to uncover students' existing knowledge and prior experience to make connections to the current material. See Activity 10.2 for an exercise using metaphors.

Activity 10.2: Teaching through Metaphor

Metaphors and analogies can be great ways to help students connect ideas to each other and increase learning. For this activity, you will prepare a brief explanation of a library concept using an illustrative analogy or metaphor to connect new information to previous knowledge.

First, choose one term or phrase from the list below or choose a concept of your own, and then decide who your audience is (children, undergraduates, lawyers, etc.). Finally, develop an analogy, activity, or illustrative example that helps the audience understand what is being taught. Be sure that your language and examples are appropriate to the audience that you have selected.

- Subject headings
- Online catalog
- Peer review
- Bibliography
- Plagiarism
- ereserves
- Interlibrary loan
- Search string
- Boolean operators
- Truncation
- Database
- Primary source

Pair up with a classmate and share analogies.

Questions for Reflection and Discussion:

1. Does your classmate's analogy help clarify the concept they are describing? Can you see the connections between the two ideas?
2. Does the analogy seem appropriate to the intended audience? Why or why not?

(Used with permission from a class assignment designed by Vivienne Piroli.)

Using a Variety of Instructional Strategies

Another important practice is to vary our instructional approaches by presenting material in different formats and offering a variety of activities for learning and hands-on practice. We often hear advice for varying strategies tied to the idea of learning styles, or the belief that individuals have a preferred mode of learning or acquiring new information. Based on the theory that some students learn best through text, others through audio, and so on, instructors have been advised to present information in multiple formats to match these learning styles. The concept has been extremely influential, but multiple reviews have demonstrated a lack of scientific evidence to support the theory of learning styles (Coffield et al., 2004; Kaufmann, 2018), leading one research team to conclude "there is no adequate evidence base to

justify incorporating learning styles assessments into general educational practice. Thus, limited education resources would better be devoted to adopting other educational practices" (Pashler et al., 2008, p. 105). Others have argued that the idea of learning styles is actually harmful, as it suggests that some students cannot learn in certain formats and can lead to fixed mindset thinking that interferes with learning and decreases motivation (Kaufmann, 2018).

Rather than trying to match instruction to perceived learning styles, instructors should reflect on what strategies are best aligned with their content (Willingham, 2005). For instance, visual approaches might align well with subjects that deal with spatial relationships like geometry, architecture, and drafting. We should also recognize that multiple approaches align with the Universal Design for Learning (UDL) principles introduced in Chapter 6 by ensuring that learners can access and engage regardless of their background and ability. If we offer these approaches as choices, we can integrate some of the humanistic and democratic elements of self-directed learning discussed in Chapter 3.

Instructional Strategies and Learning Activities

The number of learning activities available to us is enormous, from the more instructor-centered approaches like lecture and demonstration to the more active and student-centered approaches like discussion and inquiry learning. This section provides a brief overview of several methods, keeping the emphasis on those most likely to be used in a library setting. Some of these strategies are also discussed in Chapter 4 and Chapter 9 as examples of active learning and assessment techniques, but they are included here because of their popularity and utility as general instructional strategies.

Lecture

With all the emphasis on active learning, instructors often view lectures negatively. Lectures are invariably used as examples of passive learning and teacher-centered (as opposed to student-centered) classrooms. As a result, teachers often get the impression that all lecturing is bad, but lectures actually offer some important advantages. First, they are more efficient than active learning activities, making them valuable when we have a significant amount of content and/or a short time frame with which to work (Harrington & Zakrajsek, 2017). In addition, lectures can be effective tools for providing overviews of a topic, structuring and clarifying complex materials, or modeling a thought process (Brookfield, 2006). Because teachers are in control of the material in a lecture, they can be sure that the information is being communicated accurately, which can be especially important for learners who are new to a topic (Harrington & Zakrajsek, 2017). When done well, lectures can be engaging and even inspiring. So, how can we use lectures effectively in our teaching?

The first step is to be conscious about why we are choosing a lecture over (or in addition to) other formats. We should not lecture simply because it is the easiest or most comfortable method but because

it makes sense for our learning outcomes, material, and audience. We can also share the reason for our decision with learners, which can help them understand our choices and expectations. Lectures can be good scaffolding tools to establish background knowledge, either by reviewing previous content or providing an overview of a new topic. They can also be helpful when tackling difficult or complex concepts, as the instructor can use examples and analogies to explain ideas (Brookfield, 2006). We might also use lectures to present more current information than can be found in the literature, synthesize information from different sources or different activities in class, and make content more relevant to students by connecting it to their experiences and points of reference (McKeachie & Svinicki, 2006).

Lectures should be carefully organized to present information in a logical sequence. The specific organization will depend on the content but likely will move from simpler to more complex ideas. Importantly, the lecture should not just reiterate content from the readings but should add value by introducing new ideas, making relevant connections to current events and learners' experiences, and posing new questions. We should be careful to use clear language and to either avoid jargon or define jargon when we introduce it. Some instructors, especially newer ones, find it helpful to script their full lecture, but virtually anyone would benefit from having a solid outline and some brief notes. We should also decide if we will integrate any supporting materials. Chapter 11 provides more detail about instructional materials, such as slides, lecture outlines, and graphic organizers.

Next, we need to consider our presentation and delivery of the lecture. Undoubtedly, all of us have had the experience of sitting through classes where instructors read their notes or PowerPoint slides to us, delivered the entire lecture in a monotone, and never stepped away from the podium or whiteboard. Regardless of how good the content of such lectures might be, most of us have a hard time paying attention in those situations. How do we make our lectures dynamic and engaging? Chapter 12 provides more specifics on presentation skills, so this section will mention only a few important points. Even if we fully script out a lecture, we should be thoroughly familiar with the content and use notes for reference, rather than reading a script word for word. Similarly, slides should be used to reinforce points or provide visual aids, not to reiterate the whole lecture. We should avoid standing behind a desk or podium throughout a lecture but rather move around the classroom as we talk. This movement adds some energy to the lecture and helps us engage students beyond the first row of seats.

If a lecture will take more than 10 to 15 minutes to deliver, we should plan to "chunk" the lecture, or break it down into smaller parts. Brookfield suggests breaking lectures into 12- to 15-minute chunks and using "bridging activities" between them (2006, p. 105). Bridging activities could include a short pause to allow students to take notes, questions to prompt reflection or discussion, or a short demonstration or illustration of a point. Some instructors will also use cartoons or jokes to break up their lectures, although these should be linked to the content.

Chunking is at least as important for online lectures and videos as it is for face-to-face classes, and, in fact, advice for online sessions recommends even shorter chunks. Some researchers suggest keeping online lecture videos to under 10 minutes, as student attention seems to peak around six minutes and fall off drastically after 10 minutes (Gou, 2013). Research on instructional videos, which tend to demonstrate specific tasks or skills such as how to request an interlibrary loan, suggests an optimal length of 30 seconds to two minutes (Bowles-Terry et al., 2010).

Harrington and Zakrajsek (2017) provide a number of approaches to increase learner engagement with lectures. Some of these examples might be familiar. Demonstration lectures, which involve walking the class through a process or task while explaining the steps, are popular in library classrooms. Visually enhanced lectures are supported by visual tools, such as slides, images, infographics, or brief videos.

Storytelling can enliven lectures (Harrington & Zakrajsek, 2017), and presenters of the some of the most popular TED Talks recommend weaving stories into your presentation to capture listeners' attention (Gallo, 2014). Stories can make information come to life and elucidate a point more convincingly than a direct statement can. A good story can capture listeners' attention and help them see connections among pieces of information; research suggests that listeners remember information presented as a story better than information presented as discrete facts (Callahan, 2015).

Of course, you want learners to remember a story because of the information it conveys, not just because it was entertaining. To be effective, the story must relate to the lesson and should expand on a point, illustrate a skill or process, or elucidate connections within the material. As an example, many students consider themselves excellent searchers, so if a search of a database returns no relevant results, they assume that nothing has been written on their topic. In college classes, one of the textbook authors, Laura, often tells the following story:

> I was a graduate student in a Master of Arts in Teaching program. For a final paper for one of my classes, I decided to write about the impact of service learning on students. I set myself up at a search terminal at the library and ran a few searches, all with no results. I tried a few different word combinations, but I knew nothing about subject searching, and I kept getting no results. Finally, I turned to one of my friends at a nearby terminal and told her that there was nothing on service learning and I was going to have to find a new topic. As it happened, a librarian sitting nearby overheard my conversation and came over to ask if he could help. Assuming that I knew what I was doing, I thanked him but told him I had already looked, and there was definitely nothing on service learning; then I turned back to the terminal and started searching for a new topic. A few minutes later, the librarian returned with a printed list of at least a dozen citations of articles on service learning and offered them to me. I was amazed! How could he have found all of these when I had already searched so thoroughly? He sat down with me to show me how he had done the searches, and I was able to write my paper on service learning after all.

Because so many students have had the same experience of changing topics because they cannot find relevant information, they seem to relate to this story much more than if the instructor simply told them that they are probably just executing poor searches when they find no results, or explained the difference between subject and keyword searching without the context of the story. The story also conveys that librarians are eager to help and can subtly encourage students to seek that help. Finally, the listeners get a little chuckle at the instructor's hubris, which can lighten the mood, and alleviate any embarrassment that students might feel if they have had a similar experience. See Activity 10.3 for a short exercise on telling stories.

Activity 10.3: Storytelling in the Classroom

Following are several common issues, beliefs, or challenges of library patrons. Read through them, and then answer the questions that follow.

- Everything is on the Internet. If I cannot find it on *Google* (https://www.google.com/), it does not exist.
- I do not need copyright permission to use images in my school presentation.
- Everybody is biased. The information in *The New York Times* (https://www.nytimes.com/) is not any better than what I find in my *Facebook* (https://www.facebook.com/) feed.
- You should never use *Wikipedia* (https://www.wikipedia.org/) for your research because anyone can edit it, so the information is not trustworthy.

Questions for Reflection and Discussion:

1. Try to think of some experiences or stories relevant to any of these scenarios. You do not have to limit yourself to your own experiences but can think of examples from family, friends, and work as well.
2. How could you use that story in an instruction session to engage your learners? What details would you include, and why?
3. What larger points or connections does this story make?

Pair up with a classmate and share your stories with each other; then provide each other with some feedback.

1. Does your classmate's story seem relevant to the scenario? How so?
2. Can you intuit the larger points that your classmate intended to make with their story?
3. Are there any details you would cut from or add to the story? Why?

Lectures do not have to be entirely teacher-centered; we can integrate activities to encourage interaction and engagement. The lecture pause, introduced in Chapter 4, is a simple technique that can be easily integrated into any lecture. In this technique, the instructor stops the lecture and gives students a few minutes to reflect on what they have heard. We can suggest that students jot down notes about what they have learned or provide them with a question about the material for reflection. We can let students work individually or ask them to share their thoughts with a peer. Either way, this technique requires only a couple of minutes and can be used even in very large classes. If we have already chunked our lecture, we will have natural breaking points to insert a pause.

We can also invite some learner participation by integrating questions throughout the lecture. Questions could be fact-based, asking students to recall information or provide definitions, or they could be discussion-based, asking students to interpret information, expand on concepts, or share their own experiences. If questions are posed to the entire class, only a few students might have a chance to answer, especially if the class is large. To give more learners a chance to join the discussion, we can break students into pairs or small groups and give them a few minutes to talk amongst themselves before having a few

people share with the entire class. Another technique is to provide students with graphic organizers or partial outlines of the lecture (discussed in more depth later in the chapter) to encourage them to take notes.

Demonstration

Demonstrations allow instructors to model skills and processes by walking learners through the steps in a task. Demonstrations are very common in information settings, where instructors use them to illustrate a wide range of skills and activities, such as how to create effective search strings, search specific databases, use technology tools, or request an interlibrary loan. Such demonstrations might be delivered live in the classroom or recorded as a screencast video. In either case, we must be careful to narrate each step in the process. We must remember that for many of our learners, this information is new and potentially confusing. We might find it helpful to script out a demonstration in advance to be sure we do not skip or gloss over any steps in our explanation. Demonstrations are often grouped together with lectures as teacher-centered activities but, like lectures, they can be made interactive. We can use polls to determine how familiar our audience members are with the process we are about to demonstrate; ask for their input on aspects of the demonstration, such as having them suggest topics to search; and invite learners to demonstrate some of the steps for the class. If we are in a computer classroom or learners have access to their own devices, we can encourage them to follow along with our demonstration as an opportunity for hands-on practice and engagement. We can also pose questions throughout the process to check for comprehension or encourage reflection.

Discussion

Discussions are a popular way of integrating active learning, but they take some planning and skill to manage effectively. All of us have probably been part of class discussions that seemed strained or have flopped. All too often, instructors ask discussion questions only to be met with silence and blank stares. At other times, the class might engage in some discussion, and it might even be lively, but, ultimately, only a handful of students will have contributed to the conversation. In fact, often only about five to eight people will make up more than three-quarters of the class discussion, regardless of the size of the class (Howard, 2019). And even when a robust discussion does occur, at least some students are likely to leave the class without having taken notes, unsure of what aspects of the discussion were important or what the main takeaways were. While these issues are frustrating, with planning we can successfully integrate discussion into our classrooms. Several strategies can help us facilitate better discussions:

Set Expectations and Explain Why

One reason learners might not be eager join discussions is that they have been enculturated to believe their

role in the classroom is one of "civil attention" (Howard, 2019). The notion of civil attention is linked to the "banking" model of education, in which the teacher transmits information and the students' role is simply to engage in behaviors that signal they are paying attention, such as taking notes, laughing at jokes, and making eye contact with the instructor. Civil attention does not require any active engagement on the part of the student because by appearing to pay attention, students are fulfilling their role.

Instructors can disrupt this pattern by explaining that they expect learners to actively engage and participate in the class (Howard, 2019). School and academic librarians teaching credit-bearing courses could reinforce that expectation by making participation part of the course grade. Instructors can also signal their expectation for participation through their own behaviors. For instance, many instructors will begin class by introducing themselves, going over the agenda, and discussing learning outcomes. While this is important content, it means that the instructor does most of the talking for the first part of the class, replicating the model of civil attention. Imagine, instead, if the instructor opened the class with a question, so that students were immediately drawn into an active role.

Instructors should tell learners why their participation is important. If your teaching philosophy draws on constructivist and social-constructivist theories, you could share that with students, letting them know that you believe participation will help them construct new knowledge and deepen their learning. You could also share research demonstrating that active learning, including discussion, leads to better learning outcomes (Howard, 2019). These steps help learners understand that your use of discussion was a conscious decision based in best practice, not a sign of laziness or a way of evading your responsibility as a teacher.

Match Discussion to Outcomes

We tend to use the word "discussion" as though it refers to a single, well-defined entity. However, discussions can be implemented in different ways, and many different activities fall within the broad category of discussion. Herman and Nilson (2018) note that discussions can serve several different purposes, including motivating learners to prepare for class, increasing overall participation, encouraging active listening, and assessing learning. They recommend aligning discussion activities with the intended outcome. For instance, a "fishbowl discussion," in which one group of students engages in a discussion while another group observes, takes notes, and then summarizes the main points, can help promote active listening, while activities like think-pair-share can increase participation by ensuring each student talks with at least one peer.

Ask Better Questions

Not all discussion questions are created equal. Closed-ended questions, which require only a yes-or-no answer, and fact-based questions with a single correct answer, such as who won the presidential election in 2008, do not lend themselves well to discussion. While these questions can be good for exploring learners' knowledge, once the answer is given, there is little room left for discussion. Other problematic discussion

questions are those that are overly broad or vague, such as "What did you think of the reading?" as students might not be clear about what is really being asked.

Fruitful discussion questions fall into a range of areas, including (Eberly Center, n.d.):

- **Challenge:** Reflect on or interrogate assumptions, conclusions, or interpretations.
  - Example: "What makes this article a good choice for your paper?"
- **Diagnostic:** Probe the motives or causes behind actions, incidents, or declarations.
  - Example: "Why might certain members of the community have wanted to ban this book?"
- **Action:** Ask for a conclusion or solution.
  - Example: "What steps could we take to improve our online security?"
- **Cause-and-effect:** Probe the relationship between ideas or events.
  - Example: "How might the repeal of net neutrality impact online access?"
- **Hypothetical:** Reflect on an imagined scenario.
  - Example: "How might social media change if people had to pay to use platforms like *Facebook* and *Twitter*?"
- **Summary:** Synthesize ideas or main points.
  - Example: "What are some of the main takeaways from today's discussion?"

While open-ended questions are typically best suited for discussion, Wiggins and McTighe (2005) point out that some closed-ended questions can be good entry points for discussion, especially if a broad question is likely to be overwhelming for the audience. For instance, a yes-or-no question like "Is this a trustworthy website?" could be followed by a question like "How do we know?"

Be Comfortable with Silence

Any instructor who has asked what they believe is an engaging discussion question only to be met with a wall of silence knows how nerve-wracking such silence can be. However, we also need to understand that some silence is expected and can even be productive. Learners often need a few moments to gather their thoughts before they volunteer to speak, and good discussion questions are meant to be thought provoking, so we should anticipate some time for students to process the question. Unfortunately, many instructors are uncomfortable with silence, often misinterpreting it as a lack of engagement or understanding and rushing to rephrase the question or provide the answer themselves. Such actions actually discourage discussion, suggesting that the instructor is not really interested in hearing from students and signaling that if students just wait, the instructor will give them the answer.

Herman and Nilson (2018) suggest that most learners need at least 15 seconds to gather their thoughts before joining a discussion, and they point out that English language learners, neurodiverse students, and students with learning disabilities might appreciate even more time. The authors suggest alerting students that you will pause for 15 or 30 seconds after asking the question, so they understand that the pause is

intentional. Announcing the pause might also relieve anxiety for those students who need the time to think. Even just a few extra seconds of waiting after posing a question can increase the overall number of students who participate.

Create a Safe Climate

Discussion is a higher-risk activity than passive listening or watching, and learners might be reluctant to participate in discussions for fear of embarrassing themselves. They might be concerned that they will give an incorrect answer or that they will be criticized by the instructor or their peers (McKeachie & Svinicki, 2006). We can help mitigate these fears by creating a safe classroom climate that encourages learners to participate. One step to ensuring a safe environment is to establish some ground rules for the discussion, which should include active listening and respectful dialogue. Instructors can outline these guidelines at the beginning of class, or they can hold a "discussion about discussions" in which the class works together to determine its own guidelines (Howard, 2019). This approach models the democratic classroom favored by humanists and provides learners with some feeling of ownership and stake in the process.

We can also model active listening and respectful participation ourselves by providing supportive and constructive feedback to students during the discussion. Even if a student's answer is off topic or includes inaccurate or misleading information, we can usually find a way to acknowledge the contribution even as we redirect the conversation or correct the inaccuracies. Usually we can build on some part of the response, while we respectfully challenge another part, perhaps saying something like, "I am really glad that you brought up this point, but I wonder if there are other ways to look at it?"

Finally, we can find alternative ways for students to participate beyond having to share their own thoughts in front of a large group. For instance, we could end a think-pair-share activity by asking the class, "Whose partner had a great answer or interesting idea?" This question invites learners to share their partner's idea rather than their own, which might be easier and feel less risky for some students. Another option is to allow students to participate in online discussions. Some learners prefer online discussion because it gives them more time to organize their thoughts and craft their answers, and it removes the public-speaking aspect. One of the book authors creates an online discussion board she calls "continued conversations" for her face-to-face classes. At the beginning of the semester, she lets students know that the discussion board is optional, but any posts will count toward their participation grade. For many learners, these options will be first steps, and, as they gain confidence, they will be able to participate more easily in regular in-class discussions.

Manage Dominant Talkers

The flip side to quiet learners who are reluctant to participate are those who volunteer immediately to answer questions, interrupt others, or otherwise dominate the discussion. While these students might be well meaning and eager, they reduce opportunities for others to participate. One strategy for dealing

with dominant talkers is to avoid immediately calling on the first people to raise their hands, but use the conscious pause described earlier to give more people a chance to volunteer. If some students have already talked quite a bit, we can thank them for their contributions but say that we would like to hear from some other voices as well.

McKeachie and Svinicki (2006) suggest assigning dominant talkers to be "observers" with the responsibility to listen to the discussion and summarize key points at the end. We can establish a guideline that once a person participates, that person cannot speak again until two other voices have been heard, or we can give each student three chips at the beginning of class and ask that they deposit one in a jar each time they speak (Herman & Nilson, 2018). Once learners are out of chips, they cannot participate any more. Herman and Nilson warn instructors to notice if students are asking questions that are off topic or of very narrow interest and, if so, to invite them to meet after class in order not to waste other students' time.

Managing Challenging Comments

Some discussions will center on sensitive or controversial topics that might be challenging to navigate, and occasionally learners might make problematic statements or assertions. As discussed in Chapter 5, instructors must acknowledge and respond to such statements but should also "realize that rarely is a student's intent harmful, so avoid an accusatory approach" (Herman & Nilson, 2018, p. 47). The exact response will depend on the context, but Herman and Nilson (2018) offer helpful strategies. For instance, if a student uses outdated terminology, the instructor should note that different language is preferred. If learners' remarks are provocative or disrespectful, the instructor can remind them of the discussion guidelines established at the beginning of the session. If a statement is relevant to the course, the instructor could open it up for further discussion but must be sure that only the underlying ideas are being challenged, not the student who made them. If the discussion becomes heated or emotional, the instructor should step in to calm the situation, perhaps by asking learners to take a short break to reflect on and even write down their thoughts.

Summarize the Learning and Takeaways

Some students are resistant to discussions because they do not see value in them (Herman & Nilson, 2018; McKeachie & Svinicki, 2006). They might resent time spent listening to their peers when they believe the teacher has the knowledge and the "right" answers, and they might also view the discussion as a test to see if they can guess the answer the instructor wants, rather than seeing it as a true exchange of ideas. In addition to explaining the purpose and learning goals of the discussion at the outset, we can demonstrate the value of discussion and surface the learning that takes place by periodically summarizing the discussion and identifying the key takeaways. These summaries help make the learning visible and give the instructor an opportunity to fill in any gaps, correct inaccuracies, and answer lingering questions.

Activity 10.4: Building Better Discussions

Below are three brief scenarios. Read each one and respond to the reflection questions.

Scenario 1: Lisa is an academic librarian who has been asked to guest lecture to sophomore-level psychology students preparing to write a research paper. Lisa is determined to make her presentation engaging, and she begins by asking the class if anyone would like to share a research topic so she can use it as an example for her search demonstration. A young man in the front row speaks up immediately. Lisa writes his topic on the board and then asks the class to suggest key words related to the topic. Later, she asks the students to suggest ways to combine the keywords and asks them which databases they think she should search. Before long, Lisa realizes that the same young man is answering all her questions. Occasionally, another student will raise a hand but, even if Lisa calls on others, the young man tends to jump in and talk over them. After giving the students time to search on their own, Lisa asks for volunteers to demonstrate their search for the class. The young man is the only volunteer.

Questions for Reflection and Discussion:

1. What strategies could Lisa use to manage the young man's participation?
2. Why do you think other students were slow to respond?
3. Lisa is frustrated that the young man is the only one to volunteer to demonstrate his search. How might she handle the situation?

Scenario 2: Mike is a high school librarian. Mr. Smith has assigned a research paper to his 12th-grade history class and asked Mike to lead a session on plagiarism and show the students how to prepare bibliographies. Mike starts the class by reading from the student honor code and explaining that students can fail the assignment and face suspension if they plagiarize material. He then asks the class if anyone can explain what plagiarism is. One student timidly raises a hand and says, "Lying?" Mike shakes his head. "No," he says, looking around the room again. "Anyone else?" No one else volunteers, so Mike defines plagiarism for them.

Questions for Reflection and Discussion:

1. Why might students have been reluctant to answer Mike's question?
2. Imagine you were a colleague observing Mike's class. What advice might you give him?

Scenario 3: Angela is leading a workshop on evaluating health information. During the workshop, an older man raises his hand and says that he is afraid to get the flu shot because he has heard shots are not safe. Before Angela can answer, a woman near the front of the room complains that "anti-vaxxers" are making other people sick and tells the older man that the CDC recommends the flu vaccine and says it is safe. The man responds by saying it is "crazy" to trust government sites like the CDC. Angela can feel the tension in the room growing.

Questions for Reflection and Discussion:

1. How might Angela respond to the two patrons in her workshop?
2. How can she calm the tension in the room?

Despite some challenges, discussions can be effective and engaging activities. We can generally overcome any barriers by anticipating them and planning for discussion just as we would any other instructional activity. See Activity 10.4 for a brief exercise related to discussions.

Flipped Classrooms

A flipped classroom is one in which content is delivered outside of class time so that the instruction session can focus on hands-on practice and activities to apply the learning. This model "flips" the traditional classroom approach in which instructors deliver content during class, often through lecture and demonstration, and students apply the learning outside of class through assignments and projects. Learners gain background knowledge or "first-exposure" information (Walvoord & Anderson, 2010, p. 81) before class begins so class time can be spent on higher-order thinking skills and processes, such as evaluating, synthesizing, and creating. Further, because application is happening in the classroom, the instructor is available at the point of practice, where students are more likely to have questions, and where instructors can provide immediate feedback and guidance.

The flipped classroom can be implemented in different ways. Often, instructors will use video lectures and readings to deliver content before the class meeting. Of course, for the classroom activities to work effectively, students must have completed the pre-work. Walvoord and Anderson (2010) suggest incorporating exercises or other assignments into the pre-work to hold learners accountable. For instance, instructors could assign a brief questionnaire about the lecture and reading or ask students to write down the main points. In addition to holding students accountable, these checks can work as assessments, showing the instructors if there are misunderstandings or gaps in knowledge so they can be addressed before launching into activities.

In class, instructors can use any combination of active learning techniques to engage learners with the material. Students in a science class might conduct experiments, history students might examine primary source documents, and media students might use specialized equipment to create presentations. Library instructors can have students conduct their own searches and evaluate the materials, explore different technology platforms and applications, create projects in a makerspace, complete a scavenger hunt or play a game based on the content presented in the pre-work, or engage in peer instruction.

Librarians outside of a K-12 setting might face some challenges implementing a flipped model. The flipped model depends on learners completing some out-of-class work prior to the session, but academic and public librarians delivering one-shot sessions might find it challenging to assign pre-work, and learners in these sessions might not feel obligated to complete the assignments. Despite challenges, many librarians have successfully used the flipped model in their classrooms (see, e.g., Datig & Ruswick, 2013; Coan, 2016; Loo et al., 2016; Tingle, 2018). Some academic librarians have collaborated with faculty to integrate pre-work for a one-shot session into the larger course (Berg, 2018; Pannabecker et al., 2014). Faculty will include library tutorials or readings as an assignment and might offer students credit for completing the work. Datig and Ruswick (2013) assigned tutorials they had already developed for asynchronous and self-paced learning as pre-work for face-to-face sessions, thus getting more use from those materials. They found the flipped classroom more engaging for both the learners and the librarians, who had been experiencing "lecture fatigue."

Some public libraries have implemented flipped classrooms by asking patrons to complete some work prior to the session. Public librarians in Georgia implemented a flipped-classroom model for some of their programs, providing content through videos and other formats ahead of sessions (Logan & Hadzhieva,

2018), while those at the Twinsburg Public Library in Ohio (2020) promote flipped English as a Second or Other Language courses, where learners watch videos and complete tutorials outside of class time. The Skokie Public Library in Illinois created a Massively Open Online Course (MOOC) on HTML and web design for its patrons using a flipped classroom model (Coan, 2016). Pre-work should be clearly described in the promotional or registration materials for a workshop and made easily available.

Problem-Based Learning

In problem-based learning the instructor presents a messy, fuzzy, or ill-defined problem which the class works to solve, often in small groups. Rather than listening to lectures or following step-by-step experiments or demonstrations, learners must use their knowledge, engage in research, and test ideas to develop a solution or answer to the problem (Kretchmar, 2019). To be effective, the problems presented to students need to be complex, should not have a single right answer or a single path to a solution, and should be based in the real world. For instance, a library instructor could ask students how to combat the spread of disinformation or "fake news" on social media.

Problem-based learning is student-centered, and the instructor acts as a guide or facilitator rather than as an expert directing the learning. The instructor will present the problem, and then step back and let student groups devise not only a solution but a plan for engaging in whatever research and exploration they need to arrive at the solution. The instructor is on hand to offer guidance as needed but typically will not provide direct answers to questions, instead coaching students to think through the problem and find the answer for themselves. The process of investigating the issue and developing a solution is part of the learning, meaning that the process is as important as the content (Kretchmar, 2019). While the research suggests that overall levels of learning are similar in problem-based and traditional classrooms, students in problem-based classrooms report being more satisfied and have more positive attitudes toward the learning (Kretchmar, 2019).

True problem-based learning is very time-consuming, so it is unlikely that library instructors would be able to integrate it into a one-shot session or workshop. However, we can certainly integrate elements of this approach. For instance, rather than presenting students with a checklist of criteria for evaluating information, we could begin a class by posing a question, such as "How do we know which information to trust online?" We could then give students different news stories or resources and ask them to work together to decide if they would trust a certain source and why. As students report on their work, we can develop a list of criteria that will largely mirror the one we would have presented; however, with this approach, learners will have discovered those criteria on their own.

Games

Games are a fun way to engage learners, and they can be used at any age level and in any setting. Games generally incorporate an element of competition, either between individuals or groups or with single

learners challenging themselves, but a game's purpose is to impart information or develop skills. A lot of writing on game-based learning focuses on online learning objects that function like video games. For instance, *Liberation: Referencing* (http://library.northampton.ac.uk/liberation/ref/index.php) is an online tutorial on citation styles that challenges the player to order components and identify proper formatting and punctuation, all while keeping a cat named Harvey alive. Analog games can be just as fun and usually take fewer resources to create. A scavenger hunt can get learners into different parts of the library and introduce them to the library layout and classification system. Instructors can adapt popular game shows for the classroom. For instance, in library *Jeopardy*, instructors present library terms, services, or concepts, and students volunteer answers—in the form of a question, of course.

Peer Instruction

As discussed in Chapter 4, a different way of flipping the normal classroom is to give learners responsibility for the instruction. Peer instruction gives students a chance to share their knowledge and expertise with one another, and learners are often particularly engaged by their peers. Peer instruction is not only engaging, it can lead to deeper learning by requiring students to put concepts in their own words and reinforce skills through practice. During peer instruction, the instructor should stay engaged and offer feedback or redirect if the peer instructors are providing inaccurate information.

Think-Pair-Share

Also discussed in Chapter 4, think-pair-share is one of the most popular active learning techniques and can be used in classes of all sizes, with all different ages. Because it incorporates time for learners to gather their thoughts before responding and requires students to interact only with one other person, think-pair-share is relatively low risk even for introverted or anxious students. Depending on the size of the class, the instructor might have each student share their thoughts with the class or ask for a few volunteers to sum up their discussion for the whole group.

Polls

Polls are a relatively simple and quick way to add some interaction to the class. Poll questions can be content-based questions of fact, or they could be scaled questions asking learners their level of familiarity with a concept or confidence in a task. Polls can be done by a show of hands or with polling software like *Poll Everywhere* (https://www.polleverywhere.com/) or *AnswerGarden* (https://answergarden.ch/create/). Many learning management systems and conferencing tools like *Zoom* (https://zoom.us/) have polling software embedded.

Writing Exercises

The process of putting concepts into writing requires learners to reflect on what they have learned, recall bits of information, and translate the ideas into their own words, all of which help reinforce and deepen learning. These exercises are flexible; we can focus them on almost any aspect of the content, and we can devote as much or as little time to them as we want. Some writing reflections require only one to two minutes of class time, making it easy to adopt them even in short workshops and one-shot sessions.

However, just as some students are less comfortable joining discussions or speaking in front of a group, other students find it difficult to articulate their thoughts in writing. In library classrooms, we will encounter learners with a wide range of literacy, language, and writing abilities. English language learners, younger patrons, and patrons with low literacy, among others, might find writing exercises particularly challenging.

Several best practices can make these exercises more effective, even for patrons who are less comfortable with writing. We can emphasize the low-stakes nature of the activity by explaining that the purpose is not to critique learners' writing but to give them an opportunity to reflect. We might even say that writing "does not count," or that we will not be paying attention to grammar or spelling. Often, librarians are not giving learners grades on their activities anyway, and this helps to keep the exercises low stakes. When appropriate, we might also offer learners different options for reflection, such as drawing a picture or providing a demonstration of a task, rather than writing out the steps.

This section provides a brief overview of some sample writing exercises. You can find many more examples online.

Pre-writing

Pre-writing is a form of brainstorming or capturing ideas before delving more deeply into a lesson. For instance, instructors might ask students to brainstorm paper topics or keywords and synonyms for their topics before beginning a lesson on searching. Learners could jot ideas down on paper, organize their thoughts into a concept map or list, or use a graphic organizer.

Minute Paper

The minute paper is meant to be very brief, typically just two or three questions. While we can ask any type of question, minute papers usually pose reflective questions, asking students to think about what they have learned and whether they still have questions. Common minute-paper questions include: What are one or two new things you learned from this lesson? Can you describe one or two ways you can use what you learned? What remains unclear from the lesson? What questions do you have about today's lesson? Instructors can respond to students' questions in writing or leave enough time to flip through the responses and answer questions at the end of the class. Minute papers can be left anonymous to keep the exercise low

stakes, but in that case, we should take time to answer outstanding questions at the end of class, since we will not be able to follow up with individual students.

Graphic Organizers/Lecture Outlines

Graphic organizers and lecture outlines are a form of guided notetaking; they provide students with a framework for the lesson, drawing their attention to important points. As their name implies, graphic organizers are generally visual tools, such as figures or infographics, with space for learners to take notes or label parts of the figure. For example, during an orientation, librarians could provide patrons with a blank map of the library and encourage them to label the spaces on the map as they move through the tour. As another example, Chapter 3 provided you with a blank table to track learning theories, including the names of the theorists and the key points of each theory. Similarly, instructors can provide learners with a partial outline of a lecture, leaving spaces for students to fill in the missing information. Many learners, especially those who are new to a topic, can have trouble picking out the essential information from a long lecture or discussion. As a result, they either try to write down every word or leave with no notes at all. Tools like lecture outlines and graphic organizers can make lessons more engaging, and the prompts can help students identify the important points. Example 10.1 shows a sample lecture outline.

Example 10.1: Lecture Outline

Below is an excerpt of a lecture outline for a library instruction session on plagiarism and citations. The session starts with a brief lecture on plagiarism, including a definition and examples of when citations are needed. Next, the librarian explains the purpose of citations and demonstrates how to format citations according to APA guidelines by showing learners an example of a book citation and walking them through each element. Learners are encouraged to fill out the outline as they listen.

Plagiarism 101

Plagiarism is using someone else's _____ or _____ without giving them credit.

I should cite a source when:

1.

2.

3.

Following is a book citation in APA format. Label the author, title, publication date, publisher.

Riordan, R. (2008). *Percy Jackson and the lightning thief*. Disney Hyperion Books.

Group Work

According to the constructivist and social constructivist learning theories introduced in Chapter 3, human beings create meaning and new knowledge in part through their interactions with other people. Group work provides learners with opportunities for peer interaction to facilitate that process. Small groups can give everyone a chance to participate, even in larger classes, and many learners will find it less intimidating to talk and share ideas in a smaller group.

Several best practices apply specifically to group work. First, we need to be clear about the purpose, expectations, and tasks involved. Without clear directions, groups will be unsure of how to engage and are likely to end the activity feeling they have not been productive. Before starting any group activity, we should lay out the goals and provide directions, including any guiding questions or specific tasks. We should also be clear about the outcomes and any deliverables. Are groups expected to produce something tangible, like a concept map? Should the group take notes and be prepared to discuss its activities with the class? Providing a handout or displaying a slide with the directions can help the group stay on track.

Since group work tends to be more self-directed than other strategies, some instructors are unsure of their role and might disengage from the class. Even while groups work independently, we should be active in the classroom. Circulating throughout the room helps ensure groups stay on task and provides opportunities to respond to questions or concerns. We should be careful to allot an appropriate amount of time for the tasks. Too little time can be frustrating and leave groups feeling dissatisfied with their level of discussion, but extra time will probably lead to unrelated conversations. Circulating through the room and checking on progress also give us a chance to gauge the time and decide when to wrap up the activity.

Dozens of small group activities exist, and many instructional activities can be adapted for groups. For instance, scavenger hunts could be done in teams, or students could work in groups to complete worksheets or graphic organizers.

This section offers a few examples, and you can find many more online.

Guided Discussion

Provide learners with a question, scenario, case study, or similar prompt, and have them discuss their answers in small groups.

Jigsaw

Break the class into groups and give each group an aspect of a topic to research or discuss. These groups develop expertise on their aspect of the topic. After a set amount of time, shuffle the groups so each new

group has one representative from each original group. As students share their research from the original group, the new group will develop a full picture of the topic.

Circle of Voices

Break students into small groups and ask them to sit in a circle. Each student gets two to three minutes to speak without interruption in response to a question or prompt. Once everyone in the group has had a turn, the group can have a more general discussion on the topic. Students should try to build on their peers' responses, rather than offering only their own ideas.

Debate/Pro-Con

Discussions can be structured to examine different perspectives on a question or the merits of different strategies. For instance, we could ask groups to debate the merits of using primary versus secondary sources when researching a historical topic or create a list of the pros and cons of different online browsers.

Combining Strategies

Teaching guides like this textbook tend to describe each instructional strategy separately. While this approach is useful for providing in-depth overviews of each approach, it can give the false impression that the strategies are mutually exclusive. In fact, few instructors will use only one instructional strategy in a lesson. For instance, flipped classrooms generally incorporate lecture; the difference is that those lectures are delivered outside of class time. Even in a problem-based classroom exercise, instructors often use lecture to provide background information or demonstrate methods students might use to research the problem and develop solutions. In other words, we can mix and match instructional strategies in any classroom. Brookfield asserts that we should think of strategies such as lecture, discussion, and other active learning techniques as "symbiotic" (2006, p. 98). We simply want to make conscious decisions about which strategies we are using and consider why those strategies are appropriate.

Lesson Plans

Our instructional design decisions should culminate in a written lesson plan or detailed outline of the session. Some instructors might question whether a written plan is necessary, but putting the plan into writing ensures that we are addressing all the necessary details and thinking carefully through each decision. It also creates a record of the lesson, which can aid us in reflecting on the session later and

implementing lessons consistently over time. Also, a written plan can be shared with colleagues, which can also ensure consistency when multiple people are teaching the same lesson.

Different models and templates for lesson plans exist, but most lesson plans start with the learning outcomes to set the purpose and expectations for the session. Including brief notes about the intended audience, length of the session, and any materials or equipment that will be necessary to carry out the lesson can also be helpful.

The bulk of the plan outlines the content, instructional strategies, and assessments for the lesson. The lesson plan should provide a step-by-step overview of each section or "chunk" of the session, with a brief explanation of what will take place during that section, including the instructional strategies and any assessments that will be employed. The plan should include enough detail that a colleague could envision or re-create the lesson but should not be a word-for-word transcript. Include only the major points of lecture content or the basic directions for an activity.

Each segment should include a time stamp, or a note about how much time is allotted for that section or activity. Instructors can find it challenging in the beginning to gauge the time needed for different activities, but the authors' experience has been that new instructors often underestimate how much time they need, and, as a result, rush to fit all their material into the session. To be safe, you might allot more time than you initially think you need for each segment but have additional examples or backup activities that you can use if you have extra time at the end of the session. Conversely, you can note activities or examples to cut if you run out of time. Example 10.2 offers a sample lesson plan for a public library workshop on "fake news." See Appendix B for additional sample lesson plans on different topics for a variety of information settings and audiences.

Conclusion

In the final stage of Backward Design, we select the strategies we will use to interact with students and deliver the content of our lessons. For many instructors, this stage is the most fun because it centers on that part of teaching with which we all have experience as students—what happens in the classroom. The main points to keep in mind during this stage of instructional design are as follows:

- Best practices include focusing on active learning techniques to keep students directly engaged with content, scaffolding material to support students' journey from simpler to more complex knowledge and tasks, making explicit connections between new information and prior learning, and selecting strategies that are appropriate for our audience, content, and time frame.
- Lectures have received some negative attention in recent years, but as an instructional strategy they have some advantages. We can take steps to make lectures interactive and engaging.
- Good discussions take planning and management, but they are an effective way to engage students and bring active learning to the classroom.
- We can choose from an array of active learning techniques, including those that can be completed by groups and those that can be done by individuals, those that take substantial class time and those

designed to take only a few minutes. Regardless of the size of the class or the amount of time we have, we virtually always can find a way to incorporate some active learning.

- Our Backward Design should culminate in a lesson plan that lists the learning outcomes; identifies our topic, audience, and materials; and outlines the instructional strategies and assessments we will use.

Example 10.2: Lesson Plan for an Instructional Session on Fake News

Fighting "Fake News"

Introduction

This session takes place at the Anytown Public Library and is geared toward a general adult audience. The session will run on a weeknight and midday on a weekend to reach various segments of the audience.

Running Time: 60 minutes

Materials

- Laptop and screen projector
- Flip chart or whiteboard
- "Sample News Stories" handout

Learning Outcomes

By the end of this session, participants will be able to:

- Apply criteria for evaluating news stories.
- Discuss strategies for responsible sharing of news.

Outline

I. Welcome (5 minutes)

- Introductions and overview of learning outcomes

II. Lecture (10 minutes)

- Instructor will start by asking participants:

    ◦ What is the impact of fake news?
    ◦ What sources do you trust for your news?

- Instructor will provide a brief overview of fake news, drawing on participant answers as appropriate.

    ◦ Historical examples
    ◦ Current landscape
    ◦ Definitions

III. Activity (25 minutes)

- The instructor will share two brief excerpts of current news stories from sources of varying reliability. Participants will have 5 minutes to read the excerpts individually; then, working in pairs, they will have 10 minutes to answer the following questions:

    ◦ Does this story seem trustworthy? Why or why not? List as many reasons as you can.
    ◦ What additional information about the source or the details of the story would help you evaluate this story? How could you find that additional information?

- The group will engage in a 10-minute debrief discussion. The instructor will call on pairs to share their discussion. As participants explain what made them trust or not trust each news story, the instructor will create a list of evaluation criteria on the flip chart.

IV. Debrief (10 minutes)

- The instructor will review the list of criteria and discuss how they can be applied, filling in any gaps in the list. The instructor will share another short news excerpt and ask the group as a whole to evaluate the story, making explicit connections to the list of criteria. Participants will discuss which stories they would share stories based on those criteria.

V. Wrap-up (5 minutes)

- Instructor will return to learning outcomes and highlight main takeaways.

VI. Reflection (5 minutes)

- Instructor will pass out a "minute paper" sheet asking participants to list two things they learned and any questions they have.
- Instructor will review the papers and answer outstanding questions.

Suggested Readings

ACRL Framework for Information Literacy sandbox. (n.d.). https://sandbox.acrl.org/resources

The Association of College and Resource Libraries has compiled this open access collection of lesson plans focused on *The Framework for Information Literacy for Higher Education*. Users can search for lesson plans and activities, along with a host of other materials, and can limit by frame or discipline. All materials are licensed through Creative Commons and can be reused and adapted with limited restrictions. The materials are designed for a college audience, but many could be adapted for other audiences.

Barkley, E.F. (2010). *Student engagement techniques: A handbook for college faculty*. Jossey-Bass.

This book offers a wealth of information and advice on how to engage students. The first section provides background and theoretical information on student engagement, while the second section offers tips for motivating and challenging students and implementing active learning. The third section outlines 50 "student engagement techniques" or active learning activities. Each section describes the "essential characteristics" of the activity, its description and purpose, directions for implementing the activity, and concrete examples of the activity. Barkley also offers ideas for varying the activities and adapting them to an online environment.

Denver Public Library. (n.d.). *Technology classes and workshops*. https://www.denverlibrary.org/ctc-classes

The Denver Public Library provides free access to high-quality lesson plans and related materials for its technology workshops and classes. From the events page, click on a workshop title, and follow the link for class materials, all of which are licensed through Creative Commons.

Green, L. S. (2019). Flipped learning environments: An introduction for librarians who design and teach. *Library Technology Reports*, 55(5), 11-16. https://www.journals.ala.org/index.php/ltr/article/view/7067

In this brief paper, Green offers librarians straightforward guidance on how to implement a flipped classroom, with some attention to the theory and the pros and cons of the approach.

Harrington, C., & Zakrajsek, T. (2017). *Dynamic lecturing: Research-based strategies to enhance lecture effectiveness*. Stylus Publishing.

In this volume, authors Harrington and Zakrajsek make the case that lectures can be active and engaging. The authors offer clear, research-based advice on how to plan, structure, and deliver a lecture that engages students and incorporates activity and reflection.

Herman, J. H., & Nilson, L. B. (2018). *Creating engaging discussions: Strategies for 'avoiding crickets' in any size classroom and online*. Stylus Publishing.

This excellent text offers a clear and thorough guide to implementing discussion successfully. The authors offer 12 principles for good class discussion, as well as advice on addressing common issues, such as learners who talk too much or too little, students who are not paying attention, microaggressions, and controversial topics. The second half of the book is a series of case studies that present specific strategies or activities for successful student engagement.

Marcotte, A. (2019). Tech trends: Library tech leaders recommend their favorite tips and tools. *American Libraries*, 50(3/4), 5-7.

The author shares detailed overviews of a range of teaching technologies with an emphasis on free and open access tools. While geared toward the flipped classroom, these tools could facilitate active learning in many formats.

McKeachie, W. J., & Svinicki, M. (2006). *McKeachie's teaching tips: Strategies, research, and theory for college and university teachers*. Houghton Mifflin.

This handy volume provides clear and concise advice on a range of pedagogical topics. Chapters are brief and to the point, and integrate concrete examples and supplementary readings. Topics include effective lectures, facilitating discussions, active learning, problem-based learning, teaching culturally diverse students, and motivating students.

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Berg, C. (2018). No assignment? Just flip it: The flipped classroom in first-year library instruction. *College & Undergraduate Libraries*, 25(4), 372-387. https://doi.org/10.1080/10691316.2018.1539366

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11. Designing Instructional Materials

Introduction

Often, our lessons will be accompanied by instructional materials such as slide decks, videos, handouts, and worksheets. Used well, these materials are integral to the session, and to be effective, they need the same careful level of planning and design as the rest of our lesson. While creating high-quality materials takes time, the good news is you do not need to be a graphic-design expert to make materials that are clear, user friendly, and accessible to all audiences. This chapter outlines strategies for creating effective instructional materials. It begins with some background on the cognitive processes that impact use and understanding of instructional materials and then outlines general best practices. The chapter concludes with design suggestions for a variety of materials. Specific attention is given to universal design principles and accessibility of all materials.

Theoretical Background and Best Practices

Instructional materials typically provide a physical and/or visual supplement to a session in the form of slides, handouts, and images. Because these materials often combine both visual and textual elements and often supplement an audio delivery such as a lecture, learners are asked to interact with both aural and visual information; therefore, some background on the cognitive processes that this experience entails can inform the design of materials. Perhaps the most important thing to consider when delivering information in multiple formats simultaneously is cognitive load, or the strain on learners as they try to hold information in memory while also trying to process new information. Cognitive load "is a theory about learning built on the premise that since the brain can only do so many things at once, we should be intentional about what we ask it to do" (Heick, 2019). Clark and Mayer (2016, p. 35) identify three issues that impact cognitive load:

- **Dual Channels:** Different parts of the brain are used to process visual and auditory information. When video and audio reinforce each other, as when images or text on a slide reinforce a speaker's point, learning is enhanced. However, if video and audio are misaligned, such as when slide text is different from the audio narration, the brain has to work harder, and learning can be negatively impacted. This is not to suggest that instruction should be delivered only in one format, but that we make informed decisions about how we structure and present the information in different formats, as explained in more detail below. While the theory of dual channels is primarily applied to audiovisual materials like voice-over videos and tutorials, the concept is relevant when we are using textual and visual materials to support a live lecture or demonstration as well.
- **Limited Capacity:** Individuals can process a limited amount of information in each channel at one time. As such, instructors must carefully select pieces of information to include and make intentional

decisions about how to present that information.

- **Active Processing:** Learning happens when people can identify and access the important information in a lesson, process that information, and relate it to their prior knowledge. Good design can facilitate active processing.

The brain's limited capacity impacts its ability to engage in active processing and, hence, to learn. We can avoid cognitive overload and facilitate active processing by reducing or eliminating extraneous information from our instructional materials. Clark and Mayer (2016) provide tips for lightening the cognitive load and maximizing active processing, organized around nine major principles. These principles are geared toward multimedia learning and are discussed in more depth in Chapter 16, but several principles apply to textual materials and visual aids:

1. **Coherence Principle:** Omit unneeded words, sounds, and graphics.
2. **Contiguity Principle:** Place printed words next to the corresponding part of a graphic (see Figure 11.1 and Figure 11.2 for examples).
3. **Redundancy Principle:** Do not duplicate audio and on-screen text.

These principles emphasize the importance of minimizing extraneous content and streamlining presentation, which reduce cognitive load for learners. Managing the amount and presentation of information facilitates active processing and makes content more accessible. Cognitive load theory and the accompanying design principles draw on broader cognitive science learning theories introduced in Chapter 3, and some of the ideas probably sound familiar from other discussions in this textbook.

Figure 11.1: Example of Poor Contiguity in a Graphic
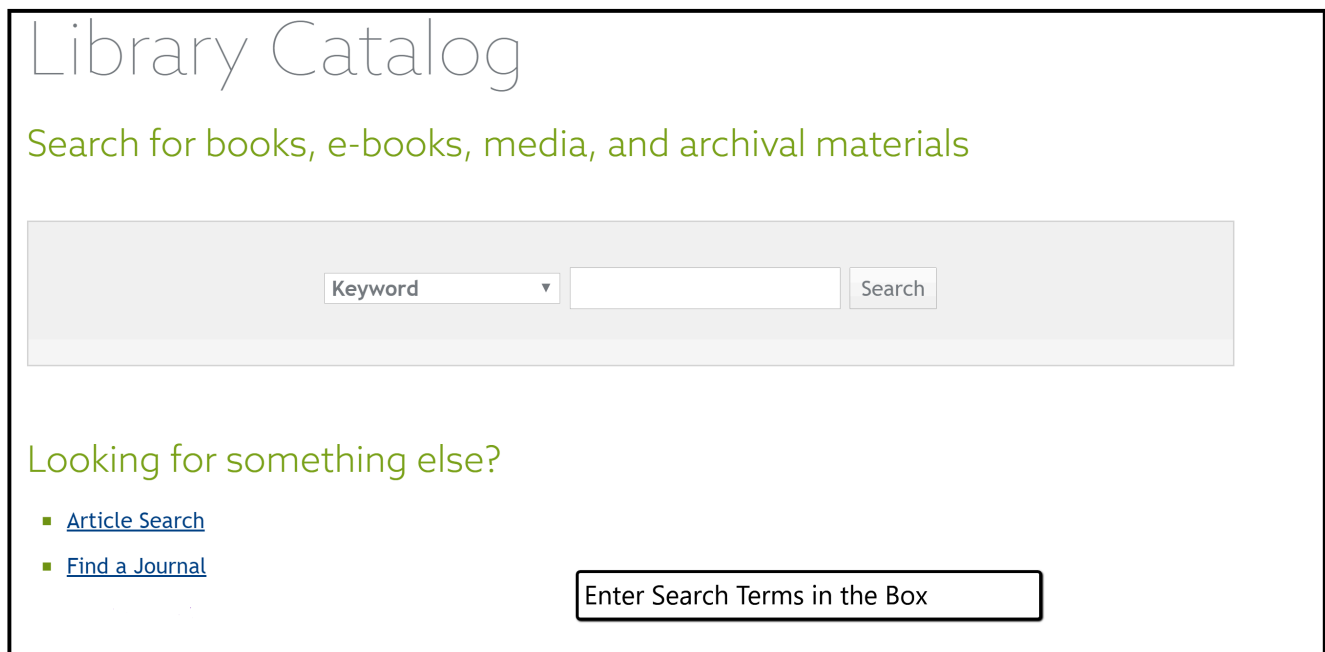
According to the contiguity principle, when using graphics and text together, we should place the text next to the relevant portion of the graphic. In this example, the text "Enter search terms in the box" appears below the screenshot, in violation of the contiguity principle. The reader looks at the image, then reads the text and must return to the image and find the search box. Not only is this more work, it assumes the reader knows what a search box is.

Figure 11.2: Example of Appropriate Contiguity in a Graphic
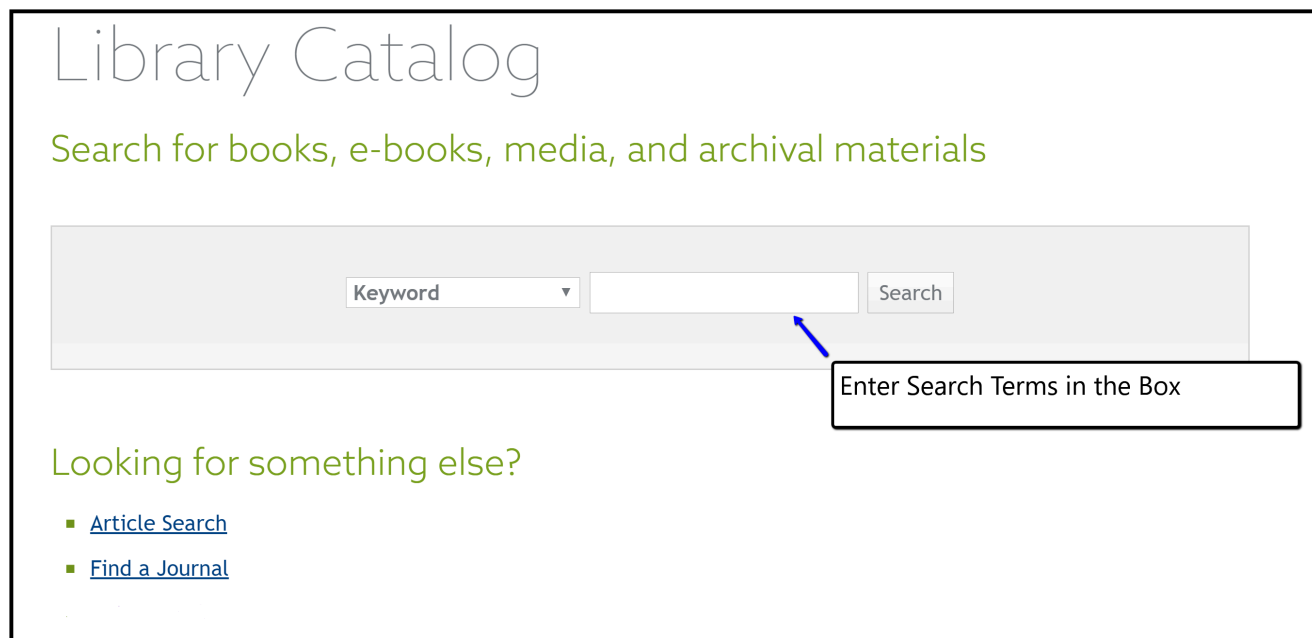
In this example, the text "Enter search terms in the box" appears very close to the search box in the screenshot and is accompanied by an arrow pointing to the box. Aligning text and graphics helps the reader make an explicit connection between the text and image, and minimizes effort by directing the reader's eye. Arrows and call-out boxes also help to draw the reader's eye to the appropriate part of the graphic.

Written Materials

Librarians produce many types of written materials, including brochures, pamphlets, reading lists, flyers, fact sheets, and informational guides. Written materials can be shared in hard copy, such as handouts or worksheets to accompany a workshop, or they can be posted online to be read or printed out at the reader's convenience. This section focuses primarily on written materials in hard copy but will also address considerations for online materials.

Since printed materials, unlike their online counterparts, cannot be manipulated by the reader or read aloud by a screen reader, we need to follow best practices to increase their accessibility and readability. Choosing an appropriate font is the first step, and the focus should be on a clean, clear font with adequate spacing between letters (Kitchel, 2011/2019). The main choices for font are between serif and sans serif. The characters in serif script have an extra line or decorative stroke on the edges. Popular examples include Times New Roman and Courier. Sans-serif characters are made up of straight lines. Examples of sans-serif fonts include Arial and Calibri.

Although there is little research to suggest that font style substantially impacts reading speed or comprehension for most readers, people tend to express a preference for serif fonts, which are often recommended for long blocks of text such as textbooks (dos Santos Lonsdale, 2014). However, sans-serif fonts are recommended for people with visual and other disabilities (Kitchel, 2011/2019), and research

suggests these fonts might increase comprehension as well as readability for people with certain disabilities (Wilson & Read, 2016). As such, sans-serif fonts are best for the written materials we are likely to use in our instruction.

We should avoid the use of fonts with unusual features or ones that might distort when printed or copied. These include fonts with fine lines or a mix of thick and thin lines; those with small internal spaces, such as the openings in a lowercase "b" or "d," as these might fill in when printed or photocopied; and condensed fonts, or those in which individual letters touch each other (dos Santos Lonsdale, 2014). In general, we should avoid any decorative font that is meant just to "dazzle" and which "calls attention to itself rather than to the text" (dos Santos Lonsdale, 2014, p. 33). Figure 11.3 summarizes the considerations for font choice and provides some examples of different types of font.

Figure 11.3: Font Examples and Use

Font Style	Examples	Uses
Serif	Times New Roman Courier New Garamond	Recommended for long texts meant for continuous reading
Sans Serif	Arial Calibri Kalinga	Recommended for instructional materials
Decorative	Brush Script MT Chiller Modern Love	Not recommended for most printed materials

The table displays examples of serif, sans-serif, and decorative fonts with their recommended uses.

In addition to choosing an appropriate font, the American Printing House for the Blind (Kitchel, 2011/2019) recommends several other best practices for accessible print materials for all readers:

Font Size

The general recommendation is for 12-point font; 18-point font is considered large type and might be suitable for older adults and people with certain visual disabilities. Different fonts present differently, so we should experiment to find the appropriate size for our chosen font.

Adequate White Space

Substantial amounts of white space around text and graphics make printed materials easier to read. To avoid dense, crowded handouts, use at least one-inch margins and blocked paragraphs with space between each block, rather than continuous paragraphs with indents.

Minimal Text

Avoid dense blocks of text whenever possible. Keep language simple and straightforward and eliminate unnecessary information. Use lists and bullet points to break up text and increase white space. When appropriate, use graphics in place of text. For instance, rather than describing a display screen, include a screen shot.

Headings and Subheadings

Headings and subheadings help break up the text and increase white space. They also act as a navigational guide for the reader, providing an outline of the topic and its main points.

Highlighting Text

If we need to highlight or emphasize text within a block, we should use bold or underline, as italics are harder to read. Colored text is also problematic. Lighter colors do not provide enough contrast against the background, making the text harder to read. Also, some readers cannot distinguish color, so we should never use color to convey meaning. While bold and underlining are recommended, they should be used sparingly as they can distract the reader and interrupt the flow of the text.

Charts, Graphs, and Visual Elements

The best practices highlighted here apply to charts, graphs, figures, and other supplements, including the legends or captions that accompany them. These elements should be presented in the same size font as the main text, with adequate white space. The figure or chart itself should be of adequate size to be easily read and interpreted. It is better to move a chart or figure to a new page than to reduce the size to fit it on an existing page. Visual elements are addressed in more detail later in this chapter in the section on visual aids.

White Paper, Black Text

Materials should be printed on white paper with black text, as the high contrast makes for easier reading. If you must use colored paper, select a light color, such as pale yellow.

Accessibility of Written Materials Posted Online

We might post some of our instructional materials online to make them available after the session ends and to learners unable to attend sessions. In some ways, written materials are more accessible online than in print because learners can manipulate the document to increase text size and brightness or use screen readers. Best practices for printed materials generally apply equally well to written materials posted online. However, there are a few additional considerations for making online materials accessible.

Headings and subheadings are very important to online documents. Without these headings, a screen reader will read the page as one continuous narrative. However, with online materials, we cannot rely on using bold lettering and different size fonts to signal headings and subheadings, as we might with printed materials. Instead, we must use the headings function built into most word-processing programs. This technique will allow screen readers to recognize headers and subheaders, thus aiding in document navigation. In addition, these functions usually add some additional white space around the header, improving the overall appearance and readability of the document even when printed (Accessible U, 2019a). Similarly, we should use the word processor's built-in functions for bullets and numbered lists.

If the document includes hyperlinks, the links should be embedded into the document, rather than giving the URL in the text (Accessible U, 2019b). Screen readers will read every character in the link, frustrating the listener and breaking up the flow of the text. Even in print, including the URL breaks up the text and interrupts the flow. Most word processors will have an option to embed a hyperlink into the text so when the document goes online, users can click the text to follow the link. Since users cannot follow the link in printed materials, you can include a list of URLs in a reference section at the end of the document. We should also avoid using phrases like "click here" as a link, but instead include some descriptive text with the link, so readers know what they will find if they decide to follow it. Following are examples of appropriate treatment of links in written materials.

Poor Practice:

- *Why We Fall for Fake News* (https://www.cits.ucsb.edu/fake-news/why-we-fall) explains cognitive bias.
- Fake news often preys on people's cognitive biases. Click here to learn more.
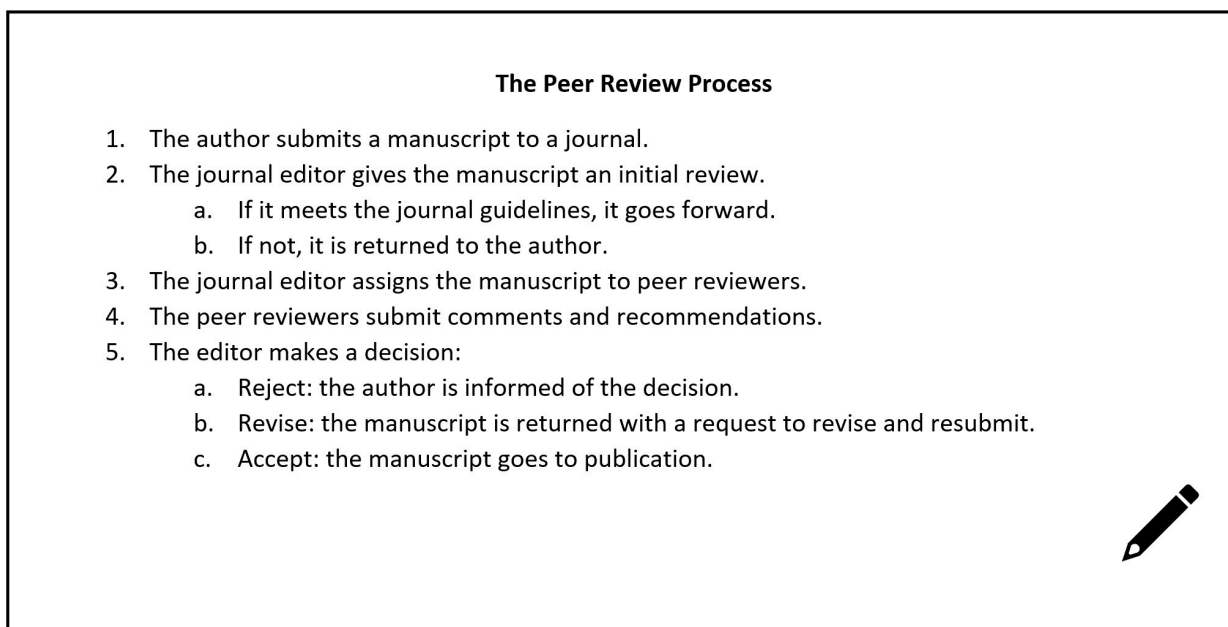
Better Practice:

- Fake news often preys on people's cognitive biases. The article *Why We Fall for Fake News*, from the Center for Information Technology at UC Santa Barbara, explains different types of cognitive biases

and how they influence our thinking.

Visual Aids

Visual aids are instructional materials that include elements such as images and graphics. More than just a supplement to written learning materials, when used well, visual aids can lead to better learning. As Clark and Mayer (2016, p. 77) explain, "people learn more deeply from words and pictures than from words alone." Meaningful graphics often can replace some text, further reducing cognitive overload. However, not all visual elements are equal, and when they are not used properly, they can detract from learning. We might think that adding some pictures or clip art to a handout or a slide will make the materials more engaging for the learner. But if the visuals are only included to make the materials "pretty," the learner will waste cognitive energy processing the visual material without gaining new information or meaning. So, how do we use visual elements to increase learning?

Figure 11.4: Example of a Poorly Designed Visual Aid

The Peer Review Process

1. The author submits a manuscript to a journal.
2. The journal editor gives the manuscript an initial review.
    a. If it meets the journal guidelines, it goes forward.
    b. If not, it is returned to the author.
3. The journal editor assigns the manuscript to peer reviewers.
4. The peer reviewers submit comments and recommendations.
5. The editor makes a decision:
    a. Reject: the author is informed of the decision.
    b. Revise: the manuscript is returned with a request to revise and resubmit.
    c. Accept: the manuscript goes to publication.

The handout depicted in the figure is text heavy, and the ordered list does not clearly reflect the relationship among different parts of the process. For instance, step two includes two outcomes. In one case, the editor rejects the manuscript and the process ends, while in the other the manuscript moves forward to review. However, the linear list does not make the difference between those two outcomes clear. The pencil graphic does not add any meaning to the material and is only loosely related to the topic.

Meaningful visual elements show relationships among concepts, depict processes, organize information, and interpret information (Clark & Mayer, 2016). For instance, a visual aid could label elements of a figure,

such as search fields in a catalog or the parts of a citation. Graphs and charts can condense complex quantitative and relational information into clear visuals. Flowcharts can illustrate processes, and organizational charts can show relationships among different entities. In each case, the visuals are conveying information, often using minimal text. Figure 11.4 and Figure 11.5 show two examples of instructional materials. Both describe the peer review process, but they are not equally effective.

Figure 11.5 Example of a Properly Designed Visual Aid
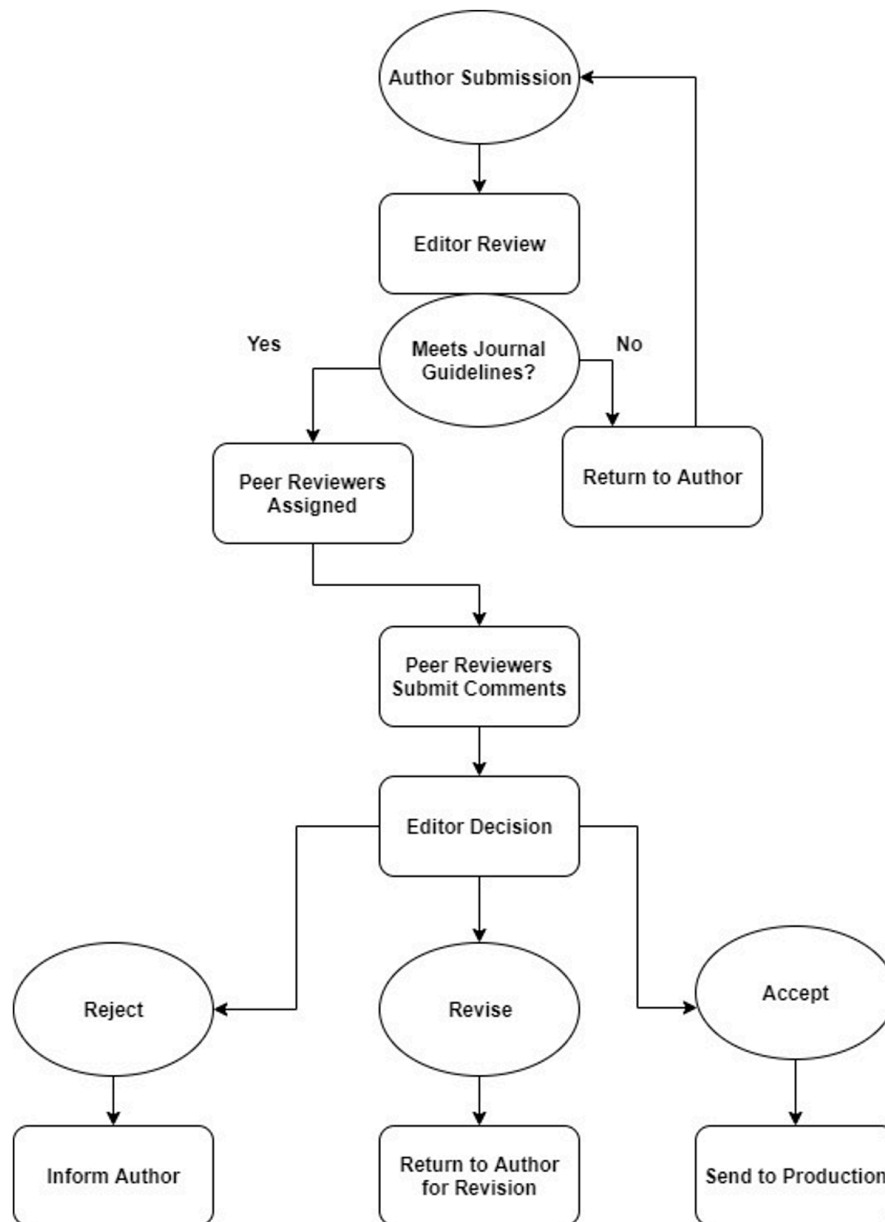
The handout depicted in the figure uses a flowchart to visually illustrate the steps in the peer–review process, and their relationship to each other is clearer. The different outcomes of step two are obvious. Also, there is less text for the learner to digest. This visual aid could stand on its own or could accompany a more detailed written or spoken description of the process.

High contrast between the background and the graphic are important (Association of Registered Graphic Designers of Ontario, 2010). Black-and-white graphics with bold lines are best, but if you use color, choose highly contrasting colors, such as dark lines against a light background. In general, avoid grayscale and light colors. Again, colors should not be used to convey meaning because that meaning would be lost to people who are using screen readers or who are unable to differentiate colors. In keeping with the contiguity principle mentioned earlier in this chapter, when visual aids combine text and graphics, the text should be placed next to the relevant part of the graphic to reduce the effort needed to connect the concepts.

Commonly available word-processing tools such as Microsoft's *Word* (https://www.microsoft.com/en-us/microsoft-365/word) or *Google Docs* (https://www.google.com/docs/about/) usually are sufficient for creating basic handouts, and *Word's* Illustrations function offers some options for creating simple graphics to depict workflows, hierarchies, and other relationships. However, both *Word* and *Google Docs* have limited capabilities for creating and integrating more complex visuals and offer minimal control over the formatting and placement of elements within a figure. Several free and low-cost options exist for more complex and visually appealing figures. For example, the flowchart depicted in Figure 11.5 was created in *Draw.io* (https://www.draw.io/), an open-source software for creating diagrams. *Canva* (https://www.canva.com/) is a popular publishing and graphic-design tool that offers a free option and can be used to create slick handouts, brochures, and flyers. Other tools include *Inkscape* (https://inkscape.org/), *TechSmith Capture* (https://www.techsmith.com/jing-tool.html, formerly *Jing*), *Stencil* (https://getstencil.com/), and *PicMonkey* (https://www.picmonkey.com/). See Activity 11.1 for a brief exercise related to creating written materials.

Activity 11.1: Creating Written Instructional Materials

Imagine you are developing an information packet to be shared with new patrons at your library. Choose one of the examples below and develop a brief guide to be included in the packet. Consider using one of the free design tools mentioned in this chapter (*Canva*, *Draw.io*, *Inkscape*, etc.).

- Submitting an interlibrary loan request
- Creating an email account in a free service like *Gmail* (http://gmail.com)
- Downloading a book on *Overdrive* (https://www.overdrive.com/)
- Searching the library catalog or a library database

If possible, exchange materials with a partner and critique each other's work.

Questions for Reflection and Discussion:

1. Do you see examples of the best practices from this chapter?
2. Are visuals used to their best effect?
3. Do the font type and size seem appropriate?
4. Could you offer any suggestions for improvement?


Charts, Graphs, and Tables

Charts, graphs, and tables are excellent ways of organizing and presenting data. Charts and graphs, in particular, can make complex information more comprehensible than it would be in raw-data form, and can make relationships among variables more readily apparent. However, these visuals also require some special considerations. Charts and graphs often use color to convey meaning. We tend to use color-coded lines or bars on graphs to correspond to different variables, or shade regions of a map to represent information, such as population density. To make these materials accessible, we can use patterns—such as dots of varying size and stripes of varying density and direction—rather than colors to differentiate variables. Another option is to use one color and vary the shade, rather than using different colors. Often, different colors have similar levels of brightness and will appear almost identical when rendered in grayscale or viewed by color-blind readers. Using a single color but highly varied levels of brightness will make the figures readable even if the reader cannot distinguish the color. However we decide to render the figures, labeling relevant parts of the graphic reduces the need to rely on colors and a legend to understand the figure (IT Accessibility Group, 2019a). See Figure 11.6, Figure 11.7, and Figure 11.8 for examples of inaccessible and accessible figures, based on circulation rates of materials at a public library.

Figure 11.6: Chart Using Color to Convey Meaning
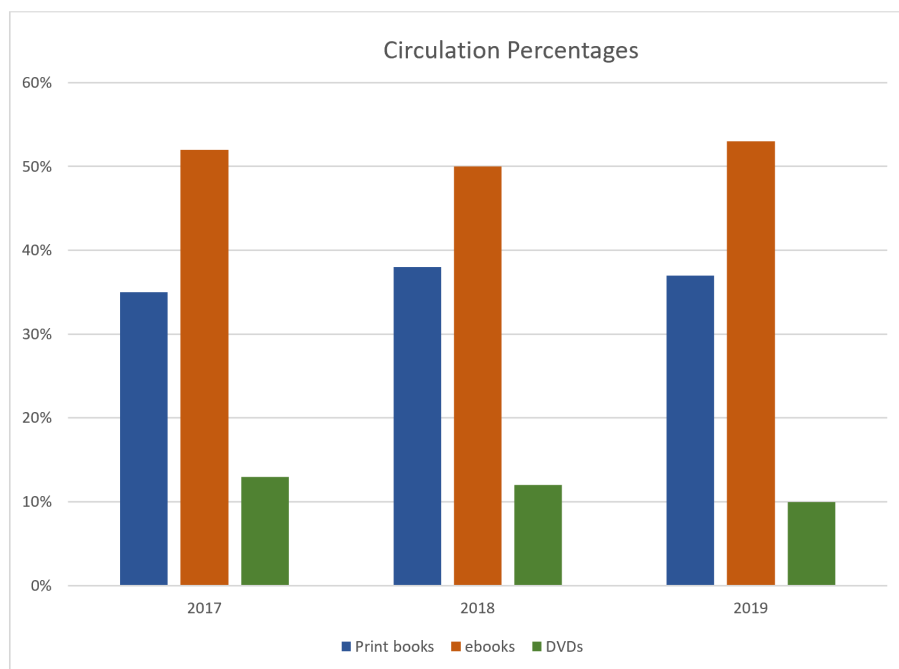
The chart uses color to convey meaning, as each material type is depicted in a different color. Readers with visual disabilities and those who rely on screen readers might not be able to distinguish between the bars on the graph. This example is not accessible.

Figure 11.7: Chart Using Different Shades of the Same Color to Convey Meaning
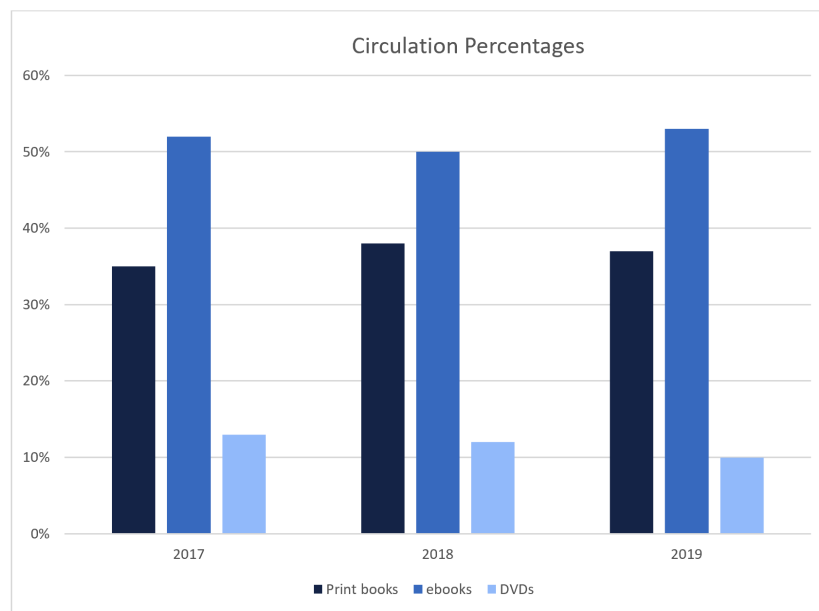
This chart shows the material types in highly contrasting shades of blue. Most color-blind readers would be able to differentiate the bars on this graph, making this chart more accessible than that in Figure 11.6.

Figure 11.8: Chart Using Patterns to Convey Meaning
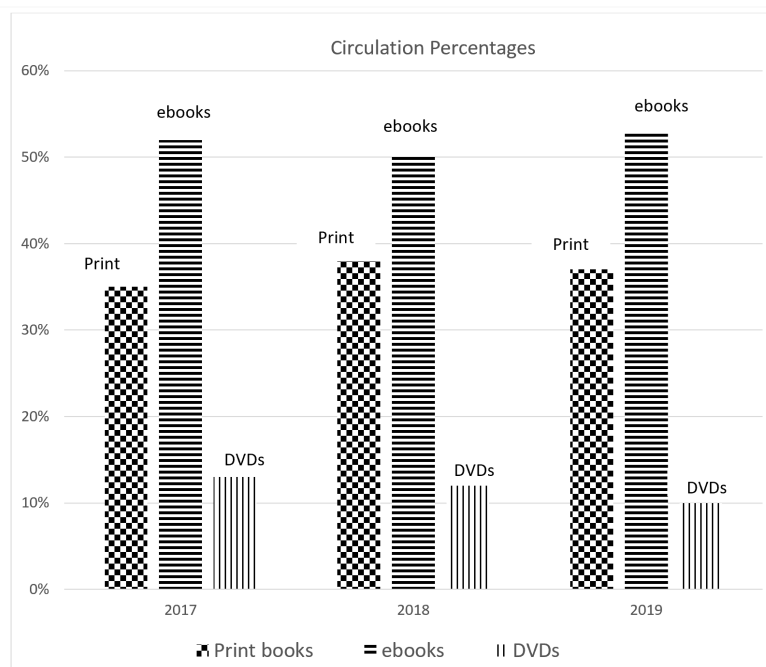
This example uses patterns, rather than colors, to differentiate the chart bars and includes labels for each bar so the reader does not have to depend on the legend. In addition, the font size is larger for all labels and the legend. This chart is the most accessible of the three figures depicted.

Tables can also present some difficulty for users with disabilities and those using screen readers. Gridlines, meant to help organize table elements, can be distracting to the eye. Using a softer gray color for the gridlines and black for the table elements can help the data stand out while still providing a visual guide for the eye. Similarly, we can alternate table rows with gray background fill and no fill, but in this case, we need to choose a very soft shade of gray to ensure enough contrast for the text to be readable (Agency for Healthcare Research and Quality, 2019). We should also designate header columns and rows, so screen readers can distinguish between column and row labels and the data in the rest of the row or column (WebAIM, 2017).

Images and Photographs

Like other visual aids, images or photographs should be clear, bright, and of adequate size. If possible, crop large images to include only the relevant parts. Cropping reduces extraneous information, and you may be able to enlarge the cropped image for easier viewing. But be aware that resizing images can impact their quality and accessibility. If the image becomes too small, details might be lost; however, some images will pixelate and lose clarity when enlarged.

While written material is often more accessible online, where readers can enlarge fonts or use screen readers, visual materials can present challenges: images might not load; screen readers cannot always interpret the content of visuals, especially images; and some viewers who can see well otherwise might not tolerate certain visuals, such as animations (Accessibility at Yale, 2019). To ensure accessibility, images and photographs posted online should be accompanied by brief, explanatory notes known as alt text. Alt text should describe the image and the content it is meant to convey within the context of the instruction, with a focus on salient points. Alt text is meant to be brief, and, ideally, should be no more than 125 words. In keeping with the coherence principle, we should avoid images and graphics that are purely decorative, but if such images are used, then the alt text tag can be entered as "null." If a visual is complex and requires a lengthy description, experts suggest embedding that description in the text and using the alt text tag to direct the reader to that description (IT Accessibility Group, 2019b). Chapter 16 covers alt text in more depth.

Slide Decks

Slide presentations, such as those created in *PowerPoint* (https://www.microsoft.com/en-us/microsoft-365/powerpoint) and *Google Slides* (https://www.google.com/slides/about/), remain popular in both face to face and online instruction. In addition to slides helping instructors stay organized and on topic, some research suggests that access to lecture slides before a lesson can improve learning (Marsh & Sink, 2010; Motagi & Dharwadkar, 2018). Learners also express a preference for handouts accompanying lectures (Stacy & Cain, 2015). By providing some of the main content, these handouts might reduce the need to take as many notes, thus freeing students to listen more closely to the lecture. In fact, Marsh and Sink (2010) found that learners who had access to lecture slides took fewer, but higher quality, notes. Several best practices apply to slide decks:

- Use highly contrasting colors for the background, text, or graphics, and keep the background design plain.
- Use the predefined slide layouts, as these are usually designed to work with screen readers (Accessible U, 2019c).
- Use clean, easy-to-read fonts, and make sure the font size is large enough to be seen by people in the back of the room.
- Use clear graphics and images, and make sure graphics are large enough to be seen by people in the back of the room. As noted above, be sure to include alt text for images and graphics.
- When possible, crop images to show only relevant areas. As necessary, use arrows or boxes to draw attention to relevant parts of the graphic.
- Keep animations and slide transitions to a minimum (TED Staff, 2014).
- In keeping with the coherence principle mentioned earlier, do not include any unnecessary words or images on the slides (Clark & Mayer, 2016).
- In keeping with the redundancy principle, use graphics instead of on-screen text in slide decks (Clark & Mayer, 2016). This practice reduces cognitive load by eliminating the need for students to reconcile the written text with what they are hearing in a lecture or demonstration. Also, if both text and graphics are used, we can overload the visual channel. However, text can be included in certain situations:

  ◦ A few key words to reinforce concepts and ideas
  ◦ When terms are technical, unfamiliar, lengthy, and/or needed for future reference, such as a mathematical formula, or steps in a procedure

- If you include labels for graphics, place the words next to the relevant part of the graphic.

See Activity 11. 2 for a brief activity on slide decks.

Activity 11.2: Creating Effective Slide Decks

The presentation *Quite Possibly the World's Worst PowerPoint Presentation Ever* (https://www.apa.org/gradpsych/2012/01/worst-powerpoint-ever.pdf) consists of a series of paired slides. The first slide in a pair illustrates at least one example of bad design, while the second slide identifies the design issue and how to fix it. As you look at each pair of slides:

1. See if you can identify what is wrong with each "problem" slide before advancing to the answer.
2. Suggest ways you could fix each slide to reflect better design principles.
3. Do you notice any issues not addressed in the answer slide?

Videos

Videos are a popular instructional tool and are discussed at length in Chapter 16. As such, this section will provide only a brief overview.

Videos should be clear, accessible, and engaging, but they do not need to be fancy and full of complicated or high-tech add-ons. In fact, as with most instructional materials, less is usually more. We do not necessarily need expensive equipment to create effective instructional videos. Just a computer, webcam, and headset with a microphone will suffice. If necessary, we can use a computer's built-in audio system to record, but a separate microphone usually provides clearer audio, while a headset helps to reduce background noise.

Following the coherence principle, eliminate any extraneous spoken or written words or images. Focus on audio narration with images for support, rather than on-screen text. When text and graphics are used together, the text should align with the relevant portions of the graphic (Clark & Mayer, 2016).

Closed captioning is crucial to make videos accessible to learners with hearing disabilities and, as with all universal design techniques, can improve accessibility for all learners. Some students might not have access to devices with audio equipment or might need to view the videos in noisy areas, like on a train. These learners will also appreciate closed captioning. The captions should appear on screen and in sync with the video. Some video software packages offer auto-captioning, but the accuracy of the automatically generated text rarely meets requirements for accessibility, so we should be prepared to edit.

Finding Existing Instructional Materials

Most of this chapter assumes that we will be creating our own instructional materials, and homegrown materials have the advantage of being completely customizable. However, creating materials from scratch is not always necessary and, at times, may not be feasible. Complex images and sophisticated multimedia tutorials can be engaging, but they also require time, knowledge, and equipment to create. Rather than developing these materials on our own, we might search online repositories for existing materials. The ACRL *Framework for Information Literacy Sandbox* (https://sandbox.acrl.org/) provides access to a wide variety of materials on information-literacy topics, including slide decks, worksheets, and multimedia tutorials. Many libraries post freely accessible tutorials on their websites. *YouTube* (https://www.youtube.com/) provides access to videos on an immense range of topics, including TED Talks on a number of relevant education topics. We can also search repositories like *Flickr* (https://www.flickr.com/), *Google Images* (https://images.google.com/), and *Pixabay* (https://pixabay.com/) for photographs and images. Some information settings will also have access to subscription sources of videos and tutorials. For instance, *LinkedIn Learning* (https://www.linkedin.com/learning/me) offers tutorials on a wide range of technology and business topics.

Copyright

Whenever we use instructional materials created by someone else, we must be sure we are following all relevant copyright guidelines. Copyright protection means that, in general, we cannot use other people's work without their permission. Currently in the United States, creative works are subject to 96 years of copyright protection; thus, as of 2020, works created after 1925 are covered by copyright. After 96 years, works enter the public domain, and they are free to use without restriction. While reuse of copyrighted materials for noncommercial, educational purposes is often protected by fair use, such protection is not guaranteed, and there are limits to fair use. Four factors are usually used to determine whether fair use exceptions apply to a specific circumstance (Copyright.gov, 2019):

- **Purpose and character of the use.** Generally, nonprofit, educational use of copyrighted materials is covered by fair use while commercial use or use of the material that will result in a profit for the user, is not. The government warns that not all educational or nonprofit use will be covered by fair use, nor will all commercial use necessarily be exempt from fair use, but instead, "courts will balance the purpose and character of the use against the other factors" (Copyright.gov, 2019). Transformative use, or use that adds something new to the work for a different purpose, is more likely to be considered fair use than use that is not transformative.
- **Nature of the copyrighted work.** Technical and factual materials are more likely to fall under fair use than creative materials such as poems, songs, and artwork.
- **Amount and substantiality of the portion used in relation to the copyrighted work as a whole.** In determining fair use, courts consider the quantity and quality of the material used. Larger excerpts or excerpts that represent the "heart" of the work are less likely to be covered by fair use.
- **Effect of the use upon the potential market for or value of the copyrighted work.** Part of the purpose of copyright is to protect the creator's right to profit from their work. If reuse of the material will hurt the market for the original work, it is less likely to fall under fair use.

If we decide to reuse existing materials, we must apply all four factors to determine if we are protected by fair use. When in doubt, it is always best to request permission.

We should also be sure to check the licensing agreement for any material we use. Some creators choose to share their copyrighted materials by using less restrictive forms of licensing, which allow for more opportunity and flexibility for reuse by others. Creative Commons (https://creativecommons.org/) enables creators to choose from several different licenses. The least restrictive requires only that the user attribute the material to the creator. Other licenses allow reuse for noncommercial purposes, limit derivative works, require users to share any derivative work they create through a similar open license agreement, or some combination of these options. If the work we wish to use has a Creative Commons license, we can generally reuse it without permission, provided we follow the licensing restrictions and requirements. If we do not see a Creative Commons license, we should assume the material is protected by traditional copyright restrictions.

Conclusion

Instructional materials, both written and visual, are an integral part of teaching and, when used appropriately, can engage learners and deepen learning. Creating effective instructional materials takes time and perhaps some practice, but it does not require expensive equipment nor expertise in graphic design or multimedia tools. The major best practices and takeaways from this chapter are as follows:

- Our brains process visual and auditory materials through two different channels. Integrating visual materials so that they support, rather than compete with, our lectures and demonstrations reduces cognitive load and can increase learning.
- In general, the best materials are simple, clean, and straightforward. We should reduce any extraneous words and images from our instructional materials.
- We should always ensure our instructional materials are accessible to all learners, including providing alt text for images and closed captions for videos.
- When reusing existing materials, we must be sure to adhere to appropriate copyright restrictions.

See Activity 11.3 for a brief exercise on instructional materials.

Activity 11.3: Critiquing Instructional Materials

Search online to find examples of instructional materials from the type of information setting in which you would like to work and take a moment to review them.

Questions for Reflection and Discussion:

1. Can you find examples of the principles and best practices discussed in this chapter?
2. Can you find any room for improvement related to those principles and best practices?

Tools

Canva. https://www.canva.com/

Draw.io. https://www.draw.io/

Flickr. https://www.flickr.com/

Google Docs. https://drive.google.com/

Google Images. https://www.google.com/imghp?hl=en

Google Slides. https://www.google.com/slides/about/

Inkscape. https://inkscape.org/

LinkedIn Learning. https://www.linkedin.com/learning

PicMonkey. https://www.picmonkey.com/

Pixabay. https://pixabay.com/

PowerPoint. https://www.microsoft.com/en-us/microsoft-365/powerpoint

Stencil. https://getstencil.com/

TechSmith Capture. https://www.techsmith.com/jing-tool.html

Word. https://www.microsoft.com/en-us/microsoft-365/word

YouTube. https://www.youtube.com/

Suggested Readings

Accessible U. (2019). *Start small, start now*. University of Minnesota Office of Disability Resources. https://accessibility.umn.edu/start-small-start-now

> The Office of Disability Resources at the University of Minnesota offers a number of guides on creating accessible materials. Each guide is brief, clear, and easy to understand. Whenever possible, the office includes step-by-step instructions for specific software packages, such as *YouTube* or *Google Slides*. Some guides are supplemented by videos and multimedia tutorials.

Association of Graphic Designers of Ontario. (2010). *Access ability: A practical handbook on accessible graphic design.* https://www.rgd.ca/database/files/library/RGD_AccessAbility_Handbook2010_.pdf

> This concise handbook offers practical advice for creating accessible print and web materials. A third section focuses on accessibility of physical spaces. Each section is supplemented by an interesting case study.

Clark, R. C., & Mayer, R. E. (2016). *e-Learning and the science of instruction* (4th ed.). John Wiley & Sons.

> Experts in the area of elearning, the authors provide an overview of how people learn through audio and visual channels, lay out the nine principles of best practice for instructional design, and devote a chapter to applying each principle. Additional chapters explore collaborative learning and gaming. Each chapter is grounded in research but also offers plenty of practical advice and examples.

Inman, J., & Myers, S. (2018). *Now streaming: Strategies that improve video lectures. IDEA Paper #68.* Idea Center, Inc.(ED588350). ERIC. https://eric.ed.gov/?id=ED588350

> This brief report offers clear and straightforward advice for creating effective and accessible videos.

Stony Brook University Libraries. (2019, September 18). *Copyright, Fair Use, & the Creative Commons: Home* [LibGuide]. https://guides.library.stonybrook.edu/copyright/home

> This *LibGuide* gives a thorough yet concise overview of copyright concerns, including an introduction to fair use guidelines and Creative Commons licenses. The guide includes tools for helping to determine fair use, a list of tutorials on copyright, and additional information on related topics such as the TEACH Act, open access, and orphan works.

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IT Accessibility Group. (2019b). *Image alt text.* Accessibility and Usability at Penn State. https://accessibility.psu.edu/images/alttext/#caption

Stacy, E. M., & Cain, J. (2015). Note-taking and handouts in the digital age. *American Journal of Pharmaceutical Education*, 79(7), 107. https://doi.org/10.5688/ajpe797107

TED Staff. (2014, July 15). 10 tips on how to make slides that communicate your ideas, from TED's in-house expert. *TED Blog.* https://blog.ted.com/10-tips-for-better-slide-decks/

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12. Delivering Instruction in the Classroom

Introduction

Instructors often describe teaching as an art, and once we step into the classroom, our work does resemble something of a performance. Our delivery can have a substantial impact on our learners' engagement and the overall effectiveness of the lesson. Dynamic teachers who seem excited about their work and appear to care about their learners will spark a lot more interest than those who seem bored or condescending. This chapter begins with an exploration of teaching styles, provides an overview of the presentation skills necessary for developing a compelling classroom presence, and discusses strategies for common concerns, such as overcoming anxiety, managing classrooms, and handling questions.

Teaching Styles

Lesson planning largely focuses on the content of your session, but before entering the classroom, you should also consider how you will deliver the lesson. Instructors' teaching styles are an expression of how they view their role in the classroom and their relationship to their learners. All of us have encountered a variety of teaching styles as students, and each style has probably evoked a different response or influenced our overall learning experience. Research suggests that a teacher's teaching style can impact student learning and motivation (Bolkan & Griffin, 2017; De Meyer et al., 2014). Activity 12.1 contains an exercise to help you reflect on teaching styles and their impacts.

Activity 12.1: Reflecting on Teaching Styles

One way to get a sense of an instructor's teaching style is to consider how they start a class or course. For Laura, one of the textbook authors, an example sticks out from one of her first undergraduate English classes. As the class start time neared, most of the students had already arrived and found seats; some were chatting with each other. At the exact minute that class was scheduled to begin, the professor walked into the room. Without introducing himself or saying a word, he began handing out a stack of papers titled "The Sheet of 27." This sheet listed 27 automatic deductions on assignments including, for instance, a nine-point deduction for splitting an infinitive. As the sheets made their way around the classroom, people stopped chatting, and by the time everyone had a sheet in hand, the room was silent. Still without introducing himself, the professor began lecturing.

Questions for Reflection and Discussion:

1. What sort of tone did this instructor set for the classroom?
2. How do you imagine students felt as the class began?
3. Why might an instructor choose to begin a class this way?
4. Think back to some of the first days of class that you have experienced. What are some of the different ways your teachers have chosen to start class? Do most teachers begin by going over the syllabus and assignments? How often have teachers had everyone in the class introduce themselves? Has anyone ever started class with a joke? Have you had teachers ask the class to work together to create ground rules or norms of behavior for class interactions?
5. Which of the approaches have you found most and least engaging?
6. In general, have you found that the approach teachers use for starting the class is reflective of how they teach throughout the course or session?
7. At this point, how do you imagine yourself beginning a class or workshop session? What approach do you think you would find most comfortable?

[Note: Eventually this professor became one of Laura's favorite teachers, something she did not expect from that early experience!]

Teaching styles can encompass general behavior and demeanor, such as whether instructors are friendly or stern, as well as their preferred instructional strategies, such as whether they are more inclined to lecture or use active learning techniques. Teaching style is more than just personality; it seems to be related to instructors' philosophy of teaching (Atasoy et al., 2018; Saritas, 2016) and might also be influenced by their own confidence or feelings of self-efficacy in the classroom (González et al., 2018; Zhang et al., 2019).

While several descriptions and inventories of teaching styles exist, Grasha's (1994) model is perhaps the most well-known and detailed. Grasha proposed five teaching styles: expert, formal authority, personal model, facilitator, and delegator. These styles, including their pros and cons, are explored in more depth in the following sections.

1. **Expert**
   The expert approach is teacher-centered and assumes that instructors hold the knowledge and expertise on a topic; their role is to help learners gain competence or mastery of the topic by imparting this knowledge to the students. While the teacher's level of knowledge is an asset, some learners might be overwhelmed or daunted by a show of expertise. Some instructors are preoccupied with maintaining their status as an expert and do not encourage questions or debate. Also, if the expert instructor's focus is on transmitting only facts and knowledge, they might not fully expose learners to the underlying processes that lead to that knowledge.Some instructors criticize the expert teaching style because of its teacher-centeredness and reliance on "passive" instructional strategies like lectures. However, the expert style can be both engaging and dynamic when done well. TED Talks are an excellent example; these presentations are delivered as lectures by experts, generally with little, if any, audience interaction, and yet they are usually exciting,

inspiring, and entertaining. As discussed in Chapter 10, several strategies exist to make lectures dynamic and interactive. Further, lectures can be efficient when we have a lot of material to cover in a brief time, or when we want to provide background knowledge before a more interactive lesson. With this in mind, we should not dismiss the expert style out of hand but consider when and how to use it to its best advantage.

2. **Formal Authority**

   Similar to experts, the instructors in the role of formal authority hold status due to their education, background, and position. Formal authorities tend to focus on enculturating students into a field or discipline by teaching them the "right way" to do things, using feedback to guide learners. One advantage of the formal authority approach is that the teacher tends to establish clear goals and expectations. However, this approach can also result in "rigid, standardized ways of managing students and their concerns" (Grasha, 1994, p. 143).

3. **Personal Model**

   Instructors who use the personal model tend to lead by example and model behavior. While experts and formal authorities might be more likely to lecture, personal models will demonstrate skills and processes, and guide students through hands-on activities. These instructors tend to draw on personal experiences and stories as examples.

4. **Facilitator**

   The facilitator acts more as a coach or guide than an expert instructor. Facilitators are focused on developing learners' independence and assist learners in that quest by "asking questions, exploring options, suggesting alternatives, and encouraging them to develop criteria to make informed choices" (Grasha, 1994, p. 143), along with providing meaningful feedback. The facilitator approach is more learner-centered than the expert, formal authority, or personal model. However, Grasha warns that this approach takes more time and can be inefficient if the instructor has a great deal of content to share.

5. **Delegator**

   The delegator is perhaps the most student-centered approach. The delegator's ultimate goal is to empower students to be independent, often taking a discovery or problem-based approach to learning. Delegators may give students projects or problems to tackle on their own or in self-directing groups, intervening only at the students' request. This approach can be very engaging and hands on, but it can also make some learners anxious if they are not ready for such autonomy.

These teaching styles are not prescriptive or exhaustive, and they are not meant to be restrictive either. Just as we would be unlikely to strictly adhere to a single learning theory in our instruction, no instructor embodies just a single style of teaching. But it can be helpful to be aware of these different styles and how they play out in the classroom. For instance, the expert and formal authority approaches are most associated with lecture, while the personal model approach tends to incorporate some demonstration. When adopting facilitator and delegator styles, teachers employ more active learning techniques. The delegator style can be used with individual students but tends to involve a lot of group projects (Gill, 2013) and may be more appropriate for credit courses than single-session workshops. Most likely we will find ourselves combining styles, even within the same lesson. For instance, in a high school class focused on research papers, we could start the lesson with a combination of the expert and personal model styles by giving a brief lecture and demonstration on how to search using keywords and subjects, and how to combine search terms with

Boolean operators. Next, as we give the students time to try their own searches, we would adopt a facilitator role as we circulate through the class and coach them on their strategies.

Activity 12.2: Discovering Your Teaching Style

Determining your preferred teaching style can help you select instructional strategies, think about how you approach activities, and analyze the steps you take to manage the classroom. Use the questions below to reflect on which teaching style most resonates with you. Remember that you are never tied to a single style and that your preferences may change over time or in different circumstances.

Questions for Reflection and Discussion:

1. Which of the styles outlined in this chapter most resonate with you? Why do you think that is?
2. Are there any styles that you feel would not suit you right now? Why might that be?
3. You could think of the style that resonates with you as your preferred, or comfort, style and the one that does not suit you as your stretch style. What are the advantages of your comfort style? What steps could you take to gain more confidence with your stretch style?
4. Think about some of the good and not-so-good instructors you have had. Which styles best describe them? Do you think their personal teaching style impacted your perception of them or of the content? How so?
5. Think about an information setting, group of learners, or information literacy standard that you would like to work with. Would that setting, audience, or standard impact your choice of teaching style? How so?
6. Imagine you are preparing a lesson on searching the library catalog, a database, or an archival finding aid for an audience of your choice. Choose two of the teaching styles, and describe how you would deliver the lesson in each of those styles. Was one style easier for you to describe? If so, why might that be?

The two main points to remember with teaching styles is to match the style to the content and audience, and to do what feels authentic. Students often need some prerequisite knowledge before they can begin a new topic. Even if we are committed to acting as facilitators in our teaching, an expert lecture can be an efficient way to deliver an overview of a new topic or to recap previous information relatively quickly. The expert style can also work well for sharing factual information. On the other hand, if the lesson involves learning a new skill, a lecture might be too passive and abstract an approach. In that case, a demonstration, followed by hands-on practice, is probably most effective. Beginning teachers might feel more comfortable in an expert role where they have a little more control over the classroom and the flow of information. Over time, as they gain confidence, they will feel ready to give learners more autonomy and step into a facilitator or delegator role. See Activity 12.2 for a brief exercise on discovering your teaching style.

Basic Presentation Skills

If you think about some of the best (or worst) presentations you have seen, you can probably recognize the fundamental aspects that distinguish an engaging delivery from a less engaging one. These can be summed up as presentation or public-speaking skills, and include the presenters' speaking voice and body language, how they move around the space, and their overall demeanor.

As each of these skills is discussed in more detail, keep in mind that the advice and tips must be understood within the logistical context of the instruction session. Library instructors are more likely to be presenting to a group of 10 workshop attendees or a classroom of 20 or 30 students than to an auditorium of hundreds. Similarly, teaching tends to involve more interaction between the instructor and student than, say, a keynote address, which typically is delivered as a lecture or monologue. While we rely on many of the same techniques, our delivery will be different in each situation. In a workshop or classroom, we can move around the room and make direct eye contact with learners but will probably have to rely on our natural voice projection to be heard. During a large lecture we might have a microphone to ensure we can be heard, but we might also have to stand behind a podium to access the microphone. The key is to be aware of your space, make use of its opportunities, and adapt to its limitations.

Voice

One of the most important steps we can take as presenters is to ensure that our audience can hear us. Projection refers to the strength or volume of a voice. The more we project, the louder and clearer our voice is. In order to be heard comfortably in a classroom setting, nearly all people need to project their voice more than they would for a normal conversation. However, some people tend to drop their voice almost to a whisper when they are nervous. If this happens to you, you will need to make an extra effort to project. One technique to help with projecting is to make eye contact with a listener in the back of the room or choose a spot on the back wall and imagine you are speaking directly to that person or space (Oppelt, 2015).

Importantly, projection is not the same as yelling. If your voice is tired and strained after a session, you may not be projecting your voice correctly. See the exercise in Activity 12.3 and the *Lecturing without Tiring and Losing Your Voice* (Brown, 2012) videos in the Suggested Readings to learn more about correct breathing and projection.

Regardless of how loud you believe you are, do not assume that everyone can hear you. Learners might be reluctant to say if they are unable to hear, so be sure to check early in the lesson that everyone can hear you comfortably. If you are offered a microphone, especially in a large auditorium, use it. Many of us are uncomfortable with microphones if we are not accustomed to them, and we might be tempted to avoid them. Remember that the microphone is not about you; it is about the comfort and engagement of your audience and can be especially important for audience members with hearing disabilities.

Activity 12.3: Projecting Your Voice: Breathing from the Diaphragm

Projection involves breathing from the diaphragm, rather than the chest, and puts less stress on your vocal cords. Babies naturally breathe from their diaphragms, but as adults we tend to shift our breathing into our chests. To test if you are breathing correctly, lie on your back and put an object like a book on your lower abdomen. If you are breathing from your diaphragm, the book will rise and fall with your breath, but if you are breathing from your chest, the book will remain still.

If the book is not moving as you breathe, practice until you can feel the air drawing into your diaphragm. Once you get used to the feeling, try to notice throughout the day whether your breathing has shifted back to your chest, and take a moment to reset. You will find you can speak more audibly and longer if you practice diaphragm breathing. Singers rely on diaphragm breathing for performance, so if you want more practice, you could explore singing lessons.

In addition to ensuring that we are loud enough to be heard, we should address the following issues when speaking:

Diction

Be sure to clearly enunciate each word. This is especially important when our learners include non-native English speakers and those with hearing disabilities, and when we are using unfamiliar vocabulary.

Pace

Slowing down our pace is often key to better diction and can make it easier for our learners to hear and understand us. Many of us speak more quickly when we are nervous, and we will tend to rush if we are running out of time to address all the material we have planned. Remember that even if we cover everything, learners are not likely to understand or remember material that was rushed. When we rush, we often take shallow breaths. The deep breathing exercises that help us project our voice can also help us slow our pace. If you use written notes or an outline, you can include reminders to pause.

Tone and Pitch

Learners will pick up on your enthusiasm for the session and the material—or lack thereof. Varying the tone and pitch of your voice to avoid a monotone can convey energy and help hold the audience's interest.

Verbal Tics and Fillers

Try to avoid fillers or meaningless interjections like "um," "like," and "you know." While these fillers are distracting for the listener, the speaker is often unaware of using them. You might need to videotape yourself or ask a peer to observe you to know if you overuse them. Of course, some occurrence of these fillers is natural and can make your tone more conversational, so do not worry if they slip in occasionally.

Body Language

A substantial amount of information is communicated through body language. Good instructors must be aware of their physical presence as well as their voice. Open body language (such as keeping your hands at your sides rather than crossed or in your pockets), making eye contact, and smiling can improve your presence and make your lesson more engaging. Posture, gestures, and use of space are all integral to effective body language.

Eye Contact

Eye contact signals that we are speaking directly to an individual and can make our learners feel more involved in the lesson and encourage them to pay attention. Try to make eye contact with different individuals throughout the lesson. When answering questions, do not look only at the individual who posed the question, but move your gaze around the group to indicate that the information is relevant to everyone. If the group is very large, you might not be able to make eye contact with each audience member but be sure to look at different sections of the audience as you speak.

Some presenters, especially those who are inexperienced and nervous, might find making eye contact difficult. If engaging in direct eye contact makes you uncomfortable, try focusing on a person's nose or between the eyebrows; to that person, it will seem as if you are looking in their eyes. As you gain experience speaking in class, you will probably find eye contact becomes easier.

Posture

The way you stand conveys a message to the audience. A person who stands up straight looks more confident and engaged than one who is hunched over. Interestingly, some research suggests that good posture can actually increase your confidence (Ohio State University, 2009), so while slouching might be a natural reaction to nervousness, standing up straight might help overcome some of that nervousness. Try to keep your shoulders square and your back straight as you speak. As an added bonus, good posture enables better breathing, which can help you project your voice more effectively, as discussed earlier (Dalton, 2018).

Gestures

Gestures should flow naturally and be an organic part of your speech. For instance, if you are describing something on screen, you will most likely point to the relevant part of the screen. If you are counting out a number of points or steps in a process, you might hold up the same number of fingers to reinforce your point. Do not be afraid of big gestures, especially if you are in a large room; people should be able to see your gestures just as they should be able to hear your voice. At the same time, be aware of distracting gestures, like fiddling with jewelry or hair.

Smile

Smiling is another signal of interest and engagement. People often associate a smile with warmth and competence in the speaker (Selig, 2016). Further, smiling releases dopamine and elevates your mood, which can help counteract the stress some people feel when speaking in public (Riggio, 2012).

Use of Space

Moving around the room as you speak can convey energy and help hold listeners' attention. As you walk around, you can make eye contact with more people and help those who are not in the front and center of the room feel involved. Brookfield (2013, p.14) suggests occasionally standing in the back of the classroom, or "lecturing from Siberia," to connect with learners in the last rows. While moving around the room can be engaging, pacing is distracting. Make your movements purposeful and spend a little time in different spots.

It might seem obvious, but as you move around the room, be sure that you are facing the audience when you are speaking. If you need to write on the board, pause to do that and then resume talking once you have turned back to the room. If you are pointing things out on a screen, stand next to the screen, rather than turning toward it.

Humor

Humor can be a great way to engage our listeners, and a well-chosen joke can illustrate a point or make a connection that learners might otherwise miss. Humor can also alleviate library anxiety, or the stress many of our patrons feel using the library for research (Walker, 2006), and some research suggests that humor can increase learning (Trefts & Blakeslee, 2000). However, some library instructors are reluctant to use humor, perhaps feeling shy or worrying that it will make them appear less professional. Also, humor can be hard to do well. Not all people find the same things funny, and some jokes incorporate offensive tropes. But when

it is done well, the benefits of humor generally outweigh the negatives. Following are some strategies for successfully integrating humor into our sessions:

- **Learn to tell a joke.** Learning to tell a joke is a skill that can serve you well even if you never use humor in the classroom. Good comedy is all about the delivery–the pace of the story, effective pauses, even the tone of voice–and these skills are relevant to any presentation or public speaking. Even if you do not feel comfortable incorporating jokes into your teaching, practice telling jokes to your friends to learn how to use pace, timing, and pauses effectively.
- **Choose humor carefully.** Not all people find humor in the same places. When choosing a joke or story, be sure to avoid anything that relies on stereotypes for humor. Likewise, be cautious of sarcasm and dry humor, as these are more easily misunderstood and can sound negative or offensive. We should also be cautious with jokes that rely heavily on cultural knowledge, including pop culture references, as not all learners will have the same points of reference.
- **Make it relevant.** Brief jokes and comic asides can be a nice way to break up a lecture or reinvigorate the class if attention is lagging. However, jokes, cartoons, and other uses of humor should be relevant to the session.
- **Be aware of copyright.** Showing a comic strip or humorous video clip can be an easy way to inject some humor into our classes. Just remember that most of what you find online is likely protected by copyright. Be sure to credit the original source and follow any relevant licensing agreements.

Common Concerns

Instructors, especially new instructors, share a number of questions and concerns about delivering instruction. This section addresses some of the most common concerns.

Overcoming Anxiety

If the thought of standing in front of a classroom to lead an instruction session fills you with dread, you are not alone. More than one-quarter of Americans report anxiety at public speaking, making it one of the most common fears (Wilkinson College, 2018). The fact that this fear is so common means that your listeners are likely to understand and be sympathetic if you are a little nervous.

Preparation and practice are two of the best tools to overcome this anxiety (Sawchuck, 2017). If you have followed the instructional planning steps outlined in this book, you should be well prepared with a clear set of learning outcomes, carefully chosen instructional strategies, and a detailed lesson plan. While it is difficult to re-create an authentic classroom environment, you should try to practice your lesson ahead of time. If possible, recruit some colleagues to act as the audience, and encourage them to ask questions and offer feedback. If you are unable to assemble an audience, you can practice a lecture in front of a mirror or

even an obliging pet. What is most important is running through the words out loud to get comfortable with them.

Preparation and practice take place well ahead of the session, but other relaxation techniques can help you calm down just before entering a classroom. The deep-breathing exercises for vocal projection, described earlier in this chapter, can also be used to reduce anxiety. Some people benefit from visualizing a successful presentation, imagining themselves providing a confident and engaging session to a receptive audience (Sawchuck, 2017). Others find listening to music, a favorite podcast, or a comedy routine helps them relax.

Remember that anxiety can lead us to exaggerate problems (Career Press, 1993; Sawchuck, 2017). We can challenge our fears by identifying what we are afraid of, asking ourselves whether our fears are rational, and then considering how we could handle the situation if our fears came to pass. For instance, if we are afraid that we will forget content, we can ensure that we have notes with us. If we are afraid that people will laugh at us, we can remind ourselves that our audience is likely to be interested and supportive. Sawchuck (2017) recommends focusing on positive outcomes over negative ones.

While even experienced speakers sometimes feel anxiety, most people find that the more presentations they do, the less nervous they feel. In other words, one of the best steps for overcoming your fear is to take every opportunity to speak in public. You can be creative in looking for opportunities. For instance, you might deliver a report at a staff or community meeting; take a public-speaking class; volunteer to speak at your local school's career day; join service organizations, like Kiwanis or Rotary clubs, that offer speaking opportunities; or find a local Toastmasters club, an organization that focuses on building public-speaking skills (Fasano, 2017).

Amount of Content

One common concern is how to plan an appropriate amount of content; instructors worry about having too much material and running out of time or having too little material and ending up with extra time to fill. While both of these situations are stressful, having too much material is a more common problem. Including time stamps in the lesson plan, or estimates of the time needed for each section, can help in planning, but these estimates are hard to calculate, especially for new teachers. Instructors, especially those with less experience, often underestimate how much time they will need to devote to various topics and activities. As a result, they allot too little time to each section of the lesson plan, include too much material and too many activities, and find themselves rushing to include everything.

LaGuardia and Oka (2000, p. 59) suggest following a two-step process to right-size curriculum content. First, they recommend that instructors cut half of the content from their original lesson plan. Then, working with the new, reduced outline, the researchers suggest cutting an additional third from the outline, resulting in a final lesson plan that is one-third the size of the original. LaGuardia and Oka acknowledge that this is a difficult process, but the resulting outline will reflect a much more realistic amount of content for the given time frame. Making these cuts will feel challenging because all of the material tends to seem valuable and important. Review the discussion on big ideas and essential knowledge in Chapter 8 to help you determine what material is really necessary, and what would just be nice to know but not essential. If you are still

worried about having too little material, plan some backup activities or demonstrations to fill in any extra time. Just be sure that the extra material is related to and reinforces the existing content.

Classroom Management

Occasionally we will have learners who are disruptive or uncooperative. Our exact response will depend on the nature of the disruption, but several general classroom management strategies can be useful across a variety of situations. Begin class by setting clear expectations, including for behavior. Remind learners to be respectful in all of their interactions, and model that behavior for them. In public libraries, learners have chosen to attend sessions, so they are likely to be motivated and engaged. In school and academic libraries, on the other hand, students might not have a choice about whether to attend a session and might resent the use of their time, especially if they do not see the value in the material. You can remind learners what they are gaining from the session in terms of new skills and knowledge, which might encourage them to pay attention.

If the group is just too lively or the conversation is getting off track, you can gently redirect by saying something like, "This is a great conversation, but I want to make the most of our time, so I'd like to bring us back to today's topic." If, however, individuals are being rude to their peers or to you as the instructor, you should remind them of the behavioral expectations. Keep your tone positive and focus on the behavior rather than the person. If the behavior continues, as a last resort you could ask the individual to leave the classroom. Again, try to keep the focus on the actions rather than the individual. For instance, you might say, "That behavior is distracting, and your peers are trying to learn. If you cannot stop, please leave so we can continue the lesson."

Handling Questions

Having to answer questions on the fly is something that causes many speakers and instructors anxiety. Keep in mind that learners' questions are a sign they are engaged in the session's content and trust you to be able to assist in their learning. Looked at this way, questions are a sign of successful instruction!

One of the best ways to be prepared for questions is to be thoroughly familiar with your topic and materials. Following are a few additional strategies:

- **Be confident.** Remember that you are an information expert and that you have spent a lot of time preparing your class; you can feel confident about your skills and knowledge.
- **Ask the learner to repeat the question, if necessary.** You cannot answer a question well if you do not understand it. Do not be afraid to ask the student to repeat the question if you did not hear it clearly or are not sure you understood it. Another strategy is to paraphrase the question back to the student and ask them if you understood it correctly.
- **Anticipate questions.** Some material is more challenging and some tasks more complex than others. If

we have taken the time to get to know our audience, we might anticipate the parts of the lesson that will be most challenging and the kinds of questions that might arise, which will allow us to prepare our answers.

- **Follow up with the student.** Learners might be shy to ask a follow-up question, or to admit that they are still confused after hearing your answer. When you have finished your response, consider asking whether you have answered the question completely, or if anything is still unclear.
- **Admit when you are unsure.** No one has every answer, and it is perfectly acceptable to admit if you cannot fully answer a learner's question. Rather than just saying you do not know, you might offer to help them search for the answer after class or offer to follow up with them at another time. Remember that admitting you do not know the answer but are willing to seek it out models curiosity and inquiry for learners and can be as engaging as a smooth, expert answer.

Handling Mistakes

Everyone makes mistakes. While this knowledge is reassuring, when you have just made a mistake in front of a room full of people who expect to learn from you, it can feel devastating. Try to remember that any mistake you might make in a library instruction session is unlikely to be very high stakes or have terrible consequences (Melissa, one of the authors of this book, likes to remind herself that when she was a swim instructor, a moment of inattentiveness could have a truly fatal consequence; in comparison, library instruction is much less anxiety producing). Once you realize that you have made a mistake, take a deep breath, acknowledge the mistake, and correct it. Once you have corrected the mistake, try not to dwell on it. Repeated apologies or explanations only draw more attention to the problem and might confuse the learner.

You can also reframe mistakes as teachable moments (Tustin, 2017). Keep in mind that if you made a mistake as an information expert, learners probably find the same information or skills challenging. Take some time to unpack the mistake, figure out what the confusion or stumbling block might be, and work with the students to correct it. For instance, if you mix up the Boolean operators "and" and "or," you can discuss with learners how this is a common mistake because outside of online searching, the word "and" usually signals a bigger set but in searching it is the opposite. By acknowledging and correcting your mistakes, you are also modeling a growth mindset for students and demonstrating that they can take risks in their learning process and learn from mistakes.

Conclusion

Our time in the classroom interacting with our students can be the most rewarding part of teaching, but for many of us it is also the most anxiety-inducing. Our presentation of the lesson we have so carefully crafted is part of the art of teaching, and many strategies exist to ensure an engaging delivery and overcome any anxiety we feel. The key takeaways from this chapter are summarized here:

- Different teaching styles will suit different instructors, audiences, and formats. We should explore various teaching styles to discover which style or combination of styles feels most authentic to us and allows us to engage with students with the most confidence.
- Even in discussion-based classes, instructors spend substantial amounts of time speaking. Proper breathing and good pace, tone, and diction lead to a clear and engaging presentation. We should also be aware of our posture, eye contact, and gestures, as a lot of information is conveyed through body language.
- Relevant stories and judicious use of humor make presentations livelier and can illustrate points and make connections for learners in an engaging way.
- It is natural to be nervous about public speaking. Many strategies exist for overcoming our anxiety, but preparation and practice are the most effective.

Suggested Readings

Artman, J., Sundquist, J., & Dechow, D. R. (2016). *The craft of librarian instruction: Using acting techniques to create your teaching presence*. Association of College & Research Libraries.

> This engaging book draws on acting techniques to offer a wealth of tips for improving presentation styles. The authors share a number of physical and vocal warm-up exercises, along with sections on identity and reflection, and tips for handling challenges such as technology failures. All examples and strategies are framed around library instruction.

Berkun, S. (2010). *Confessions of a public speaker*. O'Reilly Media.

> This book is written in an entertaining and conversational style and is full of great advice for crafting an interesting and engaging presentation and dealing with fear of public speaking. Although the focus is on lecture-style presentations such as keynote addresses, the strategies and techniques are relevant for teachers as well.

Brown, R. (2012). *Lecturing without tiring or losing your voice* [Videos]. Center for Instructional Innovation and Assessment.

> Part 1 (Introduction): https://www.youtube.com/watch?v=Ju5whpzA7bU
> Part 2 (Warm-Up): https://www.youtube.com/watch?v=PZOtZwVfbtk
> Part 3 (Breath): https://www.youtube.com/watch?v=YAo24z1p4_s&t=1s
> Part 4 (Placement): https://www.youtube.com/watch?v=5Tmls-lAi4s
> Part 5 (Resonators): https://www.youtube.com/watch?v=E2OxNnr0ZAE

> This series of videos teaches proper breathing techniques to help you project your voice and protect your vocal cords.

Gallo, C. (2014, March 4). 9 *public speaking lessons from the world's greatest TED Talks*. Forbes. https://www.forbes.com/sites/carminegallo/2014/03/04/9-public-speaking-lessons-from-the-worlds-greatest-ted-talks/#50d2328b4a9d

> This article sums up public speaking advice from nine popular TED Talk speakers. The advice is distilled from Gallo's book *Talk Like TED* published in 2014 by St. Martin's Press, in which each speaker offers a full chapter outlining their advice.

Polkinghorne, S. (2015, September 9). Unpacking and overcoming "edutainment" in library instruction. *In the Library with the Lead Pipe*. http://www.inthelibrarywiththeleadpipe.org/2015/edutainment/

> Polkinghorne examines and challenges calls to integrate theater and humor into library instruction simply for the sake of entertainment, suggesting it can undermine librarians' role as teachers. Rather, she reframes the use of performance techniques like improv to make library instruction engaging while still maintaining a focus on learning and outcomes.

Trefts, K., & Blakeslee, S. (2000). Did you hear the one about the Boolean operators? Incorporating comedy into library instruction. *Reference Services Review*, 28(4), 369-378. https://doi.org/10.1108/00907320010359731

> In this case study, the authors share their experience taking a comedy workshop and incorporating what they learned into their library instruction. The article includes practical advice for integrating various kinds of humor into the classroom, including jokes, videos, and cartoons.

Walker, B. E. (2006). Using humor in library instruction. *Reference Services Review*, 34(1), 117-128. https://doi.org/10.1108/00907320610648806

> Walker offers a nice guide to incorporating humor into your teaching, providing a general overview of classroom humor techniques as well as some background on how humor can reduce learners' anxiety. The article also explores different styles of humor and offers advice on cultivating a personal style.

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13. Evaluating and Improving Instruction

Introduction

Chapter 9 discussed assessment, a crucial step in Backward Design that allows us to measure student learning. The terms "evaluation" and "assessment" are often used interchangeably, but while assessment focuses on learning and student progress toward identified learning outcomes, evaluation involves "determining the quality of the service or activity and the extent to which the service or activity ... accomplishes stated goals and objectives" (Hernon & Schwartz, 2012, p. 79). While learning is always our main focus as instructors, we should also consider other factors that contribute to the overall success of our instruction, like learner satisfaction and perceived quality of the lesson. Students can certainly learn even if they do not enjoy the process, but their levels of satisfaction can impact their learning and, for those who voluntarily attend workshops and trainings, influence whether they will return for future sessions. This chapter explores methods for evaluation of library instruction with a focus on quality and patron satisfaction. See Activity 13.1 for a brief reflection on evaluation.

Activity 13.1: Reflecting on Evaluation

Nearly all of us have some experience with evaluation as a learner. For instance, students, especially in higher education, regularly fill out course evaluations, and workshop participants are often asked to complete feedback forms or surveys at the end of a session. Recall a time that you have responded to this sort of evaluation.

Questions for Reflection and Discussion:

1. Surveys linked to instruction sessions, like course evaluations, often mix questions about learning (assessment questions) with questions about satisfaction (evaluation questions). Can you recall specific evaluative questions?
2. If you cannot recall specific questions, can you imagine the kinds of questions that might be asked on such a survey?
3. How might instructors use the information from evaluative questions to inform their instruction?

Planning for Evaluation

As with assessment, instructors can use data from evaluations to identify areas for improvement. Evaluation

data can also help library managers determine the effectiveness of an instruction program and inform allocation of resources in support of the program, and it can demonstrate the value of the program to library stakeholders. Some studies have linked student satisfaction and engagement to self-regulation (Liaw & Huang, 2013), perceived quality of instruction (Rodriguez et al., 2008), and learning (Baños et al., 2019; Lo, 2010). Because of these potential impacts on students and the usefulness of data for improvement and demonstrating value, we should consider evaluating our instruction sessions as well as assessing for learning.

The process of evaluation is similar to that of assessment, described in Chapter 9, and can be summed up in four steps:

1. Identify the criteria by which we will evaluate the instruction. For assessment, we use our learning outcomes. In evaluation, as described in more detail later in this chapter, we explore other criteria that impact the perceived quality or success of the session.
2. Find or develop a tool to gather data related to those criteria.
3. Analyze the findings.
4. Use that information to make informed decisions about changes.

Identifying Criteria for Evaluation

Just as we need learning outcomes in order to assess student learning, we need to identify metrics against which to evaluate our instruction sessions. Importantly, evaluation in instruction generally takes the learners' perspective, meaning that quality and success depend on the learners' subjective experiences. As Hernon and Altman explain, "if customers say there is quality service, then there is. If they do not, then there is not. It does not matter what an organization believes about its level of service" (1996, p. 6). The researchers' point is that when the learner's opinion of the quality or success of instruction differs from the instructor's, the learner's opinion counts, because they will act on it. If learners enjoy the session, they might return and even encourage others to attend. If learners did not find the session useful, or if they perceived the instructor to be unengaged, they probably will not return and are likely to tell others about their negative experience (Dixon et al., 2010).

To create or identify evaluation measures, we need to ask ourselves what criteria or outcomes would define a successful instruction session. Our choices of what to measure should align with the mission and priorities of our institution and focus on what will be most helpful in improving our practice. Often, these measures will relate to the quality or enjoyability of the session as determined by the learners, which means we will want to ask questions related to our learners' perceptions of and attitudes toward the session. Satisfaction is one popular measure in evaluation.

Developing Tools

Using the criteria we have identified, we can develop tools to gather relevant data. As described in more detail later, a range of possible data-gathering methods exists, including both quantitative and qualitative methods. Quantitative methods include tools, such as surveys, that generate numerical data. Qualitative methods collect textual data. Examples of qualitative methods include comment cards and minute papers.

Analyzing Data

Once evaluation data has been gathered, we need to analyze and interpret the data to uncover its meaning. Specific methods of analysis will vary, depending on whether we have gathered quantitative or qualitative data. In general, quantitative data is analyzed using frequency counts and percentages, while qualitative data is analyzed for themes or patterns in the responses. For instance, we would calculate the percentage of people who rated themselves on a survey as highly satisfied with an instruction session, or review comment cards to see if learners agree on which aspects of the session were most engaging or least clear. It is beyond the scope of this chapter to provide in-depth explanations of data analysis, but the Suggested Readings at the end of the chapter provide more information.

Using Data

After analyzing the data, we must think about what story the data tells and how we can use what we have learned to make improvements to our instruction. For instance, if a substantial portion of our learners indicates that the pace of the session was too fast or too slow, we can adjust the pace. We might keep an activity that learners liked, and tweak or discard one that they found boring or unhelpful.

Creating Evaluation Tools

A number of methods exist for evaluating instruction. In fact, some of the assessment methods described in Chapter 9 could be readily adapted for evaluation. This section highlights several evaluation tools, with a focus on those most likely to be used in library instruction.

Surveys

Surveys are probably the most popular method of evaluation. In fact, anyone who has been through a college

course in the United States is probably familiar with the end-of-semester course evaluation survey. These surveys are useful because they are relatively quick to administer and analyze, and they can incorporate a range of questions about different aspects of the session, including learners' satisfaction, self-efficacy, and engagement.

Surveys usually consist of closed-ended questions, sometimes called forced-choice questions, that ask the respondent to select an answer among a range of choices or along a set scale. For instance, evaluation surveys often ask learners to rate their level of agreement with statements such as "the workshop met its learning outcomes" or "the instructor provided clear explanations." Similarly, surveys can ask students to rate their level of satisfaction with the session as a whole, or with various aspects, such as the pace of the instruction, the amount of content covered, balance of lecture to activities, and comfort of the facilities. We can also incorporate open-ended questions in surveys and provide space for respondents to provide an answer in their own words. Open-ended questions can be a good way to expand on closed-ended questions. For instance, we might ask learners to rate their level of satisfaction with the session and then ask them to explain their answer by describing which aspects of the session left them more or less satisfied. Open-ended survey questions should be analyzed as qualitative responses.

While we can find some helpful examples of course or workshop evaluation questions online, we will generally create our own surveys tailored to our topics of interest and the specific content and logistics of our session. Writing good survey questions that will result in useful data is deceptively challenging. Slight variances in wording can lead to vastly different responses, and a number of factors can impact the reliability and validity of the data. Following are several strategies for writing good survey questions (Harris, 2007; Lloyd, 2018; Pew Research Center, n.d.):

- Use clear, simple language.
- Keep questions short.
- In general, avoid using technical terms and jargon. If you do include these terms, provide a brief definition.
- Avoid vague or ambiguous language. Asking learners if they agree that "the activity was good" is vague because the learner could respond to many aspects of the activity, and the word "good" could be interpreted differently by different people. A better approach is to ask about specific aspects such as, "Did you like pairing up with a classmate for the activity?" or "Were the activity instructions clear?"
- Avoid double-barreled questions. Double-barreled questions ask two separate questions but allow for only one answer, making it difficult or impossible for respondents to answer accurately. "Was the instructor friendly and knowledgeable?" is an example of a double-barreled question because the instructor could demonstrate one quality and not the other; respondents, however, are asked to treat the two qualities together. Ask about each quality or aspect separately.
- Avoid leading or loaded questions. Some questions suggest a "correct" answer or prompt the respondent to answer in a certain way. For example, asking if learners are happy they attended the session prompts the respondent to answer positively.
- Offer comprehensive lists. When providing respondents with a list of choices, be sure that all possible options are included and provide an option for a write-in response if necessary.
- Avoid overlapping or ambiguous scales. For instance, if you ask patrons how often they attend library workshops and provide the options of "often," "frequently," "sometimes," and "not often," respondents

will probably have a hard time distinguishing the difference among these choices. How many workshops count as "frequently," and how many would be "sometimes"? Better wording might be "about once a week," "about once a month," "several times a year," "about once a year," or "less than once a year."

- Avoid asking for unnecessary personal information. Demographic questions such as age, gender, race, and ethnicity should be asked only if they are relevant to your analysis. For instance, a public librarian running a mixed-age workshop might be interested in whether learners of different ages rated the workshop differently.

See Activity 13.2 for a brief exercise on writing survey questions.

Activity 13.2: Writing Survey Questions

Following are several poorly worded survey questions. Working individually or in groups, identify the problems and rewrite the questions to conform to the best practices outlined above.

Sample Instruction Survey

Please rate your level of agreement with the following statements on a scale of 1 to 5, where 1 is Strongly Disagree and 5 is Strongly Agree:

	1	2	3	4	5
The workshop was awesome.					
The activities were engaging and relevant to the content.					
The pedagogical approaches were appropriate to the audience.					
I have a better understanding of how to search the OPAC.					
The instructor did a good job.					

If you had the chance, do you think that you might recommend that a friend or family member attend this same workshop in the future?

      Yes   No

Please tell us your age range:

    0-10   10-20   20-30   30-40   40 or above

In addition to the wording of questions, we must think about the overall format and design of the survey. We should focus only on essential questions and avoid anything extraneous. Shorter surveys require less time and effort for the learner to complete and for the instructor to analyze. Sometimes survey questions are

dependent on the answer to a previous question. For instance, if learners did not complete a certain activity, they will not be able to answer questions about that activity. We should make it easy for respondents to skip unnecessary questions by directing them to the next relevant question. Survey software typically offers "skip logic," whereby we can embed commands into the design to automatically redirect respondents away from questions that do not pertain to their experience. Finally, we should organize the survey so questions on the same topic are grouped together.

Surveys can be offered in paper or online. Online surveys will be easier to analyze. Many survey software packages perform some analysis automatically, such as generating frequency counts and percentages, and might also create helpful charts and graphs. However, if we create online surveys, we should ensure that our learners will have access to a device to complete the survey, and make sure the survey is optimized for display on different types of devices and screen sizes. Whether in paper or online, the survey should follow the design and accessibility guidelines outlined in Chapter 11.

Short Text Responses

Reflective writing exercises such as minute papers and Critical Incident Questionnaires (CIQs) can function as evaluations. If questions for reflective writing exercises are directly linked to learning outcomes, then they are assessments. However, if the questions focus on satisfaction or engagement, they are evaluations. Questions for short-text responses will be more open-ended and general than survey questions, but we should still strive to make them clear, simple, and unambiguous. Also, because these questions require more effort on the part of the learner, we should limit ourselves to two or three questions. Some examples of short text evaluation questions include:

- What are one or two things that you enjoyed about today's session?
- What is one thing that you would improve or change about the session?
- What did you find most engaging about the session, and why?
- Which part of the session was least engaging, and why?
- How well did the workshop meet your expectations? Please explain.

Observations and Video Recording

Chapter 14 describes how we can use video recordings and peer observations for reflective practice. When we use these methods to focus on aspects of instruction that impact the quality of the experience or the user's satisfaction, such as our presentation skills and perceived levels of learner engagement, we are engaging in evaluation. We can use the information we gather from the observations and recordings to make decisions that will improve our practice, thereby increasing the quality of instruction and the levels of learner satisfaction.

Standards

Standards such as the *Framework for Information Literacy for Higher Education* (ACRL, 2016) and the *National School Library Standards* (American Association of School Librarians, 2018) outline specific content and skills that learners are expected to master at different developmental and educational stages. We can compare our lessons to these standards to see how well we are addressing them. Keep in mind that we cannot address all standards in a single session. However, we can see if individual lessons align with some part of the relevant standards and frameworks.

Wong (2019) describes how we can use existing standards to evaluate ourselves as instructors. For instance, using the professional competency standards relevant to our setting and position, such as the Association for Library Services to Children's *Competencies for Librarians Serving Children in Public Libraries* (ALSC, 2015) or ACRL's *Roles and Strengths of Teaching Librarians* (2017), we can evaluate our proficiency in each area and determine steps to improve areas that are not as strong.

Wong (2019) also notes the existence of instructional design standards that can help us evaluate the quality of our curriculum and instructional materials. For instance, the Online Learning Consortium (2016) offers a free Scorecard to guide evaluation of our curriculum in terms of overall design, content, engagement, and adherence to principles of accessibility and universal design. We could use the Scorecard ourselves, or we could invite peers to provide us with their feedback on our sessions. We can also use the best practices outlined in Chapter11 and Chapter 16, or the guidelines from the National Center on Accessible Educational Materials (n.d.) to ensure that any handouts, videos, or other learning objects we create adhere to universal design and accessibility standards.

Program Evaluation

The bulk of this chapter focuses on evaluation of individual instruction sessions or self-reflective evaluation of ourselves as instructors. However, evaluation should also be carried out at the program level. Program evaluation allows us to improve services, provide evidence of our value to stakeholders, and inform managerial decisions such as allocation of funds and staff. Program evaluation is discussed in more depth in Chapter 20.

Conclusion

While our priority for library instruction is student learning, evaluation can provide us with useful insights into learners' satisfaction with and perceptions of the quality of our sessions. The main takeaways from this chapter are as follows:

- Evaluation data can tell us how satisfied learners are with our instruction sessions and provide us with an overview of their perceptions of the quality of the session. Since satisfaction is correlated with learning, motivation, and self-efficacy and can influence future attendance, we should make an effort to evaluate our sessions.
- Surveys are one of the most popular evaluation tools, but they can be challenging to develop. We should follow best practices to ensure we are writing good survey questions that will result in useful data.
- Short text responses, peer observations, and video recordings are all valuable tools for evaluation.

Suggested Readings

Applegate, R. (2013). *Practical evaluation techniques for librarians*. Libraries Unlimited.

> Although not specific to instruction, this text offers thorough, clear, and straightforward guidance on developing and implementing evaluation methods, including surveys, interviews, use analysis, and focus groups. Advice on analyzing and interpreting results is included. The author includes plenty of examples, as well as advice on communicating results to stakeholders.

Matthews, J. R. (2007). *The evaluation and measurement of library services*. Libraries Unlimited.

> A complete handbook for evaluation of library services, this text provides information on quantitative and qualitative tools for evaluation, as well as guidance on analyzing and interpreting results. A chapter is devoted to evaluation of library instruction.

Perlmutter, D. D. (2011, October 30). How to read a student evaluation of your teaching. *The Chronicle of Higher Education*, 58(11). https://www.chronicle.com/article/How-to-Read-a-Student/129553

> In this advice column, Perlmutter lays out a simple approach to reading and interpreting course evaluations, including scanning for red flags, teasing out useful data, and preparing by evaluating yourself first. The author recognizes that negative comments can be demoralizing and encourages instructors to take such feedback in stride and recognize when a comment is an outlier as opposed to an indicator of a bigger issue.

Shonrock, D. D. (Ed.). (1996). *Evaluating library instruction: Sample questions, forms, and strategies for practical use*. American Library Association. http://hdl.handle.net/11213/9207

> Despite its publication date, this slim volume remains a useful resource for evaluation of library instruction. The text offers guidance on developing session evaluation questions and advice on survey design, as well as clear and straightforward explanations of how to tabulate and analyze results. Sample surveys are included. A free downloadable version of the guide is available at the American Library Association Institutional Repository.

Winer, L., Di Genova, L., Vungoc, P., & Talsma, S. (2012). *Interpreting end-of-course evaluation results.* Teaching and Learning Services, McGill University.

> This brief guide provides invaluable information on analyzing course evaluations. It offers a clear overview of how to interpret numerical survey results, along with a discussion of various factors that can impact the reliability of those results. Another section deals with interpreting student comments and includes a handy comment analysis worksheet. Although written for college faculty, the advice is applicable for most instructors.

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14. Practicing Reflective Teaching

Introduction

Good instructors do not just assess their students, they also find ways to assess themselves in order to continuously improve their own practice. The American Library Association (2009) identifies continuing education and lifelong learning, specifically with regard to our role as instructors, as a core competency of our profession. ALA (2009) includes understanding of "learning theories, instructional measures, and achievement standards," as well as "the principles related to teaching and learning," as core knowledge, and acknowledges the "necessity of continuing professional development of practitioners." We can address these competencies and continuously improve our teaching by engaging in reflective practice and seeking out professional-development opportunities to enhance our knowledge and skills. This chapter introduces the concept of both general and critical reflective practice and outlines activities to promote reflection. The chapter ends with a review of professional-development outlets and opportunities related to teaching and learning.

What Is Reflective Practice?

Reflective practice "is a process of self-examination and self-evaluation in which effective educators regularly engage to improve their professional practices" (Shandomo, 2010, p. 103). Research suggests that engaging in reflective practice can improve our teaching (Dervant, 2015; Murray, 2015; Zahid & Khanam, 2019), lead to more mindful practice (Mortari, 2012), and increase our self-efficacy (Khanmohammad & Eilaghi, 2017). Ideally, reflection should be as integral to our practice as any of the steps in Backward Design or lesson planning.

Many of us probably already engage in some informal reflection. After an instruction session, we might naturally notice how we are feeling about the session and perhaps think about what is prompting those feelings. For instance, if we feel uneasy, we might try to identify points in the class when we sensed confusion, lack of engagement, or lack of attention. If the session went well, we might think about the parts that felt engaging or revisit specific points when students seemed to have "aha" moments or make insightful connections. In both cases, we might share anecdotes about the class with colleagues and get their feedback.

While both thinking back on the class and consulting with colleagues are aspects of reflective practice, there is a difference between the casual approaches described here and truly reflective practice. As Goodsett (2014, p. 12) explains, "good reflectors move beyond description of an experience and begin to identify problems or questions, gather information to address the questions, study the issues and the gathered information, and make sound decisions for further action based on this act of studying." Our engagement in

reflective activities must be intentional and analytic, and we must apply what we learn from our reflection to inform our practice.

Techniques for Reflective Practice

How do we engage in systematic reflective practice? Reflective practice does not have to take a lot of time, but we are busy people. A good practice is to block off time dedicated to reflection and protect that time as much as possible. Reflection is best when it takes place shortly after the instruction, while the details are still fresh in our minds. If possible, you might try blocking out some time at the end of each instruction session to reflect. Even as little as 15 minutes can be enough to capture initial thoughts.

While reflecting on positive experiences is rewarding, reflecting on challenging events can be uncomfortable, and, unfortunately, we are apt to dwell on the negative (Brookfield, 1995). At some point, we will have a lesson that flops or receive some negative feedback from students or peers (Booth, 2012; Brookfield, 1995), and we certainly need to be honest with ourselves in critiquing our experiences. At the same time, however, we must keep things in perspective and be kind to ourselves. One or two negative comments should not outweigh an abundance of positive feedback. Reflective practice is not helpful if it leaves us drained or discouraged. We should remind ourselves that no one receives perfect reviews all of the time and keep our focus on the fact that we are learning and improving. We should also remember to celebrate our successful lessons.

With these caveats in mind, several activities and guides exist to facilitate reflective practice. This section introduces some of the most popular; more can be found online.

Reflection as a Four-Step Process

One approach proposes a four-step process that encourages us to reflect on our actions and to use reflection as a step toward taking action (York-Barr et al., 2006, p. 82). Step one focuses on the question "What happened?" and invites us to choose an event, situation, or interaction from our classroom and describe it in detail. The event could be positive or one that was challenging or upsetting. In step two we analyze and interpret the event by thinking about "why" things happened as they did. In step three, we answer the "So what?" question by considering what we learned from the event and from our reflection on it, and consider how we might apply what we learned in our practice. The final step asks "Now what?" and invites us to consider our next steps, including how we would handle a similar situation in the future, and how we can get more feedback. Each step is accompanied by additional questions that help guide our reflection and analysis. Table 14.1 lays out the four-step process and questions in more detail. See Activity 14.1 for a brief reflective exercise.

Table 14.1: The Four-Step Reflective Teaching Process

Step	Focus Question	Guiding Questions
Step One: Description	What happened?	• What did I do? • What did others (students, colleagues, etc.) do? • What was my affect? What was their affect? • What was happening around us? What were the circumstances? Was anything unusual going on?
Step Two: Analysis and interpretation	Why?	• Why might things have happened this way? • Why did I behave the way I did? • What can I surmise from others' behaviors and reactions? • What was I thinking and feeling? How might that have affected my choices? • What else might have contributed to the event? • What are my hunches about why things happened as they did?
Step Three: Meaning and application	So what?	• Why did this even seem significant enough to reflect on? • What have I learned from this? How could I improve? • How might this change my practice in future? • What questions do I still have?
Step Four: Implications for action	Now what?	• Are there others I might consult with about this event? Who? • What do I want to remember the next time a similar situation occurs? • How can I set up conditions for productive interactions and learning?

(Adapted from York-Barr et al., 2006, p. 82)

Activity 14.1: Reflections on Teaching

Think about a recent time that you were in a teaching role. This does not have to be a formal classroom experience; it could be teaching your little brother or sister how to tie their shoes or teaching your friend how to make your famous pasta sauce.

Questions for Reflection and Discussion:

1. Describe the experience in as much detail as you can remember.
2. What do you think went well during that interaction? Why did it go well?
3. What might you do differently if you were to teach that same content or skill again? Why would you want to change?

Journaling

Keeping a journal is a relatively low-barrier way to engage in reflective practice. All you need is a notebook or a word processor to get started; then, make a habit of recording your observations, reactions, and ideas after each lesson. As noted earlier, the closer to the session you take notes, the better because your memory will be fresher.

Remember, the point of reflective practice is to move beyond description to analysis and action. We can use the questions from the four-step process in Table 14.1 to guide our journaling. Additional guiding questions include (Danielson, 2009):

- What worked in this lesson? How do I know?
- What would I do the same or differently if I could reteach this lesson? Why?
- What additional data do I need to make an informed decision? How could I get that data?
- What root cause might be prompting or perpetuating the student behaviors I observe?
- What do I believe about how students learn? How does this belief influence my instruction?

Tompkins (2009, p. 226) offers a detailed guide to reflective journaling for librarians. She distinguishes between diaries, which are often free-flowing narratives of thoughts and impressions, with a more structured journal which combines "personal reflections with empirical descriptions," such as class location and time, attendance, and details about the lesson plan. In samples of her own journal entries, which could serve as templates, Tompkins (2009, p. 235, 237) records the date, time, and location of the session; provides some brief background information on the class, such as any discussions she had with the faculty member; and then provides a description of the session, including her own actions and her observations of students. Finally, she completes the entry with a set of reflections which includes her thoughts and inferences on the class, and her ideas for any changes to the session. Tompkins (2009, p. 236, 238) also provides examples of lesson plan and handout revisions based on her reflections, which demonstrate how she put the reflections into action. Similarly, Renard (2019) offers an online lesson plan template with built-in space for reflection.

Video Recording

Recording ourselves in action during an instruction session can be an enlightening, if somewhat uncomfortable, experience. While recording and watching ourselves perform can be excruciating, the insights we get from this process are invaluable. We can see things on recordings that we probably would not be able to notice otherwise, and the impact of seeing it ourselves is different than having an observer describe it. For instance, when reviewing a video of one of her instruction sessions, one of the authors of this book, Laura, noticed that she frequently played with her bracelet while talking. Thinking that action might be distracting, she stopped wearing bracelets when teaching. After listening to recordings of her classes, the other author of this book, Melissa, realized that she frequently uses the word "so" as a filler. Noticing this has helped her think about starting sentences differently and become more deliberate about using silence

in class. While other reflective practices rely on our observations and memory, a video provides us with a concrete and detailed record of the event (Goodsett, 2014).

When reviewing your recording, pay attention to your overall presentation and delivery. Notice things like the volume and pace of your voice, where and how you stand, and whether you make eye contact with learners. Ask yourself whether students in the back of the room would be able to hear you, or whether you are speaking too quickly. Notice whether your voice conveys enthusiasm and interest, or whether you sound monotone. Watch for any distracting behavioral or verbal tics. Finally, review your delivery of the content. Were your explanations clear? Did you provide helpful examples? You might also note whether the impressions you had of the class align with your observations of the recording. For instance, during the session you might have felt like a particular activity went well and that students were engaged. When reviewing the recording, look for evidence that supports or contradicts your impressions. If the recording shows something different than your impression, you might consider what caused the discrepancy.

While the point of video recording is to critique your presentation, you should be fair to yourself and not feel the need to change everything about your performance. Remember that a live session will always be a little "messy," and some tics and a little nervousness are natural and human. You should focus only on changing aspects of your delivery that could impact learner comprehension or engagement, such as speaking too quickly or softly for people to understand. In addition, you should choose just one or two changes to work on. Creating a laundry list of issues will feel overwhelming and could be counterproductive.

As a final note, be aware that recording the session could make some learners uncomfortable. Be sure to let students know ahead of time that you are recording and emphasize that your purpose is to assess your own performance, not theirs. Also, let them know what steps you will take to assure their privacy and confidentiality, such as not sharing the recording and deleting it when you are done with your reflection. If you are delivering your session in another person's class, such as a one-shot session at the invitation of a faculty member, you might alert the faculty member ahead of time that you plan to record.

Peer Observation

Having a colleague observe your class and offer feedback can be informative and perhaps less intimidating than video recording. You could invite anyone with whom you feel comfortable, but if you can find colleagues who also do instruction and whose teaching you respect, they might have additional insights based on their own classroom experiences and understanding of the craft of teaching. They will also be alert to nuances of the classroom and issues of instructional design and delivery that might not be as apparent to colleagues who do not engage in instruction. Most important, however, is to find a colleague whom you can trust (Booth, 2012; Goodsett, 2014), as no lesson will be perfect and by inviting observation you are opening yourself up to criticism. Booth (2012) reminds us that getting feedback from colleagues can be difficult. She suggests that "if you receive harsh or unhelpful feedback, console yourself with the knowledge that it likely was either offered unintentionally or as an unsubtle manifestation of 'why didn't I think of that?' syndrome." Some librarians in educational institutions might have mandatory classroom observations. However, those observations are often part of a formal review process and might take a less developmental or coaching

approach. Even if your institution mandates such reviews, setting up your own observation with a peer can be worthwhile.

In general, your colleagues will probably focus on the same areas and reflect on the same kinds of questions outlined earlier, such as your classroom presence and delivery, the sequence and scaffolding of content, and the overall classroom dynamics. However, you could also ask your colleague to focus on specific areas about which you feel uncertain or have questions. For instance, maybe you feel as if your discussions are falling flat and would like your colleague to pay particular attention to that portion of the class and try to identify issues that might be hindering more engagement. You could create a brief template to guide the reviewer and highlight areas where you would like specific feedback. Example 14.1 shows a sample peer-observation form with a focus on classroom presence and delivery. Even if your colleague provides you with some written feedback, it can be helpful to arrange a time to debrief in real time. A meeting will allow you to ask any follow-up questions and to compare your impressions of the class with your peer's.

Example 14.1: Peer Observation Form

	Fair	Good	Excellent
The instructor's voice was clear and audible.			
The pace of delivery was appropriate to the audience.			
The instructor seemed engaged/interested in content.			
The instructor made eye contact with students.			
The instructor moved away from the podium/whiteboard.			
The instructor made good use of classroom space.			
The instructor had a good "classroom presence."			

What were one or two strengths you observed in the instructor's delivery and/or classroom presence?

What is one thing that could be improved?

An additional benefit of peer observation is that it can be reciprocal; you might offer to observe and critique your colleagues' sessions for them. Acting as the observer not only allows you to provide support to your colleagues, it can be a learning experience for you as well. Watching our colleagues in action gives us ideas and inspiration for our own classrooms. As you observe your colleagues, pay attention to what seems to

work and what you might want to try yourself. Keep in mind, as well, that we all have our own teaching style, and what is effective for one person might not work for someone else. For instance, some people are great at incorporating humor into their sessions, but for another person, the same joke will fall flat. Do not be afraid to try ideas from colleagues, but do not blindly copy them either. Identify elements of their practice that you admire and adapt them to your style.

Communities of Practice

A community of practice moves beyond the one-to-one interaction of peer observation to create a group of practitioners that offer each other support. Group members can share ideas and act as sounding boards for each other. For instance, if one member is considering a new teaching technique or wants to try a new activity in the classroom, they might get input from the group before implementing it. Some groups will share resources, such as lesson plans and rubrics, for other members to use and adapt. Others might act as journal clubs, discussing readings on teaching and learning. Most importantly, however, these groups can offer each other support for the emotional labor of teaching. Group members can celebrate each other's successes and help each other work through challenges. Also, when we discuss challenges with our colleagues, we often find that others are facing the same issues, which can help us feel less isolated.

Student Feedback

Part of the purpose of reflection is to improve the student experience. In order to do that, we must solicit learners' perspectives and input, rather than trying to guess how they felt about our sessions. Many of the assessment and evaluation techniques introduced in Chapter 9 and Chapter 13 can also be used for reflective practice. As we analyze feedback from tools like minute papers and class evaluations, we can reflect not just on whether learners appear to be achieving outcomes or were satisfied with our sessions, but *why* that might be, and what that might mean for our practice. We should look for patterns in the responses and consider what those patterns tell us. For instance, if a group of students indicate that all of them were confused by part of the lesson, we can reflect on the explanations and examples we offered at that point in the lesson or the activities we implemented, and consider what we might do differently next time.

Brookfield (2006) suggests using a Critical Incident Questionnaire (CIQ) to learn more about learners' perspectives on the session. The CIQ is similar to a minute paper, but, rather than asking students to reflect on their learning, the CIQ is designed to "discover the effects your actions are having on students and to find out the emotional highs and lows of their learning" (Brookfield, 2006, p. 41). Brookfield recommends the following questions:

- At what moment in class did you feel most engaged with what was happening?
- At what moment were you most distanced from what was happening?
- What action that anyone (teacher or student) took did you find most affirming or helpful?
- What action that anyone took did you find most puzzling or confusing?

- What about the class surprised you the most (this could be about your own reactions to what went on, something that someone did, or anything else that occurs)?

Because these questions focus on learners' emotional and affective responses, they can help to uncover aspects of our sessions that promote or hinder learning that we might not discover through questions that focus on content. Brookfield also recommends making the CIQs anonymous to encourage students to be honest in their reflections.

While gathering direct feedback from students is important for our reflective practice, we also need to remember that their input might be skewed or unreliable at times. Students are not always good at assessing their own learning, and they might let factors such as the comfort of the room, the race or gender of the instructor, or even how the instructor is dressed influence their feedback. Indeed, some studies suggest that course evaluations, in particular, are not good indicators of teaching effectiveness (Falkoff, 2018) and are often biased against women and people of color (Buskist & Hogan, 2009; Owen, 2019). These caveats do not mean that we should ignore or avoid student input, but we must look at it in a balanced way. Patterns of responses might indicate an issue, but one or two negative comments do not constitute a pattern. If we do get some limited negative feedback, we have to consider it objectively and try to determine if it is a real issue or just the reaction of a disgruntled person. Most importantly, we cannot let a handful of negative comments discourage us (Brookfield, 1995).

Recapturing the Student Experience

Typically, we reflect on our practice from our perspective as a teacher. However, we can also gain insight from putting ourselves, literally or figuratively, in the place of the student. One way to do this is to recall some of the best and most effective teachers, as well as some of the worst and least effective teachers, we have had and analyze what made these instructors good or not-so-good at what they did (Goodsett, 2014; Renard, 2019). Think about the actions the teachers took in the classroom, what tone they set and how they set it, how they managed classroom discussions, how they answered questions, and what teaching methods and instructional strategies they used. You might try listing five personal qualities, skills, or attitudes that made the teachers more or less effective (Renard, 2019), but the idea is to move beyond description to analysis and action. Once you have described the teachers and identified the skills and qualities that made them good (or not so good), think about how the descriptions apply to your own practice. What qualities do you share with the effective teachers, and how do you apply those in the classroom? What qualities could you develop or improve on? How might your analysis of these teachers influence your own practice?

Brookfield (1996) suggests taking the experience one step further by actually becoming a student again. One challenge we face as instructors is that we are so deeply ensconced in our subject that we forget what it was like to be a novice. As instruction librarians, we typically have a master's degree and years of experience working in libraries. Search strategies, types of resources, criteria for evaluating sources, and the jargon of the field are all second nature. As a result, when teaching, we might gloss over explanations that we think are obvious or skip steps in a process simply because we hardly notice them.

Sharing his experience of learning to swim as an adult, Brookfield (1996, p. 4) notes that being a student can help instructors recapture the feeling of not being the expert in the room, and of the discomfort and anxiety that can come from "not getting it." He encourages instructors to find opportunities to engage in learning experiences on topics that are challenging for them. Of course, part of the process is to reflect on your experiences as a learner and think about how they might apply to your own practice. After each session, you might reflect not on the content or what you learned, but how you learned and circumstances that supported or hindered your learning. For instance, did you find yourself unwilling to ask a question because you did not want to admit that you were having trouble understanding? If you did ask a question, did you feel validated by the teacher's response? Did certain activities or approaches to the material engage you? Did others leave you feeling disengaged? Why might that have been? As you answer these questions, think about how these same circumstances play out in your own classroom, and how these reflections might influence your practice.

Teaching Statements

A teaching statement is a narrative that outlines your personal philosophy of teaching and learning, and how you put that philosophy into action. These statements are relatively brief, about a page in length. Teaching statements can be an important professional tool, as they signal to colleagues and employers how you approach teaching, and some employers will ask for a teaching statement as part of the job application for an instruction position. More importantly, developing a teaching statement forces us to reflect on and articulate the beliefs, theories, and understandings that guide our practice, and explain how these influence our instructional activities.

A teaching statement should address four major elements (Graduate Student Career and Professional Development, 2019):

- **Outcomes:** What do you want your students to learn or be able to do? This question is about more than just learning objectives for a single instruction session. Rather, it asks you to think broadly about the fundamental concepts, lifelong learning, and problem-solving skills you hope your learners will attain. Will they be more confident researchers? Better consumers and creators of information? Will they understand the social and economic value of information? While you might not be able to address each of these themes in every session, they are the broad goals and ideas that inform your content and instruction.
- **Activities:** What methods do you use to help students achieve these goals? To answer this question, do not just describe what instructional strategies you use, but why you use them. For instance, if you are a proponent of active learning, discuss why you believe active learning is a valid and appropriate teaching method. You might draw on research and learning theories to support your position. To make the statement more specific and personal, you can also give examples of the types of activities you use in the classroom.
- **Assessment:** How do you know if your students have learned? Discuss the methods of assessment that you use, as well as how and why you use them. You might also address the ways in which you use student feedback to improve your teaching. Again, consider including specific examples of assessment

methods you have used and changes you have made based on student feedback.

- **Philosophy:** Why is teaching important to you? This question prompts you to talk about why you have chosen this career path, and what you get out of teaching. You might also discuss the kinds of professional development and lifelong learning you pursue in order to keep improving your practice.

Addressing some of these areas can feel challenging, especially if you have not yet spent a lot of time in the classroom. However, even if you do not have much experience teaching, all of us have spent plenty of time as students; we can draw on those experiences, and our reflections on effective and less effective teachers, to shape our teaching philosophy. If you have not yet had the opportunity to put your philosophy into practice, you can describe how you *would* implement your ideas in the classroom. See Example 14.2 for an example of a teaching statement from one of the textbook authors. You can find many more examples online.

Example 14.2: Laura Saunders's Teaching Statement

My goals as an instructor in a graduate-level professional program are:

- To provide students with a foundation in both the theory and practice of librarianship.
- To develop their critical thinking and intellectual curiosity by encouraging them to engage with the core questions and challenges of the discipline.
- To facilitate the discovery and creation of new knowledge through active engagement with course content.
- To foster a climate of respect and inclusion.

I strive to achieve these goals through a constructivist approach to teaching and learning, which includes an emphasis on active engagement with course materials, problem-based learning, and collaborative learning through small- and large-group activities and discussions. I have made a conscious effort to integrate more of these practices into my day-to-day teaching, both in person and online. For instance, in my reference class, I moved from a model of introducing and explaining the criteria for evaluating resources and then asking students to apply those criteria, to a flipped model in which students engage with the resources through a series of small- and large-group activities and discover for themselves what is important when deciding the quality of a resource. Similarly, I have students engage with ethical questions related to the profession by examining case studies and current news stories in which students have to draw on their understanding of the values and ethics of the profession and their own experiences to decide what would be an ethical approach to the problem. These activities require students to think critically about the material rather than just apply a set of standards or criteria, and student feedback shows they find the activities to be more relevant and interesting than the lecture-based approaches.

The constructivist philosophy emphasizes the social nature of knowledge, but I also believe that individual students have different preferences for learning engagement. Some students are comfortable joining discussions and engaging with peers immediately, while others want time to process and reflect on new information. I try to accommodate these preferences by providing students with various paths for active participation, including small- and large-group discussions, self-reflective activities, online forums, and feedback sheets so that everyone can participate in a way that is comfortable.

I am strongly committed to issues of diversity, equity, and inclusion, both in the classroom and in the LIS profession. I believe we are all collaborators and partners in the learning process. Just as I bring my own background knowledge, research, and professional experience to the classroom, I encourage students to bring their experiences, to ask questions, and to challenge assumptions so that we can all learn from each other. I strive to create a welcoming and inclusive environment by modeling respectful engagement and valuing diversity of experience. I consciously seek out readings by diverse authors and with a critical focus on issues of diversity, equity, and inclusion in our field, and I work to bring a lens of diversity to the content and activities with which we engage.

My hope is that students will emerge from my classroom ready to engage as professionals and empowered to explore, critique, question, and even challenge the major issues of the field.

Critical Reflection

The reflective practice discussed thus far in this chapter focuses mostly on the design and delivery of instruction. Critical reflective practice focuses on uncovering the assumptions and biases that influence our teaching and surfacing the politics and power dynamics of the classroom in order to facilitate a more democratic and inclusive environment (Brookfield, 1995). Critical reflection acknowledges that teaching is not a neutral act. Rather, it is grounded in the values, norms, and behaviors of the culture in which it is practiced, a culture that is usually so ingrained as to be invisible. As a result, instructors make decisions and plan their instruction around cultural biases and assumptions without even realizing it. For example, many instructors assume sitting in a circle with their students is more welcoming and democratic than standing at the front of the class with students sitting in rows (Brookfield, 1995). But why do we think that? And is it true? Indeed, some students might find sitting in a circle uncomfortable or intimidating. Shy learners might feel as if they are under more scrutiny or feel more pressured to participate. Students with less experience in the American educational system might be unsure of the expectations of a classroom set up this way.

Shandomo (2010) discusses the importance of critical reflection for teachers, particularly those preparing to work in urban schools. She notes that the majority of new teachers are white, middle-class women whose worldview and experience often diverge greatly from their students. She suggests that some teachers might view their "students as having cultures that are deficient, rather than valid but different from their own" (Shandomo, 2010, p. 103). We face a similar issue in librarianship, given that the library field is similarly dominated by white, middle-class women.

Critical reflection asks instructors to "identify the assumptions governing their actions, locate the historical and cultural origins of those assumptions, and develop alternative ways of acting" (Shandomo, 2010, p. 101). For instance, Elmborg (2004) notes that within the fields of education and library science we tend to view literacy and related concepts such as information literacy as universally good, and assume that people are autonomous learners, meaning they can choose to become literate. These views ignore the ways in which our school systems have been created to be more responsive to middle-class students

who grew up speaking English and were constantly exposed to reading and writing, and the ways in which Western concepts of literacy enabled colonization and the spread of other Western values such as capitalism. Similarly, Drabinski (2008) discusses how the race and gender disparities that are inherent in our classification systems might be apparent in the search examples we choose, and these biases might also manifest in the ranking of search results. If we are aware of these issues, we can reflect on how they influence our teaching practice and address them in our instructional design or within the classroom as appropriate.

Such reflection does not mean that we necessarily must change our practices, but it does mean we should be more mindful of those practices and what their impact might be (Brookfield, 1995). For instance, once we realize that sitting in a circle might be challenging for some students, we can explain why we chose that seating arrangement so that students can understand our purpose. Knowing that one of the challenges might be the pressure to speak, we might find ways to alleviate that pressure. For instance, we could have a policy to not call on people unless they volunteer, or we could give students the opportunity to "pass" if we do call on them and they are not ready to join the conversation.

Critical reflection acknowledges that a power dynamic always exists in any classroom (Brookfield, 1995). Even in classrooms where instructors do not assign grades, such as a public- library workshop, learners probably have the sense that the teacher is the "expert" on the topic, with the authority to set and enforce policy, to choose the content and the activities, and to decide who is allowed to speak in the classroom. Critically reflective teachers acknowledge that power dynamic and take steps to balance and share power. Simply encouraging students to ask questions or challenge ideas is not enough because students might not believe such invitations are sincere. We must demonstrate our willingness to be questioned and challenged by listening respectfully and taking learners' ideas seriously (Brookfield, 1995). We can also invite students to participate in forming classroom policies and norms, allowing them some choice, making room for all voices, and, most importantly, treating everyone with respect.

While the focus of critical reflective practice is different from general reflective practice, many of the same techniques and activities described earlier in this chapter, such as journaling, peer observation, and analysis of student feedback, can be used for critical reflection. With their focus on learners' feelings of engagement, affirmation, and confusion, Critical Incident Questionnaires can be especially effective for critical reflection. As we uncover things about our lessons that students find distancing or confusing, we can try to address the assumptions or dynamics that might underlie them, while expanding on those that learners find affirming and engaging. See Activity 14.2 for a critical reflection exercise.

Activity 14.2: Critical Reflection Exercise

Listed below are some common ideas about teaching. Choose one or identify an assumption or bias of your own, and then answer the questions that follow.

- Lecturing is passive and boring for students. It is better to have discussions or activities so that

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students can participate in the learning.

- The idea of the teacher as the "expert" establishes a power dynamic that might make learners hesitant to question or challenge ideas. I can balance that power dynamic by telling my learners that we are collaborators or peers and that I will learn as much from them as they will from me.
- Information literacy is an essential set of competencies because information is power. Information literacy can help narrow socioeconomic gaps and give people agency. All people need to learn these competencies.
- Students want to be self-directed learners. I should give them as much choice and as little direction as possible so that they can take responsibility for their own learning.

Questions for Reflection and Discussion:

1. Do you agree with the statement you chose?
2. What specific assumptions or biases underlie the statement?
3. Think about different kinds of learners—older adults, younger students, people of different language proficiencies and literacy levels, people of different educational and socioeconomic backgrounds, and so on.

   ◦ How might these different learners feel about the statement?
   ◦ Are there any for whom the assumptions underlying the statement might not hold true? In what ways?

4. Do you feel that the statement is one with which you agree and would want to implement?

   ◦ If so, why? How could you explain your thinking to a student who did not agree?
   ◦ If not, why not? How might you change the statement and actions to feel more inclusive?

Professional Development

Reflective practice and lifelong learning are intertwined. Our reflections will lead us to new understandings about our practice, but they will also prompt new questions. As we make decisions to adjust our practice based on our reflections, we will likely find that we need more information or want to learn more about certain instructional strategies, teaching methods, theories, and best practices before we implement a change. We can engage in lifelong learning by taking advantage of the many professional development opportunities available both within the library field, and in education more broadly.

Professional Associations

Professional associations like the American Library Association (ALA), the Association of College & Research

Libraries (ACRL), the American Association of School Librarians (AASL), and the Public Library Association (PLA) provide a range of professional development opportunities. Some associations, or divisions of associations, are dedicated exclusively to instruction topics, including LOEX, the ACRL Instruction Section, and ALA's Library Instruction Round Table. Each association runs conferences with workshops, presentations, and other sessions on topics related to teaching and learning. While national conferences can be expensive to attend, these associations offer other free and low-cost professional development forums such as webinars, toolkits, reports, and professional listservs. For instance, ACRL offers the *Information Literacy Framework Sandbox* (https://sandbox.acrl.org/), where academic instruction librarians share resources including lesson plans, rubrics, and instructional activities. Listservs like ILI-L provide professionals with a community of practice and a forum to share ideas, ask questions, and offer support. Regional associations and conferences, like ACRL New England, the California School Library Association, and the Illinois Information Literacy Summit, provide many of the same benefits and opportunities as their national counterparts, often at a lower cost.

We can also explore general education associations in addition to library-focused associations. Educause, Editorial Projects in Education, and Edutopia offer a wealth of free resources, including newsletters, videos, and blog posts on a wide range of educational topics. Librarians working in a higher education environment can take advantage of information from the Association of American Colleges & Universities (AAC&U) and the American Association of Higher Education (AAHE). School librarians will be interested in the American Association of Educators, and national and local parent-teacher associations. Many states have a professional network or association for nonprofit institutions, like the Massachusetts Nonprofit Network, which offer trainings and resources that might be of particular interest to public librarians.

Continuing Education Courses

You can find a number of free and fee-based continuing education courses related to library instruction beyond those offered by the professional associations listed earlier. For instance, WebJunction from OCLC offers dozens of free webinars, several of which are relevant to library instruction, including webinars on creating and delivering training, online teaching skills, and general teaching skills. Similarly, Infopeople is a California-based, nonprofit library consortium that offers free training on a range of topics, as well as some consulting services in areas like instructional design, webinar production, and assessment. Library Juice Academy offers more than 20 courses related to library instruction, including an option to earn continuing education credits and complete a certificate in library instruction by combining at least eight of their courses. The ACRL Immersion program is an intensive, five-day training geared toward academic instruction librarians. Finally, some LIS programs offer continuing education or postgraduate certificates, and others offer an option to audit courses, typically for much less than the regular cost of the course. You can also look outside of the library science field for relevant courses. For example, Columbia University offers a free course on inclusive teaching through the EdX platform.

Professional Literature

Professional journals, trade magazines, and blogs can be sources of information and inspiration for instructors. Many of the associations listed earlier produce publications ranging from peer-reviewed journals to reports, newsletters, and blogs. For instance, the American Association of School Librarians publishes *Knowledge Quest* and *School Library Research*. ACRL publishes *College & Research Libraries* and *College & Research Libraries News*, both of which are open access. *Communications in Information Literacy* is another open access journal that publishes research and commentary exclusively on information literacy and library instruction topics. Some useful general education publications include *Education Week*, *Chronicle of Higher Education*, *Inside Higher Ed*, and *Educational Leadership*. You can find many more by searching online or through general and education-focused subscription databases. The ERIC database, hosted by the Institute of Education Sciences, indexes over 1.5 million education resources, many of which are available freely online. Social media sites like *Facebook* (http://www.facebook.com), *Twitter* (http://www.twitter.com), and *LinkedIn* (http://www.linkedin.com) can also be useful spaces for finding literature and ideas, and for interacting with colleagues and forming communities of practice. See Activity 14.3 for a brief exercise on finding professional development outlets.

Activity 14.3: Finding Professional Development Resources

Select an information setting that you would like to work in and identify three or four outlets for professional development that would be relevant to that setting.

Questions for Reflection and Discussion:

1. What resources do these outlets offer related to teaching and learning?
2. How might you use these outlets now as a student as well as later in your professional practice?

Teaching Centers and Employer-Supported Training

Academic and school librarians often have access to additional professional development opportunities through their places of employment. Many institutions of higher education house a center for teaching and learning to support faculty and staff. Most centers run workshops on teaching and learning topics, and many also offer consulting services, such as classroom observations, one-on-one consultations, and syllabus and lesson plan reviews. Many school districts also run professional development trainings for their staff throughout the year. In addition, some schools might have funding to support registration for conferences or other external continuing education opportunities.

Public library staff can often benefit from professional development and training opportunities offered

through state and regional consortia. In addition, municipalities might offer training to city employees. Although such trainings might not be directly related to teaching and learning, they often will incorporate relevant topics, such as how to address issues of diversity, equity, and inclusion; how to manage conflict; and how to improve communication. Libraries might also hire consultants to facilitate training on topics of their choice, and some consultants will consider reducing or even waiving fees for nonprofit organizations like public libraries.

Conclusion

Reflective practice enables us to gain a better understanding of ourselves as instructors, to identify areas of strength and areas for change, and to continuously improve our teaching. Professional development and lifelong learning are core values of our profession and can support reflective practice by offering general learning opportunities, as well as specific training in areas that we want to change or improve.

The key takeaways from this chapter are:

- Reflective practice asks us to think not just about *what* we do in our classrooms but *why* we do what we do and *how* we might want to change and improve our practice. Critical reflective practice asks us to uncover our underlying biases and assumptions to promote a more inclusive and democratic classroom.
- For it to be effective, reflective practice should be an integral part of our overall practice, and we must make time for it in our schedules.
- We can facilitate reflective practice through activities like journaling, requesting peer observations, and soliciting student feedback.
- Crafting a teaching statement can also prompt us to reflect on what we believe as instructors and how we put those beliefs into action in the classroom.
- A range of professional development opportunities is available through professional associations, continuing education, and professional literature. We should explore these opportunities to enable lifelong learning and continued improvement of our practice.

Suggested Readings

Booth, C. (2011). *Reflective teaching effective learning*. Rowman & Littlefield.

> Awarded ACRL's Ilene F. Rockman Publication of the Year for 2012, this handbook provides a thorough introduction to instruction for librarians, with an emphasis on reflective practice. Booth's book is full of templates, activities, and examples to help librarians plan instruction and engage in reflection.

Brookfield, S. D. (1995). *Becoming a critically reflective teacher*. Jossey-Bass.

This book delves deeply into the purpose and process of critical reflection. Brookfield offers an empathetic discussion of the emotional labor inherent in teaching, as well as the power dynamics and inequalities in education, and provides insights into the ways in which critical reflection can benefit both instructors and their students. He includes advice and activities for facilitating critical reflection. The book is focused on college teachers, but much of the advice is applicable to librarians and any setting.

Burns, E. (2018). School librarian as inquisitor of practice: Reimagine, reflect, and react with the new standards. *Knowledge Quest*, 46(4), 54-58 (EJ1171712). ERIC. <u>https://eric.ed.gov/?id=EJ1171712</u>

This article guides school librarians through a set of reflective practices to explore and better understand the American Association of School Librarians' *National School Library Standards* (AASL, 2018a). Burns provides a brief overview of reflective practice and of the *Standards*' development, and then guides the reader through a reflective process using the "what," "so what," and "now what" probes to consider how they can apply the *Standards* in their work.

Farmer, L. J. (2017). *Managing the successful school library: strategic planning and reflective practice*. ALA Neal-Schuman.

Farmer covers all aspects of managing a school library and couches the text in reflective practice. As such, she integrates reflective questions throughout the book, encouraging readers to envision their ideal school library and what it would entail to achieve that vision.

Goodsett, M. (2014). Reflective teaching: Improving library instruction through self-reflection. *The Southeastern Librarian*, 62(3), 12-15. <u>https://digitalcommons.kennesaw.edu/seln/vol62/iss3/3</u>

In this brief article geared toward librarians, Goodsett describes the benefits of reflection and describes several methods of self-reflection, including journaling and video recording.

Graduate Student Career and Professional Development. (2019). *How to write a teaching statement that stands out*. University of Nebraska-Lincoln. <u>https://www.unl.edu/gradstudies/current/development/how-write-teaching-statement-stands-out</u>

This site offers clear, straightforward advice for developing a teaching statement. Although the article is written for graduate students preparing for faculty positions in higher education, the recommendations apply equally well to teaching statements for any setting.

Reale, M. (2017). *Becoming a reflective librarian and teacher: Strategies for mindful academic practice*. ALA Editions.

While Booth's book, noted earlier, is a full introduction to instruction with a section on reflection, this book focuses entirely on reflective practice within the realm of instruction. Reale provides a solid overview of reflective practice and a deeper dive into several activities and practices, including journaling, reflection with colleagues and peers, and opportunities for reflection in the classroom. She integrates theory but includes practical examples and applications.

Tompkins, E. K. (2009). A reflective teaching journal: An instructional improvement tool for academic

librarians. *College & Undergraduate Libraries*, 16(4), 221-238. https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1019&context=kb_pubs

> This article provides a detailed yet succinct overview of reflective journaling for librarians. In addition to targeted advice, Tompkins shares examples of her own journals and lesson plans that were revised based on her reflections.

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Goodsett, M. (2014). Reflective teaching: Improving library instruction through self-reflection. *The Southeastern Librarian*, 62(3), 12-15. https://digitalcommons.kennesaw.edu/seln/vol62/iss3/3

Graduate Student Career and Professional Development. (2019). *How to write a teaching statement that stands out.* University of Nebraska-Lincoln. https://www.unl.edu/gradstudies/current/development/how-write-teaching-statement-stands-out

Khanmohammad, H., & Eilaghi, A. (2017). The effect of self-reflective journaling on long-term self-efficacy of EFL student teachers. In J. Vopava, V. Douda, R. Kratochvil, & M. Konecki (Eds.), *Proceedings of AC 2017* (pp. 547-561). MAC Prague Consulting.

Mortari, L. (2012). Learning thoughtful reflection in teacher education. *Teachers and Training: Theory and Practice*, 18(5), 525-545. https://doi.org/10.1080/13540602.2012.709729

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TEACHING ACROSS VENUES AND MODALITIES

15. Online Instruction: Moving Workshops into the Virtual Environment

Introduction

Part III of this textbook outlined the instructional design and delivery process with a focus on teaching in face-to-face settings. Increasingly, librarians are moving their workshops into the virtual environment in order to better serve patrons who reside at a distance or want the convenience of learning from their homes or offices. Many librarians also find themselves offering professional development workshops and webinars online.

The planning process for teaching online is similar to that for face-to-face workshops. We should learn about our audience and then use the Backward Design model to develop learning outcomes, develop assessments to measure learning, and select instructional strategies. The same best practices apply as well; we should pay attention to how people learn, emphasize active learning and student engagement, and ensure our instruction is inclusive and accessible for all learners. Where online instruction differs is in how we will implement our instructional strategies to deliver instruction. This chapter begins with a brief explanation of modalities for online instruction and then provides guidance for selecting learning activities and delivering workshops in both synchronous and asynchronous environments. Chapter 16, on online learning objects, addresses the use of videos, multimedia tutorials, and library guides for instruction, while Chapter 17, on credit courses, includes a discussion of online courses.

Modalities

Synchronous instruction takes place in a platform like *Zoom* (https://zoom.us/) or *Blackboard Collaborate* (https://www.blackboard.com/teaching-learning/collaboration-web-conferencing/blackboard-collaborate) with all students online at the same time. In libraries, synchronous instruction can be used for drop-in workshops, course-related instruction, professional development webinars, and programming such as storytimes. Using synchronous session software, instructors can show slides, lecture, demonstrate databases or applications using application sharing, conduct a poll, lead a chat discussion, have students speak on the mic, and even break learners into small groups for a discussion or activity.

Synchronous instruction offers a number of advantages. Because the instructor and learners are online together, we can create a dynamic, engaging learning environment (Wang & Hsu, 2008, p. 177; Zoumenou et al., 2015). Given the ability to lead a real-time discussion or learning activity and the opportunity to answer student questions in real time, synchronous sessions can foster a sense of community and social support. In addition, you may be able to reuse lesson plans you have created for face-to-face workshops.

However, synchronous instruction has some disadvantages. Not all learners have laptop or desktop computers to access the Internet, and those using tablets or smartphones to access a session may not be able to fully participate in discussions and activities. Synchronous instruction requires a higher bandwidth, which will be problematic for learners who lack strong internet connections or have limited data plans. Technical problems can be distracting for students and instructors, and may result in students arriving late or being unable to attend. In addition, instructors may find that delivering a lecture or demonstrating an application while also monitoring and troubleshooting the application used to deliver the session adds a layer of complexity (and even cognitive overload) to their instructional work.

While synchronous session applications like *Zoom* offer the option for users to join through video so they can see one another, not all users will have the appropriate technology to share video, and some may prefer not to join with video. Further, streaming video increases the bandwidth of a session, potentially slowing the connection, especially when large numbers of participants are present. As a result, sessions are often run without user video sharing. Many instructors who are new to online teaching may find it disconcerting not to be able to see their audience, especially if they are accustomed to "reading the room" for signs of engagement or confusion.

Asynchronous instruction does not happen in real time; rather, instructors create an online lesson for learners to work through at their own pace. Whereas online videos and tutorials are typically brief and focused on a discrete topic, such as Boolean searching, asynchronous lessons should provide the depth and detail of a face-to-face workshop. Asynchronous instruction will be most appropriate when you want to offer a complete lesson but cannot easily gather learners together for a synchronous session. For instance, an academic librarian who offers course-related information literacy instruction for on-campus classes might create an asynchronous equivalent for integration into online courses.

Asynchronous instruction has a number of advantages. It requires less bandwidth, it is potentially easier to access on a smartphone, and learners can complete the lesson at their convenience. In addition, you can create asynchronous lessons that repurpose existing instructional resources, such as videos and tutorials that are already on your website. Once you create an asynchronous lesson, it can be used repeatedly and serve as a template for additional lessons. At the same time, asynchronous instruction has some disadvantages. Learners may not engage as fully as they would in a live class session, and there are fewer opportunities for learner-to-learner interaction, making it more challenging to create a learning community.

While synchronous and asynchronous are the two primary models for online instruction, others exist. Blended or hybrid instruction blends modalities, typically adding an element of face-to-face instruction. Blended instruction is most common in higher education; early online degree programs often included an in-person component, such as a summer orientation or once-a-semester course meeting. Blended instruction is also used in some online K-12 courses, particularly in the sciences where students might attend an in-person lab and complete the rest of the course online. HyFlex is a relatively recent development where instructors design a course so that students can take it in person, online, or switch between the two modalities (Educause, 2010; Beatty, 2019). For example, students might watch a recorded lecture and then choose between attending a classroom discussion or participating in a discussion forum. Hybrid and HyFlex models tend to be used in credit courses, rather than workshops.

In selecting between synchronous, asynchronous, and other types of online instruction, such as creating an instructional video or multimedia tutorial, we should consider a number of factors.

- **Who are our learners?** We should explore what technology our learners are likely to have access to, as well as their experience with online instruction. Librarians offering course-related instruction for a college class that has a required synchronous component could attend one of those sessions as a guest speaker, knowing that students have the technology to participate. However, librarians who want to offer a drop-in workshop might find that an asynchronous lesson, or even a video or tutorial, provides more flexibility for learners.
- **What technology is available to you?** School and academic librarians may have access to a learning management system, while libraries of all types may provide institutional subscriptions to products like *Zoom*. If you do not have access to institutionally supported products, you can explore freely available options. For example, *Google Classroom* can be used to organize and deliver asynchronous content in lieu of a formal learning management system. You should also check for any institutional guidelines regarding instructional technology; you may be required to use institutionally approved products or be disallowed from using particular applications, particularly those that do not protect learner privacy or provide access to potentially inappropriate content. For example, some school districts block *YouTube* (https://www.youtube.com/) on district-issued devices.
- **Can you offer technology support?** Technology support will be particularly important for synchronous instruction. Do you have a help desk that can troubleshoot problems, such as difficulty with logging in? Can you staff synchronous sessions with a second instructor or support person to help troubleshoot such problems?
- **What legal requirements must you follow?** School and academic librarians must protect learner privacy. In addition to using tools that are compliant with the Federal Educational Rights and Privacy Act (FERPA) and are institutionally approved, you will need to be mindful of student privacy when developing instructional activities. For example, requiring that students share their work via a social media platform would violate privacy laws.
- **How comfortable are you teaching?** Teachers who have experience with online learning themselves, are technically savvy, and/or are already comfortable teaching in the face-to-face classroom may be ready to jump into synchronous teaching. On the other hand, if you are new to teaching or have never taught online, you might want to start with asynchronous instruction and move into synchronous options gradually.

In addition, we should think creatively about how we can provide instruction through the applications our learners are already using. For example, during the pandemic of spring 2020, many public libraries and cultural organizations offered online programming through *Facebook Live* (https://www.facebook.com/facebookmedia/solutions/facebook-live).

Finally, it is worth considering the circumstances that are causing you to move instruction online. In spring 2020, many students, instructors, and librarians found themselves engaging in online instruction out of necessity as schools, campuses, and libraries closed physical facilities in response to COVID-19. These transitions happened quickly and were stressful; not only were people thrown into online instruction with little preparation, other aspects of daily life were changing at the same time. Many people found their experiences with online instruction frustrating and even demoralizing. It is important to remember that

during these emergency pivots to online learning, few people were able to realize the full benefits of online teaching and learning (Bessette et al., 2020; Hodges et al., 2020). Both of the authors of this text, while experienced online instructors, found themselves advising colleagues to keep it simple and opt for flexible, low-tech, asynchronous options even if that resulted in less robust instruction (Wong, 2020; Wong & Saunders, 2020). However, when instructors are trained in teaching online and have sufficient planning time, and when sessions are deliberately designed for the virtual environment, online instruction can be a rich, rewarding modality for student learning.

Activity 15.1 asks you to reflect on your experience with online learning.

Activity 15.1: Reflecting on Online Learning

Think back on some of the experiences you have had with online learning in both synchronous and asynchronous environments. These might include credit courses, workshops, and training sessions, whether academic, work-related, or for personal enrichment. If you have never attended a session in one of the modalities, try browsing the web for examples.

Questions for Reflection and Discussion:

1. What was most effective about each modality? Least effective?
2. What did you find most and least engaging?
3. As a learner, did you prefer one environment over the other? How so?
4. As an instructor, do you feel yourself drawn to teaching in one format over the other? Why might that be?

Interaction in Online Instruction: Content, Instructors, and Peers

One of the most important considerations in moving instruction online is thinking about how you will engage students in active learning. Many instructors who are new to online learning focus on how they will deliver content; however, as discussed in Chapter 3, learning is a process that requires cognitive engagement with the material and opportunities to practice new skills. Lengthy lectures, whether provided as a video or in real time, are unlikely to engage our learners and do not provide an opportunity to practice skills.

Moore (1989) argued that effective online instruction is characterized by three types of interaction: student-to-content, student-to-instructor, and student-to-student. In a meta-analysis of research on distance education, Bernard et al. (2009) demonstrated the validity of Moore's framework and showed that a blend of the three types of interaction increased both motivation and learning. While Moore was writing about online courses, his focus on how interaction supports learning is in keeping with the constructivist and social constructivist theories of learning discussed in Chapter 3, and his three-part framework is a fruitful tool for thinking about the design of online workshops.

Student-to-Content Interaction

In synchronous sessions, we should break lectures into brief segments and intersperse active learning techniques, such as polls, instructor-led discussions, and reflective writing. Applications like *Zoom* offer built-in options for polls and chats, or you can utilize free online tools. For example, *AnswerGarden* (https://answergarden.ch/) is an easy-to-use brainstorming tool that creates word clouds from participants' answers (see Figure 15.1 for an example); the results could be used as a discussion starter or as a lead-in to a lecture. Activities like polls and discussions also serve as formative assessments, allowing us to monitor student learning as we teach. Guided notes and graphic organizers, which support learners as they attend to and synthesize information, can be posted in a learning management system or shared folder for easy access by participants.

Figure 15.1: Example of a Learner-Generated Word Cloud

In this word cloud generated by AnswerGarden, participants were asked to respond to the question, "What social media sites do you use?" The more common answers, which include Facebook and Twitter, appear larger than less common answers.

In asynchronous lessons, we should also segment content and intersperse opportunities for active learning. For example, instead of a single, lengthy video lecture, we can create multiple, shorter videos and follow each one with a quiz question to check comprehension or an activity that promotes application and reflection. Guided notes and graphic organizers will be useful in asynchronous instruction as well.

Student-to-Instructor Interaction

To a certain extent, student-to-instructor interaction is a natural occurrence in synchronous sessions as we lecture, lead a discussion, or respond to student questions. However, recognizing that technology can feel like a barrier for some learners, we should make an extra effort to project a warm, friendly demeanor.

Learners often enjoy seeing the instructor on camera, even if only for a few minutes at the beginning of the session; alternatively, we can include our photo on an introductory slide.

Since we will not be online interacting with students while they complete an asynchronous lesson, it can be hard to add student-to-instructor interaction. However, we can take steps to add a human element that shows there is a person behind the lesson. We can start the lesson with a personal welcome and introduction, add our photo, and/or provide our contact information and encourage students to be in touch with questions. We can also use conversational and polite language (Clark & Mayer, 2016) and incorporate humor into lessons. If the lesson is one that participants will be required to complete, such as work-related training, we could include a short assignment or exit ticket and respond to individuals via email.

Student-to-Student Interaction

Synchronous sessions offer myriad opportunities for peer interaction. Discussions are easy to integrate, although in the beginning, the instructor may need to encourage participants to respond to one another and not just to the instructor. We might also invite individuals to use the mic to share ideas with the full group. Small group work is also a possibility, since most synchronous software allows for the creation of breakout rooms. Software like *Zoom* gives the instructor the option to allow participants to share their screens. As appropriate, we could integrate student demonstrations, having learners walk us through a process like searching a database on their own screens, just as we might have a student use a podium computer to lead a demonstration in a face-to-face class. We can also incorporate collaborative tools such as *Google Docs* (https://docs.google.com) for brainstorming or note taking.

Student-to-student interaction will be more challenging in asynchronous sessions. If we are working with a classroom instructor to provide course-related instruction, we may be able integrate a discussion forum or similar activity. Simple activities like a poll, where learners can see how their peers have answered, can be engaging. We can also use collaborative tools in the asynchronous environment. For instance, we could pose a problem or scenario in a shared document and invite students to post their comments, questions, or answers as they work through the session. Some video tools like *VoiceThread* (https://voicethread.com/) allow viewers to not only post comments but embed them at the relevant point of the video. Although they would not be directly communicating or collaborating with these tools, learners could view and even respond to each other's posts.

Synchronous Instruction

The first step in a successful synchronous session is ensuring learners know how to access the session. We should provide clear, written instructions with a link and any necessary passwords. If technical support will be available, we should provide that information as well. If technical support will not be available, we might direct learners to resources for online support, such as a help page or a way to test their system in advance.

On the day of the session, we should arrive 10 to 15 minutes early and allow learners to log in and confirm that their audio and video are working. Using this time to chat with learners as they arrive will create a welcoming atmosphere and put participants, and potentially yourself, at ease.

Slide decks are very helpful. Slides give learners a place to focus their attention and can be used to provide key vocabulary, examples, activity directions, and anything you might write on the whiteboard in face-to-face instruction. Application sharing requires a robust internet connection, and unpredictable lags are par for the course; many instructors find it helpful to take screenshots and create a slide-based version of any planned database or application demonstrations that can be used as a backup.

As you create your lesson plan, remember that very few people can listen to a long online lecture without getting distracted. Segment your content into shorter chunks, and intersperse lectures with activities like a poll, discussion, or practice search. In line with Universal Design for Learning, discussed in Chapter 6, vary the types of activities, and offer learners choices in how to participate. For example, you could allow students to respond to discussion questions using either the chat or the mic. If you are comfortable monitoring the chat while you teach, you can encourage students to use the chat to ask questions or make comments as you lecture. This will promote engagement and metacognition, and if students raise questions or exhibit confusion, you can pause for clarification. If the session is longer than an hour, take a short stretch break, just as you would in a face-to-face class.

The opportunity for small group work is one of the most rewarding aspects of teaching synchronously, and most synchronous software makes it easy to move learners into breakout rooms and then back into the main room. As in the face-to-face classroom, students can hold a short discussion or, given more time, work together to complete an activity. Small group work will take careful planning on the part of the instructor; once students are in breakout rooms, they will need to work independently. A few tips:

- Provide step-by-step written directions. These can be given on a slide for review prior to beginning the breakout rooms, but once students move to a breakout room, they may not be able to see the slide. For longer or more complex activities, provide directions in a document that students can access as they work, such as a PDF in the learning management system.
- Set a timer so students know how long they have to work.
- If you want students to take notes and report back on their group's work, it can be helpful to set up a shared document for that purpose.

Instructors should test the synchronous application they will be using to ensure it is compatible with their operating system and that they have any necessary extensions for application sharing and the like. You should also preview any slides you will be using to ensure content appears as expected and is legible, and practice using functions like application sharing and breakout rooms. Audio quality is an important aspect of synchronous instruction; poor audio will make it difficult to understand what the instructor is saying, and extraneous noise can be distracting and even off-putting. Instructors should use a headset microphone for the best quality sound, and we can encourage others to keep their microphones off unless speaking.

Most synchronous applications allow all participants to be visible on camera; however, this feature should be used sparingly. Many people find watching the presenter and others distracting or are uncomfortable being

on camera themselves. In addition, having multiple people transmitting video will add to the bandwidth required to access the session.

Example 15.1 provides a sample lesson plan for a synchronous session.

Example 15.1: Sample Lesson Plan for a Synchronous Session

<div align="center">Research Instruction for English 100</div>

I. Welcome [5 minutes]

- Introduction
- Agenda
- Participation Guidelines

II. Discussion: What questions do you have about the research process? [5 min]

III. Boolean Searching [15 min]

- Lecture
- Poll

IV. Searching ERIC [10 min]

- Demonstration
- Practice Search

V. Subject Headings [20 min]

- Lecture
- Small Group Activity in Thesaurus
- Practice Search

VI. Q and A [5 min]

The lesson begins by welcoming students; the instructor introduces themselves, briefly reviews the agenda, and mentions guidelines for participation, such as keeping mics turned off when not speaking. Next, the instructor leads a brief discussion about what questions students have regarding the research process, inviting participants to either use the text-based chat box or raise their hand for a turn speaking on the microphone. The main content of the lesson is segmented into three parts, each of which includes a practice activity. The instructor gives a short lecture on Boolean searching and then uses a poll to review the proper use of each operator. During the demonstration of *ERIC*, the instructor asks students to follow along on their own computers, pausing to both pose and answer questions and ending with a practice search that students first try on their own. A brief introduction to subject headings is followed by a small group activity

where students work together to identify subject headings in the thesaurus; when the class reconvenes, the instructor leads students through another practice search comparing keywords and subject headings. The session ends with time for any questions that have not already been answered.

Activity 15.2 is an exercise in designing active learning for a synchronous online session.

Activity 15.2: Creating a Synchronous Online Workshop

Below are several instruction scenarios. Choose one or develop one of your own, and answer the questions that follow.

- Public library session on downloading and using *Libby* (https://www.overdrive.com/apps/libby/)
- School library session on using *Google Classroom* (https://classroom.google.com/u/0/h) for online learning
- "Hour of Code" session for middle schoolers at a school or public library
- Session on finding clinical trials and research reports to support evidence-based practice in a medical library
- Academic archives session on evaluating primary documents

Questions for Reflection and Discussion:

1. How could you integrate active learning into a synchronous session on this topic?
2. Which technology tools might you use to facilitate these activities?
3. Would you create (or reuse) any learning objects for this session, such as videos, *LibGuides* (https://www.springshare.com/libguides/), worksheets, etc.?
4. How would the setting and audience influence your design and material choices?

Asynchronous Instruction

In asynchronous instruction, an online lesson guides students through a series of learning activities. Asynchronous lessons can be posted on the web or in a learning management system. Some instructors post lessons as a single document, while others make use of functions within the learning management system to present segments of content and activities. As noted earlier, we can create new content and resources for an asynchronous lesson or repurpose existing materials, such as videos and tutorials from our library's website, or activities and worksheets we might have developed for a face-to-face class. We might also search repositories like *Merlot* (https://www.merlot.org/merlot/) to locate instructional materials that we can integrate into our lessons.

When creating asynchronous lessons, it can be tempting to add extra tips or link to resources that "might be useful." However, extraneous content can be distracting or cause cognitive overload, which will decrease

learning rather than enhance it (Clark & Mayer, 2016). We should omit unnecessary content and activities and edit our writing for clarity and concision. The guidance on creating effective written materials found in Chapter 11 is equally applicable to asynchronous lessons.

As you create the lesson, it is important that content and instructions be as clear as possible. You should provide step-by-step directions for students to follow and put everything in one place. If students will need access to content, such as a video or quiz in another portion of the learning management section, provide a direct link. Label everything clearly so there is no confusion that students are in the right place or what a video will contain. In addition, ensure that all content is accessible to learners with disabilities; Chapter 11 provides guidance on creating accessible documents, while Chapter 16 provides guidance on creating accessible multimedia learning objects. Example 15.2 provides a sample asynchronous lesson plan.

Example 15.2: Sample Asynchronous Lesson Plan

Note: Throughout this example, underlining is used to indicate where the librarian would include a hyperlink.

<div align="center">

Research Instruction for English 100

</div>

English 100 students,

Welcome! This lesson introduces you to the research skills you need to complete Professor Garcia's research paper. You do not need to complete all of the activities at once but should plan to finish the lesson by next Friday, March 27, to stay on track in the course.

If you have any questions as you complete the lesson or conduct your research, you can reach me at kuchiyama@university.edu. Also, we have a reference librarian available on email and chat from 8 a.m.-8 pm every day!
reflib@university.edu
http://www.university.edu/libraryhelp

Wishing you the best,

Kimiko Uchiyama, Reference Librarian

1. **Review your research paper assignment.**

Please review the directions for the research paper assignment, which is available in your course website. You should already have an approved topic, but if you don't, email Professor Garcia at agarcia@university.edu.

Note that you will need at least *six sources* and *three of these should be peer-reviewed journal articles*.

2. **Watch the Introduction to Miller Library's databases.**

The library offers a lot of resources for your research. Please watch this short introduction where I talk about some of the resources that will be most helpful for your class!

- Introduction to Miller Library's databases (5:40 minutes)

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3. **Learn about peer review.**

Remember that at least three of your sources need to be peer-reviewed articles. Not sure what peer review is?

- Watch the video <u>Peer Review in 3 Minutes</u> (3:15 min) for an introduction.
- Next, review the <u>characteristics of a peer reviewed article</u>.
- Finally, take this <u>short quiz</u> (don't worry, there's no grade!) to check your understanding.

[*Lesson continues with videos and activities on identifying search terms and creating search strategies.*]

These videos and resources will help you get started on your research. I have also created a *LibGuide* for the class that links to the databases introduced in the videos and offers search tips.

Remember that you are not alone in your research—the library is always here to help! You can email me at kuchiyama@university.edu to set up a personalized research consultation, or contact the library between 8 a.m. and 8 p.m. every day for assistance: reflib@university.edu or http://www.university.edu/libraryhelp.

The lesson begins by welcoming students; the instructor expresses interest in students and encourages them to contact her with questions. The content of the lesson is broken into multiple segments in the form of a numbered list, making it easy for students to see what tasks they need to complete. Each item on the list is given a descriptive title and includes an explanation and links to resources. Some of the resources, such as the video on peer review, were repurposed from the library's web pages, while others, like the quiz and *LibGuide*, were created for this class. The session ends with a reminder to students to contact the library for additional help, reiterating the librarian's direct email and the general contact information.

Activity 15.3 is an exercise in designing an asynchronous lesson.

Activity 15.3: Creating an Asynchronous Lesson

Return to the synchronous session you designed in Activity 15.2. Imagine you are redesigning this activity as an asynchronous lesson, and answer the questions that follow.

Questions for Reflection and Discussion:

1. How would you deliver instructional content for this topic (e.g., textual explanations, videos, tutorials)?
2. How would you integrate active learning into your lesson?
3. Could you repurpose any of your synchronous content or activities for your asynchronous lesson? What new material would you need to develop?

Conclusion

Increasingly, information professionals are teaching online, providing opportunities to reach a wider audience who might not otherwise engage with our instructional offerings. While most of the best practices for instructional design and delivery apply equally to online instruction, the online environment entails some additional considerations, as summarized in these key takeaways:

- We will generally be able to choose between synchronous and asynchronous options for delivering content. We should explore our audience's connectivity and needs, and carefully weigh the advantages and disadvantages as we select a modality.
- In both modalities, we should plan opportunities for students to actively engage with the content.
- Synchronous sessions more closely mimic on-the-ground instruction, affording more opportunities for direct student-to-instructor and student-to-student interaction, but synchronous instruction requires more bandwidth and requires students to log on at a specific time, both of which could be barriers for some learners.
- Asynchronous sessions require less bandwidth and allow students to log on and complete tasks in their own time but provide fewer opportunities for student-to-student and student-to-instructor interaction.

Suggested Readings

Barnhart, A. C., & Stanfield, A. G. (2011). When coming to campus is not an option: Using web conferencing to deliver library instruction. *Reference Services Review*, 39(1), 58-65. https://doi.org/10.1108/00907321111108114

> The authors share their experience delivering synchronous information literacy instruction for graduate students in a distance education program. While the article is slightly older, its tips on judging the appropriate amount of content and communicating clearly with students are still relevant and valuable.

Faulk, N. (2018). Bringing scale and structure to the online information literacy program. *Journal of Library & Information Services in Distance Learning*, 12(3-4), 198-208.

> Faulk details how one library created asynchronous learning modules for integration into online courses. The author outlines the planning process, provides examples of lesson content and activities, and discusses collaboration with faculty.

Journal of Library & Information Services in Distance Learning. Taylor & Francis. https://www.tandfonline.com/loi/wlis20

This quarterly journal focused on library services for distance education programs publishes articles about online instruction on a regular basis.

Parramore, S. (2019). Online active-learning: Information literacy instruction for graduate students. *Reference Services Review*, 47(4), 476-486.

Parramore reviews the literature on how students learn and, using evidence-based practice as a lens, evaluates tools that can support active learning in online teaching, including *Nearpod*, *Softchalk*, and *Padlet*.

Rapchak, M. E. (2017). Creating a community of inquiry in online library instruction. *Journal of Library & Information Services in Distance Learning*, 11(1-2), 59-67.

Using the Community of Inquiry model as a framework, Rapchak provides numerous suggestions for establishing instructor presence, engaging students, and promoting critical thinking in both online workshops and credit courses. This article is highly recommended both for the discussion of the Community of Inquiry model and the wealth of concrete teaching strategies.

Roemer, R. C., & Greer, R. (2016). If you build it, will they come? Piloting a multi-day collaborative research workshop within a learning management system. *Journal of Library & Information Services in Distance Learning*, 10(3-4), 174-185.

Roemer and Greer detail the development of an asynchronous workshop that taught students to conduct a literature review. While the authors' workshop was conducted over multiple days, similar to a professional development course, the discussion and examples will be valuable for any librarian seeking concrete strategies for designing asynchronous instruction.

Stanford, D. (2020, March 16). Videoconferencing alternatives: How low-bandwidth teaching will save us all. *iddblog*. https://www.iddblog.org/videoconferencing-alternatives-how-low-bandwidth-teaching-will-save-us-all/

Stanford provides a concise introduction to online instructional options through the lenses of bandwidth and immediacy. This is an excellent "at-a-glance" graphic organizer for librarians contemplating whether to go synchronous or asynchronous.

Ziegler, A. (2019). Framework + digital badges = online instruction for today. *Journal of Library & Information Services in Distance Learning*, 13(1-2), 235-241.

Ziegler describes the development of online information literacy modules and a badging system for integration into credit courses. While the author focuses on the planning process and the work described here is not fully complete, the article may be of interest to those seeking examples of using the *Framework for Information Literacy in Higher Education* in asynchronous instruction.

Zoumenou, V., Sigman-Grant, M., Coleman, G., Malekian, F., Zee, J. M. K., Fountain, B. J., & Marsh, A. (2015). Identifying best practices for an interactive webinar. *Journal of Family & Consumer Sciences*, 107(2), 62-69.

The authors offer practical advice on designing and delivering effective webinars that is very applicable to synchronous workshops.

Zoumenou, V., Sigman-Grant, M., Coleman, G., Malekian, F., Zee, J. M. K., Fountain, B. J., & Marsh, A. (2015). Utilizing technology for FCS education: Selecting appropriate interactive webinar software. *Journal of Family & Consumer Sciences*, 107(3), 33-40.

The authors review five popular web-conferencing applications. While the details of specific applications are now dated, the discussion of desirable features is based on the authors' research on effective webinar practices and remains valuable.

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16. Online Learning Objects: Videos, Tutorials, and Library Guides

Introduction

Earlier chapters in this text have focused on teaching to groups of learners in face-to-face and online sessions. Many libraries also offer online learning objects, such as instructional videos, multimedia tutorials, and library guides, that patrons can access at their convenience. In some cases, patrons would like to receive instruction but are unable to attend a workshop because the times are inconvenient or they live too far away. Online learning resources are also used by patrons who have a quick question when a librarian is unavailable and those who prefer to learn independently. In some cases, online learning resources can serve multiple purposes; a video created for the library's website could also be used in an email reference transaction or as part of a flipped classroom.

This chapter first explores how people learn from multimedia and presents evidence-based principles for designing online learning objects. The chapter then introduces best practices and processes for designing instructional videos, multimedia tutorials, and library guides.

Principles of Multimedia Learning

Chapter 3 introduced research on how people learn. Learning is a process of sense making in which people attend to information, mentally organize it, and integrate it with their prior knowledge. Instructors cannot simply present material and expect learners to absorb it; rather, effective teaching encourages and supports the sense-making process. Instructional strategies, such as highlighting and organizing essential content, scaffolding complex material, and providing opportunities for practice and feedback, all support learning. Affective elements also play a role in learning; instructors should create a welcoming environment and support student engagement and motivation. These same concepts and strategies apply to online learning.

Research on multimedia learning, also discussed in Chapter 11, is essential reading for librarians creating online learning objects. Clark and Mayer (2016, pp. 35-39) suggest that three findings about learning should drive the design of elearning:

- **Dual Channels:** People process visual and auditory information through separate mental channels. Instructional designers can take advantage of this to present information through a combination of text, graphics, and narration.
- **Limited Capacity:** People can process only a few pieces of information at one time. Extraneous content causes cognitive overload, leaving less capacity for essential learning, and should be avoided.

- **Active Processing:** Learning occurs when people attend to relevant information, organize it into mental models, and integrate it with prior knowledge. Instructional designers can support (or undermine) this process as they make decisions about the selection and presentation of instructional content.

Using these three understandings of the learning process, Clark and Mayer (2016) have developed nine principles to guide the design of elearning.

1. **Multimedia Principle: Present content through a combination of words and graphics.**

   We should use graphics such as screenshots, diagrams, charts, and infographics in conjunction with text to convey information. However, we should minimize decorative graphics added purely for aesthetic appeal and representational graphics whose only function is to illustrate an object. Instead, we should prioritize graphics that portray concepts, relationships, and changes over time. Also, if the graphic is complex, we should draw the learners' attention to the relevant portions of the image. For example, in a screenshot of an interface, we can use boxes or arrows to point out key features or a specific function.

2. **Contiguity Principle: Align words and graphics.**

   When using graphics, the way we label those graphics can support active processing and minimize cognitive overload. Descriptions and explanations should appear to the side of the illustration, rather than below, and if the illustration shows a series of steps or parts, we should break up the text and place each piece next to the relevant area of the image. If a tutorial incorporates demonstrations or animations, any narration should play simultaneously.

3. **Modality Principle: Present words as narration rather than on-screen text.**

   We can also reduce cognitive load by explaining graphics through narration rather than on-screen text. This principle often surprises librarians, who may prefer to read information; the modality principle is most important when we are using a complex graphic and the lesson is fast paced. In addition, the narration should use familiar vocabulary. We can still use on-screen text if the graphic is simple; when the words are technical, unfamiliar, in a foreign language, or needed for future reference (e.g., a math formula); when the words are used as a learning support (e.g., the steps in a process); or when providing directions for an activity.

4. **Redundancy Principle: Explain visuals with text or narration, but not both.**

   As part of minimizing cognitive load, we should not duplicate narration with on-screen text. Learners will pay attention to the written words and ignore the graphic, or spend mental energy reconciling the narration and text, causing extraneous cognitive load. However, this rule does have some exceptions. Textual duplication can be used when there are no graphics, the pace is slow or learner controlled, only a few words are presented on screen (e.g., a summary of key points), or the learner must exert greater cognitive effort to process spoken text (e.g., as with some complex material). Note

that another exception to this rule is closed captions, which should always be present for auditory narration.

5. **Coherence Principle: Avoid adding extraneous content, images, and sound to tutorials.**

    Unnecessary material causes cognitive overload, which has a negative impact on learning. In addition, learners may pay attention to the wrong information; this is particularly true for novices, who often cannot tell what information is essential and what is extraneous. As we design tutorials, we should focus on the intended learning outcomes and cut irrelevant content. In addition, we should keep our text and narration concise and use simple graphics, avoiding detailed images and cropping unnecessary portions of screenshots. Clark and Mayer (2016) note that instructional designers may fall into the trap of adding extraneous content in order to make learning more exciting. Certainly, we should create learning objects that are visually attractive–for example, by using harmonious colors and professional graphics. However, we should avoid adding images or sound simply to grab attention; instead, we can make the lesson itself more interesting by emphasizing relevant, engaging content.

6. **Personalization Principle: Use a conversational style.**

    The tone of a tutorial can support or detract from learning. We should use conversational language such as "you," "I," and "we"; phrase instructions as invitations or requests, rather than demands; and use polite wording (e.g., "please click 'next' when you are ready to continue"). Narration should be provided by a friendly, human voice, rather than a machine voice.

7. **Embodiment Principle: On-screen agents should mimic human gestures.**

    Many tutorials use on-screen agents to guide learners through the content; for example, in a tutorial aimed at children, an insect might narrate the content or point to important parts of an image. These on-screen agents do not need to be human, but they will be more effective if they act like humans with natural gestures and movements. These human-like social cues prompt engagement and motivation in learners.

8. **Segmenting Principle: Break lessons into smaller chunks of content.**

    An important strategy to avoid cognitive overload is breaking complex or extended content into smaller chunks and presenting one segment at a time.

9. **Pretraining Principle: Introduce key concepts and vocabulary at the beginning of instruction.**

    In some cases, learners will need to understand foundational concepts and vocabulary in order to complete a tutorial; we should introduce these concepts and vocabulary at the beginning of the tutorial, prior to presenting the core instructional content. For example, in a tutorial on searching *Scopus* (https://www.scopus.com/home.uri) for scholarly articles, we would explain the concept of a peer-reviewed journal first, since this vocabulary will be essential to understanding the remainder of the tutorial, then move on to search strategies for *Scopus*.

We can use the nine principles as a guide to every aspect of the instructional design process for online learning objects, from selecting content to designing graphics to editing textual and narrative elements. Some of the principles are straightforward, while others, such as the modality principle, have boundary conditions, and adhering to all nine principles simultaneously is a complex undertaking. Activity 16.1 asks you to explore how these principles might appear in practice; then, the remainder of the chapter will recommend strategies for applying the principles to specific types of learning objects.

Activity 16.1: Explore Online Learning Objects

Browse a library website or search online for an instructional video or multimedia tutorial of interest and analyze how well it adheres to the multimedia principles.

Questions for Reflection and Discussion:

1. How well did the content adhere to the intended learning outcomes? Did you notice any extraneous information, images, or sound that might detract from learning?
2. Were images used to support learning? Did their use follow the multimedia principles? If not, how could the use of images be improved?
3. How were on-screen text and narration used to support learning? Did their use follow the multimedia principles? What recommendations for improvement would you make?

Instructional Videos

Instructional videos are relatively easy to create and, as a result, are very common in libraries of all types. Videos are ideal for brief demonstrations of a database or software, as well as short explanations of concepts like Boolean searching. Videos can be placed on the library's website for patrons to access as needed or integrated within library guides and larger lessons.

Instructional videos can be created in a variety of styles, and you should select a style that matches your instructional content and purpose.

- **Live Action:** Live-action videos feature real people speaking to the camera or acting and are particularly useful for demonstrating tasks like the operation of compact shelving. They can also be used in marketing videos when you want to welcome patrons and put a friendly face on the library.
- **Screencast:** Screencast videos show a librarian's computer screen and are used to demonstrate tasks like searching a database or using software.
- **Slidecast:** Slidecast videos are a narrated slide presentation. Librarians can combine text, graphics, and screenshots, making them ideal for conceptual topics such as peer review.
- **Animated Videos:** Like slidecasts, animated videos allow a combination of text, graphics, and

screenshots, making these good for conceptual topics. The animated style can feel fresh and fun, especially when trying to reach younger viewers.

Best Practices for Creating and Managing Instructional Videos

In keeping with the Segmenting Principle, each video should focus on a single concept or skill. Complicated processes or systems should be broken into multiple videos and linked via a playlist, giving learners the option to jump to a specific piece of content or watch the entire series at their own pace. For example, a librarian who wants to create a resource on the library's new subscription to *Hoopla* (https://www.hoopladigital.com/) might create a series of videos—one on downloading the app and logging in, one on browsing for and checking out books, one on accessing and listening to audiobooks, and so on.

In addition to segmenting video content into small chunks, we should design the videos themselves to be as concise as possible. Clossen (2014, p. 34) recommends that videos be less than two minutes in length, while Bowles-Terry et al. (2010) found that patrons preferred videos as short as 30 seconds to one minute. In addition to meeting user preferences for quick access to information, shorter videos benefit learners with concentration and cognitive-load issues (Clossen & Proces, 2017). As we script our videos, we should minimize introductory information and ruthlessly edit nonessential information.

Another best practice is to cover the most important content first. In one study of college students, only 35 percent watched an entire video; on average, they watched 54 percent of the video before quitting (Martin & Martin, 2015). Guo (2013) and Lin et al. (2017) found that the longer the video, the less likely students were to watch the entire video. Placing important information at the beginning of the video increases the likelihood that it will be seen by the learner.

In order to keep videos focused and concise, librarians should begin the design process by identifying their audience and writing a learning outcome that stipulates the knowledge or skill learners should gain from the video. Using the learning outcome as a guide, you can write a script that outlines the narration, along with the steps to be followed on screen (in the case of screencast videos) or the shots that will be needed (in the case of live-action and animated videos). Even librarians who prefer to speak more extemporaneously should outline the major points they wish to make, keeping in mind that the goal is to be as concise as possible. In keeping with the coherence principle, resist the urge to add extraneous content in an attempt to engage the viewer. Unnecessary music and graphics, jokes, and side comments will detract from learning rather than enhance it.

Narration should be clearly enunciated, free of background noise, and evenly paced. A headset or desktop microphone will usually capture better quality audio with less background noise than built-in microphones will and can even smooth out harsh vocal sounds (Martin & Martin, 2015). While a quick narration can sound trendy, it will make it difficult for many learners to comprehend the content; speak at a moderate pace and pause in appropriate spots. In keeping with the elearning principles, narration should be carefully synchronized with graphics, screenshots, and on-screen actions, and should use polite, conversational wording. We should take care to describe everything taking place on the screen, such as clicking on buttons and links or entering search terms, and incorporate directional words such as "in the upper right corner of

the screen" that signal where the learner should look. In fact, Clossen (2014) recommends turning off your monitor and listening to the video to see how well actions and locations are described.

Graphics should be simple, consistent, and professional looking; boxes, arrows, and similar tools can be used to call attention to essential content. Software such as *Camtasia* (https://www.techsmith.com/video-editor.html) and *Captivate* (https://www.adobe.com/products/captivate.html) will allow you to create templates, ensuring all of the library's videos have a similar look, even when created by different individuals.

When filming talking heads or live-action videos, we should pay attention to production values, ensuring that the area is well lit with little to no background noise and that the shot is in focus. Using a tripod can ensure a steady camera, and you might consider working with an experienced videographer for camera work. Thomson et al. (2014) provide advice on creating engaging live-action videos, including periodically changing the shot style and having a narrator who is conversant with the material and comfortable speaking on camera.

Many learners access the library and educational content on tablets and smartphones. As part of the production process, we should design content to be compatible with mobile devices. In addition, we should preview videos on a wide array of devices to ensure everything works as planned.

While instructional videos are often made available in a central repository on the library's website, librarians should think creatively about where to place videos so that they are easily discoverable by patrons. For example, a video about navigating the stacks should be linked from a library web page with information about the stacks, since patrons might not think to look for an informational video elsewhere on the library's site (Bowles-Terry et al., 2010). Veldof (2008) recommends that librarians identify "fail points," or places where patrons get stuck in the research process and integrate learning objects in those places. In addition, videos can be embedded in library guides, highlighted on social media, and in school and academic libraries, made available within course sites. Librarians can also get extra use out of instructional videos by integrating them within online lessons and tutorials. In all cases, we should title and describe videos in ways that make the content clear to users.

As websites and interfaces change, you will need to remove or replace outdated videos. If the library maintains numerous videos, you may need to create a system to track all of them, including when they were created and where they are linked, and occasionally review each one to see which need updating.

Accessibility of Instructional Videos

Just as we practice accessibility in our workshops, any and all learning objects we create should be accessible to learners with disabilities. Many accessibility features will benefit able-bodied learners as well; for example, closed captions are used by English language learners and individuals working in quiet spaces, as well as by patrons with auditory disabilities.

Videos should have closed captions that provide complete access to the audio narration. Captions should be accurate, timed to match the spoken words and on-screen action, and not block any important content.

If you used a script when recording the video, you may be able to upload the text and convert it to captions. Alternatively, many software packages used to create videos, as well as hosting sites like *Vimeo* (https://vimeo.com/) and *YouTube* (https://www.youtube.com/), support automatic captioning based on voice recognition. Automatic captioning is a helpful feature that can speed the captioning process; however, you will need to edit the captions to add proper punctuation and correct any misheard words. Not only can such mistakes obscure the meaning of the video, they can be inadvertently embarrassing. For example, one of the authors, Melissa, was correcting the automatic captioning in a course video and discovered that the software had misheard the phrase "front-load" and captioned it with a very different "f" word.

In addition to captions, you should create a transcript and post it with the video. Transcripts are easily generated from the captions and improve accessibility by allowing users to review and search the video's content. Transcripts can also make a video more discoverable to search engines, potentially increasing traffic to your learning objects. Librarians who want to maximize accessibility can also add descriptive audio that describes the on-screen action for users who have a visual disability (Berkeley Web Access, n.d.).

Any on-screen text and images should be large, in high-contrast colors, and remain on screen long enough to be read (Wild, 2014). Avoid flashing content, which can be distracting and hard to process (Wild, 2014). Prior to placing videos online, ensure the hosting site or web page will be accessible and that video controls can be operated using the keyboard (Clossen, 2014; Wild, 2014; Martin & Martin, 2015).

Activity 16.2 is an opportunity to explore instructional videos for these best practices.

Activity 16.2: Explore Instructional Videos

Locate five to six instructional videos on a research or library topic such as peer review, searching *PubMed* (https://www.ncbi.nlm.nih.gov/pubmed/), or operating compact shelving.

Questions for Reflection and Discussion:

1. What styles of videos did you find? How long was each video?
2. How quickly did the video get to the essential content? Was time wasted with nonessential content?
3. How well did the videos adhere to the best practices, including accessibility guidelines, outlined in this chapter?
4. Did you feel your attention wandering? What was (or was not) engaging about the videos that you reviewed?
5. Overall, which video was the strongest? What recommendations would you make to improve the remaining videos?

Selecting Software

The cost of video creation software ranges from free to fairly expensive. School and academic librarians may be eligible for educational discounts that bring the cost down; in addition, if you are working in a large organization where many people will be making videos, a site license can reduce the overall cost. Generally, free options provide limited editing capabilities and may leave a watermark on the final product, while paid versions offer more robust editing options and the ability to create templates. Free software may be adequate for librarians who want to make a few quick videos (e.g., to send to a patron via email reference). In addition, free versions are usually easy to use and can be a good way to experiment with making videos for those who are new to the process. However, librarians who want to make professional-quality videos for use on websites and in instruction programs will want to invest in a paid product.

As part of the selection process, librarians should consider the style of video to be created, since different software packages support the creation and editing of different kinds of content. Other factors to consider include platform compatibility and output options, including whether the final product will be mobile friendly. Librarians should also verify that the software will support accessibility features, such as adding closed captions, or allow you to upload to a site where you can add captions and create a transcript.

For librarians seeking free or low-cost software, *Screencast-O-Matic* (https://screencast-o-matic.com/) and *Screencastify* (https://www.screencastify.com/) are popular, easy-to-use options. Both offer a free version and the ability to access more features for a modest monthly or annual fee. *Animoto* (https://www.animoto.com) is a free site for creating videos appropriate for marketing and social media. For librarians seeking a more robust, professional product, *Camtasia* and *Captivate* are the most widely used and offer a full range of creation, editing, and management tools for screencast, slidecast, and live-action videos. Options for animated videos include *PowToon* (https://www.powtoon.com/) and *Wideo* (https://wideo.co/), both of which offer free and subscription-based versions, and *Vyond* (https://www.vyond.com/, formerly *GoAnimate*), which requires a subscription. Some applications will support the creation of both videos and multimedia tutorials (discussed in more detail later in this chapter), so librarians may want to consider the entirety of their plans for online learning before committing to a product.

Multimedia Tutorials

Multimedia tutorials combine instructional content with practice activities and, most importantly, feedback to the learner. These interactive elements can take a variety of forms, including true/false, multiple choice, and short-answer questions; identification activities; matching and drag-and-drop activities; and branching scenarios where the learner chooses a path to follow. Tutorials can incorporate simulations and games and may feature a gating function so that learners cannot progress to more complex content until they have mastered prerequisite knowledge and skills. As the name implies, another key feature of multimedia tutorials is their use of multiple forms of media, such as text, graphics, videos, animations, sound, and narration.

Tutorials can range from relatively brief, such as a lesson on Boolean searching that might take five minutes to complete, to very lengthy; for example, many institutions require that employees complete an annual ethics or harassment-prevention training, and these can take one to two hours to complete. Within libraries and information centers, tutorials can address a wide range of topics, such as searching a database, distinguishing between primary and secondary sources, or using software like *Excel* (https://www.microsoft.com/en-us/microsoft-365/excel) or *Photoshop* (https://www.adobe.com/products/photoshop.html). In addition to creating their own tutorials, many libraries link to multimedia instruction created by others, such as online children's games, language apps, and professional development offerings from companies like *LinkedIn Learning* (https://www.linkedin.com/learning/). Like videos, tutorials can be placed on the library's website for patrons to access as needed or integrated within guides, lessons, and credit courses.

Since tutorials are both longer and more complex than instructional videos, they can be time-consuming to design and create, and require specialized authoring software, which can be pricey. At the same time, tutorials offer a number of advantages as a form of instruction. As noted at the beginning of this chapter, learning is a process; individuals must actively attend to and make sense of information in order to learn. Tutorials allow us to combine multimedia, interactive practice elements, and feedback can be combined in ways that support deep, meaningful learning. In addition, tutorials can offer a customized learning experience (Clark & Mayer, 2016, p. 15). For example, learners who answer quiz questions correctly can choose to move on to the next topic, while those who answer incorrectly can be prompted to complete additional practice exercises. And unlike videos, tutorials can allow learners to work through material at their own pace.

Best Practices for Creating Multimedia Tutorials

Most tutorials are constructed as a set of slides layered with multimedia and interactive elements. Librarians should begin by defining the intended audience and writing learning outcomes that will guide the development of content, interactions, and feedback. It is helpful to storyboard the entire tutorial, including defining any alternate paths through the content, and to write and edit all content and scripts before starting work within the authoring software.

Learners will be reluctant to devote time to a tutorial that does not meet, or appear to meet, their needs. We should be explicit about the content of a tutorial and how that content relates to learners' real-world tasks and concerns. Halpern and Tucker (2015) provide an example of designing a tutorial for social work students that frames research skills in the context of required assignments and future job responsibilities.

Clark and Mayer's principles of multimedia learning should be followed throughout the process, including segmenting content; cutting extraneous material; combining text, graphics, and narration in ways that support learning; and using a conversational style and polite language in text and narration. When designing screens and scripting narration, the use of headings and introductory sentences have been shown to improve comprehension and retention (Clark & Mayer, 2016, p. 332). In addition, we can signal important content through the use of visual and verbal cues. Arslan-Ari (2018) found that signaling is particularly

helpful for novice learners, while Wang et al. (2018) found that the use of on-screen agents that gesture at essential content results in better learning compared to signaling that lacks social cues, such as color coding.

Graphics, including images, illustrations, and animations, should be professional looking and carefully selected to support learning. As noted earlier, we should use simple graphics that omit unnecessary detail, and place labels and explanations to the side and as close to the relevant portions of the image as possible (Clark & Mayer, 2016, pp. 165-67, 91-93). We can use a moderate amount of color and relevant images to add visual interest; however, purely decorative and irrelevant visuals should be avoided (Clark & Mayer, 2016, p. 167; Schneider et al., 2018).

As noted earlier, multimedia tutorials offer unique opportunities to engage the learner in the cognitive process of learning. Clark and Mayer define engagement as "meaningful psychological interaction between the learner and the instructional environment that promotes the achievement of the learning goal" (2016, p. 222) and distinguish between psychological engagement and behavioral engagement. Mindless activities, such as clicking to advance a screen or flipping over cards to access definitions, reflect high behavioral engagement but do not offer the psychological engagement necessary for learning. Psychological engagement is also different than entertaining learners; decorative images and upbeat music may feel "fun" but do not support psychological engagement and may even decrease learning by causing information overload. Psychological engagement is fostered through relevant graphics (both static images and animations), the use of conversational style, content-related questions and practice exercises, and meaningful feedback.

Activities will be most effective if they mimic the real-world use of skills, are appropriately scaffolded, and provide multiple opportunities for practice (Clark & Mayer, 2016, pp. 271-275). In keeping with the contiguity principle, we should minimize the need for scrolling or flipping between two screens; activity directions should appear on the same screen as the activity itself, and feedback should be presented with the text of the original question, the learner's answer, and an explanation of the correct answer (Clark & Mayer, 2016, 281).

Learners should always have control over the pace of their learning—for example, by choosing when they are ready to advance to the next screen (Clark & Mayer, 2016, p. 331-332). In some cases, tutorials may also allow learners to decide what content they wish to cover. For libraries offering optional tutorials on their website, segmenting content and providing links to sections within a tutorial can allow patrons to select material that answers an immediate question. At the same time, these tutorials should have a clear linear path for learners who want to work through the content in a systematic way. Librarians who are creating tutorials that will be required viewing, such as those for staff training or use in a flipped classroom, should maintain more control to ensure learners do not skip essential content. This is particularly true when designing for novice learners who may not recognize important content if left to choose what to view and what to skip on their own (Clark & Mayer, 2016, p. 327-328). We should also minimize links that take learners outside the tutorial (Clark & Mayer, 2016, p. 333). Activity 16.3 is an opportunity to evaluate multimedia tutorials for best practices.

Activity 16.3: Explore Multimedia Tutorials

Select one of the following tutorials (alternately, if you would like to browse library websites for tutorials, be sure to select one that offers interaction). Complete the tutorial, noting how well it adheres to the principles of multimedia learning.

- UCLA Library, Wheel of Sources (https://uclalibrary.github.io/research-tips/primary-secondary/)
- USC Libraries, Academic Dishonesty (https://libraries.usc.edu/tutorial/academic-dishonesty)
- Digital Learn, Intro to Email (https://www.digitallearn.org/courses/intro-to-email)

Questions for Reflection and Discussion:

1. What were the intended learning goals for the tutorial you selected? Do you feel the tutorial met its goals?
2. What strategies did the instructional designer use to incorporate interaction? Would you classify these interactions as behavioral engagement or psychological engagement? Did the interactions effectively support learning?
3. How well did the tutorial adhere to other best practices outlined in this chapter?
4. What recommendations would you make to improve the tutorial?

Accessibility of Multimedia Tutorials

Given the complexity of working with multimedia and the potential length of tutorials, it is crucial that you plan for accessibility early in the design process. Many of the best practices for videos apply equally to tutorials. All narrated segments should have closed captions and a transcript. In addition, tutorials should have descriptive audio that ensures accessibility for people with visual disabilities, or a link to an alternate, equivalent form of instruction. Text and images should be large, in high-contrast colors, and remain on screen long enough to be read; flashing content and the use of color to indicate meaning should be avoided.

All images should have alternative text (alt text) that describes the image and reflects the context in which it is being used. For example, the kittens pictured in Figure 16.1 could be described as "three kittens"; however, a more robust description would offer detail ("a photo of three kittens wearing green and purple sweaters made from socks") or explain what viewers are meant to notice ("a photo of three kittens showing the folded ears and straight tails that indicate the animals are quite young"). Activity 16.4 provides a small group activity to practice writing alt text.

Figure 16.1: Photo of Three Kittens

An instructional designer creating alt text could describe this photo of three kittens in varied ways, depending on what features of the photo are important for the context in which it is being used. (Photo: Melissa A. Wong)

Activity 16.4: Try Writing Your Own Alt Text

Browse *Pixabay* (https://pixabay.com/), a site for free stock photography and images. Each person in the group should select an image. Do not share your image with others.

1. Write alt text for the image you selected.
2. Show your alt text to the members of your group. Do the group members feel they have a good understanding of your image based on your alt text?
3. Share your image with the group. Do the group members still feel your alt text was accurate? Do they have any recommendations for improvement?
4. Next, work together to brainstorm other descriptions that would be accurate if calling attention to a different aspect of the image.
5. Repeat steps 2-4 with other members of the group. As you get better at writing alt text, you might pause to let the last few people edit their alt text prior to sharing it.

Interactive elements within tutorials add unique accessibility challenges. The entirety of a tutorial, including all activities, interactions, and feedback, should be accessible to a screen reader as well as via keyboard commands. Buttons and hotspots should be large and easy to identify. Activities should be untimed, and we should avoid segments that require learners to mouse quickly or precisely to complete an activity, since this may be difficult for patrons with fine-motor issues.

Selecting Software

Two robust software packages for creating tutorials are *Captivate* and *Articulate 360* (https://articulate.com/360). Both offer the ability to import or create content, including slides, templates, videos, and animation; support a wide variety of interactions, such as quizzes, drag-and-drops, and hotspots; and allow the creation of branching scenarios. Designers can access asset libraries of images and on-screen agents and add narration with a text-to-speech feature. Finished products can be placed on the library's website or integrated with learning management systems in order to track usage and assessment results. Both *Captivate* and *Articulate 360* provide accessibility support.

Captivate and *Articulate 360* support the creation of rich, professional-grade multimedia tutorials. They offer unlimited possibilities for creation but come with a significant learning curve and cost. If you want to add simple interactions to an online lesson, you may be able to utilize an online tool with an easier learning curve and possibly a lower cost. *Pear Deck* (https://www.peardeck.com/googleslides) is an add-on for *Google Slides* (https://www.google.com/slides/about/) that allows instructors to integrate short-answer and multiple-choice questions into presentations; with a paid account, instructors can add drag-and-drop and drawing answers as well as narration. *Panopto* (https://www.panopto.com/) and *edpuzzle* (https://edpuzzle.com/) allow users to add quiz questions to videos, which can be particularly useful for flipped classrooms and online courses. You can upload your own content or use videos from *YouTube* and other hosting sites. *Panopto* requires an institutional license, while *edpuzzle* offers both free and paid subscription options. *H5P* (https://h5p.org/) offers a wide variety of interactions that can be added to a lesson or embedded in a course management system, including interactive videos, virtual tours, timelines, quizzes, and games. All of *H5P*'s content is free.

Library Guides

Almost all libraries produce written guides to assist their patrons. These guides may be available as print handouts in the library, although increasingly libraries make them available online so that patrons can access guides from their home or office. Currently, many libraries create and manage their online guides using *LibGuides* (https://www.springshare.com/libguides/), a subscription-based product.

Guides can cover a wide variety of topics:

- **Research Guides:** Research guides are very common in school and academic libraries. Each guide addresses a specific topic, and librarians recommend print and online sources, and provide search tips, such as appropriate controlled vocabulary.
- **Database Guides:** In some cases, patrons know what database they want to use but need guidance in searching it effectively. Depending on the approach taken, these guides will provide step-by-step directions or tips for commonly used search functions and unusual features.
- **Citation Guides:** School and academic libraries frequently provide guides to common citation styles such as MLA and APA. These guides are not intended to replace the published handbooks but serve as shortcuts for students who need a quick reminder on the format of a particular citation type.
- **Reader's Advisory Guides:** Public and school libraries in particular may offer readers' advisory guides that recommend reading for a given age group or topic (e.g., "picture books on dinosaurs," "great books for armchair travelers," "science fiction by women of color").
- **Guides to Library Services:** A library might provide a guide to using a service such as interlibrary loan or online book renewal. These guides can advertise the service, provide directions on accessing the service, or both.

Like instructional videos, library guides are particularly useful for patrons who are working when a reference librarian is unavailable or who are hesitant to ask a librarian for help. In addition, guides enable patrons to work independently. They can be consulted for quick reference when the patron needs to identify key resources or used in their entirety for a systematic introduction to a topic or resource.

Best Practices for Creating and Managing Library Guides

Each guide should focus on a specific topic. Patrons may find a very general guide overwhelming or have difficulty selecting the resources that meet their specific need. In school and academic libraries, we can create guides that correspond to specific courses and assignments. In public libraries, librarians should think creatively about how to make guides as specific as possible. For example, rather than a general "business research" guide, we might make smaller guides on topics like investing and running a small business.

Within the guide, information should be organized to support ease of access, comprehension, and retention. We can chunk content into boxes or categories and provide brief subheadings to help users navigate to needed information. Goodsett et al. (2020) recommend organizing resources by relevance or in the order that they should be used, rather than alphabetically, and adding a prominent "best bets" box to direct users to a few key resources. Each resource should have an annotation that indicates the type of content it contains or why it is recommended. And while librarians should have room to tailor a guide to its content, utilizing a consistent design and similar language across all guides will facilitate use by patrons (Little, 2010; Goodsett et al., 2020).

In addition to recommending resources, librarians should provide guidance on the search process. We can suggest search strategies, recommend keywords and controlled vocabulary, and provide discipline-specific

tips. Little (2010) notes that librarians can embed examples, screenshots, and videos to clarify content and integrate instruction.

In keeping with the coherence principle, we should take care not to overwhelm the user. Resource lists should be selective, and textual content should be focused and concise. Avoid large chunks of text, and opt for bulleted lists and short annotations instead. In addition, take care to avoid library jargon that may not be understood by users. As with videos and tutorials, library guides should feature a conversational, friendly tone. Librarians can create a personal presence by adding a professional photo and providing ways to contact a subject specialist or general reference desk (Goodsett et al., 2020).

Once created, guides must be reviewed and updated on a regular basis. You will need to remove outdated resources, add new resources, and fix any broken links (a link checker can ease this process). As with videos, libraries with a substantial number of guides may need to implement a formal strategy to ensure their regular maintenance, especially as individual authors leave the institution.

Most libraries link their guides from a central location. Users who are accustomed to using guides may turn to this central location when seeking assistance; however, guides should be linked elsewhere on the library's web page as well. Research guides might be linked from departmental pages and with lists of journals and databases, while seasonally appropriate reader's advisory guides might be highlighted on the library's homepage. In school and academic libraries, librarians can work with instructors to provide links in syllabi and course management systems. Librarians should also promote library guides during face-to-face instruction and at the reference desk.

Activity 16.5 offers an opportunity to evaluate a library guide for best practices.

Activity 16.5: Identifying Best Practices in Library Guides

LibGuides is a popular platform for creating and sharing library guides. Browse the guides available at the *LibGuides Community* (https://community.libguides.com/), and select one that integrates instructional approaches.

Questions for Reflection and Discussion:

1. What instructional strategies does the author use? Do you think these strategies are effective for the topic and intended audience?
2. Are there areas where the author could strengthen the use of instructional strategies? What would you recommend?

Accessibility of Library Guides

It is relatively easy to ensure guides are accessible to all users. Librarians who are creating print guides should follow the best practices for written materials outlined in Chapter 11, including using large, easy-to-read fonts and high-contrast colors. When placing guides online, either as PDFs or web pages, librarians should continue to use large, easy-to-read fonts and high-contrast colors while also offering properly structured headings and alt text for any images. Hyperlinks should link from the relevant word or phrase, not "click here" or a URL. Again, Chapter 11 will provide valuable guidance for both design and accessibility.

If you are using *LibGuides* to manage your guides, the system has built-in support for accessibility; however, it is essential that librarians follow the recommended practices when authoring guides (Springshare, n.d.; Pionke & Manson, 2018). For example, *LibGuides* supports alt text for images, but librarians are responsible for adding that alt text as they create a guide. Additional best practices for accessible *LibGuides* include:

- Use the default sans-serif font. Use bold (sparingly) if emphasis is needed.
- Use boxes to break up the content. Within boxes, use headings and bulleted lists that allow users to skim and minimize the need to read long passages of text.
- Develop a style guide and use consistent formatting for pages and boxes. The *LibGuides* systems uses heading 1 and heading 2 for page and box titles; within boxes, librarians should use heading 3.
- In Gallery boxes, set auto-rotate to "off."
- Include alt text for images and provide captions and transcripts for videos.

Using Multimedia Resources Created by Others

Oftentimes, librarians create their own videos and tutorials for use on their website. One advantage is that these videos and tutorials can be branded with the library's logo and the content tailored to the library's systems and patron needs. In fact, creating your own videos will be necessary if you are demonstrating processes like locating a database on your library's website or requesting an interlibrary loan item.

However, librarians can also take advantage of resources created by others. Many commercial vendors provide videos demonstrating basic search processes for their databases. In some cases, a video or tutorial created by colleagues in another library will provide more than adequate instruction in database searching, using a new technology, and concepts like Boolean searching. Videos can be located by searching a vendor's website, the Internet, or a repository like *Merlot* (https://www.merlot.org/merlot/). Additionally, products such as *LinkedIn Learning* and *Gale Courses* (https://www.gale.com/c/gale-courses) are available as subscription-based services for libraries who want to offer more extensive online learning to patrons.

If you do use a learning object created by others, you should carefully evaluate it to ensure it meets the best practices outlined in this chapter, including accessibility. Clossen and Proces (2017, p. 814-18) reviewed videos and multimedia tutorials from academic library websites and found that 48 percent of videos and 60 percent of tutorials lacked accessibility features. In addition, librarians who use materials from another

library should take care to respect copyright. You can check for a Creative Commons license, discussed in more detail in Chapter 11, or contact the original creators for permission to reuse their materials.

Conclusion

Librarians create online learning objects for many reasons. Instructional videos, multimedia tutorials, and library guides can be used by patrons who prefer to learn independently or who have questions when a librarian is unavailable. Additionally, once created online learning objects can be integrated into other forms of instruction, such as flipped classrooms, online courses, and reference consultations. In many cases, librarians create these learning objects for their libraries, although many institutions also integrate online learning resources from commercial vendors and colleagues.

Key takeaways from this chapter:

- The principles of multimedia learning address how people learn online and should be used to design and evaluate online learning objects of all types.
- Instructional videos should be focused and concise, with well-synchronized visuals and narration. Videos should have closed captions and a transcript for accessibility.
- Multimedia tutorials offer opportunities for interaction and feedback for better learning and retention but are typically more complex to create and require more sophisticated software. Most of the best practices for instructional videos apply to multimedia tutorials as well.
- Library guides are nearly ubiquitous in libraries of all types. Guides should have a specific focus, be organized and presented for ease of use, and follow best practices for text, video, and multimedia as appropriate.
- Librarians may be able to reuse learning objects created by others and should evaluate them for adherence to best practices and accessibility as part of the selection process.

Tools

Animoto. https://animoto.com/

Articulate 360. Articulate. https://articulate.com/

Camtasia. TechSmith. https://www.techsmith.com/video-editor.html

Captivate. Adobe. https://www.adobe.com/products/captivate.html

edpuzzle. https://edpuzzle.com/

Gale Courses. Cengage. https://www.gale.com/c/gale-courses

H5P. https://h5p.org/

LibGuides. Springshare. https://www.springshare.com/

LinkedIn Learning. https://www.lynda.com/

Merlot. https://www.merlot.org/merlot/

Panopto. https://www.panopto.com/

Pear Deck. https://www.peardeck.com/googleslides

PowToon. https://www.powtoon.com/

Screencast-O-Matic. https://screencast-o-matic.com/

Screencastify. https://www.screencastify.com/

Vimeo. https://vimeo.com/

Vyond. https://www.vyond.com/

Wideo. https://wideo.co/

YouTube. http://www.youtube.com

Suggested Readings

Clark, R. C., & Mayer, R. E. (2016). *e-Learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (4th ed.). Wiley.

> This text is essential reading for librarians designing multimedia instruction. Clark and Mayer present the evidence for the multimedia principles outlined in this chapter along with examples of correct implementation.

Clossen, A. S. (2014). Beyond the letter of the law: Accessibility, universal design, and human-centered design in video tutorials. *Pennsylvania Libraries: Research and Practice*, 2(1), 27-37. https://doi.org/10.5195/palrap.2014.43

> This article is a concise guide to creating accessible videos.

Costa, K. (2020). *99 tips for creating simple and sustainable educational videos: A guide for teachers and flipped classes.* Stylus.

> This text will be most useful for librarians teaching credit courses. Costa provides practical advice on analyzing instructional goals; selecting a type of video; creating an engaging, effective product; and

integrating videos with other course content. Throughout the text, QR codes link the reader to online examples.

Ergood, A., Padron, K., & Rebar, L. (2012). Making library screencast tutorials: Factors and processes. *Internet Reference Services Quarterly*, 17(2), 95-107. https://doi.org/10.1080/10875301.2012.725705

The authors outline a systematic process for planning, creating, and editing instructional videos, and provide valuable practical advice for those new to the process.

Keba, M., Segno, J., & Schofield, M. (2015). Making it work: Creating a student-friendly repository of instructional videos. *Journal of Library & Information Services in Distance Learning*, 9(1-2), 17-29. https://doi.org/10.1080/1533290X.2014.946335

One challenge for large library systems is tracking and managing all the videos that may have been created by different librarians at different times. Here, the authors review best practices and recommend processes for management and curation that ensure all videos are consistent, well designed, and accessible.

Little, J. J. (2010). Cognitive load theory and library research guides. *Internet Reference Services Quarterly*, 15(1), 53-63. https://doi.org/10.1080/10875300903530199

Little applies cognitive load theory to the design of library guides, offering tips for reducing extraneous processing and supporting learning.

Martin, N. A., & Martin, R. (2015). Would you watch it? Creating effective and engaging video tutorials. *Journal of Library & Information Services in Distance Learning*, 9(1-2), 40-56. https://doi.org/10.1080/1533290X.2014.946345

Martin and Martin provide an excellent introduction to best practices and software options for creating instructional videos.

Mayer, R. E. (2008). Applying the science of learning: Evidence-based principles for the design of multimedia instruction. *American Psychologist*, 63, 760-69.

Although a little older, this article provides a concise introduction to Mayer's research and the principles of multimedia learning; recommended for readers with limited time.

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Bowles-Terry, M., Hensley, M. K., & Hinchliffe, L. J. (2010). Best practices for online video tutorials in academic libraries. *Communications in Information Literacy*, 4, 17–28. https://doi.org/10.15760/comminfolit.2010.4.1.86

Clark, R. C., & Mayer, R. E. (2016). *e-Learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (4th ed.). Wiley.

Clossen, A. S. (2014). Beyond the letter of the law: Accessibility, universal design, and human-centered design in video tutorials. *Pennsylvania Libraries: Research and Practice*, 2(1), 27-37. https://doi.org/10.5195/palrap.2014.43

Clossen, A., & Proces, P. (2017). Rating the accessibility of library tutorials from leading research universities. *portal: Libraries and the Academy*, 17, 803-25. http://doi.org/10.1353/pla.2017.0047

Goodsett, M., Miles, M., & Nawalaniec, T. (2020). Reimagining research guidance: Using a comprehensive literature review to establish best practices for developing LibGuides. *Evidence Based Library and Information Practice*, 15(1), 218-225. https://doi.org/10.18438/eblip29679

Guo, P. (2013, November 13). Optimal video length for student engagement. *edX*. https://blog.edx.org/optimal-video-length-student-engagement

Halpern, R., & Tucker, C. (2015). Leveraging adult learning theory with online tutorials. *Reference Services Review*, 43(1), 112 – 24. https://doi.org/10.1108/RSR-10-2014-0042

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Little, J. J. (2010). Cognitive load theory and library research guides. *Internet Reference Services Quarterly*, 15(1), 53-63. https://doi.org/10.1080/10875300903530199

Martin, N. A., & Martin, R. (2015). Would you watch it? Creating effective and engaging video tutorials. *Journal of Library & Information Services in Distance Learning*, 9(1-2), 40-56. https://doi.org/10.1080/1533290X.2014.946345

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Springshare. (n.d.). *Best practices for building guides & accessibility tips* [Video]. https://training.springshare.com/libguides/best-practices-accessibility

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Veldof, J. (2008). From desk to web: Creating safety nets in the online library. In S.K. Steiner & M.L. Madden (Eds.), *The desk and beyond: Next generation reference services* (pp. 120-134). ACRL. https://conservancy.umn.edu/handle/11299/42384

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Wild, G. (2014, August 15). 8 steps to creating accessible video. *Sitepoint*. https://www.sitepoint.com/accessible-video/

17. Credit Courses: Teaching Semester- and Year-Long Classes

Introduction

School and academic librarians may have the opportunity to teach a credit course, either on information literacy or within another campus department such as a first-year experience program. Many of the best practices for instructional design that were presented in Part III of this text are equally applicable to credit courses. As instructors, we should seek out information about our prospective students, use the Backward Design model to identify learning outcomes and plan assessment strategies, and design engaging, learner-centered lessons. At the same time, credit courses bring additional responsibilities, such as writing a syllabus, developing and grading assignments, and providing ongoing feedback to learners. This chapter outlines the process of developing and delivering a credit course with particular attention to topics that have not been addressed in other sections of the text.

Credit courses are offered in all modalities, including face-to-face, asynchronous and synchronous online, and hybrid formats that combine elements of face-to-face and online teaching. While there are unique aspects to teaching and learning in each modality, many best practices cut across all formats, and this chapter addresses face-to-face and online modalities simultaneously.

Planning Your Course

The first step in teaching a credit course is identifying course content and planning how the course will unfold over a semester or year. This process includes learning about the students who will be taking the course, planning learning outcomes and assessments, selecting course materials, developing the syllabus, and possibly creating a course page in the learning management system (LMS). This process can take many weeks, particularly for new instructors, and it can be very helpful to draw on the work and advice of more experienced colleagues. Most instructors are happy to share copies of syllabi and assignments so you can see what materials they are using and how they have sequenced content. This is also the time to check on any institutional requirements; for example, if you are teaching a section of a required course, there may be predetermined learning outcomes or a common textbook you are expected to use.

Learning About Students

As with workshops, the more we know about our potential learners, the better positioned we will be to select course content and design learning activities that meet their needs. Both internal and external sources of information will be helpful. Internally, we can look for institutional data about our students. For example, high school librarians might talk to school counselors to better understand students' educational and career plans, while academic librarians might contact the registrar's office for data on students' academic backgrounds or declared majors. We can also look at where our course falls within the curriculum; an introductory course on information literacy aimed at first-year students will be very different than one that targets upper-division students learners who have declared a major. Colleagues can be an excellent source of information as well; we might ask about their perceptions of student needs or what has worked well for them in the classroom. As noted in Chapter 7, we should be mindful of student privacy when gathering information and be clear that we want only aggregate data, not personally identifiable information.

As we look for external sources for information, many of the resources identified in Chapter 7 can be used to learn about students who will be taking a credit course. For instance, Project Information Literacy has extensive research on students' information habits and needs that could be used to shape a credit course.

We should also talk directly with our students about their needs and interests. As noted in Chapter 7, we can use pre-assessments like surveys, quizzes, worksheets, and concept maps to determine what students know and where they have gaps in their knowledge and skills. Asking students to complete a personal introduction, either as a written submission in class or via an online forum, is an opportunity to ask students what they would like to learn, allowing us to tailor course content or simply frame existing content in ways that appeal to students.

Applying Backward Design to Credit Courses

Following the Backward Design model introduced in Chapter 8, our next step is to determine the course learning goals and write specific learning outcomes that articulate what students will know or be able to do by the end of the course. Course-level learning outcomes will likely be much broader than the outcomes we would write for a single workshop. In fact, it may take students multiple sessions or the entire semester to master a course-level learning outcome. However, these outcomes should still meet the same criteria as workshop outcomes, including articulating essential knowledge and skills and being measurable.

Once we have written the learning outcomes, we can determine acceptable evidence and plan for course assessments that help us monitor student learning. In credit courses, we may assume that these assessments should become formal assignments, and oftentimes they do. In fact, all of our course assignments should have a clear link to the course outcomes. However, assignments are only one part of assessment in a course. We should also engage in ongoing formative assessment through activities like polls, low-stakes quizzes, worksheets, class discussions, and reflective writing.

The final step is to determine the learning activities and teaching strategies we plan to use. We can draw

on the examples provided in Chapter 4, Chapter 11, and Chapter 15 to plan a mix of approaches, always with attention to best practices for accessibility, that will motivate students and allow them to engage with us, the content, and each other. Because we have multiple weeks with our students in a credit-bearing course, we might explore some of the more time-intensive teaching strategies, such as case-based and problem-based learning, discussed in more depth later in this chapter.

Selecting Course Materials

One difference between workshops and credit courses is that in the latter, instructors will assign readings for students to complete outside of class time. These readings can present essential content (negating the need for a lengthy lecture of background information), serve as the basis for in-class activities and discussions, and provide avenues for students to customize course content to their interests.

Textbooks will provide a concise introduction to a topic written in a manner accessible to students. Textbooks may also offer resources, such as timelines, images, glossaries, practice problems, resource lists, and recommended readings for further study, to support learning. If you plan to use a textbook, you will need to select a title well in advance of the semester or school year to accommodate institutional schedules for acquiring materials or stocking bookstore shelves.

However, academic librarians should be aware that the rapidly rising cost of textbooks is a significant concern for students. Before assigning a text that students must purchase, carefully consider how much of the text will be used and whether you could assign a less expensive alternative. Alternately, you could build your course around an open access textbook (like this one!) or a collection of open educational resources that will be free for students. Instructors can check the *Open Textbook Library* (https://open.umn.edu/opentextbooks) or *OER Commons* (https://www.oercommons.org/) for textbooks, while repositories like *Merlot* (https://www.merlot.org/merlot/) are a good source for all kinds of open resources. And as librarians, we should remember that our libraries provide access to extensive collections of online articles and ebooks that can be used in the classroom.

Syllabus

The foundation of any course is the syllabus; it outlines the course content and requirements, and provides important information students will need, such as instructor policies and due dates. Beyond conveying information, a thoughtfully designed syllabus can set the tone for a productive and engaging course. Instructors can use the syllabus to present a unified, compelling vision of the course or show how it will help students answer intriguing questions or develop professional competencies (Canada, 2013). Warm, friendly, student-centered language will contribute to a positive perception of the course and instructor (Canada, 2013; Slattery & Carlson, 2015; Ludy et al., 2016).

At a minimum, the syllabus should provide information about the course, instructor, assignments and grading, and instructor policies. Syllabi typically include:

- **Course Identification:** Give the course number, title, credit hours, days and times of class sessions, and classroom location.
- **Instructor Information:** Provide names, contact information, and office hours for the instructor and any teaching assistants. It can be helpful to clarify expectations for how often the instructor responds to email (e.g., daily on weekdays and once on weekends) or when it is appropriate to call or text (e.g., between 8 a.m. and 8 p.m.).
- **Course Description:** Provide a copy of the course description from the course catalog. In addition, you can include a brief introduction that describes the course goals and explains how the course will be run (e.g., seminar-style where active participation is expected).
- **Learning Outcomes:** List the course-level learning outcomes; if applicable, you can also list any departmental or institutional outcomes the course fulfills.
- **Texts:** Provide complete citations for all required texts as well as supplemental readings and resources and indicate which will need to be purchased and which will be freely available. If you plan to list shorter readings elsewhere, such as in the daily or weekly schedule, you can add a general note about access to these supplemental readings.
- **Assignments and Grading:** Provide descriptions for all assignments, the relative weight of each assignment, due dates, submission instructions, and a course grading scale. Indicating how quickly work will be graded (e.g., "assignments will be returned within one week") can establish reasonable expectations and decrease inquiries from students. One of the instructors, Melissa, also provides an assignment calendar that lists every due date as a supplement to her syllabus; this feature is universally popular with her students (see Example 17.1). Although assignment calendars may duplicate information available elsewhere in the syllabus or assignment directions, students find it very helpful to have a quick reference guide they can transfer to their personal calendars or use as a checklist.
- **Policies:** State any course and institutional policies, such as those for attendance, participation, late and missed work, accommodations for students with disabilities, and academic integrity. While it is important to be clear and upfront about course policies, Weimer (2018) cautions us against overwhelming students. She notes, "Rules are fine, but a plethora of prohibitions dampen the motivation to learn." In addition to limiting ourselves to essential policies, we can maintain a warm syllabus by framing policies with positive, learning-centered language. Example 17.2 provides samples of this kind of framing.
- **Technical Requirements and Support:** Provide information about equipment and software requirements and links to a campus help desk. This information is particularly important in online courses, where students will rely on technology for every aspect of the course.
- **Learning Resources and Support:** Provide information about campus support services such as writing centers, libraries, and computer labs. As Wong (2019, p. 126) notes, while "we might assume that students are already aware of these services, many students, in particular first-generation and international students, are unaware of the resources and services these offices provide. Promoting awareness of such services and encouraging students to use them can increase rates of student success and level the playing field for struggling students."
- **Communication Expectations:** As discussed in Chapter 5, instructors should establish norms that

create a respectful, inclusive classroom environment. We might remind students to use inclusive language, respect others' views, and be civil when disagreeing. In online courses, it can also be helpful to outline expectations for the mechanics of forum contributions, such as using proper grammar and punctuation, avoiding slang, and/or citing sources.

- **Course Schedule:** Provide a course schedule with weekly or daily topics, assigned readings, and due dates (see Example 17.3 for a sample course schedule entry). Even if you are not prepared to offer a detailed schedule, outlining the major units can help students see how course topics fit together and plan ahead for assignments. While we should strive to stick to the planned schedule as much as possible, it can be helpful to acknowledge that changes may happen for reasons such as inclement weather or student needs.

Keep in mind that departments and institutions may have additional syllabus requirements; new instructors should look for a syllabus template or other guiding document as part of preparing for a new course.

Example 17.1: Excerpt of an Assignment Calendar

Mon., Jan. 20: Post an introduction to the Introduction forum.

Fri., Jan. 24: Respond to at least one peer's introduction.

Fri., Jan. 31: *Ask a Manager* Discussion 1

Fri., Feb. 7: *Ask a Manager* Discussion 2

Fri., Feb. 14: *Ask a Manager* Discussion 3

Sun., Feb. 23: Candidate Evaluation Rubric and Interview Questions

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Example 17.2: Sample Course Policies that Use Warm Language

Attendance Policy for an Online Class

You are expected to attend all weekly class sessions. Our discussions and activities are an essential part of your learning in the course, and I look forward to everyone's contributions. However, I understand that you may need to miss class on occasion due to illness or work/family commitments. Please try to minimize absences to no more than one to two per semester. If you will miss class, please let me know, and plan to listen to the recording of the class session promptly.

Policy on Late Work

Assignments are due by the end of the day stated in the syllabus. I will not be up grading at midnight, so you have an automatic grace period until the next morning. If you need an extension beyond that, please email

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me with a reasonable explanation and an estimate of when you can complete the work. I am generally very flexible about extensions! If I do not hear from you or if you make late work a habit, the following penalties will apply:

- Forum Posts: I accept posts up to 24 hours late for partial credit.
- Assignments: I deduct 10 percent for every day an assignment is late.

Example 17.3: Sample Course Schedule Entry

January 22: Welcome and Course Overview

Essential Readings:

- Ancona, Deborah, et. al. "In Praise of the Incomplete Leader." *Harvard Business Review* (Feb. 2007): 92-100. [link to article online]
- Ettarh, Fobazi. 2018. "Vocational Awe and Librarianship: The Lies We Tell Ourselves." *In the Library with the Lead Pipe*. [link to article online]
- Skim the following statements of competencies for library leaders:

  - Library Leadership & Management Association (LLAMA). American Library Association. "Leadership and Management Competencies." [link]
  - Medical Library Association (MLA). "Professional Competencies" (*focus on Competency* 4 – *Leadership & Management*) [link]
  - New Mexico State Library. "Core Competencies for NM Library Staff." (*focus on competency* 4. *Management*) [link]

- *Ask a Manager* (please read for the duration of the semester) [link]

Due This Week:

- Introduce yourself! Please include your preferred name (and pronouns if you like), experience in the iSchool, professional plans, and what drew you to this course. Please also include a photo and a bit of trivia about yourself. Respond to at least one peer's introduction. [Introductions forum; 5 points; initial post due Mon., Jan. 20, response due Fri., Jan. 24]

The syllabus should be distributed on the first day of class or even earlier if using a learning management system, and instructors should take time to review key information and answer student questions. In a face-to-face or synchronous online class, this can be done in class. In an asynchronous class, instructors can record a brief introduction to the syllabus, assign a short quiz or scavenger hunt to encourage students to review the syllabus carefully, and/or create a forum or use a tool like *Hypothes.is* (https://web.hypothes.is/)

for syllabus questions. Ensuring that your syllabus is attractive and formatted for clarity and accessibility will also encourage students to read and regularly consult this important document.

Learning Management System

The learning management system fulfills a purpose similar to the syllabus in organizing and presenting course materials to support student learning and engagement. While we may associate learning management systems with online courses, many institutions also support course spaces for face-to-face courses so faculty can post resources, accept online assignment submissions, and post student grades.

Most learning management systems provide a wealth of tools for students and instructors, including options to upload and link to content; post and send announcements; engage via discussion forums; create polls, surveys, and quizzes to solicit student feedback and assess learning; and submit and grade assignments. As we develop our course sites, we should utilize the features and tools that best support our learning goals or foster meaningful communication with students. For example, almost all online courses will utilize discussion forums for peer interaction, but few courses will need a wiki.

Regardless of the features used, the course site should be organized for clarity and ease of access. General resources like the syllabus and assignments can be provided on a home tab or at the top of the site, with additional resources grouped by topic or the date on which they will be used. The course organization should be consistent, with sections and resources clearly labeled. Instructors should also take care to follow accessibility practices–for example, by adding alt text to images and using descriptive text when linking to outside resources. See Activity 17.1 for a brief reflective exercise on syllabi and learning management systems.

Activity 17.1: Reflecting on Syllabi and Learning Management Systems

Syllabi and the information in a learning management system are often our first introductions to a course, sometimes even before we meet the instructors themselves. Think back on some of the syllabi and LMS pages you have interacted with and answer the following questions. Although most LMSs and even many syllabi are password-protected, you might also browse the web to find some examples.

Questions for Reflection and Discussion:

1. Can you find specific examples of engaging language or experiences that really draw you into the course? What did you find engaging about these examples?
2. Are there any examples that you found off-putting? How might you change the language or structure to make them more welcoming?
3. Are there any features (e.g., organization, navigation, layout, etc.) that you found helpful in any way?
4. Are there features that were less helpful? How could they be improved?

Establishing a Learning Community

Chapter 5 discussed the importance of fostering a positive classroom environment and recommended strategies such as expressing interest in and high expectations for all students, establishing ground rules for discussions, fostering student-to-student relationships, making expectations explicit, and having mechanisms in place to address microaggressions and other forms of bias. In credit courses, creating a positive classroom environment is even more important, since we will gather with the same group of learners for an extended period of time, and, potentially even more rewarding, since we have the opportunity to create a positive, engaging learning community where students can learn from and support one another. In fact, the sense that one belongs to a learning community has been shown to improve student motivation and retention in addition to learning (Gordon, 2016; Infande, 2013; Ludwig-Hardman & Dunlap 2003). Positive classroom relationships also lead to more productive, open discussions and small group work. Many of the specific techniques for creating a positive classroom environment discussed in Chapter 5 were tailored for workshops where we have limited time with students; this chapter revisits some of those same practices with an eye to the unique environment of credit courses and suggests additional practices to build a learning community.

Introductions

As a first step, we should introduce ourselves to students, learn about them, and help them learn about one another. In face-to-face and synchronous courses, these introductions can be done on the first day of class. You might start by speaking briefly about your professional background, your teaching and scholarly interests, and your approach to the course. Student introductions can be done in a number of ways. In small classes, you can have students introduce themselves one at a time to the group; in larger courses, you might have students move into pairs or small groups to introduce themselves. If you also use these small groups to jump-start a conversation about the course content, for example by having students discuss what they hope to learn or having them respond to an intriguing course-related question, you can further build a learning community. Many instructors will also use an in-class poll or writing activity to solicit information about students. In asynchronous courses, we can create a forum in the LMS and ask everyone to share a written or video introduction. If we post our introduction to the same forum where students will post theirs, we can model good practice and jump-start the introductions process. See Activity 17.2 for practice developing a student introduction activity.

Activity 17.2: Developing a Student Introduction Activity

Choose a course that you could imagine yourself teaching. This could be a course in an information setting of your choice or one in another field of interest (e.g., cooking, bicycle repair, memoir writing, etc.). Imagine that you are setting up a message board for students to introduce themselves.

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1. Write your own introductory message. How would you introduce yourself to this group? What would you want them to know about you, and why? What kind of language would you use? What would you tell them about the class at this point?
2. Draft a brief prompt to guide the students in their own introductions. What information would you ask them to share, and why? What kinds of questions could you ask to elicit that information? How might you encourage the students to interact with each other?

Establishing Community Norms

As noted earlier, credit-course instructors seeking to prompt constructive classroom discussion often establish guidelines, such as using inclusive language, respecting others' views, and disagreeing in a civil manner. Example 17.4 provides a sample of such a statement. With the extra time afforded by a credit course, instructors can even engage students in creating these guidelines, thereby fostering a greater sense of ownership and personal commitment.

Example 17.4: Sample Communication Expectations Statement

The University of Illinois and the School of Information Sciences bring together people of diverse backgrounds, identities, and experiences, offering us unique opportunities to learn from and with one another. As members of the University community and this class, we have a shared responsibility to create a positive, inclusive classroom space where everyone is able to learn and thrive.

Please join me in creating a learning community characterized by collegial dialogue and mutual respect. This includes:

- Recognizing the limitations of our own experience and seeking to understand and learn from the experiences of others.
- Listening actively, with the goal of understanding rather than responding.
- Making space for others to speak and encouraging quiet members of the group to contribute to discussions and activities.
- Being aware of how our words and actions may be perceived by others and committing to acting and speaking respectfully and constructively.
- Showing our commitment to our learning community and to one another by "calling in," rather than calling out, when we witness problematic words and actions.

Peer Interaction

We can build peer interaction into our courses in many ways. Almost all of the strategies mentioned elsewhere in this book, such as think-pair-shares, whole-class and small-group discussion, debates, games, and so on, fit smoothly into credit-bearing courses. Because the class will meet on a regular basis, you can expand these activities to an entire class session or even multiple class sessions. Other strategies for classroom interaction include collaborative notes, in which students contribute to a collaborative document or graphic organizer; wisdom from another (Knapen, 2018); reflective questioning, in which students work together to develop (and perhaps try to answer) questions based on the material; role playing and skits; and collective brainstorms.

We can also build peer interaction into assignments. One relatively easy way to do this is through peer-critique processes where students give one another feedback on project drafts. Peer critiques can be done in person in face-to-face classes and via forum posts in online courses. Group projects are more complex to design, monitor, and grade, but when done well, can be very rewarding for students and instructors. We can also integrate peer interaction with assignments like journal clubs, student-led seminar discussions, and presentations.

Instructor Presence

Instructor presence is the perception on the part of students that we are invested in the course and students' learning. A strong instructor presence supports student motivation, engagement, and satisfaction, and has been linked to improved learning (Martin et al., 2018). As a first step, we should make it clear how we are available to students who have questions or need assistance, whether in formal office hours, before or after class, at lunch or after school, or via phone and email. Students should receive a prompt reply to all phone and email inquiries; within 24 hours on weekdays is the norm, and instructors of online courses might also check email at least once over the weekend, particularly if a large assignment will be due. If you will be away or offline for an extended period, such as during travel, you should notify students and indicate when you will be available again.

In face-to-face and synchronous courses, we will naturally interact with students as we deliver lectures, lead discussions and in-class activities, and answer questions. In asynchronous courses, our presence may not be immediately visible to students unless we make a deliberate effort to appear present and engaged. We should make visible contributions to course content—for example, by posting reading guides and our own videos in addition to curating content from others, and by regularly participating in forum discussions and other course activities.

In both face-to-face and online courses, assignments are an excellent opportunity to interact with and guide individual learners. We should respond to assignments promptly and offer encouraging, developmental feedback. More specific strategies for designing assignments and giving effective feedback are discussed later in this chapter.

We can also create informal spaces to interact with students. In face-to-face and synchronous courses, we might arrive early and chat with students before class begins or offer to stay after class to meet with individuals. In online courses, we can create an open discussion forum for more casual conversations. Sharing personal information, such as weekend plans or your own struggles to learn the material, can also foster a sense of connection (Schwartz, 2020).

Designing Assignments and Providing Feedback

Like syllabi, assignments are a unique and essential feature of credit courses. Instructors sometimes approach assignments as a tool for assessment or determining grades, and certainly they fulfill both of these functions, but more importantly, assignments are vehicles for students to further develop their course-related knowledge and skills. Assignments can also provide options for students to tailor course content to their specific interests—for instance through their selection of a research topic. Thus, good assignment design starts by thinking about student learning and the role assignments will play in promoting meaningful learning. As part of designing an assignment, we should give thought to our grading criteria and how we will provide feedback.

Assignments

All assignments should clearly relate to and support the achievement of the course's learning outcomes. Beyond that, students appreciate creative, authentic assignments that mimic the real-world use of their knowledge and skills. For example, a research paper that is read only by the instructor may not feel very authentic, since most students will not be writing research papers in the workplace. On the other hand, almost everyone will be called upon to make presentations during their careers. An assignment to create a lightning talk will require that students research their topic and synthesize their findings, similar to a research paper, while also requiring that students create a visual aid and communicate their ideas clearly and cogently for an audience of peers—valuable skills for life and career success. Alternately, we can take a more traditional assignment and tweak it to provide an authentic element. For example, after finishing a research paper on a social issue, students could complete a follow-up assignment to write a letter to the editor encouraging a specific action on their issue. Additional ideas for creative and authentic assignments include infographics and posters, podcasts, videos, zines, and portfolios.

We can also look to social media as an inspiration for thought-provoking and fun assignments. Students might be asked to find a gif or create a meme that responds to a course topic. Stommel (2018) describes an assignment to write an essay about a course topic in 140 characters (at the time, the character limit for a *Twitter* (https://twitter.com/) post). One of the authors of this text, Melissa, uses a *Twitter*-inspired reflection in her instruction class, asking students to compose their own #4WordPedagogy. However, while we can use social media as an inspiration for timely, creative assignments, we should never require that students post their work to actual social media accounts. Most social media platforms require that users

divulge personal information, and some students will be reluctant to share this information. In addition, sharing coursework on a public platform could identify the individual as a student in your course or at your institution, which would violate federal laws that protect student privacy.

Assignments are an excellent opportunity to integrate Universal Design for Learning (UDL) into your course, especially the principle of Multiple Means of Action and Expression. Remember from Chapter 6 that Multiple Means of Action and Expression suggests instructors provide flexible options for *how* students express what they know (Hall et al., 2012, p. 2). One strategy is to give students options for how they complete an assignment. For instance, students completing a short reflection could choose between writing a paragraph or turning their thoughts into a sketch. If we are assigning an annotated bibliography, we could encourage students to explore alternate ways of presenting their work, such as a concept map, timeline, or infographic. Another strategy for integrating Multiple Means of Action and Expression is allowing students to select between assignments or from a menu of possible assignments. Weimer (2002, p. 32-34; 2012) provides an excellent example of designing an entire course around a menu of assignment options. Providing students with choices also supports the critical pedagogy and humanist emphases on self-direction, agency, and self-actualization.

Group projects provide opportunities for student interaction and collaborative learning; they can also help students develop real-world skills in project management and communication. However, we should recognize that group projects can present challenges. Slattery and Carlson (2015, p. 161) write, "students report considerable anxiety when they are asked to do group work . . . especially when grades are heavily dependent on their groupmates' output." Brame and Biel (2015) recommend we explain the rationale for group assignments, and work with students to form groups where the members collectively possess the skills needed for the assignment. In online courses, if students will need to hold some meetings in real time, we can form groups around students' availability. We can also support groups by establishing clear expectations, providing a structure for the group's work, and periodically checking on each group's progress (Brame & Biel, 2015; Walker Center, 2018). See Activity 17.3 for an exercise in creating course assignments.

Activity 17.3: Creating Course Assignments

Think back to the course you imagined teaching for Activity 17.2, and brainstorm three to four potential assignments.

Questions for Reflection and Discussion:

1. Would you describe these assignments as authentic? What skills will students develop? If an assignment is not very authentic, how could you revise it to be more authentic?
2. Taken together, are these assignments sufficiently varied that they support the principle of Multiple Means of Action and Expression? If not, what changes could you make?
3. Identify the most complex assignment. How could you scaffold this assignment?
4. How could you build an element of peer critiquing or group work into one or more of these assignments?

Regardless of the type of assignment, we should ensure we provide clear, explicit directions. While the syllabus may provide a brief overview of assignments and their relative weight, students will need additional guidance to fully understand our expectations. We can distribute and discuss detailed assignment directions at the point in the semester when students have the requisite knowledge and skills to begin the assignment. Examples of exemplar work or approaches to the assignment will also be very helpful for students.

Additional best practices for assignments include:

- **Remember less is more.** While you want to have enough assignments that students can recover from a poor grade on one assignment, be careful not to overload your students with too much work. Fewer, higher-quality assignments will be more meaningful.
- **Vary assignments.** Students bring different strengths and interests to the classroom. Balancing the types of assignments used in the course allows students to draw on existing strengths while also developing new skills. For example, a research paper that relies on strong expository writing skills could be balanced with a presentation or creative project.
- **Scaffold assignments.** Large assignments can be particularly challenging for students. They may be unsure how to approach a complex project or could misunderstand the directions, waste time, or get hopelessly off track. If we scaffold large assignments into smaller pieces, we can ensure students stay on track and, by offering feedback along the way, improve student learning and engagement.

Grading and Feedback

Grading should be based on clear criteria that we develop during the assignment design process. Determining our grading criteria in advance will help us write clear assignment instructions, ensure grading is consistent and fair, and when shared with students ahead of time, eliminate confusion over assignment requirements and potentially reduce the number of questions we receive.

Along with developing our grading criteria, we should consider how we will provide feedback to students. As part of the grading process, we will need to explain why a particular grade was assigned, indicating what the student has done well and where there was room for improvement. At the same time, we should approach feedback as a teaching tool, one that we can use to indicate how well students have mastered the course goals and to provide suggestions for continued learning and growth. As such, our feedback should be specific and constructive (Chappell, 2019). Because students will become overwhelmed if we provide too much or tangential feedback, we should keep our comments limited and related to the goals of the assignment (Ambrose et al., 2010). Feedback should also be timely so that students can act on our suggestions before the next assignment is due.

A common tool for articulating grading criteria and providing feedback is a rubric. Rubrics can be very simple, such as an answer key for a worksheet or a checklist that outlines the elements of an assignment and their relative weights, or more complex, such as the grid-style rubric discussed in Chapter 9. As a grading tool, rubrics support consistent grading and can streamline the process of providing feedback. For

instance, rather than writing lengthy comments on an assignment, we can highlight the portions of the rubric that best describe the student's work and add brief constructive suggestions. We should share our rubrics with students as part of the assignment directions, since rubrics will clarify our expectations and may even encourage students to reflect on and self-assess their own learning (Stevens & Levi, 2005, p. 19). Keep in mind that not all students will have used rubrics before, and it may be helpful to discuss the rubric when you review the assignment directions.

Additional best practices and tips for grading and feedback:

- Grading can be time-consuming, especially for large assignments. As you create your syllabus and establish due dates, consider other obligations you will have, such as conference travel, that may impact the time available for grading. Once you have established due dates, plan ahead and block time on your calendar.
- For smaller assignments or those that will be reviewed in class, consider "light grading" strategies such as check minus/check/check plus (Center for Teaching, n.d.).
- Leverage technology to make the feedback process more efficient. For example, if you find yourself making the same comments repeatedly, you can create a document of frequently used phrases, and cut and paste as needed. For written projects, using track changes and review functions to make comments in line with student writing will save time over writing out comments in narrative form.
- If students are tackling a common set of problems, post the answers in a forum for students to review. Comments on students' papers can be brief, such as "This answer is partially correct. 8/10 points."
- Utilize peer review. Peer review increases the amount of individual feedback for each student, since they can get feedback from two to three people, not just the instructor. Peer review works best if you create a clear structure for the process and discuss the importance of giving constructive, well-balanced feedback.

Selecting Instructional Strategies and Designing Lesson Plans

Once you have determined the structure of your course, written the syllabus, and developed the assignments, you will be ready to plan for specific class sessions or online modules. As we plan lessons and modules, we should revisit our course-level outcomes. In some cases, we may identify a course-level outcome that will apply to a specific class session; in other cases, we will need to develop more specific lesson-level outcomes. Once we have determined our lesson-level outcomes, we can select instructional strategies and design lesson plans as outlined in Chapter 10.

Many of the instructional strategies discussed in Chapter 10, including lectures, discussions, and small group activities, will work equally well in credit courses; in fact, you may find that as students become familiar with activities like think-pair-share, you will be able to move into them very quickly with minimal explanation. Also, the additional time available in credit courses may allow you to dig more deeply into activities like role playing and skits, providing more opportunities for student creativity and engagement. While this chapter

will not reiterate all of the instructional strategies from Chapter 10, it will address a few unique aspects of using those strategies in credit courses.

Small Group Work

In face-to-face courses, we can easily move students into small groups for a short discussion or task or even an extended case-study activity. However, we should be aware that students tend to sit in the same seat, often near their friends, for each class session. If we want students to work with a wider variety of peers over the course of the semester, we should vary how we create groups. We can mix it up by having students number off, or posting different questions or scenarios around the room and asking students to move to a group of interest.

In synchronous courses, the live session technology we are using should allow us to move students into random groups of various sizes or create group rooms that students can self-select into. The first few times you use small groups may feel awkward; however, the process will get smoother as the semester progresses. Chapter 15 provides advice on structuring small group work in online environments.

Forum Discussions

In online courses, discussion forums are an excellent opportunity for peer interaction and collaborative learning. In fact, in asynchronous courses, discussion forums may be the primary way in which students interact with one another and the instructor. Each discussion forum should have a specific purpose. Oftentimes, forum discussions are based on readings and lecture materials; however, varying the way we utilize forums will offset boredom and heighten student engagement. For example, you could ask students to respond to a case study, share their solution to a problem, locate and summarize an outside reading or resource, or post a question they have or a challenge they are facing.

Forum discussions should have a consistent, clear structure, including due dates for initial posts and responses to others. While forum discussions should be student driven, we should read and respond to discussions on a regular basis. We do not need to respond to every post but should answer questions raised by students, pose questions to further discussion, and respond to any inappropriate comments. Research shows that this kind of instructor presence improves student satisfaction and motivation as well as learning (Croxton, 2014).

Flipped Classrooms

In traditionally structured courses, students attend class to listen to lectures and watch demonstrations, then apply their knowledge and practice problem solving via homework. In flipped classrooms, instructors

post their lectures as videos for students to watch prior to class, then use class time for hands-on practice and problem solving with the instructor's guidance. Educause (2012) and Brame (2013) provide practical advice on using the flipped classroom approach.

Case-Based Learning

In case-based learning, instructors present students with a scenario for discussion. We can write our own case studies, draw on recent news items, or look for published case studies. Cases are often presented as stories outlining a real-world problem, challenge, or ethical dilemma. These cases should be "messy," or open ended enough to allow for multiple approaches and solutions, but these scenarios must include enough detail to support an informed discussion. Even if we plan to write our own cases, we might find it helpful to read established cases to get a sense of the types of scenarios and appropriate level of detail. We should also seek out or develop cases that span a wide variety of settings and that feature characters of diverse backgrounds.

Problem-Based Learning

Problem-based learning uses an inquiry-based approach. The instructor presents students with an authentic, ill-structured problem, and students work in small groups to identify possible solutions (Genareo & Lyons, 2015). Robert Delisle (1997, p.2) points out, "educators who use problem-based learning recognize that in the world outside of school, adults build their knowledge and skills as they solve a real problem or answer an important question—not through abstract exercises." In true problem-based learning, the instructor presents the problem and allows students to direct their own learning, serving as a guide or facilitator rather than providing direct instruction (Delisle, 1997). Problem-based learning can be time-consuming and is most appropriate for courses where students have some background knowledge. However, we can also take a more scaffolded approach by presenting students with smaller or simpler scenarios, giving them time to reflect on approaches individually or in groups, and then working through the possible solutions with the class.

Universal Design for Learning

As we plan lessons and modules, Universal Design for Learning will be a valuable framework. As discussed in detail in Chapter 6, the UDL framework encourages us to design our courses to be accessible to all learners. By intentionally varying our approach to learning, offering students options for engaging with content and demonstrating learning, and being attentive to the design and presentation of materials, we can ensure that our courses are accessible to students with various disabilities and increase accessibility and comfort for all learners.

Supporting Students

Despite good intentions and hard work, students may struggle in your course. As instructors, we can take steps to prevent or mitigate these struggles and to identify students who may need extra support. Many of the strategies mentioned elsewhere in this chapter, including establishing instructor presence, scaffolding assignments, and offering time-management tools like an assignment calendar, will go a long way toward ensuring student success.

Another strategy for supporting students, especially in online courses, is course announcements with reminders of upcoming assignments and due dates. Not only will these reminders help students stay on track with coursework and ensure due dates are not overlooked, they can establish instructor presence and provide an easy venue for students to respond with assignment-related questions. Announcements that provide a wrap-up of the week's discussion, a preview of upcoming readings, and/or generalized feedback on assignments can also help students see linkages in course content and how different elements support their learning. These announcements can be given in class, posted in a dedicated announcements forum, and/or emailed to students. Announcements will be most effective if they happen on a regular, predictable basis, such as at the beginning of class or every Friday.

We can also reach out to students who may need extra support. Missed assignments or class sessions (or in online courses, not logging in to the course space for long periods of time) and dropping grades can be red flags that a student is struggling. For students experiencing a temporary illness or setback, offering flexibility with due dates or indicating that you look forward to seeing them back in class next week may be enough to help them re-engage with the course. If they are struggling with the course materials or assignments, we can invite students to office hours to review course materials, suggest supplemental learning resources, or help them brainstorm assignment topics and approaches.

We may also come across students who are struggling with issues outside of the classroom or with issues that are beyond our expertise to address. In both school and academic settings, it is not uncommon to encounter students facing academic struggles, mental health issues, financial challenges, and even food or housing insecurity. Students may be reluctant to seek help or unaware of what resources exist; instructors can play an important role in connecting students to writing and tutoring centers, counseling services, financial aid offices, food banks, and the like. Links in the syllabus or learning management system and in-class announcements can raise awareness of available services and normalize the idea of asking for help. Instructors can also reach out to individual students and make referrals or facilitate connections with other campus offices and local agencies.

Evaluating and Improving Credit Courses

As noted in Chapter 13, while learning is our main focus as instructors, we should also attend to learner satisfaction and perceived quality of our courses. Credit courses, because they consist of multiple classroom

interactions over an extended period of time, provide many opportunities for evaluation, both throughout the semester and as the course ends.

In higher education in particular, instructors are almost always required to conduct a formal, end-of-course evaluation, typically utilizing a standardized form or online system provided by the institution. If your institution does not require participation in an institutional process, you can create your own end-of-course evaluation using the tools in your learning management system or a site like *SurveyMonkey* (https://www.surveymonkey.com/). If you are creating your own evaluation or if you are able to customize portions of an institutional evaluation form, the guidelines for surveys given in Chapter 13 will help you write good questions that will solicit meaningful feedback.

Course evaluations will bring a mix of useful and not-so-useful feedback. As you review student comments, focus on the feedback that will be most helpful in improving your instruction, and avoid obsessing over every negative comment. We should also be aware that evaluation scores tend to be lower for required courses and for female instructors and instructors of color; female instructors may also find that students are more likely to make comments about their appearance (Buskist & Hogan, 2009; Gravestock et al., 2009). While we should take student feedback seriously, we should focus on the feedback that is relevant to improving instruction and be cautious about using evaluations to compare individual instructors or make promotion decisions.

In credit courses, we have a unique opportunity to solicit and respond to student feedback while the course is ongoing. One useful tool is a midterm evaluation. Midterm evaluations are typically brief and informal. Instructors can ask for feedback on the course in general or on specific elements, such as lectures or in-class activities. Typical questions might be:

- Which aspects of the course are most helpful for your learning?
- What changes, if any, would you recommend in our class sessions?
- Do you find the small group activities helpful? How can they be improved?
- Do you feel prepared to complete the [assignment]? What questions do you have, or where are you struggling?

If you use a midterm course evaluation, you should briefly summarize the results for students and indicate what changes you plan to make, so that students know their feedback was valued. In addition to midterm evaluations, short reflective writing assignments, such as minute papers and the Critical Incident Questionnaire, can be used to gather student feedback through the semester.

We can also use video recordings and peer observations to evaluate our teaching, both of which are addressed in Chapter 13. And the process of reflective teaching, discussed in Chapter 14, is very applicable to teaching credit courses. Smith (2012) suggests three questions that we can ask ourselves after every class session:

1. What went excellently today, and *why*?
2. What could have been better, and *how*?
3. What do I want to *change* in my teaching?

As we engage in ongoing evaluation, we may be able to implement changes as quickly as the next class session or online module, or we may identify more substantial changes to make in the next iteration of the course. For the latter, we will need to record these ideas lest they be forgotten. One of the authors, Melissa, maintains an online document of "changes to make" for each course she teaches, so that she can quickly and easily jot down her reflections at the end of a class session or while grading assignments.

Instructors teaching online courses can also look to the Online Learning Consortium (https://onlinelearningconsortium.org/consult/olc-quality-scorecard-suite, OLC) and Quality Matters (https://www.qualitymatters.org/qa-resources/rubric-standards, QM) for guidance on creating high-quality courses. OLC's "Quality Course Teaching & Instructional Practices" scorecard addresses 10 areas of course design, listing specific best practices for each area. QM's "Higher Education Rubric" addresses eight areas of course design; despite the name, the rubric is very applicable to K-12 settings. QM's rubrics for evaluating publisher products and online instructor skills are also very valuable. While a QM membership is needed for access to the full, annotated rubrics, nonannotated versions are available on its website.

Conclusion

While much library instruction is delivered through workshops and one-shot sessions, some school and academic librarians will have the opportunity to create semester- or year-long courses. These credit-bearing courses allow us to really get to know our students, delve more deeply into content, and engage in time-intensive activities. While many of the instructional design practices shared throughout this text apply to credit-bearing courses, we have some additional considerations to address. The main takeaways from this chapter are:

- When planning credit courses, we can follow the same steps as we would for workshops by getting to know our learners, establishing learning outcomes, and selecting formative and summative assessments to monitor learning.
- When meeting with the same group of students over a number of weeks, we have an opportunity to develop a community of learning in which students engage with and support one another while interacting with the course content.
- Syllabi should present course requirements and instructor expectations concisely and clearly, establish a warm classroom environment, and engage students in the course content.
- Assignments should link to the course learning outcomes and offer students a chance to practice skills and apply knowledge in ways that are meaningful and relevant to their academic and career goals.
- Meaningful feedback helps students improve their skills and deepen their knowledge. We should provide timely and constructive feedback that highlights what students have done well and offers strategies for improvement.
- Multiweek courses afford us opportunities to engage in a mix of instructional strategies, including more time-intensive approaches like case studies and problem-based learning.
- Evaluation is an important component of teaching credit courses. In addition to administering end-of-semester evaluations, instructors can conduct midterm evaluations and use tools like a Critical

Incident Questionnaire to solicit and respond to student feedback during the semester.

Suggested Readings

Accessible syllabus. (2015). https://accessiblesyllabus.tulane.edu/.

> This website offers clear, practical advice for developing accessible syllabi with illustrative examples. It addresses text, images, and policy with an emphasis on welcoming and engaging language.

Ambrose, S. A., Bridges, M. W., DePietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works*: 7 *research-based principles for smart teaching.* Jossey-Bass.

> The authors present seven areas of learning, from the role of prior knowledge and motivation to the importance of practice and feedback to issues of classroom climate. Each principle is covered in its own chapter, with an overview of relevant research and strategies for implementing the principle in practice.

Bryans-Bongey, S., & Graziano, K. J. (Eds.). (2016). *Online teaching in K-12: Models, methods, and best practices for teachers and administrators.* Information Today.

> This collection of essays from experienced teachers provides practical advice for elementary and secondary school instructors planning online courses and programs. The topics addressed range from LMS design to engaging learners and creating community. With chapters on universal design and special education, the book also addresses the needs of students with disabilities.

Faculty Focus. Magna Publications. https://www.facultyfocus.com.

> This portal offeres succinct, evidence-based articles on a wide range of teaching topics. Some materials require a subscription, but a substantial proportion are freely available.

Gonzalez, J. (2015, October 15). The big list of class discussion strategies. *Cult of Pedagogy*. https://www.cultofpedagogy.com/speaking-listening-techniques

> Gonzalez provides a wealth of strategies for engaging and active discussions. Although many of the examples are structured for face-to-face classrooms, most could be adapted for online classrooms. This resource is also available as a podcast episode.

Harnish, R. J., McElwee, R. O., Slattery, J. M., Franz, S., Haney, M. R., Shore, C. M., & Penley, J. (2011, January). Creating the foundation for a warm classroom environment. *Observer*, 24, 23-27. https://www.psychologicalscience.org/observer/creating-the-foundation-for-a-warm-classroom-climate

> The authors provide suggestions for and examples of specific language that will create a warm and welcoming syllabus.

Hess, A. K. N., & Greer, K. (2016). Designing for engagement: Using the ADDIE model to integrate high-impact practices into an online information literacy course. *Communications in Information Literacy*, 10, 264-82. http://doi.org/10.15760/comminfolit.2016.10.2.27

The authors outline the process of using the ADDIE model, similar to Backward Design, to plan a credit information literacy course. The discussion of specific course modules and activities may be of interest to librarians planning credit information literacy courses.

Major, C. H., Harris, M. S., & Zakrajsek, T. (2016). *Teaching for learning: 101 intentionally designed activities to put students on the path to success*. Routledge.

The authors offer a wealth of active learning activities, with descriptions, directions for implementation, and suggestions for activity pairings. The book includes suggestions for interactive lectures, discussions, reading, writing, and reflecting, accompanied by explanations of how each approach contributes to learning.

Martin, F., Wang, C., & Sadaf, A. (2018). Student perception of helpfulness of facilitation strategies that enhance instructor presence, connectedness, engagement and learning in online courses. *The Internet and Higher Education*, 37, 52-65. https://doi.org/10.1016/j.iheduc.2018.01.003

This article provides an overview of strategies for increasing engagement and instructor presence in online courses, with advice for implementation.

McKeachie, W. J., & Svinicki, M. (2006). *McKeachie's teaching tips: Strategies, research, and theory for college and university teachers*. Houghton Mifflin.

This handy volume provides clear and concise advice on creating and delivering credit courses. Chapters are brief and to the point and integrate concrete examples and supplementary readings. Topics include planning the course, developing the syllabus, building community, selecting pedagogical strategies, teaching culturally diverse students, and motivating students.

Miller, M. (2014). *Minds online: Teaching effectively with technology*. Harvard University Press.

Drawing on research related to attention, memory, thinking, and motivation related to learning, Miller provides clear and practical advice for effective online teaching.

Nilson, L. B., & Goodson, L. A. (2017). *Online teaching at its best: Merging instructional design with teaching and learning research*. Jossey-Bass.

Nilson and Goodson provide a systematic and research-based approach to designing and delivering online courses. The introductory chapter provides a clear overview of best practices that cut across modalities. The rest of the book uses an evidence-based approach to address such topics as student motivation, interaction and engagement, and accessibility within the online environment, along with practical advice and helpful examples.

Rapchak, M. E. (2017). Creating a community of inquiry in online library instruction. *Journal of Library & Information Services in Distance Learning*, 11(1-2), 59-67. https://doi.org/10.1080/1533290X.2016.1226577

Using the Community of Inquiry model as a framework, Rapchak provides numerous suggestions for establishing instructor presence, engaging students, and promoting critical thinking in both online workshops and credit courses. This article is highly recommended both for the discussion of the Community of Inquiry model and the wealth of concrete teaching strategies.

Rapchak, M. (2019). When online instruction doesn't measure up: How can you tell, and what should you do? *Journal of Library & Information Services in Distance Learning*, 13(1-2), 150-158. https://doi.org/10.1080/1533290X.2018.1499248

Librarians at Duquesne University offer an information literacy credit course in both face-to-face and online modalities. Early iterations of the online course revealed lower levels of student satisfaction and performance, leading Rapchak and her colleagues to revise the course. Rapchak provides concrete suggestions for increasing student engagement and peer interaction, along with practical tips for teaching online. The discussion of specific course modules and activities will also be of interest to librarians planning credit information literacy courses.

Rose, D., Harbour, W., Johnston, C. S., Daley, S., & Abarbanell, L. (2006). *Universal Design for Learning in postsecondary education: Reflections on principles and their application*. National Center on Universal Design for Learning. http://www.udlcenter.org/resource_library/articles/udl_postsecondary_ed

In this case study of implementing universal design in a graduate course, the authors provide a clear and straightforward overview of UDL, along with practical advice.

Shapiro, M. (2015). *HBR guide to leading teams*. Harvard Business Review Press.

Although written for the workplace, this book has valuable advice on creating and leading effective teams that instructors can mine when planning group projects.

Slattery, J. M., & Carlson, J. F. (2015). Preparing an effective syllabus: Current best practices. *College Teaching*, 53(4), 159-164. https://doi.org/10.3200/CTCH.53.4.159-164

Slattery and Carlson give helpful advice for designing a syllabus that will engage and motivate students, with attention to common concerns and good practices.

Stevens, D. D., & Levi, A. J. (2005). *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback, and promote student learning*. Stylus.

The authors explain the purpose and value of rubrics, and offer a clear and concise guide to developing and using rubrics. This text is supplemented by a number of useful examples.

Weimer, M. (2002). *Learner centered teaching: Five key changes to practice*. Jossey-Bass.

In this classic work, Weimer identifies characteristics of learner-centered teaching and offers advice for implementing these student-centered approaches grouped around five key areas of practice.

Wong, M. A. (2019). *Instructional design for LIS professionals*: A *guide for teaching librarians and information science professionals*. Libraries Unlimited.

While Wong's book will be most helpful to librarians who are teaching courses and professional development sessions for LIS professionals, Chapter 6 on assignments provides cogent advice on managing grading, providing effective feedback, and utilizing peer review to increase student interaction and feedback.

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18. Point-of-Need Instruction: Teaching at the Reference Desk and in Consultations

Introduction

Most of the chapters in this text focus on teaching groups of learners in classroom settings. We can also use our instruction skills when working with patrons one on one, such as at the reference desk and in research consultations. Integrating instruction into reference encounters improves patrons' satisfaction with the service they receive (Dewdney & Ross, 1994; Massey-Burzio, 1998), and it empowers patrons to become independent searchers and users of technology. This chapter introduces approaches to reference services that include instruction, explores how we can capture the teachable moment, and then presents strategies for incorporating instruction in face-to-face and virtual reference.

Approaches to Reference Service

When we approach the reference encounter as an opportunity to offer instruction, one in which we guide patrons through the research process rather than providing them with an answer, we are enabling our patrons to act independently to meet their own needs. This approach aligns with the focus on self-actualization and self-direction of humanist and andragogical theories of learning, and supports critical pedagogy's emphasis on empowering learners and helping them develop agency. In addition, an instructional approach allows patrons to retain ownership of their question and the answers they are seeking. Elmborg (2002, p. 459) writes, "whenever we answer a student's question without teaching the student how we answered it or why we answered it as we did, we are essentially taking the question away from the student, thereby creating a dependency in that student that undermines rather than strengthens the learning process." This philosophy of reference is often compared to the proverb "Give a person a fish, and they will eat for a day; teach them to fish, and they will eat for a lifetime."

The extent to which we engage in instruction will be influenced by our information setting and our patrons. Tyckoson (2020, p. 13), building on the work of Wyer (1930) and Rothstein (1961), identifies three approaches to reference service:

- **Liberal or Maximum:** The reference librarian conducts research for patrons, and instruction is not expected or offered. This approach is most often seen in corporate, medical, and law libraries.
- **Moderate or Middling**: The librarian may conduct research for patrons or might guide patrons through conducting their own research. This approach is most often seen in public libraries, where librarians adjust their approach based on the complexity of the question and the needs of the patron.

- **Conservative or Minimum:** The librarian primarily instructs patrons in the use of the library and its resources, and patrons are expected to conduct their own research. This approach is common in school and academic libraries.

These approaches are not rigid but comprise a continuum of service; information professionals can move across the continuum as appropriate. However, as noted, different approaches lend themselves to different information settings, aligning with the mission of the library and its role within the larger institution or community. For instance, the role of corporate librarians is usually to increase efficiency of the organization by saving time and money; this is probably best accomplished by executing searches, and synthesizing and delivering results upon request. Corporate librarians might offer workshops and trainings to groups but are less likely to engage in lengthy instructional interactions for each reference request. On the other hand, academic and school libraries support the educational mission of their campuses; thus, helping students learn to navigate and evaluate information sources is a primary role for these libraries. Simply providing students with answers would undermine that educational role. Public librarians will take their cue from the patron, offering instruction but also supplying answers if that is what the patron prefers.

While Tyckoson was addressing how librarians help patrons seeking information, we should recognize that librarians handle a wide variety of inquiries at most reference desks, and the nature of the inquiry will also dictate whether or the extent to which we provide instruction. For example, librarians fielding a question about composing and sending an email or using the technology in a makerspace will likely adopt an instructional approach, regardless of the type of library, while librarians responding to a request for more paper in the printer will probably perform the task themselves.

Identifying and Enabling the Teachable Moment

A teachable moment occurs when an individual "develops a natural curiosity about a topic" or "an event occurs that acts as a catalyst for learning" (Drew, 2020). For example, a child who asks for help finding a book by a favorite author might be naturally curious about how the librarian can find the desired title on the shelf so quickly, presenting an opportunity to explain that fiction is arranged by author name. A student writing a research paper has a natural need to learn about citation, while an adult who asks for help logging in to an email account will likely want to be able to do so again in the future. In both cases, the patron's immediate need becomes a catalyst for learning, with the reference librarian assuming the role of instructor. Reference encounters are ripe with teachable moments such as these.

An important part of teaching at the reference desk is ensuring patrons are open to instruction. Again, our approach to reference will be guided (or even dictated) by our setting. Patrons in a public library are not obligated to learn our systems and processes. If patrons are not interested in instruction, are stressed out, or in a hurry, we might simply provide them with the answers or resources they need. But at the same time, we would not want to miss an opportunity to empower these patrons if they are ready and willing to learn. We must be good listeners, looking for clues that our patrons are open to instruction. Phrases such as "Can you show me how to . . . ?" signal an interest in learning. Body language can also be a clue. Patrons who

sit down at the desk or crane their neck to watch our screen as we type are probably open to instruction; patrons who appear stressed probably are not. We can also ask questions to gauge our public library patron's interest in instruction. For instance, if a patron asks whether we have a certain book, we might respond by saying, "Yes, would you like me to show you how to locate that in our catalog?"

In a school or academic library, the ability to find, use, and evaluate information is probably an educational goal for all students, and instruction should be inherent in our reference transactions. Nevertheless, if patrons are not open to that instruction, they are unlikely to learn from the transaction. Danley (2003) points out that when students are assigned a research topic by their instructor, it can be difficult for them to feel they have ownership over their own research and learning. In these cases, we can address patrons in ways that give them authority over their research. Questions such as "What would you like to learn about this topic?" or brainstorming connections between an assigned topic and the students' personal interests can encourage patrons to negotiate their own questions and may motivate them to engage with the research process and the instruction the librarian is offering.

We can also enable teachable moments by attending to the affective aspects of our patrons' research process and providing empathetic guidance. In previous chapters, we learned about the role of emotions in research through the phenomenon of library anxiety (Mellon, 1986) and Kuhlthau's (1991, 2004) identification of affective aspects of the Information Search Process. For instance, students often experience anxiety and frustration at the beginning of the research process, especially as they try to identify a topic. Negative emotions like anxiety can get in the way of the cognitive processes and critical thinking necessary to learning, and make patrons resistant to instruction. Kuhlthau (2004) advises us to acknowledge and normalize feelings of anxiety and frustration, and assure the student that we can help.

Patrons, in particular adult patrons, may be uncomfortable admitting they do not know how to do something or may feel awkward learning while the librarian watches them. In their list of 10 best practices for teaching at the reference desk, Campbell and Fyfe (2002, p. 27-28) include "make learners comfortable with the fact that they have to learn something" and "make the person comfortable with her ability to learn" as two essential components of successful one-on-one instruction. Carlile (2007, p. 140) also notes the importance of putting patrons at ease and suggests that we use a positive, encouraging tone, and exercise tact and patience as we provide instruction.

Activity 18.1: Recognizing and Enabling the Teachable Moment

Questions for Reflection and Discussion:

1. How can we recognize a teachable moment? What might patrons say or do that indicates they are open to instruction?
2. In what situations might a patron not be open to learning? How can we recognize those situations?
3. How might we generate interest in instruction with students in a school or academic library?

We should realize that some patrons might not expect instruction. We can gently invite them into the instruction by narrating our actions as we walk through a search process and asking them questions to engage them in the search. We could even use some of the active learning techniques discussed in Chapter 4, such as asking the student to fill out a K-W-L chart or create a concept map.

Activity 18.1 offers a brief exercise on recognizing and enabling the teachable moment.

Setting Instructional Goals for the Reference Interview

Having identified and enabled the teachable moment, we should reflect on our instructional goals. Many researchers have suggested that librarians attend to learning outcomes as they teach at the reference desk (see, for example, Avery & Ward, 2010; Ward, 2011). VanScoy (2019) distinguishes between *conceptual knowledge*, or one's understanding of underlying principles, and *procedural knowledge*, or one's ability to use appropriate strategies. Understanding that a database contains citations to facilitate access to literature is conceptual knowledge, while using Boolean operators to combine terms reflects procedural knowledge. As we deliver instruction, we can step back to consider the broader conceptual knowledge that is relevant to the patron's question and introduce those concepts as part of our instruction. By helping patrons develop a more robust mental model of how information is created, organized, and accessed, we empower them to be information literate and self-directed in a way that teaching rote searching skills alone will not (Brandt, 2001).

VanScoy (2019, p. 176) argues that just as librarians are refocusing classroom instruction to emphasize conceptual knowledge, we should be intentional about teaching conceptual knowledge within the reference interview. VanScoy's work echoes Elmborg's (2002) call to develop a pedagogy of reference that articulates our goals for this type of instruction.

Strategies for the Reference Desk

We can use a number of strategies to integrate instruction into the reference encounter:

- **Think Aloud:** As we assist a patron, we can explain our actions and decisions with comments like, "If we walk over to our collection of biographies, we can browse by last name" or "I'm going to search *PubMed* (https://pubmed.ncbi.nlm.nih.gov/) because it is the primary database for health science literature and will link us to numerous freely available articles." Think aloud is one of the easiest instructional strategies to integrate into the reference interview and supports the best practice of involving the patron in the search process (Ross et al., 2009, pp. 112-114).
- **Questioning:** As we search, we can ask patrons questions that invite them into the search process. A question such as "Do any of these results look helpful?" allows the patron to retain control of the question while also modeling the importance of assessing search results for relevancy. As we pose

questions, we can support the development of conceptual knowledge. For example, the question "Would you like to find a book or articles about your topic?" assumes the patron understands the type of information that can be found in each source. A question that also includes a brief explanation ensures the patron understands why the librarian is offering this choice. Our explanation could sound something like this: "We could look for books or magazine articles on your topic. A book will provide an in-depth discussion of your topic, but magazine articles will have more current information and be quicker to read. What would be most helpful at this time?"

- **Demonstration:** As in a face-to-face class, we can explain each step of a search process while the patron observes. We should ensure the patron can see the screen by turning the monitor to the patron and narrate each step clearly. Our demonstration will be more effective if we also go slowly and pause to check in and review as necessary (Campbell & Fyfe, 2002).
- **Guiding:** In guiding, we invite patrons to sit at the computer and conduct the search while we stand to the side and offer coaching. Ross et al. (2009, p. 117) note that not only are patrons more likely to remember what they learned, it "becomes immediately clear where the user is running into trouble." As we coach patrons, we should respect their personal space and, if possible, be at eye level so that we are not looming over them (Campbell & Fyfe, 2002; Ross et al., 2009, p. 117).

We should keep in mind that approaches that engage the patron in active learning will be more effective. For example, if we demonstrate a search while the patron watches, the patron may nod as we go through each step but not remember the process later; if we have patrons sit at the computer to conduct the search with our guidance, they are more likely to remember what they learned and be able to conduct future searches independently.

Scaffolding is also very applicable to the reference encounter. We should determine what the patron already knows and offer small steps toward new skills. For example, after helping a student create a citation for a book, we can point out that other types of citations follow a similar format and walk the student through using a style guide. Librarians also can scaffold by relating new information or skills to something that is familiar to the patron. As with classroom instruction, metaphors can be very helpful. We could compare citations to addressing a letter; just as providing the correct address will help a letter reach its intended recipient, a correct citation helps the reader locate source material.

Throughout the process, we should keep our instruction concise and relevant to the user's immediate needs (Avery, 2008). If patrons are undertaking complex research, we can break the process into steps, help them get started on the first step, and invite them to return for more instruction when they are ready for the next step. We should also leave users in control of how much instruction they receive and be prepared to exit the transaction gracefully (Campbell & Fyfe, 2002; Ross et al., 2009, p. 118).

Activity 18.2 provides an opportunity to practice integrating instructional strategies into a reference encounter.

Instructional Strategies for Virtual Reference

Librarians might assume that patrons utilizing virtual reference services are only interested in quick, direct answers to their queries. However, patrons utilize virtual reference for many reasons; they may be unable to visit the library in person or may prefer the anonymity of virtual reference. In some cases, patrons may be in the library building but reluctant to pack up their belongings in order to visit the reference desk in person. Research on virtual reference shows that patrons are open to instruction. In many cases, patrons ask for instruction explicitly with questions like, "How do I . . . ?" and "Can you show me how . . . ?" (Desai & Graves, 2008, p. 246). And even when patrons do not ask for instruction directly, they are receptive when it is offered (Graves & Desai, 2006; Desai & Graves, 2008, pp. 252-53). Ellis (2004) argues that instruction is a natural fit for the more egalitarian environment of virtual reference. She writes, "remote users, either via digital reference or via online instruction, have a high degree of self-efficacy, thus are receptive to learning what is necessary to resolve their information needs" (Ellis, 2004, p. 106).

Many of the strategies used for instruction in face-to-face reference can be adapted for virtual reference, including giving brief, written explanations as we recommend sources and strategies; asking questions that engage patrons in the search process; chunking up information into smaller segments; narrating the steps we are taking to locate information or solve the patron's problem; and guiding patrons through search steps while they conduct the search themselves. Devlin et al. (2008) suggest approaching the transaction as a collaborative conversation, such as by asking patrons to suggest alternative search terms and working together to build search strategies. We should also check in with patrons frequently and confirm that they are receiving the information they need. If we are using chat software that supports co-browsing, we can provide a live demonstration of a search and even ask patrons to follow along on their own computer. If co-browsing is not an option, we can push links to instructional videos that demonstrate the search process.

As with in-person reference encounters, we should attend to the patron's affective state when conducting

virtual reference. Oakleaf and VanScoy (2010) recommend we show enthusiasm for patron requests, and acknowledge and compliment the work they have done prior to initiating a virtual reference encounter. Hunter et al. (2019, p. 147) recommend that we provide supportive, positive feedback throughout the transaction, suggesting "praise when the student gets the right answer, connecting over shared experiences, and bolstering their research confidence when they understand important ideas or find valuable resources."

Hunter et al. (2019) note that when patrons initiate a virtual reference encounter, they may be uncertain who is responding to their query and may expect a straightforward transaction similar to contacting customer service. Hunter et al. echo Devlin et al. (2008) in recommending that librarians gently persist in offering instruction, and suggest a number of strategies we can use to enable the teachable moment in virtual reference. These strategies including asking patrons if they have time for instruction; using phrases like "Let's walk through this together" to signal that instruction will be offered; and pushing screenshots, videos, and other learning objects, especially when patrons are short on time (Hunter et al., 2019, p. 145-147).

We should also be aware that conducting a good reference interview will support effective instruction (Hunter et al., 2019; VanScoy, 2019). VanScoy's findings indicate that librarians tend to focus on the patron's stated information need, rather than uncovering the challenges or gaps in knowledge that led patrons to ask for help. She suggests that a more robust understanding of the patron's goals and knowledge gaps can open up opportunities for instruction focused on conceptual knowledge. As we work with patrons, we should ask open-ended questions, demonstrate active listening, and convey interest (for more on effective reference interviews, see Ross, 2009; Saunders, 2020).

Activity 18.3 provides practice integrating instruction into virtual reference.

Activity 18.3: Adapting Instructional Strategies to Virtual Reference

Revisit the script you created in Activity 18.2, and imagine that you have been asked the same question while staffing your library's chat-based reference service.

Questions for Reflection and Discussion:

1. Which of the instructional strategies used in your script would work in chat reference?
2. Could you adapt some of your other instructional strategies, and if so, how?
3. What technologies would be helpful in providing this instruction?

Conclusion

Instruction librarians often find themselves working with patrons at reference desks and through consultations, and these interactions can be excellent opportunities to provide instruction. In fact, the

immediate information need of a reference question and the one-on-one nature of the interaction mean we can personalize the instruction and highlight its direct relevance to the patron. Helping patrons learn at the reference desk empowers them to begin meeting their own information needs.

The key takeaways from this chapter include:

- The extent to which we offer instruction as part of our reference work will vary. School and academic librarians will emphasize instruction in the majority of transactions, while corporate librarians rarely will. Public librarians will be guided by their patrons' needs and openness to instruction.
- We should be aware of the appropriate level of instruction for our setting and be attuned to our patrons so as not to miss opportunities to offer instruction.
- We have a number of strategies at our disposal to integrate instruction at the reference desk, including narrating our process, asking questions to invite patrons to engage, demonstrating tasks and processes, and offering guidance while patrons engage in a task or process on their own.
- During virtual reference transactions, we can provide brief, written explanations of our process, use screen-share applications to demonstrate tasks and processes, and ask questions to invite the patron to engage in the process.
- Regardless of modality, we should remember the affective aspects of research, acknowledge and normalize any frustrations or fears our patrons may have, and use positive, encouraging language to support their progress.

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Bruce, S. (2020, February 5). Teaching with care: A relational approach to individual research consultations. *In the Library with the Lead Pipe*. http://www.inthelibrarywiththeleadpipe.org/2020/teaching-with-care/

> Bruce addresses another form of one-on-one instruction, the research consultation. She uses the frameworks of Care Ethics, Relational-Cultural Theory, and Critical Race Theory to uncover the power dynamics in consultations and suggest strategies librarians can use to build relationships and support learning.

Campbell, S., & Fyfe, D. (2002). Teaching at the computer: Best practices for one-on-one instruction in reference. *Feliciter*, 48(1), 26-28.

> Campbell and Fyfe provide 10 tips for successful one-on-one instruction. Each tip is accompanied by a concise explanation and sample scripts librarians can use while working with patrons.

Danley, E. (2003, March/April). The public children's librarian as educator. *Public Libraries*, 42(2), 98-101.

> Danley provides a brief explanation of constructivism and scaffolding, and discusses their relevance to the work of children's librarians. She offers numerous concrete strategies for teaching young patrons within the reference encounter.

Elmborg, J. K. (2002). Teaching at the desk: Toward a reference pedagogy. *portal: Libraries and the Academy*, 2, 455-64. http://doi.org/10.1353/pla.2002.0050

> Elmborg argues for the development of a pedagogy of reference that emphasizes the integration of teaching and reference work. He draws on constructivist and social constructivist learning theories to show how reference creates teachable moments that librarians can use as powerful learning opportunities.

Hunter, J., Kannegiser, S., Kiebler, J., & Meky, D. (2019). Chat reference: Evaluating customer service and IL instruction. *Reference Services Review*, 47(2), 134-150. https://doi.org/10.1108/RSR-02-2019-0006

> In this research study, the authors review chat reference transcripts for evidence of instruction. They use their findings to explore how librarians can enable the teachable moment and recommend effective practices for teaching in virtual reference.

Oakleaf, M., & VanScoy, A. (2010). Instructional strategies for digital reference: Methods to facilitate student learning. *Reference & User Services Quarterly*, 49(4), 380-90. https://doi.org/10.5860/rusq.49n4.380

> Oakleaf and VanScoy outline eight strategies for integrating instruction into virtual reference, linking each strategy to theories of learning to show how they support metacognition and active learning.

Pattee, A. S. (2008). What do you know? Applying the K-W-L method to the reference transaction with children. *Children & Libraries*, 6(1), 30-39.

> Pattee briefly reviews how children's developmental stages affect the ways they engage in information seeking. She then shows how librarians can use the K-W-L method to integrate instruction into reference work with children.

VanScoy, A. (2019). Conceptual and procedural knowledge: A framework for analyzing point-of-need information literacy instruction. *Communications in Information Literacy*, 13(2), 164–183. http://doi.org/10.15760/comminfolit.2019.13.2.3

> In this research study based on chat reference transcripts, VanScoy shows that librarians are more likely to teach procedural knowledge than conceptual knowledge. She shows that conceptual knowledge is the basis of meaningful learning and argues that librarians should be more intentional about integrating the teaching of conceptual knowledge in the reference encounter.

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PROGRAM MANAGEMENT

19. Marketing Library Instruction

Introduction

Most of the instruction sessions that information professionals offer are workshops that patrons voluntarily attend or one-shot sessions that depend on invitations from teachers and faculty members to deliver. Exceptions include elementary and middle school librarians, who typically have weekly scheduled classes with students, and academic librarians, who teach credit-bearing courses described in more detail in Chapter 17. With these exceptions aside, because our sessions depend on audience interest and invitation, instruction librarians must engage in marketing and communication to raise awareness of and generate interest in their sessions. This chapter provides a brief overview of marketing and outreach techniques suitable for instruction programs.

Marketing Overview

Some information professionals have negative associations with the word "marketing," but in the library and information science field, marketing is not about selling people a product or service they may not want or need. Instead, it is an informational activity meant to raise patrons' awareness about the services the library offers, like instruction sessions, and to help patrons understand the value they will find in those sessions. No matter how well designed, useful, and relevant our instruction sessions are, people will not attend if they are not aware of them. Unfortunately, most people feel only "somewhat well informed" about the resources and services their libraries offer and wish that the library communicated better so that they could be more aware (Pew Research Center, 2013). Further, instruction is among the services that people most want to see offered by libraries (Pew Research Center, 2013). To that end, the Association of College & Research Libraries (ACRL) lists communication and advocacy as a best practice for instruction programs, noting that instruction librarians must "reach out to relevant stakeholders" and use a variety of communication methods, including "formal and informal networks and media channels" (ACRL, 2019). Similarly, ACRL (2017) describes the library teacher as an advocate who "promotes and advances information literacy." The Public Library Association (n.d.) offers a list of resources for marketing, while the American Association of School Librarians (AASL) addresses marketing with advocacy and public relations, defining marketing as "a planned and sustained process to assess the customer's needs and then to select materials and services to meet those needs" (AASL, n.d.).

How do we make people more aware of our instruction services? We can accomplish this through a clear and coherent marketing strategy. A coherent marketing strategy will involve concise and engaging messages targeted to a specific audience and delivered through one or more relevant formats. Developing a comprehensive marketing plan is a complex undertaking and outside the scope of this chapter. However, a

basic marketing strategy can be boiled down to four steps: identifying the audience, determining audience interest and needs, crafting the message, and selecting a medium to disseminate the message.

Identifying the Audience

Identifying the audience means breaking down the larger community that the library serves into smaller groups or target audiences in order to develop specific marketing messages for each group. There is no "one-size-fits-all" approach to marketing. If we send a single message to all of our potential patrons, it is likely to be ignored because it is not speaking to anyone in particular. Rather, we have to ensure that our message and medium are matched to the various audiences that we hope to reach. In the field of business, this process of "dividing potential customers into groups based on shared characteristics" (Ruckno, 2019) is known as market segmentation, and its aim is to align messaging with the specific needs or interests of each community. Potential markets can be subdivided in countless ways, including by gender, age, education level, and geographic location. In some cases, businesses might develop different products for different customer groups, but in other cases they market the same product to different groups using different messages and mediums.

We can segment our audiences for library instruction in many ways as well. Because the number of possibilities for segmenting audiences is seemingly endless, we need to consider what approaches will be most useful. In general, we should group learners who share similar characteristics that will impact their instruction needs and interests. In school and academic libraries, our primary service communities are students and instructors, but each of those groups can be further segmented. For instance, we can group students by grade level; major or broad academic interest; extracurricular pursuits; first-generation, international, or disability status; and so on. Public libraries also have a wide range of possible market segments, including by age, socioeconomic status, languages spoken at home, and hobbies. See Activity 19.1 for a brief activity on segmenting audiences.

Activity 19.1: Segmenting Audiences

Choose an instruction setting with which you are familiar or one in which you'd like to work, and answer the following questions:

1. How many different audience segments can you identify for this setting?
2. What characteristics do members of these groups share that could impact their instruction needs and interests?

Determining Audience Interests and Needs

Once we have identified a number of potential audience segments, we need to determine the specific instruction needs and interests that members of each audience might share. For instance, older adults in a public library might be interested in financial planning and health information, while parents of young children might be interested in educational materials and low-cost entertainment options. Studies show that faculty members demonstrate different information behaviors and prioritize library services differently by field and discipline (Hardesty, 1995; Saunders, 2013; Wolff-Eisenberg et al., 2015). Chapter 7 discussed the many different community segments that we serve in libraries and how we might learn more about our various target groups, including through direct research like surveys, as well as through existing research articles and demographic information. See Activity 19.2 for a brief exercise on determining audience needs and interests.

Activity 19.2: Audience Needs and Interests

Choose one of the audiences you identified in Activity 19.1, and answer the following questions:

1. What existing research can you find on your audience's information behaviors?
2. What information can you find about its general demographics?
3. How could this information inform your understanding of this audience's instructional needs and interests? Can you identify specific instructional topics of potential interest to this audience?

Crafting the Message

Understanding members of our audience is crucial to developing a message that captures their attention and piques their curiosity. Especially in an age when they are constantly inundated with advertisements and social media messages, people are likely to ignore or tune out information that is not relevant to them. Even worse, they might choose to unfollow library announcements on social media or unsubscribe from newsletters if they consistently find that the messages do not appeal to them. To avoid this outcome, we can use the different interests and needs we identified to develop messages targeted to each of our audiences.

In some cases, we will market different resources and services to each group, and in some cases, we will promote the same services and resources but describe them differently. Even when audience interests overlap, each group will have different motivations for its interests or will prioritize those interests differently, so that the same message will not work for all groups. For instance, an academic library session on database searching is relevant to all students, but we might emphasize the time-saving nature of the search strategies when reaching out to older learners, while noting that finding better resources can lead

to better grades when marketing to younger students. We can even adjust the language that we use with different audiences. While we always want to remain professional, shorter, more informal messages might resonate more with a younger audience. The point is to craft a message appropriate to the targeted group. See Activity 19.3 for a brief exercise on crafting a targeted message.

Activity 19.3: Crafting a Message

Review the information you compiled for Activity 19.2, and choose an instructional topic you think would be of interest to this audience.

1. What specific needs or interests of the audience does this session address?
2. Based on your understanding of audience members, how would you describe this session to them?
3. What aspects of the session, or what benefits of attending the session, would you emphasize? Why?
4. What specific words or phrasing would you use? Why?
5. Try adapting the message for another audience that might be interested in this same topic. How would you change the message, and why would you make those specific changes?

Selecting a Medium and Disseminating the Message

Just as different groups have different areas of interest, they also have different preferred methods and sources for receiving information, and we should find appropriate mediums for getting our message out to each group. In most cases, we will want to find more than one way to share our message, regardless of audience, but the question is which formats or outlets will work best? As we research our audience needs, we should also inquire about which outlets they use to find out about community events. Do some users rely on social media? Which platforms do they prefer? Which patrons subscribe to the library newsletter or the local community paper? Which patrons are likely to see flyers at the student union or the local yoga studio? And who can we meet by moving out of the library and into spaces like residence halls, low-income housing, and farmers' markets? The sections below explore how to use various outlets and media effectively, but the first step is to match different outlets with each audience.

We also must consider how to use each medium effectively. With most text-based materials, including flyers, direct email messages, web blurbs, or notices in newsletters, we should minimize the time and effort needed to digest the information by keeping the text brief while still adapting it for the intended audience. For instance, for a voluntary workshop, we might include the title of the session, a line or two about what attendees will learn and how it will benefit them, the basic logistics such as time and place, and whether registration is necessary. When reaching out to faculty to offer in-class sessions, we can emphasize how we can adapt the session to their specific course and learning goals. Occasionally a longer piece could be effective for generating interest. For instance, a campus newspaper might be willing to include a brief article

highlighting library instruction, while a local newspaper might be interested in a piece on workshops for job seekers at the public library. If the articles include a few positive quotes from attendees, all the better. Keep in mind that we can use images and graphics to enhance our textual materials.

Social media platforms such as *Twitter* (https://twitter.com/), *Facebook* (https://www.facebook.com/), and *Instagram* (https://www.instagram.com/) can be great ways to reach certain audiences, but they entail additional design considerations. Certain formats restrict text, and some outlets are particularly appropriate for graphics. For instance, we are limited to 280 characters per tweet, but we can enhance the post with graphics or a link to a web page with more information. *Instagram* emphasizes visual media over text and could be a great place to share a brief video outlining workshops and classes. Unlike most written materials, social media offers an opportunity for interaction with our learners, and we should incorporate those opportunities into our messaging. For instance, we could invite learners to share something they enjoyed about a recent workshop they attended or invite them to submit pictures of themselves putting the skills they learned into practice. Creative use of hashtags can make our messages discoverable. See Activity 19.4 for an exercise on selecting formats.

Activity 19.4: Matching Mediums to Audience

Return to the audience you selected for Activity 19.2 and Activity 19.3, and answer the following questions:

1. Which outlets or media might this audience consult to find out about community events? How do you know?
2. Think about the message you crafted in Activity 19.3. Could you use that message as is for the outlets you have identified? How might you modify the message to better fit the medium?

Avoid Stereotyping

As discussed in Chapter 7, to avoid harmful stereotyping we must be careful not to overgeneralize. Existing research, demographics, and our own data collecting can give us some helpful insights into broad group interests, but we have to remember that any individual's membership in a group does not describe an entire identity. Each person is intersectional, or made up of numerous, overlapping identities, and as such, each individual is a member of multiple groups. For instance, one person might be a father of young children and a nontraditional student returning to college for a degree. Another might be an African American woman and a veteran working as a nurse. Each part of a person's identity could influence different instructional interests and needs. Further, not every single member of a group will necessarily share all of the interests and needs of the larger group. While we can use market segmentation for broad generalities and guidance, we have to be sure not to make assumptions about any person based on actual or perceived membership in a group.

Design Considerations

In addition to each individual message we craft, we should consider the overall look and feel of the range of materials we create in order to achieve a coherent approach. For instance, we might select a color palette and font style to use consistently across all of our messaging, or we might develop a signature graphic or logo that identifies the library instruction program (Graesser & Sundell-Thomas, 2020). This kind of branding makes our materials recognizable and provides a familiar and consistent feel. That said, library instruction programs do not exist in a vacuum but are part of the larger library and might be part of a larger campus or community system as well. We should ensure that our materials are consistent with those of our parent institution and follow any design guidelines it might provide.

As with any materials we create, we want to be sure that our marketing materials are accessible to our audience. As we develop materials in different formats, we should ensure to provide readable text, use color and white space effectively, add alt text for images, and include closed captions for videos. Chapter 11 outlines additional design considerations with a focus on accessibility issues.

Outreach and In-Person Marketing

In addition to text-based materials and social media, we can reach potential learners in a more interpersonal way through in-person and word-of-mouth marketing. To begin with, every instruction librarian should prepare an elevator speech, or a brief speech of about 30 seconds describing the instruction program. Ideally, the speech should explain who benefits from the program and what those benefits are. The Association for Library Service to Children (2015) offers a simple template:

> I help [target audience] [verb phrase] so that [proven/expected positive outcome for the target audience].

For instance, a school or academic librarian might say, "I help students learn to evaluate information so that they use better resources in their papers and earn better grades." An archivist might say, "I help researchers locate and interpret historical resources so that they can create the books and films that help us understand history." With an elevator speech ready, we can market our instruction services to potential learners and other stakeholders whenever and wherever we might encounter them.

We should also consider taking our message out of the library and into our patrons' spaces. People often ignore emails, social media posts, and flyers when they are constantly inundated with information. However, when we meet them in-person, not only can we ensure they receive our message, we can answer any questions they might have and make the information even more personalized. Where we go to meet patrons depends on our setting and community. School and academic librarians should spend time in student unions, residence halls, and faculty lounges. These librarians might also request a few minutes at a faculty meeting to share information about the instruction program. Public librarians might visit community centers, housing developments, and elder and youth service organizations. And all librarians

should make an effort to attend community meetings and events, including school sporting events, city council meetings, rallies, and so forth. Armed with printed marketing materials and an elevator speech, we can share information about our instruction program while showing support for our community.

We can also tap into word-of-mouth marketing by encouraging some of our most satisfied users to talk about our services (Graesser & Sundell-Thomas, 2020). Our patrons and potential learners expect positive messages about the library to come from librarians, but such messages coming from their peers or trusted colleagues might pique their interest in a new way. Further, these patrons can reach a wider audience who might never have received a message from the library, and thus bring new learners to the library. A faculty member who had a good experience with an in-class session can discuss that experience with her colleagues in a way that speaks to their needs as instructors more directly and specifically than someone outside of the department. Stories from students who felt more confident writing a paper after library instruction, or public library patrons who found a job after attending a job hunting workshop can be more impactful than any message a librarian can deliver. Rather than hoping or trusting that satisfied patrons will share their experiences, we can reach out to patrons that we know have had good experiences and who might have influence with their peers. We can encourage them to share their story and provide them with printed marketing materials to circulate. Depending on our setting and intended audience, we could even ask patrons to record a short video for the library website or write a brief article for the newsletter. See Activity 19.5 for an exercise on in-person marketing and outreach.

Activity 19.5: Identifying Spaces and Individuals for Outreach

Return to the library setting and audience you selected for the previous activities, and answer the following questions:

1. What community spaces or events could you visit to reach this audience?
2. What kinds of patrons might be willing to help spread the word about instruction services?

Conclusion

No matter how engaging, relevant, and informative our instruction sessions might be, if people do not know about them, they will not attend. Instruction librarians, like all information professionals, must market their services to raise patron awareness. The main takeaways from this chapter are as follows:

- The first step to marketing is to segment our audiences into groups that share commonalities that might impact what they want from library instruction. We can use techniques from Chapter 7 to learn more about our audiences' interests and needs. While understanding groups can help us focus our

marketing materials, we must remember not to stereotype individuals based on their actual or perceived membership in any group.

- Once we understand our audience, we can craft a message targeted to them.
- We should share our marketing messages through media outlets favored by our patrons.
- We should also take our message outside of the library and engage in in-person and word-of-mouth marketing.

Suggested Readings

Barbara, P., & Wallace, L. (2010). *Building a buzz: Libraries and word-of-mouth marketing*. American Library Association.

> This handy guide provides clear and straightforward advice to developing word-of-mouth marketing. The authors discuss marketing and communication plans, then go on to describe various methods for "creating a buzz" about library services. They also offer an overview of marketing terminology, some sample planning documents, and a series of case studies. Although geared toward public libraries, much of the advice would be relevant to any setting.

Barker, K. (2017). Creating a unique brand for your school library: Values, vision, voice, and visuals. *Young Adult Library Services*, 15(3), 31-35.

> Barker offers pointed advice for developing a brand for the school library that builds on the mission, vision, and values of the library and larger school system.

Douglas, V. A. (2019, June 12). Innovating against a brick wall: Rebuilding the structures that shape our teaching. *Libraries + Inquiry*. https://veronicaarellanodouglas.com/critlib/innovating-against-a-brick-wall-rebuilding-the-structures-that-shape-our-teaching-tilc-2019-keynote/

> In this post adapted from a keynote address, Douglas identifies and challenges some of the structures that impact library instruction and how library instructors identify. In particular, she examines patriarchal notions of service and the liminal space outside of the traditional classroom that academic librarians occupy. After problematizing some of these issues, Douglas provides specific ideas and strategies for overcoming barriers and engaging fully in our work, such as valuing the time and labor that teaching requires.

Miller, K. L. (2010). *The non-profit marketing guide: High-impact, low-cost ways to build support*. John Wiley & Sons.

> Although not specific to libraries, the advice for nonprofit marketing is directly applicable to libraries. More detailed than some of the other texts listed here, this handbook provides clear guidance on each stage and aspect of marketing, including methods for learning about the community, including surveys and focus groups. Miller keeps cost in mind throughout and discusses the importance of relationships and social capital, which are key for nonprofits like libraries to encourage advocacy.

Posner, M. (2014, September 18). Here and there: Creating DH community. *Miriam Posner's Blog*. http://miriamposner.com/blog/here-and-there-creating-dh-community/

> Although directed at digital humanities librarians, the advice in this post is widely relevant. The first few paragraphs provide background, but beginning with the header "You are a disruption in the force," Posner offers clear, targeted advice for engaging in outreach to build community, including gems such as "Go to coffee with one new person every week" and "Promise nothing." Her handy list of tips and strategies is generally low cost and easily implementable.

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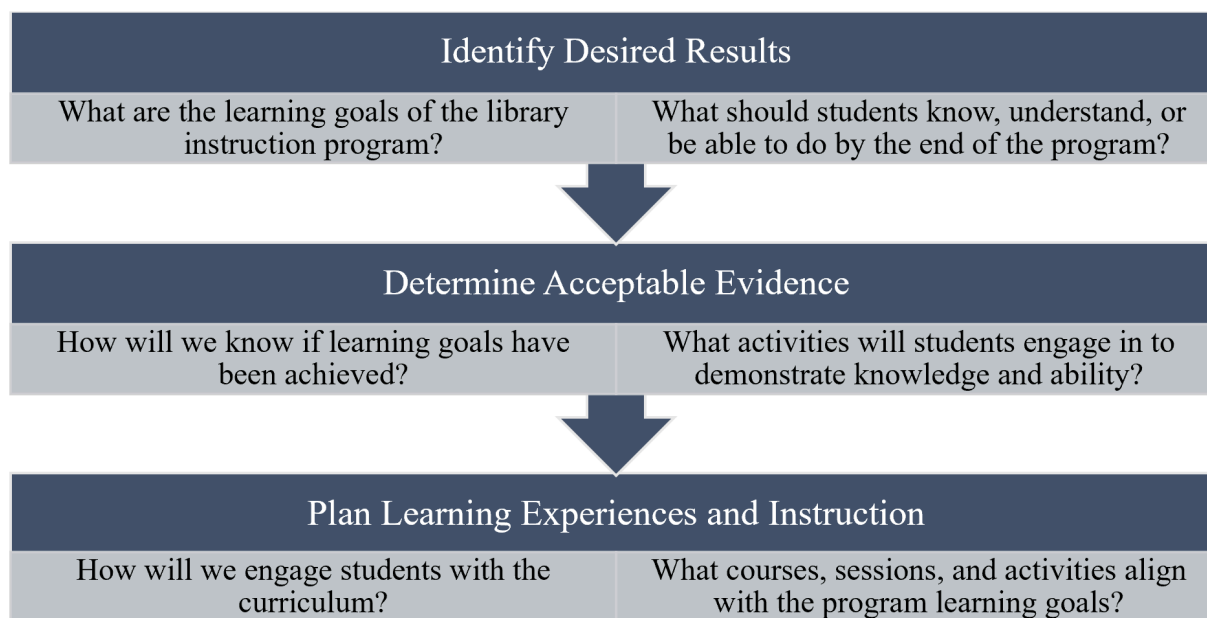Wolff-Eisenberg, C., Rod, A. B., & Schonfeld, R. C. (2015). *Ithaka S+R US faculty survey* 2015. Ithaka S+R. https://doi.org/10.18665/sr.277685

20. Coordinating Instructional Programs

Introduction

When starting out, most instruction librarians will focus on developing and delivering their own individual instruction sessions. At some point, however, many of us will be asked to participate in planning and assessing a broader curriculum, and some might find ourselves in charge of our institution's instructional program. Managing instruction at the program level involves setting program-level learning outcomes, reviewing the full curriculum to see how well it meets user needs, and assessing and evaluating the program. This chapter offers a brief overview of the basics of instructional program management.

Curriculum Planning: Backward Design

Figure 20.1: The Stages of Backward Design

Identify Desired Results	
What are the learning goals of the library instruction program?	What should students know, understand, or be able to do by the end of the program?

Determine Acceptable Evidence	
How will we know if learning goals have been achieved?	What activities will students engage in to demonstrate knowledge and ability?

Plan Learning Experiences and Instruction	
How will we engage students with the curriculum?	What courses, sessions, and activities align with the program learning goals?

The figure shows the three stages of Backward Design applied at the program level: identify desired results, determine acceptable evidence, and plan learning experiences and instruction. (Adapted from Wiggins & McTighe, 2005)

The first step to program management is planning the curriculum. Luckily, the steps for doing this are

virtually the same as those for planning a single instruction session. In fact, Backward Design (Wiggins & McTighe, 2005) was developed with unit- and course-level development, rather than single-lesson development, in mind, and the steps involved can be easily applied to program-level planning. As a quick review from Chapter 8, the three stages of Backward Design are (illustrated in Figure 20.1):

1. Identify desired results
2. Determine acceptable evidence
3. Plan learning experiences and instruction

Identify Desired Results

Activity 20.1: Developing Program-Level Learning Outcomes

Often, we can develop program-level learning outcomes by extrapolating from session-level outcomes. The table below shows sample session-level learning outcomes from various types of instruction sessions, along with their setting and intended audience. Try to write an appropriate program-level outcome related to each, following the example given.

Setting and Audience	Session-level Outcome	Program-level Outcome
College undergraduates	• Apply Boolean operators to appropriately broaden and narrow searches.	• Apply and combine sophisticated search strategies to develop efficient and effective searches.
Public library jobseekers	• Locate and navigate job boards. • Search for relevant positions. • Conduct company research.	
High school students	• Define plagiarism. • Recognize when citations are necessary. • Properly format MLA citations.	
College undergraduates	• Compare and contrast popular versus scholarly articles. • Locate peer-reviewed articles using scholarly databases. • Evaluate articles for authority.	

The major difference in developing program outcomes as opposed to outcomes for a single lesson is one of scale. When designing single sessions, we develop learning outcomes appropriate for the time constraints

of that lesson. At the program level, we can develop broader outcomes because we are now describing what learners will know, understand, or be able to do after engaging in a series of sessions that can build on each other and address a wider range of topics. We can draw on existing course- or session-level outcomes to extrapolate our program-level outcomes, as outcomes across various sessions will imply the broader skills and knowledge learners are intended to develop when these sessions are combined. For instance, learning outcomes related to Boolean, proximity, and subject searching in individual sessions imply that, ultimately, learners should be able to apply and combine search commands to develop effective search strings. While program-level outcomes will be broader than those at the session level, they should still be clear, specific, and measurable, as we will need to assess the learning at the program level just as we would at the session level. As always, the outcomes should be appropriate to our audience and setting. See Activity 20.1 for an example and activity on developing program-level learning outcomes.

We can also use professional standards and curricular frameworks as guides to what our students should be learning, as described in Chapter 2. Remember that these standards and frameworks are already written at a broad level. For instance, the Association of College & Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* (2016) describes the information literacy competencies an individual might expect to have upon finishing an undergraduate degree program, while the American Association of School Librarians' (AASL) *National School Library Standards* (2018) are meant to apply throughout K-12 education. When drawing on standards like these to create program learning outcomes, we need to consider our audience and the scope of our program. Are we describing outcomes for students in a certain year of high school or college, or at the end of their entire high school or college degree program? We would not expect students to achieve the same learning outcomes at the end of their first year of college as we will expect of them when they are seniors, but in both cases we can begin with the ACRL *Framework* to determine what learners should know and be able to do.

Determine Acceptable Evidence

Once we have our program learning outcomes, we must decide how we will assess achievement of those goals. According to Backward Design, at this stage we identify activities or assignments through which learners could demonstrate their learning. As described in Chapter 9, we can find or develop activities that align with our learning outcomes, have students complete those activities, and then collect and analyze the results for evidence of learning. In order to assess at the program level, we collect and analyze data across sessions and over longer periods of time, such as a semester or year, to get a picture of learner achievement across the program.

Plan Learning Experiences and Instruction

The final step in Backward Design is determining how the instruction will be delivered. For individual sessions, we plan specific learning activities such as a discussion or exercises for hands-on practice. At the program level, we will focus on the series and sequence of classes needed to achieve our outcomes. Most

importantly, we need to ensure that we are offering an appropriate range of sessions, each with its own appropriate set of outcomes and learning activities, so that learners completing those classes will be able to demonstrate the program-level outcomes.

Scaffolding and Curriculum Mapping

When planning our instruction program, we should consider scaffolding, or sequencing sessions, so that learners are exposed to more complex information to build their skills and knowledge over time. Just as we would do within a session, we should examine our program to understand where certain skills are introduced, how they can be built on or reinforced, and whether there is a clear path for students to fully achieve the program-level goals. One way to conduct this type of review is through curriculum mapping.

Table 20.2: Curriculum Map Excerpt

	Apply search strategies to create efficient and effective search strategies.	Critically evaluate information to select appropriate resources to accomplish tasks and assignments.	Cite sources appropriately using standard citation style.
IL100 Intro to Searching	I		
IL110 Advanced Searching and Popular vs. Scholarly Articles	R	I	
IL200 Authority and Peer Review		R	
IL300 Introduction to APA citation style			I
IL400 Evaluating Research Reports		M	

Briefly, a curriculum map is a way of charting the "what" and "when" of the instructional program (Burns, 2001) by aligning instruction sessions with program learning goals, and illustrating how classes and other offerings build toward achievement of those goals. Often, these maps are laid out as tables or spreadsheets, with program-level learning outcomes listed across the top, and individual instruction sessions listed in the first column. Instructors can then use the appropriate table cell to indicate if a specific outcome is addressed in that course. These maps might also identify the level of learning happening in each session. Typically, the maps identify learning levels as "introduced," "reinforced," or "mastered," depending on the expectations for student ability at the end of that session, although any terminology could be used. Once completed, these maps provide a visual overview of how current instruction sessions align with program goals, whether a clear path to attainment of learning goals exists, and where the gaps are. School and academic librarians also use curriculum maps to illustrate how their instruction supports academic programs by mapping information literacy courses to departmental learning outcomes rather than, or in

addition to, library-determined learning outcomes (see, Charles, 2015; Howard, 2010; LeMire & Graves, 2019; Webb, 2020). Table 20.2 is an excerpt of an information literacy curriculum map.

Program Assessment

As noted above, part of Backward Design involves planning for assessment, including identifying relevant activities and assignments that demonstrate student learning. Our purpose with program-level assessment is to measure the extent to which all learners are achieving the outcomes we set or, put another way, how well our program is enabling achievement of those outcomes. Session-level assessment tells us how well individual students are performing within a class and can give us a sense of how well the group assembled for that lesson achieved the session goals; however, without program-level assessment, we cannot see how the community of learners is performing nor whether we are successfully meeting our stated program-level learning goals.

For librarians, gathering evidence for assessment can be more challenging at the program level than at the session level. Unlike teachers in a degree program, librarians typically are not in a position to assign the types of activities like capstone projects or portfolios that require students to synthesize and apply skills and knowledge they have developed over the course of a program. In a school or academic library, if the parent institution has identified learning outcomes related to information literacy for all students, or if individual subjects or degree programs have their own information literacy outcomes, librarians might be able to work with faculty to access capstones, theses, and other culminating projects that integrate those outcomes to assess for information literacy. Otherwise, we will probably have to draw on and aggregate work produced in our individual sessions to assess at the program level. We can use our curriculum map to locate instruction sessions that address specific outcomes at a mastery level, and then identify the activities or assignments from that session that align with the outcome.

The next step is to gather the identified assignments or activities, or a sample of those activities and assignments, for review. Remember that our purpose at the program level is to get an overview of how well our community of learners is achieving program-level goals, not to scrutinize or provide feedback to individual students; that is done at the session level. In fact, some programs opt to anonymize assignments and activities before engaging in program review to protect students' privacy during secondary analysis and to avoid any bias if the student is known to the reviewer.

Rubrics can greatly facilitate the review process at the program level (see Chapter 9 for more on rubric design). Ideally, rubrics should be developed specifically for the program-level outcomes. As with the session level, program-level rubrics should describe three levels of learning, typically, "exceeds expectations," "meets expectations," and "does not meet expectations." In general, when we complete the assessment, we want to see the bulk of students meeting expectations, with some smaller percentage exceeding or not meeting, so that if we plotted the scores out on a graph, we would see a normal curve. Within our own programs, we can establish benchmarks or a minimum percentage of students we want to see meeting or exceeding expectations.

In addition to assessing whether learners are achieving program-level learning outcomes, we can use our review of activities to assess the efficacy of our various instruction sessions. We can gather activities from a specific session or series of sessions over a certain time period and review the activities to determine whether that session or series is effective. For instance, a public library that consistently offers a series of technology workshops could gather activities from those sessions for a six-month period and review them to determine if the classes are meeting their goals. If gaps are found, the program manager might make recommendations for revisions to the session. As explained in Chapter 9, assessment activities should be iterative, meaning that we return and reassess on a regular basis. When revisions are made to a course or session, iterative assessment helps us understand if those revisions were effective.

Program Evaluation

Chapter 13 discusses evaluation of individual instruction sessions. However, evaluation can also be carried out at the program level, and in an era of increased scrutiny and accountability, many of us will probably be asked to conduct or contribute to a program evaluation at some point. As with program-level assessment, evaluating programs allows us to see patterns and identify gaps in order to improve services, provide evidence of our value to stakeholders, and inform managerial decisions such as allocation of funds and staff.

To an extent, some of the techniques for individual evaluation described earlier in Chapter 13 can be aggregated as part of a program review. For instance, we could compile survey results from all of our workshops over the course of a semester or year to get a picture of learners' perceptions of our instruction program as a whole. Similarly, we could look across the short-text responses from multiple sessions for patterns and themes. With regard to standards, librarians could look across lessons in a unit or series to see how well their programs address the full standards, and whether content and skills are appropriately scaffolded across sessions.

Most libraries and information centers will track attendance at instruction sessions. Especially in cases where learners choose to attend sessions, such as public library workshops, we might want to track attendance by time of day, day of the week, and session topic to get a sense of the distribution of attendance, which can help us plan for future workshops. In school and academic settings, where librarians might be dependent on faculty invitations to provide instruction, we can track requests by department, which can help us plan outreach. If we create online learning objects such as videos, tutorials, and library guides, we can use web analytics to track usage of these resources. It is important to note that while these numbers can help us evaluate the impact and reach of our programs, they do not measure quality or learner satisfaction.

General Administration and Management

Program managers will often have responsibility for overseeing the administrative and logistical details of the instruction program. The specific areas of responsibility will vary by institution but will generally include

managing staff, including setting schedules, establishing policies and procedures, and communicating with stakeholders. In some settings, program managers might also administer their own budget, and manage facilities and equipment like instruction classrooms and makerspaces. This section will provide a brief overview of some of the major areas of program management. More in-depth information is available in the Suggested Readings at the end of the chapter.

Staff

Depending on the size and organizational structure of the library, the program manager might be a department head with dedicated staff or might act as a coordinator or team leader. As a department head with direct reports, the program manager will likely be responsible for hiring new instruction librarians. Even if the library director makes the final hiring decision and negotiates the offer, the instruction program manager will be involved in writing the job description, reviewing applications, and setting up and conducting interviews. Crafting a good job description is a crucial step in hiring, as the description will not only influence who applies for the job but will also serve as a guide for setting goals and conducting reviews once the new person is in place. The challenge in writing job descriptions is to delineate between essential knowledge and skills that a person should bring to the position on day one, and the knowledge and skills that we might prefer them to have on day one but could be developed on the job.

In addition to a standard résumé and cover letter, many institutions ask applicants to submit documents, such as a teaching statement, that speak to their teaching abilities. The vast majority also require invited applicants to do a presentation as part of their interview (Hall, 2013). The structure of the presentation varies by institution. Some ask applicants to discuss their experience and philosophy of teaching, or their perspective on an issue in the field, while others have the applicant prepare and teach an actual instruction session targeted to a specific outcome and audience. Either way, a presentation gives the hiring manager and staff a glimpse of the applicant's teaching style and how it is put into practice, and as such is a good supplement to more standard interview questions. Some employers, especially in school settings, might also ask to see a portfolio of the applicant's work, including sample lesson plans and class activities. See Activity 20.2 for an exercise on job descriptions.

Once a hire is made, the program manager will orient the new staff to the department, including reviewing policies and procedures, and lead them through any training program, which might include shadowing experienced instruction librarians and assisting in instruction sessions. During this process, the manager should review the position description, and work with the new employee to set professional development goals for the upcoming year. Those goals should align with the mission and priorities of the library and the instruction program but can be tailored to the individual person and position. For instance, if new employees have limited experience teaching online, they might set a goal to attend training and familiarize themselves with relevant software.

Program managers will likely also either conduct annual reviews with instruction staff or contribute to reviews done by higher-level administrators. Reviews should be both positive and constructive. We should acknowledge what our staff is doing well, but we also need to address any challenges or areas for growth openly and honestly. The aim with constructive feedback is not to just point out areas for improvement but also to identify strategies for improvement, such as training and professional development, shadowing a more experienced teacher, and opportunities for self-reflection. We should also review each staff member's goals from the previous year, discuss achievements, and set goals for the upcoming year.

Scheduling

On a day-to-day basis, the program manager might administer logistics such as schedules and facilities. In some institutions, especially those which use a liaison model, in which librarians are assigned to directly support specific academic departments, liaison librarians might receive instruction requests from departmental faculty directly and manage their own schedules. In other cases, a program manager might

receive all instruction requests and be responsible for assigning staff coverage and requesting classroom space as necessary.

Scheduling might seem like a straightforward process, but it involves more than just ensuring a librarian is assigned to every session. In addition to actual time spent in the session, we also have to calculate the time needed to prepare for a session, also known as "prep time." Instructors, including library instructors, consistently cite a lack of planning time as one of the biggest challenges they face (Julien et al., 2018; Merritt, 2017). As a program manager in charge of scheduling, you will need to work with your staff to be sure that they have adequate prep time for their scheduled sessions.

The amount of prep time necessary for any session will vary depending on the experience and comfort level of the teacher and whether the instructor has already taught that material in the past, but a general rule of thumb is to plan one to two hours of prep time for every hour spent in class. If instructors have already taught a class before, they will still want to review their notes and perhaps update examples or test demonstrations. They might also need time to incorporate ideas for improvement from their assessments and evaluations of those previous sessions. If a session is completely new, instructors might need even more than two hours, as they will have to prepare the entire session, from identifying the learning outcomes to developing assessments and learning activities. If an instructor is visiting a class at the request of a faculty member, we might also build in time for them to talk about goals for the session.

Assuming that most library instructors will need about two hours of prep time for each hour in class, we can estimate how many hour-long instruction sessions per week our staff can handle. We can also try to manage the schedule so that sessions are balanced across staff in order to avoid burnout. Keep in mind that prep time does not have to be scheduled immediately prior to the instruction session. In fact, most instructors will want to plan their sessions days or even weeks in advance, and then take time to review the materials briefly just before the session.

Space

Program managers could be in charge of managing classroom space as well as the schedule. Some libraries have their own instruction space or another area that is often used for educational programs like a makerspace. Part of scheduling involves ensuring that the sessions do not overlap and that the appropriate groups have access to the space as needed. If the library has its own classroom, the program manager might be consulted about layout and equipment needs for that space. Ideally, as discussed in Chapter 6, we should develop a space with attention to universal design principles, including adequate space within the classroom for wheelchairs and other assistive devices, flexible furniture, adjustable lighting, and appropriate assistive technology. Even when we do not have direct control over our classroom space, or lack the budget to renovate our space, we can take steps to make the classroom comfortable and accessible for our learners and our instructors. For instance, we might be able to move some furniture to make wider aisles or to provide space at workstations for wheelchairs, arrange seating at the front of the room for learners with visual or hearing disabilities, and adjust the lighting in the room, the volume of any audio materials, or the text size of screen displays as necessary (Thurber & Bandy, 2018).

Mission, Policies and Procedures

As program managers, we are responsible for establishing, or helping to establish, a mission, policies, and procedures for our department. The mission statement describes the purpose, intentions, and goals of the instruction program as a whole, while the policies and procedures outline how the mission will be accomplished.

A mission statement is a brief summary of an organization's or program's philosophy. It provides a "foundation for the organization's identity and purpose and helps focus the efforts of everyone involved to work toward the same goal while informing the public of its reason for existence" (Comstock, 2020). An instruction program mission statement should align with the mission and goals of the larger library and its parent organization. Within that framework, the instruction mission statement should identify and describe the primary audience(s) for instruction and the library's goals in serving that audience, including the learning outcomes. For instance, a high school library would describe the student body as its primary audience, perhaps followed by teachers, administrators, and, possibly, parents. Goals for a high school library instruction program would probably include enabling students to fulfill academic requirements related to information literacy required for graduation and developing the information literacy skills students will need for success in college, work, and personal life.

Policies establish the guidelines for our practice. They set service expectations for patrons and guide staff in fulfilling those service expectations. As always, the specific set of policies will depend on the information setting but could include areas like program goals and priorities, types and modalities of instruction offered, and collaborative and outreach efforts.

Instruction policies might provide a more detailed overview of our intended audience and goals than what is found in the mission statement. By detailing the services offered, the policies will also describe how the instruction program will achieve its goals. Policies might describe the range of skills and knowledge areas covered by the instruction program. Further, these policies will likely outline the types of instruction offered, which could include in-person instruction both in class and at the reference desk or through research appointments; online (synchronously, asynchronously, or both); and through the development of learning objects like research guides and tutorials. The policy would likely also detail the kinds of services available to faculty, such as the ability to request an in-class session or a tailor-made research guide. The policy might also lay out any parameters for service requests. For example, the Healey Library (n.d.) policy at the University of Massachusetts Boston notes that "effective library instruction takes time to prepare and is in great demand" and asks that faculty submit requests for library instruction sessions at least two weeks in advance. If the library partners with other institutional or external organizations to deliver instruction, such as a public library working with local schools or academic libraries partnering with a career counseling center, the policy might provide an overview of those projects.

Procedures are the step-by-step processes for implementing our policies. For instance, a library that offers in-class sessions or creates research guides at faculty request should include a form explaining how to submit such a request. Likewise, librarians who are willing to partner with other offices or organizations should explain how interested parties can contact the library to set up a program. In general, librarians will do everything they can to meet the demand for their services, but in times of limited resources, some

libraries might not be able to fulfill all incoming requests. In such cases, the library might also institute a policy and procedure for handling overwhelming demand.

Communicating with Stakeholders

All instruction librarians should be ready to take part in marketing as described in Chapter 19, but the program manager will usually take the lead in coordinating the marketing program and for sharing program-level information with stakeholders. Part of the process is identifying stakeholders and determining what they need or want to know. Stakeholders can be anyone who has a direct or indirect interest, or stake, in the library and, for our purposes, in the instruction program. Stakeholders would include learners, of course. If the learners are students in a school or college, others who could be considered stakeholders could be teachers, school or campus administrators, and even parents. Additional stakeholders include anyone with a financial interest in the library, including taxpayers, as well as those who provide budgetary oversight like city councilors, campus administrators, and boards of trustees.

Once we have identified stakeholders, we can determine what information would be of interest to them. For instance, teachers and faculty might be interested in how well students in their departments are achieving information literacy outcomes, while campus administrators and school boards might be interested in how well the full student body is achieving program-level outcomes. In a public library, city councilors and others might be as interested in learners' satisfaction with current program offerings as they are with achievement of learning outcomes.

In our role as program administrator, we should analyze the program-level assessment and evaluation data to cull the information relevant to each stakeholder audience and find ways to package and share that information. As described in Chapter 19, we should be sure that we adapt the information to our audience. Students might be satisfied with a few tweets that share major findings from a program assessment, while campus administrators will probably prefer a brief report with charts and graphs to illustrate the data.

Setting A Vision

The responsibilities described thus far in this chapter could be considered mostly managerial. That is, they are focused on the administrative tasks necessary for the day-to-day running of the information literacy program. While managerial tasks are crucial, by themselves they lack a broader vision or plan for the program. Another role for instruction program managers is as a leader who helps set a vision for the program. Unlike a mission statement, which typically describes what the program intends to accomplish currently, a vision is forward-looking, and a vision statement describes what the program hopes to accomplish in the future, building on its strengths and resources (Comstock, 2020). What is the mission and value of our program? Why should staff and stakeholders care about it? How do we want our program to be viewed by the community? As a leader, rather than just a manager, we should consider these questions

and then work with our staff and our community to answer them. To craft such a vision, we must be aware of the priorities of our larger community or campus and be monitoring the trends in field.

Furthermore, we have to work with our staff to cultivate support and enthusiasm for the vision. Why should the staff care about this vision? Why should they work toward it? How do their individual positions and efforts contribute to the program vision, and how does the program vision contribute to the mission and vision of our larger community and campus? As a leader, we have to help our staff see the answer to these questions. We also have to be responsive to our staff's ideas and inputs. Remember that instruction staff are on the front lines of the service, delivering sessions, interacting with learners, and gathering assessment and evaluation data. They will have important insights about what is working and what is not, what learners and other stakeholders think about our current services and what they would like to see, and how well our resources and facilities support our instructional programming. As leaders, our role is to organically develop a vision of services, in concert with our staff, that is responsive to our community's needs and cognizant of the challenges, issues, and trends in the field.

Conclusion

Many instruction librarians will be called on to manage an instruction program or contribute to its management. Program managers have a range of responsibilities that might take them out of the classroom but nevertheless will have a big impact on the goals and activities of the library instruction program. The major takeaways from this chapter are as follows:

- Program planning can largely follow the steps of Backward Design, beginning with developing learning outcomes, followed by identifying methods for assessment and planning instructional activities.
- The sessions within a library instruction program should be scaffolded to build more complex skills. Curriculum maps can show us how our current program enables learners to achieve program learning outcomes, and to identify gaps in the curriculum.
- Program-level assessment and evaluation involve aggregating the data from individual sessions to gain a broad overview of the larger community of learners' achievement of learning outcomes and satisfaction with sessions.
- As program managers, we will likely oversee the day-to-day management of the program as well as provide a larger vision for what the program could accomplish in the future.

Suggested Readings

Buchanan, H., Webb, K. K., Houk, A. H., & Tingelstad, C. (2015). Curriculum mapping in academic libraries. *New Review of Academic Librarianship*, 21(1), 94-111. https://doi.org/10.1080/13614533.2014.1001413

     This article presents four examples of curriculum-mapping projects at four academic libraries. Each

map is presented as a brief case study with an overview of how the steps for mapping were implemented, along with excerpts of the maps themselves and discussion of the results of the projects. The article begins with a solid introduction to curriculum mapping and includes a thorough bibliography. Although all four examples are from academic libraries, the steps could be applied to other settings.

Donham, J., & Sims, C. (2020). *Enhancing teaching and learning: A leadership guide for school librarians, 4th ed*. Neal-Schuman.

> This extensive handbook addresses every aspect of a school library instruction program through the lens of management and leadership. In addition to an overview of stakeholders, including the students, principals, and the community, the book includes chapters on technology, literacy, collections, assessment, and evaluation. Each chapter includes a section on "leadership strategies" for that topic, while a concluding chapter provides a general overview of leadership qualities and how to lead from various positions.

Grassian, E. S., & Kaplowitz, J. R. (2005). *Learning to lead and manage information literacy instruction*. Neal-Schuman.

> Written by two veteran library instructors, this handbook covers all aspects of library instruction program management, including staff training, evaluation and assessment, and outreach to stakeholders. Importantly, the book also addresses issues of organizational politics, including communicating with administrators and boards of trustees. In addition to these basic management topics, the authors also discuss fundraising and grant writing, important areas not covered in most other texts on library instruction. Although somewhat dated now, much of the advice is still relevant.

Sobel, K., & Drewry, J. (2015). Succession planning for library instruction. *Public Services Quarterly*, 11(2), 95-113. http://doi.org/10.1080/15228959.2015.1016198

> This article discusses the importance of succession planning, or ensuring that the library has a plan for continuity of service even as it deals with staff turnover. The authors discuss preparing instruction librarians to take on leadership roles, including providing them with professional development and training opportunities, and developing plans for tracking and sharing institutional knowledge.

Woodard, B. S., & Hinchliffe, L. J. (2002). Technology and innovation in library instruction and management. *The Journal of Library Administration*, 36(1/2), 39-55.

> The authors draw on two theoretical frameworks of technological automation and the diffusion of innovation to examine how technology can be best used to support instruction and to facilitate management activities related to instructional programs. Despite its publication date, the article is still very relevant. The authors do not focus on specific technologies but use a high-level, theory-based approach to explain how to evaluate new technologies for adoption.

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LeMire, S., & Graves, S. J. (2019). Mapping out a strategy: Curriculum mapping applied to outreach and instruction programs. *College & Research Libraries*, 80(2), 273-288. https://doi.org/10.5860/crl.80.2.273

Merritt, E. G. (2017). Time for teacher learning, planning critical for school reform. *Phi Delta Kappan*. https://kappanonline.org/time-teacher-learning-planning-critical-school-reform/

Thurber, A., & Bandy, J. (2018). *Creating accessible learning environments*. Vanderbilt University Center for Teaching. https://cft.vanderbilt.edu/guides-sub-pages/creating-accessible-learning-environments/

Webb, K. K. (2020). Curriculum mapping in academic libraries revisited: Taking an evidence-based approach. *College & Research Libraries News*, 81(1), 30-33. https://doi.org/10.5860/crln.81.1.30

Wiggins, G., & McTighe, J. (2005). *Understanding by design*. ASCD.

Appendix A: Instructional Strategies

Analogies

Analogies can help learners understand concepts by relating new information to their prior knowledge. Discussed along with metaphors in Chapter 10.

Annotated Bibliography

Students writing a research paper or collecting information for decision making are asked to compile a list of citations and provide a brief annotation. Students might be asked to evaluate each source, explaining its relevance to their topic and its trustworthiness or authority. Discussed in Chapter 9 as an assessment tool.

Application Card

An application card is a brief writing exercise in which learners are asked to list one or more ways they might use their new skills or knowledge. Discussed as part of the short writing exercises for assessment in Chapter 9.

Brainstorm/Carousel Brainstorm

Brainstorming activities encourage learners to identify anything they can think of related to a topic. These activities can be done individually, or learners can work in groups to pool their knowledge. A fun variation on a collective brainstorm is the carousel brainstorm. In this version, the instructor identifies different aspects or subtopics of the subject under study, perhaps posted on large sheets around the room. Small groups of learners are assigned to brainstorm a single subtopic. After a few minutes, the groups rotate to a new subtopic and add what they can to the previous group's work. When each group has had a turn at each subtopic, the original group reviews and synthesizes the full class brainstorm of their subtopic and presents the information to the class. Discussed in Chapter 4 as an active learning strategy (with a practice activity) and in Chapter 7 as a pre-assessment activity.

Case-Based Learning

In case-based learning, the instructor presents learners with a scenario for discussion. Good cases will present an ambiguous situation. Discussed in Chapter 17.

Circle of Voices

Learners break into small groups and sit in a circle. Each learner gets 2-3 minutes to speak without interruption in response to a question or prompt. Once everyone in the group has had a turn, the group can have a more general discussion on the topic. Discussed in Chapter 10.

Concept Map

Learners create visual displays of the connections or relationships among ideas. Generally, a learner will begin with a single idea and brainstorm to identify other words and concepts, which they arrange around the original idea, with lines illustrating how the concepts relate. Discussed in Chapter 4 (with an example) as an active learning strategy and in Chapter 7 (with an example) as a pre-assessment activity.

Debate

In a debate, discussions are structured to examine different perspectives of a question or the merits of different strategies. Discussed in Chapter 10.

Demonstration

Instructors use demonstrations to model skills and processes and to walk learners through the steps of a task. Demonstrations are described as a teaching strategy in Chapter 10. Learners might be asked to demonstrate tasks as an assessment strategy, as discussed in Chapter 9.

Directed Paraphrasing

Learners are asked to explain a concept or define a term in their own words. Discussed as part of the short writing exercises for assessment in Chapter 9.

Discussion

During discussions, students reflect on and respond to readings, questions, or other prompts. Discussions can be carried out in large- or small-group formats, although smaller groups are generally more conducive to in-depth discussions and allow for more student participation. Discussed briefly in Chapter 4 as an active learning strategy; specific implementation strategies are detailed in Chapter 10 and Chapter 17.

Exit Ticket

Exit tickets are brief writing exercises in which learners are asked to answer brief questions or respond to a short prompt on the lesson material. These activities are referred to as "exit tickets" because they are typically done at the end of the session and learners hand them in on their way out of class. Discussed as part of the short writing exercises for assessment in Chapter 9.

Fishbowl Discussion

In a fishbowl discussion, one group of learners engages in a discussion while another group observes, takes notes, and then summarizes the main points. This discussion strategy can promote active listening. Discussed in Chapter 10.

Flipped Classroom

Prior to attending class, students read texts and watch videos that cover the same content the instructor would have delivered through an in-class lecture, allowing in-class time to be used for practice problems and skill building. Discussed in Chapter 4 and Chapter 10.

Games

In the classroom, games have an element of competition, but their purpose is to impart information or develop skills. Discussed in Chapter 10.

Graphic Organizers

Graphic organizers are visual materials that assist learners in taking notes and organizing information, such as a table with labeled columns and rows to fill in, or a figure to be labeled. Discussed in Chapter 10 and Chapter 11; example in Chapter 3.

Guided Notes

See graphic organizers and lecture outline.

Jigsaw

Learners are assigned to groups, with each group working on a different aspect of a larger project. Once learners complete their assigned task, the instructor shuffles students into new groups, with at least one representative from each of the initial groups, and learners piece together the work from their original groups to complete the larger project. Discussed in Chapter 4 and Chapter 10.

K-W-L Chart

In a K-W-L chart, learners record what they know, want to learn, and learned about a topic. Discussed in Chapter 7 (with an example) as a pre-assessment.

Lecture

Lectures can be used to provide a concise introduction to a topic, organize and explain complex material, and/or synthesize current research. Strategies for integrating active learning into lectures are provided in Chapter 10.

Lecture Outlines

Lecture outlines are a form of guided notetaking; they provide students with a framework for the lesson, drawing their attention to important points. Discussed in Chapter 10 (with an example).

Lecture Pause

The instructor stops the lecture and ask learners to write down everything they remember from the lecture up to that point or the two or three most important things they remember). Discussed in Chapter 4 and Chapter 10 as a way to integrate active learning into a large lecture.

Metaphors

Metaphors can help learners understand concepts by relating new information to their prior knowledge. Discussed along with analogies in Chapter 10.

Minute Paper

The minute paper is a brief writing activity that asks learners to reflect on their learning by taking roughly one minute to react to the day's lesson. Instructors often guide the reflection by asking learners to recall one or two new things they have learned and/or to identify the "muddiest point" of the lesson, or the section they found most confusing or about which they still have questions. Discussed in Chapter 4 and Chapter 10.

One Sentence Summary

Learners are asked to distill a topic or idea into a single sentence. Discussed as part of the short reflective writing exercises for assessment in Chapter 9.

Peer Instruction

In classrooms where all learners have equivalent experience with the topic, instructors introduce a new concept or skill, then have learners take turns explaining to one another what they have just learned. In mixed classrooms, instructors can pair or group learners who have more experience with the content with those who have less, allowing the experienced learners to do some of the instruction. Discussed in Chapter 4 and Chapter 10 as an active learning strategy.

Polls

Polls present brief questions meant to gauge student knowledge or understanding. Discussed in Chapter 7 as a pre-assessment strategy, in Chapter 9 as an assessment strategy, and in Chapter 10 as an instructional strategy.

Pre-Writing

Pre-writing is a way to brainstorm or capture ideas before delving more deeply into a lesson. Discussed in Chapter 10.

Pro/Con Chart

Learners complete a chart listing the advantages and disadvantages of a tool or search strategy. Discussed in Chapter 9 as an assessment strategy.

Problem-Based Learning

The instructor presents a messy, fuzzy, or ill-defined problem which the class works to solve, often in small groups. Discussed in Chapter 10 and Chapter 17.

Role Play

Learners practice new skills by acting out the kinds of roles or positions they anticipate encountering in the real world. Discussed in Chapter 4 as an active learning strategy.

Scavenger Hunt

Participants receive a list of items or locations to find within the physical library. Discussed in Chapter 4 and Chapter 10.

Skits

Learners script and perform a brief play illustrating a relevant scenario, situation, or process. Discussed with role play in Chapter 4 as an active learning technique.

Storytelling

Instructors can use stories in class to grab learner attention or explain material in engaging ways. Discussed in Chapter 10.

Student Demonstration

Student show one another how they worked through a particular task or problem while the instructor

acts as a coach from the sidelines, offering feedback or suggestions if the student gets stuck. Discussed in Chapter 4 as an active learning strategy.

Think-Pair-Share

Instructors pose a question or brief scenario, then pause for learners to think about their responses. After a few minutes, learners pair up to share responses and discuss their thoughts and reactions. Finally, instructors ask for a few volunteers to share the ideas from their discussion with the whole group. Discussed in Chapter 4 and Chapter 10 as a low-stakes active learning strategy.

Worksheets

Worksheets can be used in class or as a take-home assignment. Question types include closed-ended questions like multiple choice and true/false, fact-based questions with a single right answer, and short-answer questions that require learners to explain a concept or justify their reasoning. Discussed as a pre-assessment tool in Chapter 7 and as an assessment tool in Chapter 9 (with examples).

Appendix B: Examples of Lesson Plans

This appendix presents four examples of lesson plans, including a brief introduction that provides context for the lesson, learning outcomes, and an outline of content and activities. At the end of each lesson, the authors have highlighted some (although certainly not all) of the best practices that can be seen in the lesson.

Example 1: Locating Health Information (older adults in a public library)

Introduction

This session is geared toward older adults in a public library setting, based on input from a brief survey of patrons and discussions between the librarian and staff at the local elder services office. In general, the session is run as a drop-in workshop. Because attendees are usually retirees, the session is often run mid-morning on a weekday, when the library is relatively quiet, but the librarian has also offered the session in the evening and on a weekend to reach additional patrons. The librarian has also brought the workshop to the elder services office and nearby assisted living facilities for on-site training. In general, between 8 and 15 adults are at each session.

Running time: 60 minutes

Materials

- Laptop or desktop computer for each patron
- Set of index cards with medical conditions or medications, each card listing a single illness, condition, or medication and focusing on relatively common, non-life-threatening conditions such as arthritis, tinnitus, sciatica, etc.)
- Handouts:
  - "My Medicines" graphic organizer (based on Tracking Your Medications: Worksheet, https://www.nia.nih.gov/health/tracking-your-medications-worksheet)
  - Health information evaluation criteria
  - List of resources
  - Exit Ticket & Survey
- Websites (already prepared on screen):

- *Ask Me 3* (http://www.ihi.org/resources/Pages/Tools/Ask-Me-3-Good-Questions-for-Your-Good-Health.aspx)
- *Questions to Ask Your Doctor* (https://www.ahrq.gov/patients-consumers/patient-involvement/ask-your-doctor/index.html)

Learning Outcomes

By the end of this session, patrons will be able to:

- Prepare for a doctor's visit, including brainstorming relevant questions.
- Identify reliable resources for consumer health information.

Outline

The session will take place in the library meeting room, which is equipped with a projector, screen, and white board. The librarian will stand at the entrance and greet patrons as they arrive, introducing herself, asking their name, and inviting them to take a seat.

I. Welcome (5 minutes)

- The librarian will welcome everyone to the session, introduce herself, and go over the learning outcomes. She will also explain the session agenda:
    - My Health Right Now: Preparing for your next doctor's visit
    - My Health in General: Resources to learn more about specific conditions, medications, and concerns
- The librarian will remind patrons that health information is sensitive, that they do not have to share any personal information, and that everything that is shared within the session should remain private and confidential.

II. My Health Right Now: Preparing for a Doctor's Visit (15 minutes)

- Remind the patrons that their doctor is their best source of information and that any health questions should always be directed to their physician. Offer to meet with patrons individually if they need help locating affordable health care options.
- Note that the average doctor's appointment lasts 20 minutes—how do we make the most of that time?
- Review resources to help patrons prepare for their next doctor's visit, noting that these resources are on their handouts:
    - Introduce the "My Medicines" graphic organizer and demonstrate how to use it to create a list of all the medications the patron takes, along with usage and dosages.

- Mention the "pill identifiers" on the resource list that can help identify pills if the patron has lost the prescription or cannot read the label.
- Go over the National Patient Safety Foundation's *Ask Me 3* questions to ask at every doctor's appointment:

    1. What is my main problem?
    2. What do I need to do?
    3. Why is it important for me to do this?

- Introduce and demonstrate the Agency for Healthcare Research and Quality *Questions to Ask Your Doctor*. Demonstrate option to create a list of questions.

III. Activity (15 minutes)

- Each patron will receive an index card with a condition or medication listed. Patrons are asked to imagine that they have just been diagnosed with this illness or prescribed this medication, and they are getting ready for a visit to their primary-care physician.
- The librarian will help patrons navigate to *Questions to Ask Your Doctor*.
    - Give them five minutes to create a list of questions about their given condition or medication.
- The librarian will have patrons pair up with someone near them for a role play. Patrons will take turns acting as patron and doctor to practice asking the questions they have prepared.
    - The librarian will circulate the room as patrons engage in role play to assist and answer questions as needed.
- Debrief: The librarian will ask group members what they learned from the activity and their impressions of *Questions to Ask Your Doctor*.

IV. My Health in General: Reliable Resources (15 minutes)

- Brainstorm: The librarian will ask the patrons what kinds of health questions they tend to have and where they usually go for health information, and track the answers on the white board, being sure to write in large, clear letters that everyone can see.
- Once the ideas have been recorded, the librarian will review them with the patrons and discuss why they might use certain resources—what makes them trust those sources? Start a new list of criteria for evaluating health information and its sources. The librarian can fill in gaps as necessary.
- Pass out the list of resources and discuss three main types of sources and their characteristics:
- Professional and research associations (e.g., Association of Orthopedic Surgeons, American Heart Association):
    - Include credentialed experts (MDs, PhDs, etc.) as staff and members who conduct and analyze research
- Government agencies (e.g., Food and Drug Administration, Centers for Disease Control and Prevention):
    - Comprise nonpartisan agencies that conduct, fund, and compile research; often include consumer

health sections
- Trusted consumer health outlets (e.g., *Gale's Health & Wellness Resource Center*, https://www.gale.com/c/health-and-wellness; familydoctor.org; *MyHealthfinder*, https://health.gov/myhealthfinder):
  - Provide reliable health information compiled and written by experts for the layperson

V. Wrap-up (10 minutes)

- The librarian will ask patrons to fill out an Exit Ticket which asks the following questions:
  - What are two things you will do to prepare for your next doctor's visit?
  - Name two resources you can use to find reliable health information. What makes them reliable?
  - Was anything about this session unclear? Do you have any remaining questions?
- While the librarian reviews the Exit Tickets, have the patrons fill out a brief survey asking them to rate their satisfaction with the session and handouts, and suggestions for future topics.
- The librarian will take 3-4 minutes to review any unclear material or answer any outstanding questions from the Exit Ticket and remind patrons they can speak with the librarian after the session or return with questions any time.
- Thank everyone for coming.

Best Practices

- The *Question to Ask Your Doctor* exercise, role play, and brainstorm allow for active learning, peer-to-peer engagement, and hands-on practice with minimal physical movement, which might be important with an older audience.
- The Exit Ticket allows the librarian to assess the session and address outstanding issues, while the survey collects evaluation data.
- Multiple handouts minimize the need for notetaking.

Example 2: Welcome to the Library! (school library)

Introduction

This lesson supports a public-school field trip to the public library. The class includes 20-25 second graders, along with their teacher and parent chaperones. Two children's librarians are present for each visit. Depending on the class size, a third librarian or library assistant will also help.

These students attend a school with a small library that is staffed by parent volunteers. The public librarians have collaborated with the school to ensure that all students get a library card in second grade and to introduce the students to the public library and its service through field trips. Each second-grade class visits the library separately. Before the field trip, the school collects signed permission forms from parents and caregivers allowing the library to issue cards to each student.

Running time: 60 minutes

Materials

- Name tags
- Library cards
- Blank maps of the library
- Genre and location stickers
- Scavenger hunt handout
- Library tote bag including library card; brochure with library hours, list of services, and policies; bookmark with library logo; list of "best bet" books for second graders in various genres (sports, biographies, adventure, etc.); list of upcoming, age-appropriate library events
- Movable white board or easel pad

Learning Outcomes

By the end of this session, students will be able to:

- Identify the types of resources available in the library.
- Recognize the librarians and explain their roles.
- Explain basic circulation policies.
- Locate a book, movie, video game, or other resource for use or checkout.

Outline

As the class arrives, the librarians will greet each child at the entrance to the children's room, ask their name, provide them with a name tag, and invite them to sit in the storytime area.

I. Welcome (5 minutes)

- Once the children are seated, the librarians will introduce themselves, welcome the children, and

briefly explain the purpose of the visit—to learn about the library, get a library card, and have fun.

- Next, the librarians will ask the students to raise their hand if they have been to a library before and call on two or three students to share what they did when they went to the library.

II. Group Brainstorm (5 minutes)

- The librarians will ask the students what kinds of things they can find or do at the library. As the kids share ideas, the librarian will note them on a white board or large easel paper. As necessary, the librarian can prompt the children to come up with different or more specific ideas. For instance, if the children say they can find books at the library, the librarian might ask what kinds of books or encourage the children to look around the room to find things other than books, such as games, puzzles, movies, and so on. The librarian could keep a few examples of items on hand to hold up as prompts.
- The librarian will ensure children list these key services or fill them in as necessary: Borrow books, music, movies, and games; use the computer for games and internet access; work on a puzzle; read a book or do homework; get homework help; ask a librarian for help finding information; attend a program

III. Debrief (5 minutes)

- The librarian will complete the brainstorm activity by explaining that the children can find all of those items at the library, that they can all be used in the library, and that many can be borrowed to be used at home for two weeks at a time. The librarian will explain that items must be returned so that other people can use them.
- Next, the librarian will explain how each type of item has its own place in the library and compare this to how items in the children's homes or classrooms have their own place. The librarian will use questions like, where do you keep your toothbrush at home? Where do you keep the forks and knives? Where do you put your coat when you get to school? The librarian will explain that when everything has its own place, we know where to look for it when we need it.

IV. Tour (15 minutes)

- The librarian will tell the students that they are going to take a tour of the library so they can see where all of the different items in the library are kept. Each student will get a blank map of the children's room and a set of genre and location stickers. Each section of the library is marked with a sign corresponding to one of the stickers. Throughout the tour, the librarian will point out the signs, explain what types of resources are found in that section, and encourage the students to place the appropriate sticker on the relevant part of their map. Teachers and chaperones will help. As appropriate, the librarian will explain each section of the library—for instance, the computers can be used for one hour at a time to do schoolwork, play games, or search the web; everyone can print out five pages a day for free, and printouts are 10 cents a page after that; books can be checked out for two weeks; and so on. The librarian will introduce staff members at various checkpoints (circulation desk, children's reference desk) and briefly explain what each person does.
- At the end, the librarian will quickly review a completed map of the library, with adults helping to

check the students' maps, and remind students they can keep these maps and use them to find what they need whenever they come to the library.

V. Scavenger Hunt (20 minutes)

- After the tour, the group will gather at the storytime nook and the librarian will explain the scavenger hunt.
- The class will be broken up into teams. Each team will have about five children and one adult. The teams will have 15 minutes to find each item on their list. The librarian will tell the children that this is not a competition—everyone will get a prize at the end. The purpose is to have fun and learn more about the library. The librarian will remind children to use inside voices and walking feet so everyone can be safe. The librarian will hand the scavenger hunt list to the adult in each group (the items should be in random order so the groups will move to different parts of the library to start).

   Scavenger Hunt Questions:

   Using your map of the library, and your memory, find these items and/or answer the questions:

   1. A graphic novel
   2. A biography
   3. A picture of a dinosaur
   4. A video game
   5. A movie with animals in it
   6. A book from a series
   7. A list of the library hours
   8. What is the name of the librarian at the big desk in the middle of the room?
   9. What do you do at that big desk?
   10. How long can you keep library books?
   11. How long can you use the computer?
   12. Who can answer all of your library questions?

VI. Wrap-up (10 minutes)

- The class will regroup in the storytime nook, and the librarian will ask different groups to show the items they found or answer the questions.
- The librarian will pass out the library totes and show the children the materials inside, including the library card. The children will sign the back of their library card, with adults assisting as necessary. The librarian will briefly reiterate the circulation policies and remind the students that the librarians are there to answer questions, help them find books and information, and help them have fun. The librarian will ask for any questions.
- The librarian will ask for volunteers to tell one thing they learned about the library today, or one thing they would like to do the next time they come to the library.
- The librarian will thank the students for coming.

Best Practices

- The session includes several assessment activities: the librarian can look at the map to see if the students followed the tour and understood where items are located; the scavenger hunt shows if the students can find items in the library and understand some basic library services and policies; the reflective questions at the end encourage students to think about what they have learned, and the librarian can see if their answers align with the outcomes.
- Using graphic displays and visuals like maps and stickers, and having adults assist with the scavenger hunt make the activities accessible to students at different literacy levels.
- The librarian builds on prior knowledge by asking students about previous visits to the library and connecting the organization of materials in the library to their understanding of items at home and school having a proper place.

Example 3: Introduction to Academic Integrity (first-year students in an academic library)

Introduction

This lesson is delivered to first-year community-college students who are taking a required first-year experience course that orients them to college success strategies such as time management and study skills. Academic integrity is a core institutional value; it is mentioned at orientation and appears on all course syllabi. This session, led by a librarian, is students' first formal introduction to institutional policies on academic integrity.

Running time: 50 minutes

Materials

- Scenario worksheet
- Academic integrity policy and procedures
- Reflection worksheet

Learning Outcomes

By the end of this session, students will be able to:

- Explain why academic integrity is a core institutional value.
- Identify actions that violate the college's academic integrity policy.
- Explain the procedures for investigating and potential consequences of an integrity violation.
- Reflect on their personal commitment to integrity.

Outline

I. Welcome (5 minutes)

- The instructor will introduce herself, explain her role on the campus integrity committee, and give a brief overview of the session.

II. Why is academic integrity important? (10 minutes)

- The instructor will lead a discussion about why academic integrity is a core institutional value, first asking students why they think academic integrity is important and then sharing institutional perspectives. Key ideas (emphasize positive aspects of integrity): Cheating undermines individual learning, can have severe consequences for individuals who are caught, can damage the reputation of the institution.
- As part of the discussion, the instructor will share the story of a student who was harmed by someone else's cheating. Another student stole this individual's work and turned it in as her own. Explain that because it was initially unclear who stole from whom, both students were investigated and while the first student was exonerated, it was a stressful experience and highlights that everyone at the institution should be concerned about integrity.
- The instructor will share a few examples from integrity policies at transfer institutions to highlight that academic integrity is a common value in higher education and that sometimes the "rules" can be surprising (for example, it may be an integrity violation to leave your work on a public computer where others could access it).

III. Scenario-Based Activity (20 minutes)

- The instructor will distribute a worksheet that outlines eight short scenarios, such as "You skip class, miss a quiz, and tell the instructor that you had car trouble and ask to make up the quiz." Students will be given a few minutes to read each scenario and mark whether or not it describes an integrity violation.
- The instructor will lead a discussion of each scenario, first using polling or a show of hands to see how many students believe the scenario describes an integrity violation, then asking a few students to

volunteer their reasoning. After leading a short discussion, the instructor will indicate whether (and why) the scenario describes an integrity violation according to the college's policy.

- Throughout the discussion, the instructor will take an educational approach–emphasizing the rationale behind policies and indicating that many students are unfamiliar with the finer points of the policy, may have encountered different rules in high school, etc.

IV. Policy and Procedures Review (10 minutes)

- The instructor will distribute copies of the college's integrity policy and procedures, review nine prohibited behaviors, explain procedures for investigating suspected violations, and review potential consequences.
- The instructor will emphasize the college's educational approach to integrity (the consequences for a first violation is an educational workshop) and campus resources for help with writing and citation practices as well as tutoring for all subjects.

V. Wrap-up / Reflective Writing (5 minutes)

- The instructor will distribute a brief, anonymous writing activity that asks students to reflect on why academic integrity is important. Students can leave when they finish writing and submit their papers by placing them in a box by the door.

Best Practices

- Recognizing that students may be reluctant to discuss academic integrity, the instructor begins with stories that will grab learners' attention.
- The session utilizes active learning and critical reflection; rather than lecturing students on the "rules" of academic integrity, the instructor invites reflection, discussion, and even debate about the rationale for college policies.
- Recognizing that some students may have difficulty taking notes during a discussion, the instructor ensures students understand the policies correctly by ending each scenario discussion with a clear statement on whether the scenario described a violation and later distributing and reviewing the nine prohibited behaviors.

Example 4: Creating Screencast Videos (library staff)

Introduction

In this two-hour workshop, library staff will learn to create instructional videos for use on the library's website, in *LibGuides* (https://www.springshare.com/libguides/), and in virtual reference. The workshop addresses best practices for screencast videos, creating and editing videos in *Screencast-O-Matic* (https://screencast-o-matic.com/), and adding closed captions. To accommodate staff working at different branch libraries, the session takes place online in *Zoom* (https://zoom.us/).

Running time: 120 minutes

Materials

- Slides (to be shared with participants ahead of time)
- Handout
- *Screencast-O-Matic* (participants will have been sent a link and should verify they can run the program prior to the workshop)
- *YouTube* (https://www.youtube.com/; participants will be asked to create an account so they can practice uploading and captioning videos)

Learning Outcomes

By the end of the workshop, staff participants will be able to:

- Create a storyboard and script for an instructional video that follows best practices.
- Use *Screencast-O-Matic* to record and edit a screencast video.
- Use *YouTube* to add captions and generate a transcript.

Outline

I. Welcome (5 minutes)

- The instructor will have logged in 10 minutes early to allow participants to connect and test their audio/video connection. When the session begins, the instructor will introduce herself and lead a brief discussion:

- How do participants anticipate using videos at their branch?
- What experience do participants have with creating videos?
- The instructor will wrap up the discussion by highlighting the goals for the session: participants will be able to create a video that follows best practices and will learn to use *Screencast-O-Matic* and *YouTube* to create and host their videos.

II. Using Videos for Library Services (10 minutes)

- Why videos? The instructor will briefly review how library staff might use videos (e.g., on websites or *LibGuides* as an instructional resource, for virtual reference, in marketing, as a program activity).
- Styles of videos: The instructor will briefly review different types of videos, such as live action, screencast, slidecast, and animated, and discuss appropriate uses/strengths of each type. Since this session will focus on making screencast videos, the instructor will emphasize uses for this type of video, such as demonstrating a database or technology.

III. Best Practices for Screencast Videos (20 minutes)

- Brainstorm: The instructor will ask participants what they think best practices are for instructional videos. Depending on the answers, the instructor can prompt additional discussion with questions such as, "When we say videos should be brief, what do you think the optimal length is?"
- The instructor will present best practices for screencast videos through an interactive lecture, presenting the best practices and pushing links to examples of videos for viewing and discussion.
    - Short (approximately two minutes)
    - Concise, omitting extraneous content
    - Engaging through relevant content, personalized language
    - Clear, well-paced narration
    - Use of closed captions
    - Mobile friendly
- The instructor will refer participants to the handout for a list of best practices and a selected bibliography of helpful readings.

IV. Introduction to Video Creation Software (5 minutes)

- The instructor will review criteria for selecting video creation software (e.g., cost, platform compatibility, editing features, ability to create templates) and explain that today participants will be using the free and easy-to-use *Screencast-O-Matic* to begin learning about video creation.
- A list of other software options will be included in the resource list handout.

V. Planning Your Instructional Video (20 minutes)

- The instructor will demonstrate how to write a learning outcome and script a video.
- Working individually, participants will select a simple task (e.g., locating a book in the catalog), write a learning outcome, practice the task, and outline a script.

- The instructor will conduct a quick check-in to ensure everyone was able to create a script before moving on to the next step.

VI. Break (5 minutes)

VII. Using *Screencast-O-Matic* (25 minutes)

- Participants will watch a short video that demonstrates how to use *Screencast-O-Matic*.
- The instructor will review the steps in the recording process (also available on the slide and handout).
- The instructor will provide tips for a smooth recording:
  - Speak clearly.
  - Stick to your outline.
  - Minimize scrolling and mouse movements.
  - After clicking, pause to let the screen load, then talk.
  - Have your intro and wrap-up planned.
- Participants will practice recording their videos; when they have a video they are happy with, they can upload it to their *YouTube* account
- The instructor will lead a brief reflective discussion:
  - How did the process go?
  - What was easy, hard, or surprising about the process?
  - Any questions?

VIII. Uploading Videos to *YouTube* (5 minutes)

- The instructor will briefly orient participants to the features of their *YouTube* account, including how to access their videos and check their status as published or private.
- Participants will access their recently uploaded video and edit the title and description; instructor will confirm students were able to locate and edit their video.

IX. Captioning Videos (15 minutes)

- The instructor will remind participants of the importance of captions and explain that while *YouTube* and other applications can create automatic captions, these captions will need editing. The instructor will share a few examples of funny/embarrassing instances of miscaptioning.
- The instructor will demonstrate the process of accessing and editing the automatic captions.
- Participants will access and begin editing the automatic captions for their video.
- The instructor will lead a brief reflective discussion:
  - How did the process go?
  - What kinds of errors did you encounter? To what extent would these interfere with understanding the video?
  - Is there anything you could have done differently when recording? (Participants might comment that they see the importance of enunciating clearly or avoiding filler words.)

X. Wrap-up (5-10 minutes)

- The instructor will thank people for attending.
- The instructor will push a link to an online evaluation form.
- The instructor will invite people to stay if they have follow-up questions or to log out if they need to attend another meeting, have a desk shift, etc.

Best Practices

- The instructor opens the session with a warm-up discussion that sets the tone for an interactive session and allows her to informally determine participants' interests and experience level.
- The session utilizes scaffolding – the instructor breaks the process of creating a video into steps (planning, recording, uploading, captioning) and, for each step, demonstrates the process, provides practice time (with directions visible on a slide and instructor help available via chat), and then invites reflection and questions.
- The session utilizes Universal Design for Learning's Multiple Means of Representation. Content such as the best practices are explained verbally and presented in writing on the slides and handout (both of which participants have access to prior to class). Processes such as recording a video and adding captions are demonstrated with application sharing, explained verbally, and outlined step by step on the slides and handout for easy reference as participants are working.

About the Authors

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