Evaluating The Value and Impact of Makerspaces on Public Libraries

Kyungwon Koh[a], Gowri Balasubramaniam[b], Emily Knox[c], and Andy Zalot[d]

[a]The University of Illinois at Urbana-Champaign School of Information Sciences, U.S.A.

[b]The University of Illinois at Urbana-Champaign School of Information Sciences, U.S.A.

[c]The University of Illinois at Urbana-Champaign School of Information Sciences, U.S.A.

[d]The University of Illinois at Urbana-Champaign School of Information Sciences, U.S.A.

kkoh@illinois.edu, gowri2@illinois.edu, knox@illinois.edu, azalot2@illinois.edu

ABSTRACT

This study addresses the need to evaluate the value and impact of a public library makerspace broadly at the organizational level. Since they first appeared in U.S. libraries in 2011, once viewed as a trend or an emerging service, nowadays a number of libraries incorporate makerspaces or maker programs as part of their core, regular services. While existing literature on makerspace evaluation primarily focuses on individual learning outcomes (e.g., STEM learning), our study found the value of makerspaces to their libraries. Thirteen focus groups were conducted in three public libraries in Illinois, engaging forty-two participants including users, non-users, teens, staff members, and community stakeholders. Data unveiled that makerspaces support libraries' missions in new and expanded ways, upholding core values of librarianship; change people's perceptions of libraries and increase pride in their libraries; and attract new community members and encourage broader usage of library services.

ALISE RESEARCH TAXONOMY TOPICS

Public libraires; community engagement; education.

AUTHOR KEYWORDS

Makerspaces; non-traditional library services; evaluation; values; impacts.

INTRODUCTION

A makerspace is a place for community people to engage in hands-on, creative making activities, offering access to tools and social opportunities with other makers. People come together to learn, create, and share their passions using a variety of tools and equipment, which they might not be able to afford on their own. These spaces may embrace low- and high-tech approaches and a wide spectrum of maker projects, spanning fields like computers, science, digital art, electronics, music, woodworking, crafts, and more. These spaces come in various sizes—large, small, mobile (like trailers or carts), or even as part of a maker program without a dedicated space. Since the launch of the first 21st-century makerspace opened at the Fayetteville Free Library in New York in 2011, the growth of library makerspaces has been consistently remarkable over the past decade (Good & Doctorow, 2013; Koh, Abbas, & Willet, 2018). Once viewed as a trend or emerging and innovative service in libraries, makerspaces now transcend various types of libraries—public, school, academic, special, rural, and urban, and a substantial number of libraries in the U.S. have embraced makerspaces as regular integrated services, akin to reference or interlibrary loan services, rather than mere add-ons.

Evaluation of makerspaces has garnered increased attention from both researchers and practitioners alike (Cun, Abramovich, & Smith, 2019; Teasdale, 2020; & Wardrip et al., 2021). However, the existing body of research, predominantly emphasizes individual outcomes— essentially, what individuals gain from participating in makerspaces or maker-based learning, such as STEM learning outcomes (Chang et al., 2019). Like any other non-traditional library services that often face the necessity to justify their relevance to the organization, there is a need to investigate the value of a makerspace more comprehensively. To bridge this gap in the literature and fulfill the need for a more holistic evaluation of library makerspaces, this paper investigates their organizational value. The specific research question guiding this paper is: What is the value of public library makerspaces to their organizations?

RESEARCH DESIGN

This qualitative study conducted focus group interviews at three library sites within the suburbs of Chicago, Illinois, to understand people's perceived values and impacts of their library makerspaces. Focus groups allowed participants to build off each other's statements, resulting in rich data for analysis—referred to as "chaining" or "cascading effects" among the participants (Lindlof & Taylor, 2002, p. 182). The University of Illinois Institutional Review Board approved the research protocols for this study for both adults and minors.

This was a participatory research project, in which academics and practitioners collaborated to investigate a problem with real-world relevance and impact. The Indian Trails Public Library District (ITPLS) librarians reached out to the university researchers with the need to develop an evaluation tool for their library makerspaces, into which they had invested substantial resources. The researchers, in collaboration with the partner librarians, developed a research proposal that included research goals, questions, and research design. The librarians facilitated the recruitment of interview participants, arranged the interviews, and provided the space. The researchers conducted focus group interviews at the libraries in December 2021 and analyzed the data. The librarians reviewed the analysis and provided feedback.

This project was in partnership with three public libraries located within the suburbs of Chicago, IL: The ITPLS, the Dekalb Public Library, and the Joliet Public Library. ITPLS serves residents in the Wheeling, Buffalo Grove, and Prospect Heights suburbs, which have populations diverse in ethnicity, religion, and culture. DeKalb Public Library is situated in an exurb of Chicago with a diverse population. DeKalb is home to Northern Illinois University, which brings a large number of students and international residents to the area. Joliet Public Library serves the third-largest city in Illinois. The city's population is socio-economically and racially diverse, including significant Black, Hispanic, and White communities.

All three public libraries have dedicated makerspaces and popular maker programs. The Indian Trails Public Library District (ITPLS)'s makerspace, The Launch Pad and Digital Media labs include several areas for creation, learning, and entertainment purposes, including Sound Lab, Video Editing Lab, and Archival Station. The Dekalb Public Library's makerspaces, 309 Creative, houses fabrication machines and resources for custom art, design, and prototyping. The library also has a sound studio, digital design lab, and a hands-on creative space for programming. The Joliet Public Library's Digital Media Studio (DMS) was built to focus on the needs of Joliet's small businesses and entrepreneurs, providing a range of resources and services, such as digitization, photo restoration, sound/video/graphics editing, small business startup guidance, 3D printing, and more.

The study used a convenience sampling approach, where participants were chosen based on availability and willingness to participate. However, the researchers screened potential participants to ensure they met specific characteristics relevant to our research. We created a website, shared by the libraries, where patrons could sign up by completing a brief form. Participants were asked to provide their age and indicate if they were library staff, makerspace users, or non-users. The study defined "non-users" as those who do not use makerspaces but are aware of their presence in the library. We also allowed sign-ups on the day of the focus groups, provided consent forms were completed. Participants were grouped into categories: makerspace staff, users, non-users, and teens. For teens, we combined users and non-users to ensure adequate group size.

Thirteen focus group sessions were conducted in the three library sites, engaging 42 participants including users, non-users, teens, staff, and community stakeholders. One or two researchers facilitated each focus group session and audio-recorded the conversations. Each group included 4-6 participants, and each interview lasted approximately an hour. Four researchers analyzed the transcribed interview data through iterative coding processes in Dedoose, a cloud-based app for qualitative data analysis. The initial analysis used a grounded theory approach, identifying several themes related to the value and impact of the makerspaces, as well as the challenges they face. As the researchers discovered noticeable themes, we also used frameworks such as ALA core values of librarianship and levels of impact (individual, organization, and community). Note this paper focuses on reporting the impact at the organizational level.

Table 1
Focus Group Participants

	Users	Non-users	Teens	Staff	Total
DeKalb	0	2	0	3	5
ITPLD	8	6	9	4	27

Joliet	6	0	0	4	10
TOTAL	14	8	9	11	42

FINDINGS

Our data suggest that the value of a makerspace in helping public libraries achieve excellence is wide-ranging. Recurring themes included: supporting libraries' missions in new and expanded ways, upholding core values of librarianship; changing people's perceptions of libraries and increasing pride in their libraries; and attracting new community members and encouraging broader usage of library services.

Supporting the Library's Mission

The functions of makerspaces align closely with the mission of public libraries, which aims to provide access to various types of information, educate citizens, and serve the public. This theme of alignment with the library's mission was highlighted during staff focus groups. One staff member at Dekalb expressed, "I just feel it fits in well with our general library mission. We want to enrich the community or educate…it's both fun for people, but it also provides…opportunities for education that people wouldn't have otherwise." Another staff member emphasized, "ultimately, it's about serving our community…what we're here for is to serve the people of DeKalb. And this is a way that we can provide things…that they won't have access to otherwise." Furthermore, staff members noted that the makerspace can be viewed as an extension of the library's original mission: "If you're talking about the original library mission, which is to serve the public in as many ways as possible, that hasn't changed. That's just the scope [*that's* been] broadening. So it's the offerings that are changing, but not the original mission."

> *I think it just reflects well on the library to have because the truth is, like books, I've got about 200 of them on my phone through Amazon or Hoopla or whatever. We've pivoted in a way, so now we're offering the makerspace stuff that you can't get on your phone. So I think that it's good in a couple of different ways. It's a new offering. And I think the community likes to have that even if, the truth is, not every single person uses it. You still have people who are basically here to use the public computers and jump on Facebook or check their email. But even if they're not using it, they like the idea that we have it.*

Indeed, even a participant who does not regularly use the makerspace appreciatively acknowledged that it provides enhanced educational opportunities for their community:
> *[In a library makerspace] people can use technology that they're not taught in school. Most elementary schools, for example…they'll have PCs…and likely have some level of coding classes, but it's not necessarily going to be the same level as a makerspace, which is probably going to have multiple varying classes…They [schools] might not have certain classes that are online classes there, as well.*

An Indian Trails user noted that having the makerspace enhances the library experience beyond solely relying on books that instruct on "how to do a thing", by providing hands-on experiences and one-on-one training: *"I think there's value in teaching people in the community how to do a thing. Before, you would just get a book and teach yourself."*

Additionally, a comment from a Joliet user illustrates how the makerspace has increased the library's capacity to serve their community, including small business owners.

I'm very familiar with the space. I have a small business and they have helped me from almost the inception of it. From making flyers. We do county shows, making tickets, making signs, making the menu, just all kind of help. Helping me with my contracts, proposals...One aspect of digital media studio is they help small businesses. So, they've been very instrumental with helping me and I have enjoyed it.

Changing Perceptions of Libraries and Increased Pride

Participants emphasized that the presence of the makerspace significantly broadened their understanding of the library's role. There was a noticeable shift in perceptions, with stakeholders acknowledging that the library offered "more than books" because of the makerspace. For many, the makerspace was a surprising addition to the traditional offerings of reading and information services. As a Joliet User described it, "It's very interesting to see the new people who come down here, who've never been here before. And, they explain to them what they do and you see their mouth just hanging [open]."

Interestingly, this change in perception extended to stakeholders who didn't use the library makerspace themselves. One Indian Trails makerspace non-user remarked:

It's opened up a whole new avenue of things to do...When I was younger, and I've lived in this neighborhood all my life, it used to be, something...you came here for a book and research for school and that was to the extent you used your library for. I feel like it's become something so much more than that. It's a gathering space; it's also a place to learn new things that have to do with so many different topics. It doesn't necessarily have to be just reading or book clubs, but it could be an activity you enjoy, a craft or maybe you're learning something new, or discovering something or even making friends at a place. So, I feel like the dynamic of what it comprises has kind of shifted to more of a community-based type of activities that they offer, versus just a place to go get a book and leave.

Another non-user from Dekalb said:

The previous, before the expansion, was [like] the old school library. A lot of books, a lot of little nooks and crannies for meeting spaces and things like that...[Now] this is more...the new wave library, with more options and more opportunities, not just the books. The books are obviously still a key component of that, but the ability to have meeting spaces, [and] makerspaces...

The presence of a makerspace within a library not only alters people's perception of the library but also enhances the community's pride in their local libraries. An Indian Trails Teen noted that the makerspace added to the library's appeal: "It offers more than books, technology, internet. There are a lot of books, and there's computers as well. It offers more than that. It one-ups the library to more cool." Many credited the diverse programming and services offered by their library for fostering this sentiment. For a Joliet user, the impact of the makerspace was profound: "it's even on a deeper level for my community...my kind of shows is like a ministry. It's an asset to the community because we are healing people, one laugh at a time." A Joliet non-user remarked, "wow, we really have this? We have this amazing facility in our community. I think it really, it's been a source of pride. For a lot of families and a lot of folks, it's been a true

resource." Another Indian Trails User discussed proudly promoting the library: "I think it's great you're doing it, because I think the more communities that have makerspaces, the more they get to see what I'm always bragging about. My library. I mean, I literally would move from here. Anywhere I would go, I would check out the library. It's great."

Attracting New Community Members and Encouraging Broader Service Utilization

Participants mentioned that they used the library more frequently because of the makerspace, particularly among the Indian Trails users and teens. One teen stated, "Without the makerspace we would be here less." Another teen expressed, "[without the makerspace] I think [the library] would definitely end up losing a lot of their teenage clientele…I think there are a lot of teens that come here specifically for the fact that there's maker and activities that you can do." Makerspaces also have attracted audiences to library services. A teen from Indian Trails remarked, "It kind of helps kids get engaged in the library when they're younger too I think, because they see like, 'Oh, there's this fun craft we can do,' and then they see all the like stuff in this area. And I think it would definitely, if we didn't have it, it wouldn't draw as many kids."

Moreover, an Indian Trails user noted that makerspace classes prompted them to check out more books: "Yeah. And that's part of why you come for a class, and then you wander around and go grab a book. That's usually how it works for me."

DISCUSSION AND CONCLUSION

The study explored the value and impact of integrating a makerspace into public library services, illustrating how it supports the core mission and values of librarianship in contemporary society. Notably, access emerged as one of the central themes, as many participants underscored how makerspaces improve access to fabrication tools, support, training, learning, creative opportunities, and social interactions, which might otherwise be inaccessible or unaffordable for community members.

It is noteworthy that both makerspace users and non-users recognize the value of having a makerspace in a library. The presence of a makerspace has significantly shifted people's perceptions and increased pride in their libraries, regardless of their library usage. The study suggests that makerspaces contribute to fulfilling the mission of public libraries and achieving excellence in serving their communities.

As an increasing number of libraries have integrated makerspaces or maker programs as key components of their services, LIS education must actively address this development and provide robust training on both makerspace theory and practice.

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