

Beyond Resilience: Children's Access to Reading Materials Relative to the COVID-19 Pandemic

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ABSTRACT

This collection of three studies investigated children's frequency of access to school and public library materials as well as format preferences and resources used to access reading materials prior to, during, and predicted after the COVID-19 pandemic. A survey of parents of children ages 2-18 was conducted which included demographics and other factors. Data were analyzed for significant differences over time and by subgroup. Results indicate that children's frequency of access to reading materials was negatively influenced by school and library closures and limited access. The child's age and school environment were influencing factors. Results also indicate differences in format preferences and types of resources used to access reading materials over time. Educators of school and public librarians hold a responsibility to instruct LIS students to prepare for resilience by teaching library patrons how to access and enjoy digital materials in transformative times.

ALISE RESEARCH TAXONOMY TOPICS

reading and reading practices; school libraries; public libraries; children's services; young adult services.

AUTHOR KEYWORDS

Access to reading materials; Coronavirus (COVID-19) pandemic; School libraries; public libraries; children's and young adult services; reading preferences.

INTRODUCTION

The coronavirus (COVID-19) pandemic triggered many school and public library closures, resulting in shifts to online and/or hybrid instruction and limited school and public library access. This pivot serendipitously provides the opportunity to study the ways children access reading materials prior to, during, and after the pandemic for the field of LIS to become more viable in our rapidly changing library and educational environments. By going back to look

at practices in place prior to the pandemic, we can move forward to a new narrative of re-engineered standard procedures, practices, policies, and pedagogies. This examination may bolster the foundations of our work and connect us more strongly to our local cultures to make measurable, significant, lasting change as we re-adjust our university programs to better prepare our LIS students for a post-COVID world.

BACKGROUND

Children's access to reading resources has been a topic of study in the library literature (Boltz, 2007; Gaver, 1963; Pribesh, Gavigan, & Dickinson, 2011). The influence of varied levels of libraries, such as school libraries and classroom libraries, on academic performance has also been well established (Gaver, 1963; Lance & Kachel, 2018; Wine, 2020). However, given the limited services by public and school libraries in place during the COVID-19 pandemic, families were often forced to rely on their own resources to access reading materials for their children. How well schools and libraries adapted to the pandemic crisis and communicated with parents and caregivers about available resources may also have influenced children's access to reading materials. Neuman and Celano (2001) point to larger economic systems of power, authority and cultural capital in low- and middle-income community environments which indirectly affect children, translating into differences in the availability of print and variations in patterns of early literacy development.

Schools and public libraries seek resilience in their organizational structure to promote equity of access when confronted with societal disruption, especially for vulnerable populations (Aldrich, 2018). For example, the American Association of School Librarians (AASL) mission states that the school library program ensures that students are effective users of ideas and information by providing access to materials to develop and strengthen a love of reading with resources that reflect current information needs and anticipate changes in technology and education (AASL, 2009). AASL further defines the role of the school librarian as information specialist who is responsible for providing continuous access to library services and as program administrator who ensures that members of the community have "access to resources that meet a variety of needs and interests (AASL, 2018, p. 15). School librarians are prepared through university training to facilitate open access to library resources by developing solutions to address "physical, social, virtual, economic, geographic, and intellectual barriers to equitable access to resources" (ALA/AASL/CAEP, 2019, p. 12). The Association for Library Services to Children (ALSC) provides a research agenda for public libraries involved in learning and development for young children and families which includes use of library collections, programs, and services and for school-age children and families addressing patron needs as they choose the library versus other informal learning environments to engage families with school-age children.

School and public libraries united can create a powerful collaboration. Both are community centers at heart, sharing the same goal to provide access to information in a variety of formats (ALSC, 2020). This goal becomes even more crucial for vulnerable populations and during times of community stressors. More than half of the achievement gap between lower- and higher-income youth can be explained by unequal access to summer learning opportunities. Book ownership and free access to books and technology are key to stemming summer learning loss. This lack of access frequently results in lowered high school and college graduation rates for low-income youth. (ALSC, 2020).

The Young Adult Library Services Association (YALSA) research agenda also prioritizes the use of public and school libraries working together to support and enhance emerging literacies skills and develop informal and formal learning opportunities for teens. Ensuring access to a variety of materials for teens in the face of challenges and embedding access to technology, resources, and learning within families and communities are also identified as research priorities (YALSA, 2020).

Access to devices does not necessarily increase time spent reading. In a survey of 997 Australian children aged eight to twelve, Roni and Merga (2017) found that while children have relatively high access to devices with eReading capability, ownership of devices was negatively associated with reading frequency for both girls and boys. This negative impact was more significant for girls. Daily readers who had access to devices did not use them frequently for book reading, suggesting that children who are frequent readers still prefer paper books (Roni and Merga, 2017), or perhaps other leisure and entertainment behaviors are prioritized when faced with the distractions available when using an ereading device.

Parents are developing stronger views about the role of books in a child's life. Parents of children in all age groups seek books which help children escape from the real world, and which include learning about the lives of others, exploring different places and worlds, and making their child think and feel. Parents of children aged 11 or younger are more likely than parents with older children to look for these characteristics. Parents of Black and Hispanic children are the most likely to look for more diverse books. Additionally, most parents agree that reading fiction and nonfiction helps children better understand the world from different points of view. Children need help finding books, especially infrequent readers, and children older than age eight. Role models such as family members, friends, principals, teachers, and librarians are critical to instilling reading as an integral part of a child's life (Scholastic, 2020).

Children with a larger number of books in the home tend toward greater gains in academic attainment when compared to their peers with fewer books, especially for disadvantaged populations such as parents with less formal education and lower income families (Funge, Sullivan, & Tarter, 2017). Per the Scholastic report, frequent readers have greater access to books at home and at school. Home libraries of children ages 6–17 average 103 books, varying from 74 for infrequent readers to 139 for frequent readers. Families with incomes of less than \$35,000 own an average of 73 books while families with incomes of \$100,000 or more own an average of 125 books. On average, Hispanic (79) and Black (72) children have fewer books in their homes than White (120) or Asian, multi-racial children, and children of other racial backgrounds (115). While the presence of a robust classroom library across all age groups correlates with frequent reading, only 43% of school-aged children have access to a classroom library (Scholastic 2020). Additionally, while 70% of school-aged children say they have a school library, the number of certified school librarians per student has been in decline (National Center for Education Statistics, 2016).

Programs such as The Dolly Parton Imagination Library (book gifting program which mails age appropriate books monthly), First Book (free and low cost teaching resources provided to educators), the International Children's Digital Library (free publicly accessible ebooks in many languages), Little Free Library (publicly accessible book sharing boxes), and Read Conmigo (free ebooks and print books in Spanish and English) provide reading materials to children which do not require use of a library for access. These resources offer diverse reading

choices, foster a love of reading, improve cognitive development and readiness for school, and may even increase use of public and school libraries (DPIL, 2020; First Book, 2022; ICDL, n.d.; Little Free Library, 2022; Smith-Kang, 2019). Organizations which provide this access to reading materials play a role in supporting public and school library programs as frequent readers become frequent users of library services.

To investigate these topics, the researcher proposed the following questions.

According to their parents,

- In what ways did safer at home restrictions influence frequency of access to school and public library materials for children aged 2-18 years prior to, during, and predicted after the COVID-19 pandemic?
- In what ways did safer at home restrictions influence the ways children aged 2-18 years accessed reading materials prior to, during, and predicted after the COVID-19 pandemic?

METHODOLOGY

The researchers conducted a survey of parents of children ages 2-18 ($N = 260$) to investigate children's frequency of access to school and public library reading materials and preferences for reading formats and resources prior to, during, and predicted after the COVID-19 pandemic. Parents were chosen as the targeted survey population because at the time of the survey (November 2020), children were not an accessible audience due to school and library closures and limited communications with school and library authorities.

Demographics such as age, gender, race, and ethnicity and other factors such as household income, community type, geographic location, type of school, school environment, and number of books in home were collected. Results of the survey were analyzed for frequency of access to school library materials (Soulen and Tedrow, 2021), frequency of access to public library materials (Soulen and Tedrow, 2022), and family preferences for reading format and accessibility to resources (Soulen and Tedrow, n.d.).

The school library survey of parents of children aged 2–18 years whose school had a school library ($n = 230$) investigated students' frequency of access to school library materials prior to (T_1), during (T_2), and predicted after (T_3) the pandemic. Frequency of access to school library materials was compared at T_1 , T_2 , and T_3 and by demographic and other factors.

The public library survey of parents of children ages 2-18 years whose community had a public library ($n = 240$) investigated children's frequency of access to public library materials prior to (T_1), during (T_2), and predicted after (T_3) the COVID-19 pandemic. Frequency of access to public library materials was compared at T_1 , T_2 , and T_3 and by demographic and other factors.

The reading preferences survey of parents of children aged 2-18 years ($N = 260$) investigated children's reading preferences for format and resources relative to the COVID-19 pandemic (Soulen and Tedrow, n.d.). Parents were asked about their children's preferences for book format (print book, ebook, audiobook, interactive digital book) prior to (T_1), during (T_2), and predicted after (T_3) the COVID-19 pandemic. Parents were also asked how their children were accessing reading materials prior to (T_1), during (T_2), and predicted after (T_3) the COVID-

19 pandemic, including resources such as classroom, school, and public libraries; retailers; and books available online or by subscription through programs such as the Dolly Parton Imagination Library, First Book, the International Children's Digital Library, Little Free Library, and Read Conmigo.

RESULTS

Results of the school library survey demonstrate that frequency of access to school library materials differed significantly between time points (see Table 1). Repeated measures ANOVA showed a significant difference between T₁ and T₂ and between T₂ and T₃ but not between T₁ and T₃. According to their parents, female and male students who had a library in their school ($n = 230$) accessed school library materials more frequently prior to the COVID-19 pandemic than they did during the pandemic. Parents predicted that their children would return to a similar level of access after the pandemic ends. A repeated measures ANOVA with a Huynh-Feldt correction showed that frequency of access differed significantly between time points, $F(1.78, 408.31) = 63.701, p < .001$. Post hoc tests using the Bonferroni correction revealed a significant difference in access ($p < .001$) at T₁ ($M = 2.67, SD = 1.61$) and T₂ ($M = 1.60, SD = 1.56$) and a significant difference in access from T₂ ($M = 1.60, SD = 1.56$) to T₃ ($M = 2.70, SD = 1.63$) (see Table 2). There was not a statistically significant difference from T₁ to T₃. Significant interactions were found for age and frequency of access over time, with age group 6–10 years showing the most change. Significant interactions were found for school environment and frequency of access over time, with face-to-face students showing less disruption in their access than online and hybrid students.

Table 1

Frequency of Access to School Library Materials Relative to COVID-19 Pandemic ($n = 230$)*

	Prior T ₁		During T ₂		(Predicted) After T ₃	
	<u>Frequency</u>	<u>Percent</u>	<u>Frequency</u>	<u>Percent</u>	<u>Frequency</u>	<u>Percent</u>
Never	18	7.8%	69	30.0%	20	8.7%
Once a month or less	48	20.9%	67	29.1%	47	20.4%
Twice a month	51	22.2%	33	14.3%	46	20.0%
Three times a month	29	12.6%	28	12.2%	29	12.6%
Four times a month	42	18.3%	15	6.5 %	46	20.0%
Five or more times a month	42	18.3%	18	7.8%	42	18.3%

*Data only displayed for female and male students who had access to a school library.

Table 2.*Descriptive Statistics for Frequency of Access to School Library Materials Over Time (n = 230)*

Time Period	Mean	SD
T ₁ (Prior to pandemic)	2.67	1.61
T ₂ (During pandemic)	1.60	1.56
T ₃ (Predicted after pandemic)	2.70	1.63

Results of the public library survey demonstrate that frequency of access to public library materials differed significantly between time points (see Table 3). A repeated measures ANOVA with a Huynh-Feldt correction showed that frequency of access differed significantly between time points, $F(1.75, 418.06) = 58.05, p < .001$. Post hoc tests using the Bonferroni correction revealed a significant difference in access ($p < .001$) at T₁ and T₂ and a significant difference in access from T₂ to T₃ (see Table 4). There was not a statistically significant difference ($p = 1.00$) from T₁ to T₃ suggesting that parents felt their child's access would return to previous levels when the pandemic ends. Significant interactions were found for school environment and frequency of access over time, with online and hybrid students showing a significant decrease in access from T₁ to T₂ and an expected significant increase from T₂ to T₃.

Table 3*Frequency of Access to Public Library Materials Relative to COVID-19 Pandemic* (n = 240)*

	Prior T ₁		During T ₂		(Predicted) After T ₃	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Never	36	15.0%	101	42.1%	32	13.3%
Once a month or less	70	29.2%	57	23.8%	73	30.4%
Twice a month	50	20.8%	39	16.3%	46	19.2%
Three times a month	31	12.9%	19	7.9%	40	16.7%
Four times a month	28	11.7%	10	4.2 %	24	10.0%
Five or more times a month	25	10.4%	14	5.8%	25	10.4%

*Data displayed for female and male children who had access to a public library.

Table 4*Descriptive Statistics for Frequency of Access to Public Library Materials Over Time (n = 240)*

Time Period	Mean	SD
T ₁ (Prior to pandemic)	2.08	1.56
T ₂ (During pandemic)	1.26	1.47
T ₃ (Predicted after pandemic)	2.11	1.53

Analysis of the survey data for children's reading preferences demonstrates differences over time (see Table 5). Preferences for book format (print book, ebook, audiobook, digital interactive book) changed over time. Print books were the biggest losers during the pandemic from T₁ to T₂ as demonstrated by a 15.0% decrease over time. Winners during the pandemic from T₁ to T₂ were ebooks (+8.5%) and audiobooks (+7%). Audiobooks were substantial winners overall, demonstrated by a predicted 5.4% increase in access over time. The most disruption to access during the pandemic from T₁ to T₂ included the greatest positive change for ebooks (+8.5%) and the greatest negative change for print books (-15.0%). The most disruption to access overall from T₁ to T₃ included the greatest positive change overall for audiobooks (+5.4%) and the greatest negative change overall for interactive books (-2.7%). The least positive change to access during the pandemic from T₁ to T₂ and from T₁ to T₃ was for audiobooks (+7.0%) and (+5.4%) respectively. Holding steady during the pandemic from T₁ to T₂ were interactive books (-4.2%) and holding steady overall from T₁ to T₃ were ebooks (+4.2%) and print books (-1.9%).

Table 5
Book format

	Prior T ₁		During T ₂		(Predicted) After T ₃		Percent Different ial T ₁ -T ₂	Percent Differenti al T ₂ -T ₃	Percent Differenti al T ₁ -T ₃
	Freque ncy	Percent	Freque ncy	Percent	Freque ncy	Percent			
Print book	183	70.4%	144	55.4%	178	68.5%	-15.0%	+13.1%	-1.9%
eBook	85	32.7%	107	41.2%	96	36.9%	+8.5%	-4.3%	+4.2%
Audiobook	63	24.2%	81	31.2%	77	29.6%	+7.0%	-1.6%	+5.4%
Interactive book	70	26.9%	59	22.7%	63	24.2%	-4.2%	+1.5%	-2.7%
None of the above	11	4.2%	15	5.8%	11	4.2%	+1.6%	-1.6%	---

Additionally, resources used to access reading materials changed over time (see Table 6). Losers during the pandemic (T₁-T₂) included print books for both the school library (-34.3%) and public library (-22.3%) as well as print books for the classroom library (-13.4%) and for retailers (-5.8%). Book access through the Little Free Library (-5.0%) was also substantially reduced. There were no substantial winners during the pandemic from T₁ to T₂. Overall, there was substantial loss to access for print books from the school library (-13.1%) and substantial gains for print books for retailers (+5.8%) from T₁ to T₃. The most disruption to access during the pandemic from T₁ to T₂ included the greatest positive change for ebooks (+4.3%) and the greatest negative change for print books from the school library (-34.3%). The greatest positive change overall from T₁ to T₃ occurred for print books purchased from a retailer (+5.8%), and the greatest negative change overall from T₁ to T₃ occurred for print books from the school library (-13.1%). Holding steady during the pandemic from T₁ to T₂ was access to reading materials

through First Book (+0.8%) and usage of library digital books (-0.4%). Holding steady overall from T₁ to T₃ was usage of library digital books (+4.2%) and ebooks in general (-0.3%).

Table 6

Resources used to access reading materials

	Prior T ₁		During T ₂		(Predicted) After T ₃		Percent Differential T ₁ -T ₂	Percent Differential T ₂ -T ₃	Percent Differential T ₁ -T ₃
	Frequency	Percent	Frequency	Percent	Frequency	Percent			
Print books- school library	159	61.2%	70	26.9%	125	48.1%	-34.3%	+21.2%	-13.1%
Print books- public library	116	44.6%	58	22.3%	111	42.7%	-22.3%	+20.4	-1.9%
Print books- classroom library	88	33.8%	53	20.4%	86	33.1%	-13.4%	+12.7	-0.7%
Print books- retailer	78	30.0%	63	24.2%	93	35.8%	-5.8%	+11.6%	+5.8%
eBooks	49	18.8%	60	23.1%	48	18.5%	+4.3%	-4.6%	-0.3%
Audiobooks	42	16.2%	42	16.2%	37	14.2%	-	-2.0%	-2.0%
Digital books- library	48	18.5%	47	18.1%	59	22.7%	-0.4%	+4.6%	+4.2%
Dolly Parton Imagination Library	28	10.8%	33	12.7%	25	9.6%	+1.9%	-3.1%	-1.2%
First Book	30	11.5%	32	12.3%	21	8.1%	+0.8%	-4.2%	-3.4%
Little Free Library	39	15.0%	26	10.0%	35	13.5	-5.0%	+3.5%	-1.5%
Open access ebooks	47	18.1%	42	16.2%	38	14.6%	-1.9%	-1.6%	-3.5%
International Children's Digital Library	26	10.0%	22	8.5%	20	7.7%	-1.5%	-0.8%	-2.3%
Read Connigo	13	5.0%	7	2.7%	11	4.2%	-2.3%	+1.5	-0.8%
None of the above	17	6.5%	35	13.5%	22	8.5%	+7.0%	-5.0%	+2.0%

DISCUSSION

Children's frequency of access to school and public library materials was negatively influenced by closures and limited access, with the expectation of a return to similar frequency of access on resumption of normal operations. This gap in access to library resources, library instruction, and reading promotion would influence children's reading ability (learning to read) and application of reading skills to learning content curriculum (reading to learn). Changing preferences for book formats and resources used to access books may also influence reading frequency and reading enjoyment. Given the strong associations between access to library resources and academic performance, these results suggest that student learning and reading behaviors suffered during these closures.

Study of children's reading preferences is important as librarians and administrators plan for future social crises to make informed choices in the continuously shifting digital environment of schools and libraries. Libraries prepared to shift their focus by re-imagining services to address pinpointed current needs best serve their communities. Examples of such innovations draw upon existing technology and already available resources such as expanded WiFi, laptops and hotspots for checkout, provision of ebooks through the school district's library system, and virtual tutoring services (Berra, 2021). Just as important is the provision of reading resources within the community, such as the Children's After-School Recreation Center program which not only provided quality multicultural books to children experiencing virtual instruction at

home, but also followed up with book response cards and phone conversations (Bennett, Gunn, and Peterson 2021). Many changes made due to the COVID-19 crisis can continue after the pandemic ends

Children ages 6-10 years were most affected by the pandemic for accessing school library materials. Given that children at this age are learning basic reading skills and developing their confidence as independent readers, this may have long lasting effects for learning. Interestingly, both the school and public library studies highlighted school environment as a factor for frequency of access to both school and public library resources. While this may be expected for school libraries, it is a bit puzzling for public library access. Online and hybrid students demonstrated a significant reduction in frequency of access to public library materials from T1 to T2, and a corresponding significant increase in access from T2 to T3, but no significant change overall. This speaks to the disruption of family life due to school closures, when families were overwhelmed by the combined responsibilities of working while overseeing the education of their children at home.

Results of these three studies show that library patrons were ill-prepared for the effect of school and public library closures, limited access, and shifts to online or hybrid access points for reading materials and instruction. For the field of LIS to become more viable in our rapidly changing library and educational landscapes, we must address children's knowledge of how to access digital resources and motivation to use these resources during times of normal operations to better prepare our library patrons for future shutdowns. We can move forward to a new narrative by re-engineering our standard procedures for teaching our LIS students about nontraditional materials purchasing, showing patrons how to access these materials, and demonstrating how digital and unconventional resources are best used and enjoyed. We must revisit how we teach our LIS students about policies surrounding selection of diverse materials and formats, and innovative pedagogies for our university programs which influence practice for our PreK-12 learners under ordinary conditions, to prepare for the extraordinary (Soulen, Tedrow, and Sullivan, 2020).

Based on these three studies, our experiences, and the experiences of our patrons and students during the COVID-19 pandemic, LIS educators need to make relevant changes in our university curricula to better prepare our LIS students for a post-pandemic world while recognizing that the next pandemic is just around the corner. As LIS educators, we can improve our pedagogy during normal times to prepare our LIS students to resiliently adapt during transformative times to the benefit of our PreK-12 students. Educators of LIS students can focus more on teaching use of digital resources and innovative, adaptive programming which will equip future librarians to help their patrons during health and social crises that restrict access to print resources. In doing so, we can make measurable and significant lasting change. This examination bolsters the foundations of our work by bringing forth the weaknesses in our systems which can lead us to build stronger connections to our local cultures by not only addressing their current needs, but also proactively preparing them for their future needs.

LIMITATIONS AND FURTHER STUDY

This study was limited in that the survey was conducted online, thereby introducing some bias for internet usage. Additionally, the study could be improved by directly surveying the children, rather than their parents to gain a clear picture of actual reading behaviors and preferences. Respondents to the survey were all English speaking and located in the United States. Users of other languages in other nations would be expected to have disparate experiences during the pandemic. Future study may include repeating the survey after library closures and limited access have ended to determine whether the predicted reading behaviors hold true post-pandemic. An international survey would better describe the experience of library patrons around the world during the COVID crisis.

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