

Closing the App Gap: From Plan to Project I

Closing the App Gap: From Plan to Project I allies with IMLS's support of the Campaign for Grade-Level Reading with an exploration of the use of tablet computers, apps, and e-books in public libraries as a tool against summer reading loss. Submitted as a planning grant in the research category, *Closing the App Gap* will engage with experts in scholarship and practice to define the public library's role in selecting and providing existing digital media for younger children, especially those primary-grades children in low-income communities who are most in need of intervention, whose access to media at home is limited, and for whom summer often means a loss of skills.

This plan draws on both the historic involvement of public libraries in literacy, through summer reading programs and ongoing support, and their long-term role as providers and facilitators for communities impacted by disparate access to technology. Tablet use is becoming more common in schools and libraries, with compelling apps and e-books engaging young learners with new opportunities, but libraries are still exploring ways to meet the challenges and maximize the benefits of incorporating these technologies into their collections and services. *Closing the App Gap* will contribute to a foundational understanding of this aspect of library service by devising and assessing models for the use of apps and tablets with children within the public library setting.

In our planning stage, we will compile relevant data and survey existing practices, collate and assess review sources of apps and e-books, and identify partners and stakeholders in order to design a subsequent multi-site project involving the use of tablets in summer reading programs in underserved communities. A key part of our planning phase will be the creation and direction of a pilot study, which will be conducted at the Douglass Branch Library of Champaign. The lead institution in this proposal is the Graduate School of Library and Information Science (GSLIS) at the University of Illinois at Urbana-Champaign; GSLIS will partner with the Douglass Branch of the Champaign Public Library.

STATEMENT OF NEED

According to the Campaign for Grade-Level Reading, "Reading proficiency by third grade is the most important predictor of high school graduation and career success." For many children, summer vacation, with its absence of classroom education and school resources, results in a decline in reading proficiency and loss of essential literacy skills. The effects of this summer reading setback are more harshly felt by children of lower economic circumstances, as evidenced by lower scores on standardized tests, more exaggerated reading regression from spring to fall, and a widening achievement gap between children of means and those without. A 2010 study showed 77% of "economically advantaged" students in fourth grade, a crucial stage for developing readers, exceeded basic levels of proficiency, while only 46% of economically disadvantaged students achieved an average level of proficiency (Allington 2010). Statistical studies also show that students of lower means own significantly fewer books than their more affluent peers, further discouraging the development of reading skills during summer vacation. (Kim 2007).

Public libraries

The public library plays a unique role in summer education. Summer reading programs are among the most popular library activities for youth, and they are also the most well documented and measured activity in youth service. Evidence of the educational boost of summer reading programs is most recently documented in the impressive Dominican Study, which focused on low-income families participating in summer reading programs. It revealed that a public library's summer reading program was more than an antidote to summer learning loss; it also put participants at an average 52 Lexile points, a notable reading level difference, ahead of non-participants. Findings showed that students participating in their local summer reading program scored higher on reading tests at the start of fourth grade and did not experience summer learning loss. A survey of fourth-grade teachers indicated that students participating in summer reading programs had a better attitude about reading, read beyond expectations, and had more confidence and enthusiasm in the classroom (Roman 2010).

Digital media

The progressive inclusion of technology in literacy education, within and beyond the classroom, continues to provide a creative and meaningful avenue for teachers to reach students of all socioeconomic statuses, reading proficiency levels, and personal interests and learning needs. Schools are embracing the multitude of ways computers, especially tablet computers, can benefit burgeoning readers. The tablets' touch-screen interface is accessible and immediately interactive, which will attract young readers who crave interactivity or struggle with reading traditional books; interfaces can be configured to minimize the obstacles to readers struggling with disabilities; and the two-dimensional nature of e-books may minimize the anxiety evoked in some young readers by a book's thickness. Trial studies using tablet use for literacy instruction with early to middle grade elementary students have demonstrated that integration of print and technological literacy creates meaningful and engaging reading experiences; while systematic evaluation of tablet effectiveness is still forthcoming, individual reports indicate that for elementary students who are approaching a crucial learning milestone, tablet-based literacy instruction has a strong positive influence for elementary students who are approaching an important milestone (Hutchinson 2012).

Public libraries are embracing the possibilities such technology offers, as evidenced by ALA's Office for Informational Technology Policy 2010 brief titled "There's an App for That! Libraries and Mobile Technology: An Introduction to Public Policy Considerations," which identifies the necessity and challenges of supporting patrons' needs in this area. The Darien, Connecticut library offers iPad literacy kits to parents with pre-selected apps that the librarians have deemed age appropriate and useful for beginning readers and iPad users; Watertown, Massachusetts and Eau Claire, Wisconsin have tablets and e-readers available for circulation; Hays, Kansas has one of several public libraries that employ tablets in digital storytimes. With iPad and app usage still a developing theme in children's libraries, the librarians have become the resident experts in selecting apps and tablets for patron use (Samtani 2012). Enriching offerings ranging from original apps such as "Stack the States" and "Math Bingo" to book-based titles such as "Don't Let the Pigeon Run This App!" and "Harold and the Purple Crayon"

provide stimulation, entertainment, and education that makes them extremely valuable in a library situation.

Individual libraries, however, vary widely in the technological resources and media they offer—and can afford to offer—for young patrons, and electronic media policies largely depend on the knowledge, funding, and interest of a given institution. Room still remains for the creation of a scalable model for library app acquisition and use. We therefore see this project as a contribution to a more systematic plan for the use of apps and of protocols for tablet use with children within the public library setting.

Underserved populations

These technological opportunities are least available to those children in low-income families, those children who are the most likely to fall short of grade-level goals, who are also most likely to benefit from programming that integrates print and technological literacy. The “digital divide,” a term coined in the 1990s to describe the disparity in access to information and communications technology, is a problem whose impact increases as such technology becomes increasingly crucial in daily life. That disparity of opportunity is evident in what’s termed the “app gap,” a discrepancy that exists between children in low-income families and children in higher-income families. As documented by the *Zero to Eight: Children’s Media Use in America* study, 27% of children eight years old and younger from lower-income families (defined as earning \$30,000 or less per year) have some kind of access to smartphones, while 57% of children from higher-income families (defined as earning \$75,000 or more per year) interact with smartphones. Tablet access is even more limited to underprivileged children. Only 2% of lower-income children under eight have a tablet of some kind in their home, while 17% of children in the higher-income group have regular access to tablets, including iPads. 38% of lower-income parents say they don’t know what an app is (compared to 2% of higher-income parents) and only 14% have ever downloaded an app for use by their children, while 47% of higher-income households have downloaded apps for their children. When it comes to time on a smartphone, iPod, or tablet for playing games watching video, or using apps, the disparity is stark: 55% of higher-income children have had such opportunities, while only 22% of children in lower-income families have (Common Sense Media 2011).

As explored in the *Opportunity for All: How the American Public Benefits from Internet Access at U.S. Libraries* report, public libraries play an invaluable role in addressing the problem of the digital divide, especially in their role as technology providers for those who lack personal technological resources (44% of households living below the poverty line rely on public libraries for Internet access; 61% of the young adults from these households use library computers for educational and recreational use; almost 50% of all the nation’s teens reported using library computers in 2011). However, the demand often outstrips the ability to provide resources, and those libraries serving less affluent children and their families are often those with the most straitened budgets, who must make sure every budget dollar spent earns its worth.

Our partner, the Douglass Branch of the Champaign Library, is an excellent example of a library working to close the digital divide. The branch serves a predominately African-American, low-income neighborhood in northeast Champaign. Data from census tract 2 in Champaign County, the area served by the branch, shows that 37% of residents are below the poverty level and 58% of households have an annual

income of less than \$25,000. According to 2000 census data, 82% of residents served by the branch have a high school education or less and 40% are not employed. Currently, the branch has no tablets or personal electronic devices for young patrons; while the library possesses two Kindles available for checkout, the devices currently contain only adult titles. Yet this is also a library keenly focused on the development of digital skills: they are working with middle schoolers via the Project Next Generation program, and they are committed to acquiring and facilitating patron use of emerging formats. Our project will enable this library to further expand its resources and serve its constituency.

With this project, we bring a new facet to many ongoing discussions. The efficacy of summer reading programs, as noted above, has been extensively explored in the scholarly literature, and the digital divide and its consequences for children in low-income families has been documented in reports such as *From Zero to Eight* and *Living and Learning with New Media*. Projects such as the Minneapolis Public Library's Media Mashup and YOUMedia in Chicago offer excellent examples of the value of using digital media to enhance twenty-first century literacy skills and providing young people with new ways to engage with their libraries. The PLA's National Digital Summer Reading initiative is both a strong ally in its exploration of digital media's value in summer reading and a perfect complement in its focus on the creation of a purpose-built app, and we plan to investigate possible connections between their initiative and our project. Overall, we see a need to bring to the discussion an investigation on the value of the public library's role in providing and selecting existing digital media for younger children, especially those primary-grades children in low-income communities who are most in need of intervention, whose access to media at home is limited, and for whom summer often means a loss of skills.

IMPACT

The primary impact of the planning process will be the design of a multi-site project, created to assess the value of digital media in summer reading programs as a tool in the fight against summer reading loss and to investigate the importance of providing underserved patron communities with age-appropriate elements of contemporary technologies. Our process will enable us to begin to create a shared and workable conceptual framework for tablet use in public libraries, allowing us to develop collaborative strategies, use protocols, materials analysis, and success metrics to serve as a vision for subsequent work and the foundation for our next stage. Additionally, our exploration will help generate interest in the issue and provide support for those facilities seeking to develop such programs. Rather than create a single prescriptive model, we will consider the advantages of various use opportunities, including programming, circulation, and onsite use, in order to foreground a flexibility of use that should allow libraries to build on the use blueprint most appropriate to them.

Our planning process will also offer direct impacts in our preliminary findings. The exploration of useful methodologies for tablet app selection, review source assessment, and survey of tablet use protocols will be shared with local librarians, at regional and national conferences, and through publications in order to offer immediate utility to professionals seeking to ground and guide their practice in this area. Libraries can build on our assessment methodologies and our use policies and can draw on proof of

concept/value to inform funding allotments. Additionally, by choosing a smaller library as partner, we will foreground the value of such libraries in lower-income neighborhoods in the effort to retain reading capacity. The findings of this planning project will assist in identifying strategies that such libraries can employ to make the most of their resources in choosing and using digital media with young children.

This project has great potential to be widely applicable to other libraries reaching underserved populations. While technology expenditures can be costly, tablets are relatively inexpensive and present touch-screen interfaces that are easy to use for pre-literate children, early readers, or youth for whom English is a second language. Relative ease of use and the lower cost of tablets suggest that the multi-site project plan resulting from the grant will result in models that are feasible to implement and replicable at other locations.

Our pilot study will provide our partner library with an additional inviting facet for summer reading and allow its patrons to gain hands-on experience exploring tablet computers and book apps. Its staff will gain additional knowledge of how young readers engage with interactive media and how to provide reader's advisory to assist in selection of apps for young children. Use statistics and library attendance numbers will be counted and assessed in comparison to other times and programs, and the planning phase will identify additional metrics relevant to the issue of summer reading loss.

In sum, successful conclusion of the planning grant will result in:

- A collation of research assessing digital media use with young children in public libraries
- A shareable annotated compilation of app review resources and the development of selection guidelines
- The promotion of and participation in the ongoing discussion about the value of digital media use in libraries with young children, especially in underserved populations
- The findings of a pilot study demonstrating value of tablet use in a public library's summer reading program
- A recommended design for a subsequent multi-site project and a variety of possible use protocols
- The identification of possible site libraries for that project

PROJECT DESIGN

Closing the App Gap: From Plan to Project I seeks to explore the possibilities that tablet computers offer for enhancement of primary-grade children's library experience and to support and encourage summer retention and even growth of skills. This planning grant phase will work towards two goals: firstly, the design of a large-scale multi-site project exploring app use with primary-grade children in underserved libraries, and secondly, the execution of a pilot small-scale study in the Douglass Branch Library, our project partner. The project will begin on November 1, 2013 and run through October 31, 2014.

November 2013-October 2014

Monthly meetings will be held with the core project team to discuss the input from our advisory committee (already assembled), articulate further issues for exploration, and

assess project progress. The project coordinator will be responsible for creating a monthly progress report, including an analysis of the completion stage of project goals, to be presented and discussed at each meeting. We will consult with our advisory committee via email and periodic conference calls. With the committee, we will explore the following questions:

- How can we ensure this process brings value to participating libraries and their patrons?
- How do we ensure the selection of materials that stimulate children, meet their needs, and offer beneficial reflection of the area's cultural diversity?
- What is the best way to inform communities about the opportunity to participate? How can we work with communities to ensure the project serves them?
- What are the best ways for the librarians to facilitate use of tablets and apps?
- What are the benefits of programming, individual patron use, and a combination of the two?
- What mistakes are we making, and how do we avoid them in the large-scale project?
- Where should we take this project? What kinds of libraries and what specific libraries would be useful sites for future exploration? What material and personnel resources will we require?
- How do we define success? What outcome measurements can we employ that will both draw on library practice and support the educational aims of the project?
- How can we help libraries to continue their programs in this area after our project concludes?

November 2013-February 2014

The project manager will initiate the Institutional Review Board process. Based on previous experience, we anticipate this step taking a minimum of three months, since children are a protected group, and have arranged our schedule to leave ample time for the process.

November 2013-April 2014

We will prepare a local pilot study to be held in conjunction with the summer reading program at our partner institution, the Douglass Branch Library in Champaign, Illinois. This pilot study will allow us to explore our research questions on a smaller scale and to better prepare us for the challenges we may encounter when we execute our large-scale project.

During this time, the project coordinator will work with the support staff on these key tasks:

- reviewing and compiling existing research on use of tablets and other handheld digital devices with youth
- reviewing and compiling existing app review venues
- creating an annotated app review pathfinder for public sharing
- assessing 200 promisingly reviewed apps and e-books for selection for the project

- compiling a shortlist of suggested apps and e-books from which the advisory committee and project staff will choose items to include on the pilot project tablets
- obtaining and preparing pilot study tablets, configuring security settings as appropriate

The project coordinator will have these additional responsibilities in coordinating with our partner institution:

- assessing the current digital services at the library
- discussing the integration of those tablets into the library's existing services and collections

April 2014

By April 1, the project coordinator will present a suggested plan for the prototype study to the advisory committee, the grant PIs, and the partner library liaison for consideration, revision, and approval. The plan will be finalized by April 30.

The core grant personnel will hold one or more forums with community residents, to assess currently available services and resources and create a plan to identify local needs related to summer literacy.

May 2014

The project coordinator and the support staff will, assisted by GSLIS technical support and Douglass Branch Library staff, begin to prepare the tablets for public use in the Douglass Branch library for the pilot study.

June 2014-August 15 2014

On June 1, the start date of the Douglass Branch Library's summer reading program, the pilot study will begin, following the plan outlined in the report submitted April 1 and approved April 30. It will conclude on August 15 with the close of the program.

August 15-October 31

The core staff personnel will, with the input of the advisory committee, prepare an assessment of the planning stage and recommendations for the subsequent multi-site study. This report will be shared at regional and national conferences such as ILA and ALISE. We will evaluate the strengths, weaknesses, and findings of the pilot study and the process, and identify their implications for a large-scale research project to study the implementation of tablets in library collections as a means of sustaining grade-level reading over the summer to be executed in a new project called *Closing the App Gap II*.

3. PROJECT RESOURCES: PERSONNEL, TIME, BUDGET

Personnel: The key personnel will be the co-PIs, Dr. Kate McDowell and Dr. Deborah Stevenson. Dr. McDowell, an assistant professor at GSLIS since 2005, is a leading figure in the field of youth services research and a former librarian at the Urbana Free Library; with this research she builds upon her prior exploration of digital media in storytelling for children. Dr. Stevenson, the director of the Center for Children's Books and the editor of

the *Bulletin of the Center for Children's Books*, has been with GSLIS since 1992; an internationally recognized scholar of youth literature and media, she has been reviewing and evaluating children's texts for over two decades, experience the project will utilize in the app assessment. We will draw on the time of one of GSLIS's experienced project managers to ensure successful completion of the Institutional Review Board process and timely production of deliverables and to work with the university's Office of Sponsored Projects and Research Administration to ensure conformance with regulations. The day-to-day coordination of the project will be the responsibility of a 50% research assistant, a doctoral student at GSLIS. The app assessment, research collation, and general support will be the responsibility of the CCB's two graduate assistants, skilled master's students with strong credentials in youth services.

Amanda Raklovits, an experienced children's librarian, will be our liaison at our partner institution, the Douglass Branch Library of Champaign. She will retain the final authority over all activities at the partner facility, participate along with the rest of the core project staff in consultation with the advisory committee, attend monthly meetings, and receive the monthly progress reports from the project coordinator. She will be the primary advisor on the community forum for discussion of the pilot study and its implications and on the implementation and design of the pilot study. At the end of the project, the tablets, apps, and e-books will become the property of the Douglass Branch. The project coordinator will be responsible for ongoing communication between GSLIS and the Douglass Branch.

We will be guided in this process by an advisory committee rich in expertise, bringing both scholarly and practical librarianship perspectives:

- Denise Agosto, assistant professor at Drexel University's College of Information Science and Technology, with a focus on youth information behaviors and multicultural issues in youth library service
- Viki Ash, veteran practitioner of youth librarianship, currently coordinator of youth services at the San Antonio Public Library
- Sarah Park Dahlen, assistant professor at St. Catherine University's School of Library and Information Science, a researcher in multicultural literature, social justice, and emerging technologies
- Michelle Martin, Augusta Baker Chair in Early Childhood Literacy at the University of South Carolina's School of Library and Information Science
- Jamie Naidoo, assistant professor at the University of Alabama's School of Library and Information Studies, and a specialist in programming, diversity, and library service to Latinos

Time: The planning grant will run from November 1, 2013 to October 31, 2014. Regular meetings with the advisory board and grant personnel and research on the part of the grant coordinators will result in a list of suggested apps and e-books and a proposed plan for the prototype study at the Douglass Branch Library by April 1, 2014. The plan and app selection will be finalized by April 30 and the technology will be prepared and transferred to the Douglass Branch for a pilot study aligning with the schedule of the Douglass Branch's summer reading program, June 1-August 15, 2014. Following the conclusion of the pilot study the data from the pilot study and the preceding research will

be compiled into a report and the findings used to create the foundation plan for the multi-site project *Closing the App Gap II*.

Budget: We will contribute the following personnel costs:

- 5% of Dr. McDowell's time (\$4030)
- 5% of Dr. Stevenson's time (\$3315; \$4030)
- 2% of the time of the technical staff under Garret Gengler (\$1543)

We request funding to cover the following personnel costs:

- 10% of a project manager's time to coordinate the Institutional Review Board process and monitor grant progress (\$4598)
- 50% time doctoral student research assistant to function as day-to-day project coordinator (\$19,992)
- 5% of the time of two Center for Children's Books graduate assistants, who will function as the app reviewers and project support staff (\$1989)

We will contribute the following fringe benefit costs:

- Proportionate benefits at 44.67% for McDowell, Stevenson, and technical support staff (\$3970)

We seek funding for the following fringe benefit costs:

- Benefits at 44.67% for 10% project manager time (\$2054)
- Benefits at 5.99% for doctoral graduate assistant and two master's graduate assistants (\$1317)

and for the tuition remission expenses at 62% for the doctoral graduate assistant and the two master's graduate assistants (\$13,268)

For materials, we are able to provide ten iPad2s for the pilot study; they are not eligible for cost share. We seek funding for trial apps and e-books for investigation by the app review technicians and the purchase of 20 chosen apps for each of the 10 tablets. We anticipate that each review technician will review 100 apiece, in a mix of proprietary apps (average price \$4.99) and iPad-ready books (average price \$9.99) for a total of \$1500 total cost of assessed materials. We aim then to put 20 selected apps on each of the iPads for \$150 each, totaling \$1500. The tablets and apps will become the property of the Douglass Branch Library following the completion of the planning grant. Additionally, we request printing costs for solicitation flyers and parental permissions forms at \$100. Total materials cost: \$3100.

Total funds requested: \$46,678; total cost share provided: \$12,858.

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