TEXAS LIBRARY JOURNAL

TLA

TEXAS LIBRARY
ASSOCIATION

Special Issue: TLA 2020 Contributed Papers

96

TLA 2020 Contributed Papers By Tine Walczyk

Every year, Contributed Paper sessions provide a forum to present library-related research at the Texas Library Association Annual Conference and publish in the Texas Library Journal. This is a great opportunity for Academic and Special Librarians to participate at the conference (but any library type is welcome)! This year, eleven papers addressing a wide variety of research conducted in public, academic, and school libraries were selected. Authors presented in TLA's Virtual Conference, the 2020 Summer of Learning.

Contributed Papers will be back in 2021! To be considered, a 200-word (maximum) abstract will be due by December 15. Submission guidelines and link will be provided in the fall issue of the Texas Library Journal and will be posted on the TLA 2021 conference website, **www.txla.org/annual-conference**.
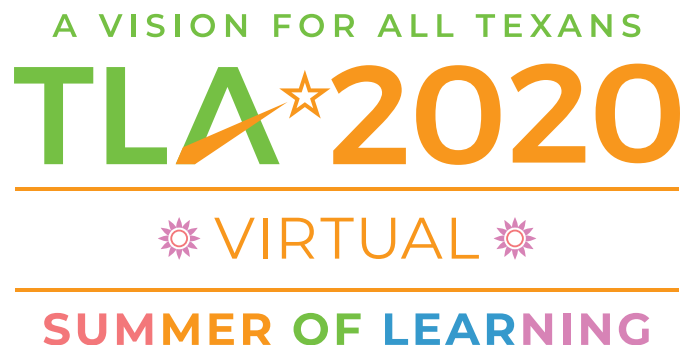
Tine Walczyk is an adjunct professor in LIS, and the library technology consultant at Trainers-R-Us. She chaired the TLA 2020 Contributed Papers Subcommittee.

A VISION FOR ALL TEXANS

TLA★2020

☀ VIRTUAL ☀

SUMMER OF LEARNING

Academic Librarians Creating Value through Commercialization Partnerships

By Yvonne Dooley, MLS

ABSTRACT

As higher education evolves and redefines how information is exchanged with industry, an increasing number of universities are creating and expanding technology transfer offices to commercialize faculty created intellectual property and promote innovation. This exchange fosters technology-based economic development and entrepreneurial success. Academic librarians at these institutions have a unique opportunity to serve as commercialization partners in these efforts, contributing to the work and creating greater visibility of the library within the campus community.

This paper focuses on how the University of North Texas (UNT) Libraries was able to develop a successful partnership with the UNT Office of Innovation and Commercialization (OIC) and move outside the Libraries' normal sphere of influence to help create a patent internship program for students. The author explains how this innovative partnership works and provides benefits for all parties involved. Best practices will be shared on ways librarians can develop similar initiatives in their own communities.

Keywords: academic libraries, collaboration, technology transfer, commercialization, partnerships, internships

BACKGROUND

In February 2016 the University of North Texas (UNT), a four-year public university, was designated a top-tier research university by the Carnegie Classification of Institutions of Higher Education. Later that same year, UNT established the Office of Innovation and Commercialization (OIC) in an effort to further expand its research and innovation enterprise. The OIC is responsible for a variety of activities that promote economic development, including protecting and commercializing UNT's intellectual property through technology transfer. Generally speaking, technology transfer describes the formal process of transferring the rights to new university discoveries and innovations to industry for commercial development (AUTM, 2018). In order to facilitate these activities, many academic institutions establish technology transfer offices to accomplish this work and have ramped up their efforts in recent years (Perkman et al 2013).

Inspired by the University of Arizona Libraries' partnership with their campus technology transfer office (Dewland and Elliott 2015), UNT Libraries and the OIC began discussions in the summer of 2017 regarding the possibility of developing a collaborative patent internship program to support the office's technology commercialization efforts. Typically, internship programs of this sort are managed within a technology transfer office (Stewart 2013). However, since UNT's technology transfer unit within the OIC was rather small, a partnership with UNT Libraries was appealing because of the resources and support that the Libraries could offer.

In addition to the benefits OIC would receive from the internship program, the Libraries and UNT students benefitted as well. UNT Libraries had an opportunity to showcase their value in a new way by supporting campus technology commercialization efforts. Such a partnership also gave the Libraries greater visibility within the campus community. Student interns were given the rare opportunity to gain specialized skills that were transferable, could help set them apart in the job market, and make them more valuable to future employers.

In summary, UNT Libraries and the OIC's Patent Internship Program set out to achieve the following objectives:

- Increase support of OIC technology commercialization efforts
- Increase the Libraries' visibility as a valuable campus partner
- Offer students the opportunity to gain valuable work experience

WHY COLLABORATE?

In May 2017 I joined UNT Libraries as their Business Librarian. One of the objectives within my position was to work collaboratively to develop innovative approaches to assist with research for the university community. At that same time, UNT Libraries had their eye on establishing creative partnerships that would promote the Libraries and its services across campus. Considering this information, both my supervisor and I felt that a collaboration between UNT Libraries and OIC could achieve these goals.

STARTING THE PROGRAM

In order to move the collaboration forward, my supervisor and I established an ad hoc library team to meet with OIC leadership. We used that meeting to further discuss the possibility of a collaborative internship program that would benefit all parties, especially students. Prior to the meeting, our team posed the following

questions:

- What is the anticipated duration of this need?
- Can this role be fulfilled by graduate or undergraduate student assistants?
- Can we retrain existing student employees of the Libraries to do this work, or will we need to hire new employees especially for this work?
- Will a regular work station space be needed to support these positions?
- How many student employees will be needed?
- What budget will be needed to support these positions?
- Is there a sense of anticipated demand for this support?

During the meeting, our team also learned more about the specific work these interns would be doing, which included prior art and market potential assessments for various university inventions. Prior art assessments involved searching for evidence indicating an invention had already been made available to the public prior to the effective filing date of a patent application. Market potential assessments involved considering whether an invention met a market need and its potential to successfully compete for customers.

Once we had a clearer picture of what a collaborative patent internship program with OIC might look like, our team set out to get buy-in from the Libraries' administration. I gave a presentation to our Libraries' Dean's Council, and we were given permission to move forward with the program. After a joint meeting between OIC and library leadership, an agreement was reached to evenly contribute student wage funding for two patent internship positions.

To become more familiar with technology transfer and what would be involved in supervising these interns, I signed up for the "Essentials Course" offered by AUTM, the member organization for university technology managers. The course provided foundational information on academic technology transfer and opportunities to practice assessing sample innovation cases. Other topics covered in the course included market research, reaching potential partners, innovative transfer strategies, and licensing. Following the course, I had a much better understanding of the fundamental skills that would be necessary to support OIC's tech transfer unit.

Initially, our team thought we would hire one graduate and one undergraduate student intern. However, by the end of August, we were only able to identify one candidate with the background and experience required for the position. After a quick interview with myself and the Associate Vice President for OIC, the student was offered the position. Our first intern, a graduate student majoring in Electrical Engineering with a passion for technology, started in mid-September. In December, we identified our second intern for the program, an undergraduate student majoring in Mechanical and Energy Engineering who started work in January 2018.

PATENT INTERNSHIP PROGRAM OVERVIEW

UNT Libraries and OIC's Patent Internship Program is co-managed by OIC's Director of Licensing and myself. Working together, we identify suitable candidates for the program and coordinate our efforts to develop their skills so they are able to successfully complete assignments. The OIC Director of Licensing manages intern workload, assigns projects, and arranges for technical training. I supervise and mentor interns, offering administrative support, business experience, and research expertise.

The Patent Internship Program provides an opportunity for interns to learn about the patentability and other aspects of intellectual property (IP). Interns are also trained on how to market technologies to industry with the hopes of licensing the IP for development and commercialization. I educate interns on useful and important information sources, complex search strategies, and analytical and judicious evaluation processes that further develop their research and critical thinking skills.

Interns contribute to the analysis of various technologies, patents, markets and industry relations in an effort to advise on the patentability and possible commercialization of IP owned by UNT. More specifically, they assist OIC in conducting patent research in public information databases and in scientific and technical literature. Interns research similar inventions, products, and ideas and advise on whether patent claims are currently predicted or practiced in the existing art.

Interns write technical reports based on their research for OIC staff to review, check, and verify their recommendations. Report information, data, and recommendations are supported by evidence from authoritative sources that are referenced throughout and cited at the end of each report. In addition, interns create marketing pieces to promote UNT technology and research to industry, identify relevant company contacts that might be interested in licensing the IP, and reach out to those identified under the direction of OIC staff and guidance from myself.

PATENT INTERNSHIP PROGRAM RESULTS

The program has not only achieved all of its objectives originally set forward at its formation, it has also exceeded expectations for all parties involved (UNT 2018). OIC was able to save valuable time and resources through the hard work of program interns and UNT Libraries was able to help advance important campus initiatives and prove itself as a trusted partner. Finally, UNT students were able to gain valuable work experience and specialized skills that they can leverage in today's competitive job market.

As a result of intern research and analysis, OIC was able to reduce expenditures on filing for patents with little commercial potential and increase staff outreach to researchers, leading to more disclosures. Royalty revenues from UNT technology licensed for commercialization in 2019 totaled $425,000, a new record high for OIC (UNT 2019). Also in 2019, UNT faculty filed 44 disclosures of inventions and intellectual property with commercial potential, up from 7 in 2015. OIC leadership has indicated that student interns offered the same value or better

than regular paid professionals. OIC's Director of Licensing stated, "The quality of [the interns'] reports have been equal to or surpassed tech transfer assessment by industry consultants who do this every day. We were not expecting results of this caliber this quickly" (UNT 2018).

In addition, the internship program has given the Libraries the opportunity to help advance the research and student development initiatives set as high priorities for UNT. By handling administrative tasks associated with student employment, the Libraries allowed OIC the opportunity to focus on the work of their unit. This relationship also helped demonstrate the Libraries' capacity to be a trusted partner that can make meaningful contributions in new ways to the campus community. Lastly, the Libraries was able to go beyond offering internships to only Library and Information Science students, a model that can help contribute to the growth of similar programs at other institutions (Dahl 2011).

Student interns in the program are given the opportunity to work as a team, supporting the development of solutions to real-world problems through research innovation. The program offers interns experience that is broader than just the licensing and marketing aspects of technology transfer: interns learn how to evaluate IP and industry research, write technology assessments that are helpful to industry, and analyze markets. They are assigned important and challenging work that enhances their communication, teamwork, and critical thinking skills – all skills that employers say are lacking in new college graduates (Hart Research Associates 2015). In the end, students acquire invaluable work experience that prepares them for career opportunities in technology transfer, patent law, marketing, venture capital, and private equity analysis.

After a successful 2.5 years, we are now in the process of moving the program under OIC entirely; I will be taking on more of a consultant role. In August 2019 UNT chose a new Vice President for Research and Innovation who is currently restructuring and expanding the division. As a result, the tech transfer unit is adding staff and additional space to their operations, so they are now in a position to take over all aspects of the internship program. Similarly, in my position as the Business Librarian, I have been expanding the reach of my services and now am physically embedded in UNT's G. Brint Ryan College of Business. Although I no longer have the resources to directly supervise and mentor interns, I will continue to offer my research expertise when needed.

BEST PRACTICES

UNT's Patent Internship Program offers many best practices on how librarians can develop collaborative partnerships that support important community initiatives. First, librarians need to identify those initiatives that are top priorities within their communities. Paying attention to community leadership and strategic plans will help librarians stay informed of the top issues being considered. Once an initiative is identified, librarians can look for new ways to support it by considering partnerships with those involved in the initiative. Such partnerships help mitigate risks in new ventures (Lin and Darnall 2014) and offer an opportunity to improve the library's standing in the community (Serpico 2016). Collaborative partnerships, like the one at UNT, require an open mind, flexibility, and responsiveness to change. Although failure may be a possibility, it should not deter creative attempts to solve problems.

Yvonne Dooley is a Business Librarian at the University of North Texas.

REFERENCES

AUTM. "Frequently Asked Questions." Accessed October 28, 2019. https://autm.net/about-tech-transfer/what-is-tech-transfer/tech-transfer-faq

Dewland, Jason and Cynthia M. Elliott. 2015. "Embedding Libraries in the University Commercialization Process." In *Partnerships and New Roles in the 21st-century Academic Library: Collaborating, Embedding, and Cross-training for the Future*, 41- 49. New York: Rowman & Littlefield.

Heart Research Associates. 2015. "Falling Short? College Learning and Career Success." Published January 20, 2013. https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf

Lin, Haiying, and Nicole Darnall. 2014. "Strategic Alliance Formation and Structural Configuration." *Journal of Business Ethics* 127 (3): 549–64. https://doi.org/10.1007/s10551-014-2053-7

Perkmann, Markus, Valentina Tartari, Maureen McKelvey, Erkko Autio, Anders Broström, Pablo D'Este, Riccardo Fini, Aldo Geuna, Rosa Grimaldi...Maurizio Sobrero. 2013. "Academic Engagement and Commercialisation: A Review of the Literature on University–Industry Relations." *Research Policy* 42 (2): 423-442. https://doi.org/10.1016/j.respol.2012.09.007

Serpico, Joan M. 2016. "Reaching University Students via Partnerships with Non-academic Departments." *Proceedings of the Conference for Entrepreneurial Librarians*. 2: 9-15. http://libjournal.uncg.edu/pcel/issue/view/129

Stewart, Gina. 2013. "Beyond the Bench: A Career in Technology Transfer." *The Chronicle of Higher Education* (blog). Published July 16, 2013. https://www.chronicle.com/blogs/onhiring/beyond-the-bench-a-career-in-technology-transfer/39607

University of North Texas. 2018. "Exceeding Expectations with New Patent Internship Program." Published August 8, 2018. https://research.unt.edu/article/exceeding-expectations-new-patent-internship-program

University of North Texas. 2019. "Impact of innovation: Banner Year in Tech Commercialization Signals Upward Trajectory for UNT." Published December 11, 2019. https://research.unt.edu/impact-innovation

ACADEMIC-PUBLIC LIBRARY COLLABORATION:

Opportunities and Obstacles in Texas Community College Libraries

By Marissa Saenz

EXECUTIVE SUMMARY

Libraries continue to find ways to respond to proposed cuts to their funding while maintaining access to services and materials that rise in cost 3-9% annually[1]. Whether these proposed cuts are due to a decline in public funding or a decrease in student enrollment (as can also be the case in academic libraries), librarians find creative ways to do more with less to best serve their communities. One approach to combat declining budgets and increasing costs is to share resources. To do so, librarians from several types of libraries choose to collaborate with each other to meet the ever-changing needs of library users. This research seeks to identify the extent to which collaboration occurs between community college libraries and public libraries throughout the state of Texas, the obstacles encountered by community college libraries that prevent collaboration with public libraries, and disparities, if any, based on geographic area. An analysis of survey responses from Texas community college librarians indicates that the geographic area of a given library does not significantly impact that library's ability to collaborate or the type of obstacles they encounter. The data does reflect, however, that libraries in more populated areas are more likely to engage in collaboration than those located in less populated areas, and that all libraries encounter similar obstacles to collaboration. A closer look at the types of collaboration these libraries are engaged in and the types of obstacles preventing collaboration can provide librarians and administrators the opportunity to engage in a conversation about possible areas of collaboration and ideas for overcoming obstacles in order to get the most out of available resources to the community.

BACKGROUND

Collaboration is an integral part of providing library services to a community in order to meet the diverse needs of the public being served and to foster lifelong learning of patrons of all educational levels. The majority of literature regarding library collaboration addresses partnerships between public libraries and K-12 schools, baccalaureate granting institutions, and other public organizations, with only a few examples referencing collaboration between public libraries and community college libraries. Of the examples in the literature of community college library-public library collaboration, the focus is often on the process of forming a partnership and the outcome of the collaboration, examining the challenges and obstacles to collaboration in a superficial and anecdotal manner.

The purpose of this research is to identify which obstacles exist and to what extent those obstacles are preventing community college libraries from collaborating with public libraries. The research will also provide an overview of the extent and type of collaboration occurring between community college libraries and public libraries in Texas. Furthermore, this study seeks to identify any differences between libraries' likelihood to collaborate and types of obstacles encountered due to geographic area.

METHODOLOGY

This study used an online survey created using Google Forms that was sent via email to 463 community college librarians in the state of Texas. Questions were designed to identify types of collaborative efforts community college libraries are engaging in with public libraries and the types of obstacles, if any, affecting collaboration efforts between these types of libraries.

The survey included both closed-ended and open-ended questions; however, the open-ended questions were designed to supplement the closed-ended questions, which included dichotomous, multiple choice, demographic, and rank order questions (see Appendix A for survey questions).

Answer choices to discrete questions pertaining to collaboration are based on the literature and are organized into three main categories: resource-based, program-based, and services-based. The types of obstacles provided as answer choices are organized into four categories based on the literature: administrative support, availability of resources (material, financial, and human), communication/relationships, and geographic location.

To maintain anonymity, the survey did not ask for identifying information such as respondent's name or institution. However, the survey did include a few demographic questions to determine the size and type of population the respondent's academic library serves. Geographic area classification is based on U.S. Census Bureau definitions of urban, urban cluster, and rural areas (see Appendix B for U.S. Census Bureau geographic classification). This classification is used as the independent variable to evaluate whether or not there is a correlation between libraries' likelihood to collaborate and obstacles encountered based on geographic area.

Potential survey respondents were selected based on their employment with an institution listed on the Texas Association of Community Colleges (TCCTA) website (see Appendix C for list of Texas community colleges). Email addresses for potential respondents were obtained from institutional directories found through community college's websites. Potential respondents were given two weeks to complete the survey. A reminder email with the link to the survey was sent out at the one-week mark. Forty-two surveys were returned as undeliverable. Survey responses were received from eighty-six librarians.

FINDINGS

Respondents represent each geographic area with the majority of respondents, 61.6%, residing in urban areas, which are defined as areas with 50,000 or more inhabitants. Urban cluster and rural area respondents make up 19.8% and 18.6% of the total respondents respectively.
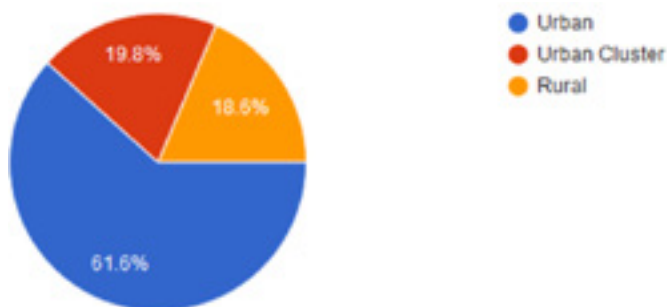
The majority, 75.6%, of community college library survey respondents are not currently collaborating with public libraries. Of those not currently collaborating, 92.3% are not considering collaboration.

Is your library currently collaborating with a public library?
86 responses

- Yes
- No

75.6%
24.4%
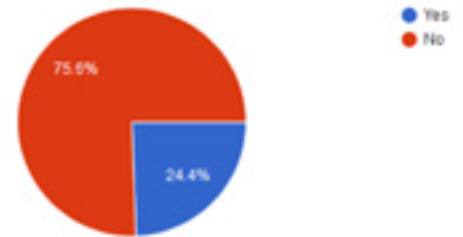
Is your library considering collaboration with a public library?
65 responses

- Yes
- No

92.3%
7.7%
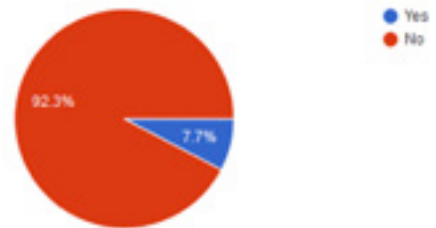
In examining whether obstacles were preventing collaboration with public libraries, 41.7% of respondents who stated they do not collaborate indicated there were no obstacles to collaboration. For those community college libraries considering collaboration, 80% of respondents indicated that they had not encountered any obstacles that were delaying their efforts. Similarly, of those community college libraries that are currently engaged in collaborative efforts with a public library, only 28.6% reported encountering obstacles when establishing a collaborative relationship with a public library (See Appendix D for graphs of survey responses to encountering obstacles questions).

The survey respondents that reported encountering obstacles while collaborating or attempting to establish a collaborative relationship indicated that communication/relationships was the most encountered obstacle, followed by administrative support, availability of resources, and geographic location. Of the survey respondents that indicated that they are not collaborating, nor are they considering collaboration, availability of resources (material, financial, human) was identified as the main obstacle preventing collaboration (See Appendix E for graphs of survey responses to questions regarding types of obstacles). In open-ended responses, respondents identified other obstacles as competing priorities and technical/computer issues (See Appendix F for a list of other responses).

Of the 24.4% of community college library survey respondents that are engaging in a form of collaboration, 61.9% are engaged in resource-based collaboration, e.g. sharing collections, cataloging and/or circulation systems; 57.1% are engaged in program-based collaboration, e.g. partnering for common reading programs, film screenings, and dialogue series; and 33.3% are engaged in services-based collaboration, e.g. sharing instruction, research help, and training.

Which of the following types of collaboration is your library engaged in? (check all that apply)

21 responses
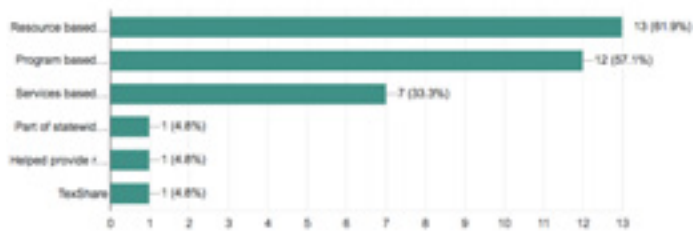
Of the 7.7% of respondents that indicated that they were considering collaboration, 40% indicted that they were considering each of the three main categories presented in the survey: resource-based, program-based, and services-based (See Appendix G for collaboration type responses).

Chi-square tests were used to investigate the connection between geographic area (rural, urban cluster, urban) and the likelihood that libraries are collaborating, considering collaboration, type of collaborations engaged in, type of collaborations considering, type of obstacles encountered, and type of obstacles preventing collaboration. The analysis indicates that there is no statistical significance between geographic area and these variables (See Appendix H for chi-square tests). Chi-square tests run by location (geographic area) and obstacle type and by location (geographic area) and collaboration type also yielded results that reflected no statistically significant relationship.

Multivariate analysis of variance (MANOVA) was used to analyze the one ranking question included in the survey pertaining to order of importance of the types of obstacles encountered. The analysis indicates that there is no statistically significant connection between the library's geographic area and how librarians ranked the obstacles of collaborating, considering collaboration, or not collaborating due to obstacles (see Appendix I for MANOVA tests).

RECOMMENDATIONS

Although this research study indicates that a community colleges' geographic area, whether in a rural, urban cluster or urban setting, does not have a statistically significant impact on the amount of collaboration, intent to collaborate, obstacles encountered, or obstacles preventing collaboration with a public library, the data does provide a previously unknown overview of the state of community college library collaboration in Texas. The data also provide insight into the type of obstacles encountered by community college libraries that are engaged in, interested in, or deterred from collaborating with public libraries. With this information, librarians and administrators can be more strategic in their way of thinking and approach with regard to engaging in a collaborative endeavor with a public library. By developing relationships that will allow libraries to leverage each other's resources (human, financial, and material), libraries can better position themselves to offer programs, services, and additional resources otherwise not available to the community they serve and to better respond to budget reductions without having to sacrifice as much of what is currently offered.

The next step for researchers is to evaluate public librarians' openness to collaboration in order to gain the perspective of the other side of the collaboration equation. If both types of libraries, public and community college are aware of each other's interest in establishing a collaborative relationship, librarians may be more likely to reach out to each other. Also, if both sides are aware of the potential obstacles, they can preemptively prepare to address them. Understanding the interest from both sides as well as the obstacles each side faces, can help both sides to better communicate about the obstacles they face and work together to overcome them. Researchers can also identify libraries that are currently collaborating and develop case study examples to provide a more in depth overview of what types of collaboration are occurring in Texas and provide insight into how the community college libraries managed the obstacles they encountered.

From this data, librarians can see that a certain level of collaboration exists in urban, urban cluster, and rural areas in Texas. They can also see that urban areas are more likely to collaborate than urban cluster and rural areas and urban clusters are more likely to consider collaboration than rural areas. The data also shows, that of the libraries currently collaborating and those considering collaboration, the number of obstacles encountered is fewer than those reported by libraries that have indicated there are obstacles preventing collaboration. This could indicate that obstacles are preventing more collaborative efforts from occurring across the state or indicate that there is a greater perception of obstacles than actually exist. Regardless, the data does provide insight into the type of obstacles that community college librarians believe are preventing them from engaging in collaborative efforts with public libraries. Further, this data can serve as a great starting point for librarians to work with their administrators to begin breaking down the barriers preventing them from building collaborative relationships with their public library counterparts.

Library administrators can also use this information to begin working with their librarians to overcome obstacles that are preventing outreach to public librarians and to begin a dialogue about academic-public library collaboration. Administrators can begin to think about how they could frame this type of external partnership when presenting a case for collaboration to their leadership in order to secure higher-level administrative support. If administrators support cross-library collaboration, librarians will take a cue from their leadership and may be more likely to engage in a conversation with their peers, both internal and external, regarding collaborative options.

CONCLUSION

This research study addresses a gap in the literature regarding academic-public library collaboration at the community college level. By examining the type of collaboration occurring between community colleges and public libraries in Texas, librarians and administrators now have a snapshot of academic-public library collaboration in the state. This provides a starting point for a dialogue between librarians and administrators interested in expanding or developing a collaborative relationship with a public library. Examining the obstacles encountered

when collaborating, attempting to collaborate, or preventing collaboration is important to the ongoing discussion pertaining to academic-public library collaboration. Being prepared for certain types of obstacles and how to overcome them can lead to greater success in collaborative endeavors. If more librarians and administrators see collaboration as a realistic option to mitigate the negative impact of loss of funding they could shift the way Texas libraries, both at the community college and public level, operate.

Marissa Saenz is an Outreach and Instruction Librarian at Del Mar College.

[1] Bosch, S. & Henderson, K. (2017). New world, same model: Periodicals price survey 2017. *Library Journal*, 142(7), 40-45.

[2] Baker, R. K. (1989). Expanding small college LRC services through creative partnerships. *Community & Junior College Libraries*, 6(1), 89-93; Overfield, D., & Roy, C. (2013). Academic and public library collaboration: increasing value by sharing space, collections, and services. *White paper presented at the Association of College and Research Libraries (ACRL) proceedings*; Parkinson, M. B. (2013). A win-win collaboration. *Pennsylvania Libraries, 1*(1), 77; Shawgo, K. (2012). Creating and sustaining academic-public library collaborations in the triangle area of North Carolina. *Master's thesis, The University of North Carolina at Chapel Hill*.

[3] Knipp, P. J., Walker, K. R., Durney, K., & Perez, J. E. (2015). Public and academic library collaboration through an anime and comics enthusiasts convention (ACEcon). *Journal of Library Innovation*, 6(2), 73-88; Nous, R. A., & Roslund, M. (2009). Public library collaborative collection development for print resources. *Journal of the Library Administration & Management Section*, 5(3), 5-14; Sarjeant-Jenkins, R., & Walker, K. (2014). Working together: Joint use Canadian academic and public libraries. *Collaborative Librarianship*, 6(1); Shawgo, K. (2012). Creating and sustaining academic-public library collaborations in the triangle area of North Carolina. *Master's thesis, The University of North Carolina at Chapel Hill*.

[4] "Geography." *U.S. Census Bureau*. https://www.census.gov/geo/reference/urban-rural.html

REFERENCES

Bahr, A. & Bolton, N. (2002). Share the experience: Academic library, public library, and community partnerships. *The Southeastern Librarian*, 50(2), 26-32.

Baker, R. K. (1989). Expanding small college LRC services through creative partnerships. *Community & Junior College Libraries*, 6(1), 89-93.

Bosch, S. & Henderson, K. (2017). New world, same model: Periodicals price survey 2017. *Library Journal*, 142(7), 40-45.

"Geography." *U.S. Census Bureau*. Last modified December 8, 2016. https://www.census.gov/geo/reference/urban-rural.html

Gunnels, C. B., Green, S. E., & Butler, P. M. (2012). Joint libraries: Models that work. *American Libraries*. (Sept/Oct), 24-28.

Knipp, P. J., Walker, K. R., Durney, K., & Perez, J. E. (2015). Public and academic library collaboration through an anime and comics enthusiasts convention (ACEcon). *Journal of Library Innovation*, 6(2), 73-88.

Nous, R. A., & Roslund, M. (2009). Public library collaborative collection development for print resources. *Journal of the Library Administration & Management Section*, 5(3), 5-14.

Overfield, D., & Roy, C. (2013). Academic and public library collaboration: increasing value by sharing space, collections, and services. *White paper presented at the Association of College and Research Libraries (ACRL) proceedings*.

Parkinson, M. B. (2013). A win-win collaboration. *Pennsylvania Libraries*, 1(1), 77.

Sarjeant-Jenkins, R., & Walker, K. (2014). Working together: Joint use Canadian academic and public libraries. *Collaborative Librarianship*, 6(1).

Shawgo, K. (2012). Creating and sustaining academic-public library collaborations in the triangle area of North Carolina. Master's thesis, *The University of North Carolina at Chapel Hill*.

Wilding, T. (2002). External partnerships and academic libraries. *Library Management*, 23(4/5), 199-202.

Appendix A: Academic-Public Library Collaboration Survey Questions

Q1. Is your library currently collaborating with a public library?
☐ Yes ☐ No
If yes, continue to Q2.
If no, continue to Q9.

Q2. Is your library a part of a joint use library facility?
☐ Yes ☐ No
If yes, continue to Q3.
If no, continue to Q4.

Q3. Please indicate your type of joint-use library facility.
☐ Academic-Public
☐ Academic-School
☐ Other
Continue to Q4.

Q4. Which of the following types of collaboration is your library engaged in? (check all that apply)
☐ Resource based (e.g. shared collections, cataloging, and circulation systems)
☐ Program based (e.g. common reading program, film screenings, dialogue series)
☐ Services based (e.g. instruction, research help, training - in person and online)
☐ Other
Continue to Q5.

Q5. Please share example of the types of collaboration your library is engaged in.

Continue to Q6.

Q6. When establishing a collaborative relationship with the public library, did you encounter any obstacles/challenges?
☐ Yes ☐ No
If yes, continue to Q7.
If no, continue to Q8.

Q7. Did you encounter any of the following types of obstacles/challenges? (check all that apply)
☐ Administrative support
☐ Availability of resources (material, financial, human)
☐ Communication/Relationships (between libraries/librarians)
☐ Location (geographic/physical location of libraries)
☐ Other
Continue to Q8.

Q8. Please rank the following obstacles/challenges in order of importance on your ability to collaborate with a public library, with 1 being the most important and 4 being the least important.

___ Administrative support
___ Availability of resources
___ Communication/relationships
___ Location
Continue to Demographic Questions

Q9. Is your library considering collaboration with a public library?
☐ Yes ☐ No
If yes, continue to Q10.
If no, continue to Q15.

Q10. Which of the following types of collaboration are you considering? (check all that apply)
☐ Resource based (e.g. shared collections, cataloging, and circulation systems)
☐ Program based (e.g. common reading program, film screenings, dialogue series)
☐ Services based (e.g. instruction, research help, training - in person and online)
☐ Other
Continue to Q11.

Q11. Please share example of the types of collaboration considering.
Continue to Q12.

Q12. Have you encountered any obstacles/challenges that are delaying your efforts in establishing a collaborative relationship with a public library?
☐ Yes ☐ No
If yes, continue to Q13.
If no, continue to Q14.

Q13. Have you encountered any of the following obstacles/challenges? (check all that apply)
☐ Administrative support
☐ Availability of resources (material, financial, human)
☐ Communication/Relationships (between libraries/librarians)
☐ Location (geographic/physical location of libraries)
☐ Other
Continue to Q14.

Q14. Please rank the following obstacles/challenges in order of importance on your ability to collaborate with a public library, with 1 being the most important and 4 being the least important.
___ Administrative support
___ Availability of resources
___ Communication/relationships
___ Location
Continue to Demographic Questions.

Q15. Are there obstacles/challenges preventing you from considering collaboration?
☐ Yes ☐ No
If yes, continue to Q16.
If no, continue to Q18.

Q16. Which of the following obstacles/challenges are preventing you from considering collaboration? (check all that apply)
☐ Administrative support
☐ Availability of resources (material, financial, human)
☐ Communication/Relationships (between libraries/librarians)
☐ Location (geographic/physical location of libraries)
☐ Other
Continue to Q17.

Q17. Please rank the following obstacles/challenges in order of importance on your ability to collaborate with a public library, with 1 being the most important and 4 being the least important.
__ Administrative support
__ Availability of resources
__ Communication/relationships
__ Location
Continue to Demographic Questions.

Q18. Please share any reasons you may have for not considering collaboration with a public library. Continue to Demographic Questions.

Demographic Questions

The U.S. Census Bureau classifies geographic areas into three categories defined as:
• Urban - 50,000 or more people
• Urban Cluster - 2,500 to 49,999 people adjacent to urban areas
• Rural - all other areas not included in an urban or urban cluster

Based on these definitions, in what type of community is your library located?
☐ Urban
☐ Urban-Cluster
☐ Rural

How many librarians (total full and part time) work in your library?

How many students does your library serve (based on Fall 2016 headcount)?

Appendix B: U.S. Census Bureau's Urban-Rural Classification

The Census Bureau's urban-rural classification is fundamentally a delineation of geographical areas, identifying both individual urban areas and the rural areas of the nation. The Census Bureau's urban areas represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses. The Census Bureau delineates urban areas after each decennial census by applying specified criteria to decennial census and other data.

The Census Bureau identifies two types of urban areas:

• Urbanized Areas (UAs) of 50,000 or more people;
• Urban Clusters (UCs) of at least 2,500 and less than 50,000 people.

"Rural" encompasses all population, housing, and territory not included within an urban area.

https://www.census.gov/geo/reference/urban-rural.html

Appendix C: Texas Community Colleges

ALAMO COLLEGES DISTRICT
• Alamo Colleges: Northeast Lakeview College
• Alamo Colleges: Northwest Vista College
• Alamo Colleges: Palo Alto College
• Alamo Colleges: San Antonio College
• Alamo Colleges: St. Philip's College

ALVIN COMMUNITY COLLEGE

AMARILLO COLLEGE

ANGELINA COLLEGE

AUSTIN COMMUNITY COLLEGE
• Cypress Creek Campus
• Eastview Campus
• Elgin Campus

• Hays Campus
• Highland Campus
• Northridge Campus
• Pinnacle Campus
• Rio Grande Campus
• Riverside Campus
• Round Rock Campus
• South Austin Campus

BLINN COLLEGE
- Brenham
- Bryan
- Schulenburg

BRAZOSPORT COLLEGE

CENTRAL TEXAS COLLEGE

CISCO COLLEGE

CLARENDON COLLEGE

COASTAL BEND COLLEGE

COLLEGE OF THE MAINLAND

COLLIN COLLEGE
- Central Park
- Preston Ridge
- Spring Creek

DALLAS COUNTY COMMUNITY COLLEGE DISTRICT (DCCCD)
- DCCCD: Brookhaven College
- DCCCD: Cedar Valley College
- DCCCD: Eastfield College
- DCCCD: El Centro College
- DCCCD: Mountain View College
- DCCCD: North Lake College
- DCCCD: Richland College

DEL MAR COLLEGE

EL PASO COMMUNITY COLLEGE
- Mission del Paso Library
- Northwest Library
- Rio Grande Library
- Transmountain Library
- Valle Verde Library
- Library Technical Services

FRANK PHILLIPS COLLEGE

GALVESTON COLLEGE

GRAYSON COLLEGE

HILL COLLEGE
- Hillsboro Library
- Cleburne Library

HOUSTON COMMUNITY COLLEGE SYSTEM
- Central College
  – Central Campus
  – South Campus (Willie Lee Gay Hall)
- Northeast College
  – Northeast Campus - Codwell
  – North Forest Campus
  – Northline
  – Pinemont
- Northwest College
  – Alief
  – Katy

– Spring Branch
- Southeast College
  – Eastside
  – Felix Fraga
- Southwest College
  – Stafford Campus
  – West Loop Campus

HOWARD COLLEGE
- Big Spring
- San Angelo
- SWCID

KILGORE COLLEGE

LAREDO COMMUNITY COLLEGE
- Harold R. Yeary Library - Ft. McIntosh Campus
- Senator Judith Zaffirini Library - South Campus

LEE COLLEGE

LONE STAR COLLEGE SYSTEM
- Lone Star College-CyFair
- Lone Star College-Kingwood
- Lone Star College-Montgomery
- Lone Star College-North Harris
- Lone Star College-Tomball
- Lone Star College-University Park
- Lone Star College - University Center at The Woodlands
- Atascocita Center
- Creekside Center

MCLENNAN COMMUNITY COLLEGE

MIDLAND COLLEGE

NAVARRO COLLEGE

NORTH CENTRAL TEXAS COLLEGE
- Gainesville
- Corinth
- Bowie
- Flower Mound

NORTHEAST TEXAS COMMUNITY COLLEGE

ODESSA COLLEGE

PANOLA COLLEGE

PARIS JUNIOR COLLEGE

RANGER COLLEGE
- Ranger Campus
- Erath County Campus
- Brown County Campus

SAN JACINTO COLLEGE
- San Jacinto College Central Campus
- San Jacinto College North Campus
- San Jacinto College South Campus

SOUTH PLAINS COLLEGE
- Levelland Campus
- Reese Center
- Plainview Center

SOUTH TEXAS COLLEGE
- Mid-Valley
- Nursing & Allied Health
- Pecan
- Starr County
- Technology
- La Joya Higher Education Center

SOUTHWEST TEXAS JUNIOR COLLEGE
- Uvalde
- Del Rio
- Eagle Pass
- Crystal City

TARRANT COUNTY COLLEGE
- Tarrant County College: Northeast Campus
- Tarrant County College: Northwest Campus
- Tarrant County College: South Campus
- Tarrant County College: Southeast Campus
- Tarrant County College: Trinity River Campus
- Tarrant County College: Connect Campus

TEMPLE COLLEGE

TEXARKANA COLLEGE

TEXAS SOUTHMOST COLLEGE

TRINITY VALLEY COMMUNITY COLLEGE

TARRANT COUNTY COLLEGE
- Athens
- Kaufman
- Palestine
- Terrell

TYLER JUNIOR COLLEGE

VERNON COLLEGE

VICTORIA COLLEGE

WEATHERFORD COLLEGE

WESTERN TEXAS COLLEGE

WHARTON COUNTY JUNIOR COLLEGE
- Wharton
- Sugar Land
- Richmond
- Bay City

http://www.tacc.org/pages/texas-colleges

Appendix D: Survey responses to encountering obstacles questions

Respondents not collaborating, not considering collaboration

Are there obstacles/challenges preventing you from considering collaboration?

60 responses
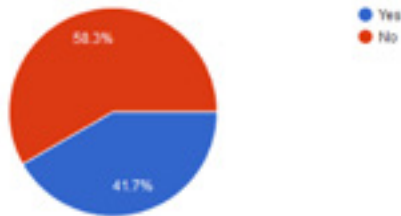
Respondents collaborating

When establishing a collaborative relationship with the public library, did you encounter any obstacles/challenges?

21 responses

Respondents considering collaboration

Have you encountered any obstacles/challenges that are delaying your efforts in establishing a collaborative relationship with a public library?

5 responses
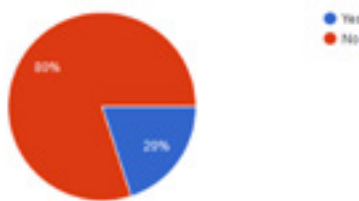
Appendix E: Survey responses to types of obstacles questions

Survey responses to types of obstacles questions

Did you encounter any of the following types of obstacles/challenges? (check all that apply)

6 responses
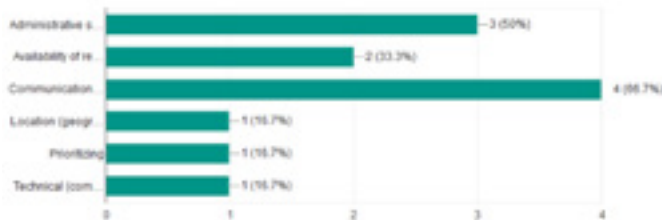
Respondents considering collaboration

Have you encountered any of the following obstacles/challenges? (check all that apply)

1 response
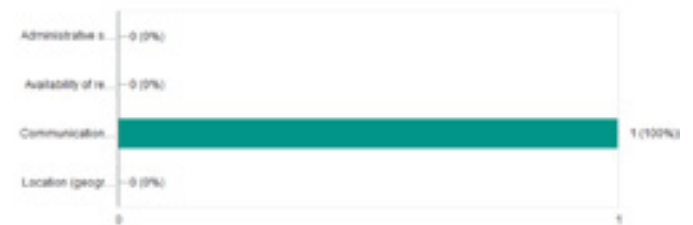
Respondents not collaborating, not considering collaboration

Which of the following obstacles/challenges are preventing you from considering collaboration? (check all that apply)

26 responses
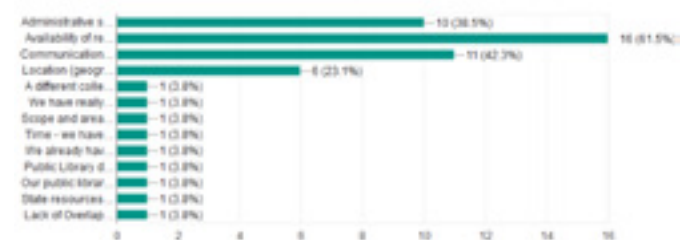
Appendix F: Reasons for not considering collaboration

Please share any reasons you may have for not considering collaboration with a public library.

☐ No interest (2)

☐ Collaborating with high school librarians is a higher priority

☐ Short staffed, many current projects and working with faculty

☐ Neither seem interested in collaborating.

☐ It simply has not come up and as many other libraries we're understaffed with more than enough projects running.

☐ We promote our public library and they promote us. But, we serve different purposes in our community.

☐ I am not sure about this as I am just a small library under branch community college.

☐ None. No plans have been made

☐ There is no Public Library we are the Public Library as well as the college library.

☐ Our Public Library just got a new director. Waiting for them to settle in.

☐ As far as I know we are not collaborating with a public library

☐ N/A

☐ We have collaborated with a public library occasionally but the main reasons for not collaborating more are time and lack of staff.

☐ I'm just a reference librarian

☐ I think this concept is a great idea! We are an 11 campus community college that serves many communities so it would be up to individual campuses (possibly) to contact their community public libraries. I think nothing has happened because there is quite a bit of bureaucracy to get things moving. But once a great idea is started, I don't see any reason why we can't collaborate :)

☐ None, no project(s) being considered.

☐ I don't think it's been considered.

☐ Both libraries have recently gone through a transition of leadership and the new leaders have not reached out to each other --- yet.

☐ Answered no but since I would have no input, don't know if it's viable. Should have been a don't know option on this question.

☐ None

☐ Different populations and needs

☐ Do not see a need for collaboration that is not already fulfilled by the use of ILL.

☐ Haven't thought about it. Too many other things to address within the Library. We already have partnerships with joint Community college degrees and high schools.

Appendix G: Survey responses to encountering obstacles questions

Respondents collaborating or considering collaboration broken down by geographic area

Type of collaboration by library location (geographic area)

Type of collaboration considering by library location (geographic area)
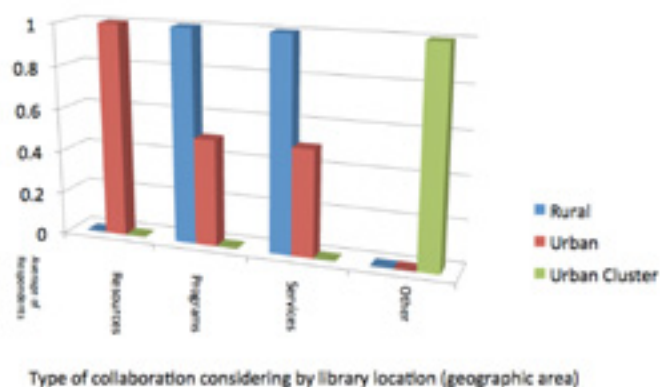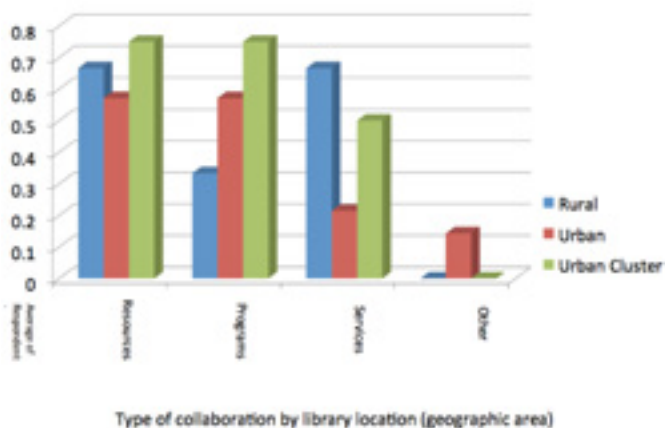
Appendix H: Chi-square Test

Location and Collaboration
The chi-square statistic is 0.322. The p-value is .851. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.322ª	2	.851
Likelihood Ratio	.331	2	.848
N of Valid Cases	84		

Location and Considering Collaboration
The chi-square statistic is 1.361. The p-value is .506. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.361ª	2	.506
Likelihood Ratio	1.212	2	.545
N of Valid Cases	63		

Location and Obstacles Preventing Collaboration
The chi-square statistic is 1.398. The p-value is .497. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.398ª	2	.497
Likelihood Ratio	1.454	2	.483
N of Valid Cases	58		

Location and Number of Obstacles Preventing Collaboration
The chi-square statistic is 7.339. The p-value is .501. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.339ª	8	.501
Likelihood Ratio	9.467	8	.304
N of Valid Cases	58		

Location and Number of Collaborations Considering
The chi-square statistic is 6.667. The p-value is .155. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.667ª	4	.155
Likelihood Ratio	6.730	4	.151
N of Valid Cases	5		

Location and Number of Collaborations Engaged In
The chi-square statistic is 6.508. The p-value is .164. The result is not significant at p < .05.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.508ª	4	.164
Likelihood Ratio	6.704	4	.152
N of Valid Cases	21		

Appendix I: Multivariate Analysis of Variance (MANOVA)

The result is not significant. The p-value is greater than .05.

Collaborating

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.969	166.140[b]	3.000	16.000	.000
	Wilks' Lambda	.031	166.140[b]	3.000	16.000	.000
	Hotelling's Trace	31.151	166.140[b]	3.000	16.000	.000
	Roy's Largest Root	31.151	166.140[b]	3.000	16.000	.000
location	Pillai's Trace	.216	.688	6.000	34.000	.661
	Wilks' Lambda	.785	.688[b]	6.000	32.000	.661
	Hotelling's Trace	.273	.683	6.000	30.000	.665
	Roy's Largest Root	.268	1.519[c]	3.000	17.000	.246

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
location	col_rank_admin	.857	2	.429	.536
	col_rank_resources	3.179	2	1.589	1.447
	col_rank_comm	3.179	2	1.589	1.314
	col_rank_location	.857	2	.429	.379

Considering Collaboration

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.947	36.000[b]	1.000	2.000	.027
	Wilks' Lambda	.053	36.000[b]	1.000	2.000	.027
	Hotelling's Trace	18.000	36.000[b]	1.000	2.000	.027
	Roy's Largest Root	18.000	36.000[b]	1.000	2.000	.027
location	Pillai's Trace	.500	1.000[b]	2.000	2.000	.500
	Wilks' Lambda	.500	1.000[b]	2.000	2.000	.500
	Hotelling's Trace	1.000	1.000[b]	2.000	2.000	.500
	Roy's Largest Root	1.000	1.000[b]	2.000	2.000	.500

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F
location	con_rank_admin	1.200	2	.600	.
	con_rank_resources	1.000	2	.500	1.000
	con_rank_comm	1.800	2	.900	1.800
	con_rank_location	9.200	2	4.600	.
	con_rank_location	.000	2	.000	.

Not Collaborating Due to Obstacles

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.957	140.738[b]	3.000	19.000	.000
	Wilks' Lambda	.043	140.738[b]	3.000	19.000	.000
	Hotelling's Trace	22.222	140.738[b]	3.000	19.000	.000
	Roy's Largest Root	22.222	140.738[b]	3.000	19.000	.000
location	Pillai's Trace	.195	.718	6.000	40.000	.637
	Wilks' Lambda	.809	.710[b]	6.000	38.000	.644
	Hotelling's Trace	.233	.698	6.000	36.000	.653
	Roy's Largest Root	.215	1.430[c]	3.000	20.000	.263

Tests of Between-Subjects Effects

Dependent Variable	Type III Sum of Squares	df	Mean Square	F
prev_rank_admin	.075	2	.038	.038
prev_rank_resources	1.196	2	.598	.438
prev_rank_comm	4.292	2	2.146	2.080
prev_rank_location	1.696	2	.848	.551

An Overview of Literacy Technology Skills in the Transition from Secondary Schools to College in the Latino Community

By Dr. Rosenid Hernandez-Badia and Dr. Leonides Perez-Martinez

INTRODUCTION

The Latino community is the largest minority in the United States (US) with 17.9%. Many of this minority are students who are enrolled in high school and college, 23.7% and 19.1%, respectively. (Census Bureau, 2020). There are a series of factors that can impact that number in reference to Literacy and Technology Skills. After the revision of literature, there are four major ones that play an important role in the upbringing of students throughout their school life toward college and beyond: Technology, Research, Soft Skills, and College Readiness. How do these factors impact the Latino community and their Technology Literacy Skills? Then, how can the library and librarian help carve the pathway to success? The librarian and the library can open the doors to learning how to incorporate technology skills. Everything the students need to pursue their college degree is completed, and the student is ready to start their life journey better prepared. Literacy and Technology Skills begin in the library through our extensive programs supporting each of the four factors that facilitate both present and future success for our students.

TECHNOLOGY

By including the use of technology in the study of information literacy, we can strengthen the education system and open a world of new information to students. For this reason, librarians in secondary schools and colleges have developed tools and learning resources to introduce concepts and skills of information literacy in daily procedures. Actually, students have a greater responsibility in the creation of new knowledge because they are being taught how to access and ethically use the rapidly changing information available to them.

The Texas Education Agency (2019; 2017); American Association of School Librarians (2018) and Association of College & Research Libraries (2018) develop standards to provide a path for librarians to improve instructional sessions, homework and courses by connecting content to information literacy. In this way, students are able to collaborate with the learning at the same time that we teach them how to interact with technology. Among the practices used in our centers, we have incorporated laboratories to integrate technology into teaching, learning, and research in a variety of ways. For example, the language laboratory of the bilingual library incorporates the teaching and learning of the English and Spanish language by offering collaboration with face-to-face teachers and integrating programs that encourage students to use technology skills. Additionally, in secondary school, technological equipment has been used to support the provision of the necessary skills for the development of information searches that will be used both in their classes and in their professional lives.

Technology companies will continue to develop tools that will be approved for educational spaces and that keep the attention of students more easily. In addition, these technologies not only prepare them for their future, but also involve combined points of view and deliberating ideas. In general, the technology skills help students develop and generate creativity, communication, critical thinking, problem solving, technology operations, and digital citizenship. In addition, teachers and librarians can benefit greatly from technological advances to make their work more attractive and more efficient.

There are a few tips to enhance the performance of the Latino community and others on how technology can foster "Real Reading" (Knapp, 2019); technology allows the reader to practice basic literacy skills more effectively and have more fun, it increases the number and variety of texts available, it helps struggling readers, and it brings out the social aspect in reading. These tips can be used from middle school all the way to college. With practice, the students will integrate the skills and use them on a regular basis.

RESEARCH

According to the American Library Association, ALA (2000), an individual who leads the skills or research for information is a

person capable of recognizing their own need. The student has the ability and skills to locate, evaluate, and use information effectively, no matter the decision-making or problem solving throughout life. Information searches are necessary because they form the basis for learning throughout life. These information competencies are common to all disciplines, to all learning environments, and to all levels of education. ACRL (2001) states that if a student is capable of accessing and using information to answer research questions, the student can then fully interact with the curriculum through collaboration and teamwork. The ACRL aims to achieve the teaching of information competencies to the student not only to finish a career but also to ensure mastery of those competencies and the ethical management of that information.

TEA (2017) also emphasizes the importance of the library in the student learning process by having available information resources that support the institutional curriculum and incorporating the management of qualified staff. TEA adopts the standards of its organization for the fulfillment of teaching with the information competencies in all its educational levels. In both high school and college, researching information is directly related to educational processes and finds a home in both the professional and personal lives of the students. According to the U.S. Department of Labor Secretary Commission on Achieving Necessary Skills (SCANS), indicates that these information search competencies develop essential skills to strengthen job training (Fluixá, Garcia, & Saurin, 2010).

In summary TEA, Texas School Library Programs and ALA have developed a common link where they present positive results regarding the integration of teachers and librarians and their contributions to the process of knowledge creation when students are immersed in the search for information. These capabilities are part of a self-directed learning to evaluate your own knowledge and selection of resources effectively. In the end, these teaching techniques in the student mean that the student is gradually independent. This reaffirms that the researching for effective information is a fundamental tool for learning.

SOFT SKILLS

Assume your student needs to select only two Soft Skills to thrive for life; which one is more important? You take communication and collaboration, hoping that is the right decision. Guess what? You are right! Yes, both are mentioned with importance in all the components of the theoretical framework for this research.

In the 21st century, communication and collaboration is the key to success. By taking advantage of technology, the students can develop communication skills while preparing thoughts and sharing outcomes digitally with others. Then, on ISTE (International Society for Technology in Education), are part of the innovation in education.

Communication is vital for the integration of the AASL Library Standards and TX Library Standards. When working within the Include and Collaborate standards, you are merging everything towards the success of the Student-Centered theory. Also, don't forget about the ALA Standards for Higher Education; for the management of personnel/external relations, communication, and collaboration, these standards are imperative.

So, how does all of this affect the use of Soft Skills in the Latino community? The answer is simple: persistence. Yes, studies have demonstrated that the Latino community is the number one minority enrolling in college but not the one that is graduating; therefore, Latinos are being retained. Other priorities for the Latino community can be associated with less retention rates. Where a person comes from has a significant impact on success. A person's background can bring limitations such as competing with work and family responsibilities, poor study skills, feelings of depression, inadequacy, sadness, and weak English/Math skills (NASP, 2016). The Latino population is not realizing the benefits of increasing quality of life after finishing a college degree. Latinos are disconnected from the college enrollment process, they feel attrition in high school (Sanchez, 2015).

There are so many opportunities to move forward and stop procrastinating in this aspect. Latino students need to be creative and avoid the expectation of staying as followers. This is the time, more than ever, to stand up, communicate and collaborate. It is crucial to get a good job in the future to learn to give and receive constructive criticism (Cho, 2017). The library is the cradle and the school librarian, the nurturing hand; the librarian is in charge of providing connections that are deep and meaningful in order to empower the Latino families with the needed skills to overcome the gaps, stay focused on the big picture, and not take short cuts or lose time on less important goals.

How can you be that nurturing hand? First, the library doors are always open; it is a place ready for literacy, collaboration, and communication. Bring in the parents for a meeting, training, storytime, games, literacy activities that involve their shared time with the students in a non-classroom environment. For example, Math/Science/Literacy Game Nights, Parent Academy, Career Day, Garden/Ornate, Library Helpers, Lunch assistance, Homework Helper and many more. These are all valuable experiences that allow the librarian to interact with parents and teach them the ways to reach the big picture and will thereby help the students get there easier.

COLLEGE READINESS

The college retention rate is different depending on the institutional type and the student demographics. At Texas A&M and the University of Texas at Austin, 80% of college students complete their program within 6 years; in contrast, the rest of the United States has an average of 39% of students matriculating in 4 years. (Gonzalez, 2015). Additionally, Latinas are twice as likely to complete a degree than their Latino male counterparts. Culture and perseverance to earn a college degree are linked. The culture impacts the performance of the students from school all the way into college. There is a difference between being college eligible and being college ready in Latinos (Sanchez, 2015).

The Latino College Readiness rate from a Dallas ISD school is 41/42% (Franklin IEA Report Card 2019), illustrating the gap between secondary school and college. The key to success in college is for the student to be able to write, read, speak, research and listen during literacy and learning activities. To help bridge this gap between college eligibility and college

readiness, professors/teachers need to develop effective and comprehensive instructional models that help students learn literacy, summarization, main idea/details, inferencing, predicting, and analyzing texts all while practicing technology skills in the process. What happens if the student doesn't feel sure of their ability or performance? In school, the student will try to deviate the attention of the teacher toward something else. Most of the cases they will act like they understand and in others, bad behavior is around the corner. The educator needs to be proactive and catch those red flags.

This is one of the opportunities for the librarian to come in and do the magic. The indirect approach is to build a positive relationship with the student and try to redirect the doubts and insecurities toward skills for life. For example, the librarian can guide the student to use their literacy and technology skills in more hands-on ways by using makers space material or asking higher order thinking skills questions. "Hey, can you help me find an answer?" Don't worry about reading it; just scan the text to help me find it. Can you print something for me? Can you share the document with the teacher?

In order for Latinos to be successful in college, we need to start in secondary schools; provide more guidance/mentors and support, encourage better GPAs (grade point average) and more college credit classes in high school, offer advance placement in Spanish courses, and share more information about college and scholarships starting in middle school. Latinos need to stop the negative perception about college affordability, and stakeholders must continue to identify more school programs that instruct school students about the reasons why students should go to college and all the choices they can find (Sanchez, 2015).

Gear Up, Upward Bound, Collegiate Academies, IB Programs, Education is Freedom, NASA, Girls Inc, WISE, ECEP, STEM, E-TECH are just some examples of programs that help prepare students. The librarian needs to be ahead of the game and provide all these opportunities to the school community. Research it and be knowledgeable in how to participate. Advertise the information and talk to the parents about it. You need to take every opportunity to tie a literacy activity to the ultimate goal of providing a good education that leads to a better lifestyle. The library is the place that everything starts; don't lose any opportunity of creating bridges to success.

CONCLUSION

To conclude, we can observe the importance of the library in promoting literacy skills. We present literacy skills not just as reading and writing, but rather an independence from society, communities, and even personal barriers. Literacy technology skills are a very important component that not only improves learning but reduces poverty, establishes gender equality, fosters education, and seeks a better future of each one of us. Education is the power of literacy; not only to teach that they understand what they read or write, but also so that individuals can be critical of what is happening and thus be able to fully develop in all their dimensions as human beings for both their personal and professional wellbeing.

In other words, literacy technology skills facilitate and promotes adjustment to new needs, as they allow you to develop an active, critical and realistic attitude towards technologies, research, soft skills and college readiness. Students will be able to value the information they find and use it ethically. These elements of literacy and technology skills will support the power of the Latino community by increasing the minority representation of college graduates in the US...and what a literacy treat that everything started in the library!

Dr. Rosenid Hernandez-Badia, School Librarian and Dr. Leonides Perez-Martinez, Academic Librarian

Editors: Mrs. Marie Novais and Mrs. Lisa MacKay

REFERENCES

ACRL. 2018. "Standards for Libraries in Higher Education." Text. Association of College & Research Libraries (ACRL). 2018. http://www.ala.org/acrl/standards/standardslibraries.

Agency, Texas Education. 2019. "Technology Standards for Students, Teachers, and Librarians." August 18, 2019. https://tea.texas.gov/academics/learning-support-and-programs/technology-resources/technology-standards-students-teachers.

Ainsa, Patricia, and Arturo Olivarez. 2017. "Online Mentoring for Hispanic Female Pre-Service Teachers: Perceptions of Use and Performance Changes." *Education* 137 (4): 381–88.

American Association of School Librarians, ed. 2018. *National School Library Standards for Learners, School Librarians, and School Libraries*. Chicago: ALA Editions, an imprint of the American Library Association.

Association of College and Research Libraries for. 2006. "Standards for Libraries in Higher Education." Text. Association of College & Research Libraries (ACRL). August 29, 2006. http://www.ala.org/acrl/standards/standardslibraries.

Baker, Doris Luft, Vivianne Mogna, Sandra Rodriguez, Dylan Farmer, and Paul Yovanoff. 2016. "Building the Oral Language of Young Hispanic Children Through Interactive Read Alouds and Vocabulary Games at Preschool and at Home." *Journal of International Special Needs Education* 19 (2): 81–94. https://doi.org/10.9782/2159-4341-19.2.81.

Beers, Sue. 2011. *Teaching 21st Century Skills: An ASCD Action Tool*. ASCD Publications. http://www.ascd.org/publications/books/111021.aspx.

Bekteshi, Venera, Mary Van Hook, and Lenore Matthew. 2015. "Puerto Rican-Born Women in the United States: Contextual Approach to Immigration Challenges." *Health & Social Work* 40 (4): 298–306. https://doi.org/10.1093/hsw/hlv070.

Britannica School, s.v. "Communication skills," accessed March 5, 2020, https://libproxy.dallasisd.org:2054/levels/middle/article/communication-skills/273755.

Bureau, US Census. n.d. "Census.Gov." Census.Gov. Accessed March 12, 2020. https://www.census.gov/en.html.

Careyva, Beth A., Roya Hamadani, Timothy Friel, and Cathy A. Coyne. 2018. "A Social Needs Assessment Tool for an Urban Latino Population." *Journal of Community Health* 43 (1): 137–45. https://doi.org/10.1007/s10900-017-0396-6.

Castro-Olivo, Sara M., Jorge A. Preciado, Loan Le, Mia Francesca Marciante, and Melissa Villalobos García. 2018. "The Effects of Culturally Adapted Version of 'First Steps to Success' for Latino English Language Learners: Preliminary Pilot Study." https://doi.org/10.1002/pits.22092.

Cho, Siwon, Laura K. Kidd, Laura M. Morthland, and Shelby Adkinson. 2017. "Developing Soft Skills Through Multidisciplinary Cooperative and Situated Learning." *Global Journal of Business Pedagogy* 1 (1): 74–89.

"College and Career Readiness Standards for English/Language Arts." 2018. Texas Higher Education Coordinating Board. http://reportcenter.thecb.state.tx.us/agency-publication/miscellaneous/revised-ela-standards/.

Corry, Michael. 2016. "Hispanic or Latino Student Success in Online Schools." *The International Review of Research in Open and Distributed Learning* 17 (3). https://doi.org/10.19173/irrodl.v17i3.2257.

Daffurn, Narelle. 2019. "Literacy for the 21st Century: A Balanced Approach." *Literacy Learning: The Middle Years* 27 (2): 60.

DeKay, Della L. 2018. "Latino English Language Learners' Career Development." *Career Planning and Adult Development Journal* 34 (4): 21.

D'Orio, Wayne. 2019. "Operation: Information: Literacy." *School Library Journal*, September 2019.

Gaertner, Matthew N., and Katie Larsen McClarty. 2016. "The Case for a Middle School College Readiness Index: Rejoinder to Lazowski, Barron, Kosovich, and Hulleman and Mattern, Allen, and Camara." *Educational Measurement: Issues and Practice* 35 (3): 35–37. https://doi.org/10.1111/emip.12122.

Goeman, Willem. 2019. "Literacy and Connectedness to Students' Worlds and Needs: A Reflection on a Recent Experience." *Literacy Learning: The Middle Years* 27 (3): 51.

González, Kenneth P. 2015. "Increasing College Completion for Latino/as in Community Colleges: Leadership and Strategy." *New Directions for Higher Education* 2015 (172): 71–80. https://doi.org/10.1002/he.20154.

Hagedorn, Linda Serra, Winny (YanFang) Chi, Rita M. Cepeda, and Melissa McLain. 2007. "An Investigation of Critical Mass: The Role of Latino Representation in the Success of Urban Community College Students." *Research in Higher Education* 48 (1): 73–91. https://doi.org/10.1007/s11162-006-9024-5.

Honan, Eileen. 2019. "Connecting Home, School, and Community Literacy Practices." *Literacy Learning: The Middle Years* 27 (3): 7.

Hughes-Hassell, Sandra. 2018. "From the President." *Young Adult Library Services*, 2018.

Kiyama, Judy Marquez, Samuel D. Museus, and Blanca E. Vega. 2015. "Cultivating Campus Environments to Maximize Success Among Latino and Latina College Students." *New Directions for Higher Education* 2015 (172): 29–38. https://doi.org/10.1002/he.20150.

Knapp, Nancy F. 2019. "Using Technology to Foster 'Real Reading' in the School Library and Beyond." *Knowledge Quest* 48 (1): 54–60.

Librarians, American Association of School. 2017. *National School Library Standards for Learners, School Librarians, and School Libraries*. American Library Association.

Luna, Nora A, and Magdalena Martinez. 2013. "A Qualitative Study Using Community Cultural Wealth to Understand the Educational

Experiences of Latino College Students." *Journal of Praxis in Multicultural Education* 7 (1). https://doi.org/10.9741/2161-2978.1045.

Lutge, Christiane, Thorsten Merse, Claudia Owczarek, and Michelle Stannard. 2019. "Crossovers: Digitalization and Literature in Foreign Language Education." *Studies in Second Language Learning and Teaching* 9 (3): 519–41.

Marhuend, F, J. C. Bernad, and A. Navas. 2010. "Las Prácticas en Empresa de Enseñanza e Inserción Laboral: Las Empresas de Inserción Social." *Revista de Educación* 351: 139–61.

Meyers, Shelly, Susan Cydis, and Priti Haria. 2015. "A Partnership between Professors and Middle School Teachers to Improve Literacy Skills of Adolescents: A Pilot Study." *Reading Improvement* 52 (4): 147–59.

Quiñones, Sandra, and Judy Marquez Kiyama. n.d. "Contra La Corriente (Against the Current): The Role of Latino Fathers in Family–School Engagement," 28.

Ramos, Giovanni, Angela M. Blizzard, Nicole E. Barroso, and Daniel M. Bagner. 2018. "Parent Training and Skill Acquisition and Utilization Among Spanish- and English-Speaking Latino Families." *Journal of Child and Family Studies* 27 (1): 268–79. https://doi.org/10.1007/s10826-017-0881-7.

"Role of Library in Public Sector Universities and Its Academic Contributions to Teacher Education n Khyber Pakhtunkhwa Pakistan." 2019. *The Dialogue* 14 (4): 205.

Roquet, Mark. 2019. "A Critical Approach to Digital Citizenship." *Information Today*, May 2019.

Sanchez, Jafeth E., Janet Usinger, and Bill W. Thornton. 2015. "Predictive Variables of Success for Latino Enrollment in Higher Education." *Journal of Latinos and Education* 14 (3): 188–201. https://doi.org/10.1080/15348431.2014.973565.

Schafer, Nikki. 2019. "Social-Emotional Learning and Technology: Friends or Foes?" *TechLearningMagazine*, December 26, 2019. https://www.techlearning.com/opinion/social-emotional-learning-and-technology-friends-or-foes.

Schulte, Don P., John R. Slate, and Anthony J. Onwuegbuzie. 2011. "Hispanic College Students' Views of Effective Middle-School Teachers: A Multi-Stage Mixed Analysis." *Learning Environments Research* 14 (2): 135. https://doi.org/10.1007/s10984-011-9088-9.

Sibley, Erin, and Kalina Brabeck. 2017. "Latino Immigrant Students' School Experiences in the United States: The Importance of Family-School-Community Collaborations." *School Community Journal* 27 (1): 137–57.

Smart, Diana, and Ann Sanson. 2001a. "Children's Social Competence." *Family Matters*, 2001. Gale OneFile: Educator's Reference Complete.

———. 2001b. "Children's Social Competence: The Role of Temperament and Behavior, and Their 'Fit' with Parents' Expectations." *Family Matters* 10.

Spektor-Levy, Ornit, and Yael Granot-Gilat. n.d. "The Impact of Learning with Laptops in 1:1 Classes on the Development of Learning Skills and Information Literacy among Middle School Students." *Interdisciplinary Journal of E-Skills and Lifelong Learning* 8: 083–096.

Spires, Hiller. 2019. "Critical Perspectives on Digital Literacies: Creating a Path Forward." *Media and Communication* 7 (June): 1. https://doi.org/10.17645/mac.v7i2.2209.

Stuart, Evans. 2019. "Learn Local, Think Global: Connecting Students through Global Literacy." *Practical Literacy* 24 (2): 38–39.

Taira, Brooke Ward. 2019. "(In)Visible Literacies of Transnational Newcomer Youth in a Secondary English Classroom." *Global Education Review* 6 (2): 74–93.

Texas Education Agency. 2019. "Technology Standards for Students, Teachers, and Librarians." 2019. https://tea.texas.gov/academics/learning-support-and-programs/technology-resources/technology-standards-students-teachers.

———. n.d. "2018-19 Federal Report Card for Texas Public Schools: BENJAMIN FRANKLIN INTERNATIONAL." Accessed March 8, 2020. https://rptsvr1.tea.texas.gov/cgi/sas/broker?_service=marykay&year4=2018&year2=18&_debug=0&single=N&title=2018-19+Federal+Report+Card&_program=perfrept.perfmast.sas&prgopt=2019%2Ffrc%2Freport_card.sas&ptype=H&level=campus&search=campname&namenum=benjamin&campus=057905047.

Texas Higher Education Coordinating Board. 2018. "College and Career Readiness Standards for English/Language Arts." 2018. http://reportcenter.thecb.state.tx.us/agency-publication/miscellaneous/revised-ela-standards/.

Texas State Library and Archives Commission. 2017. "School Library Programs: Standards and Guidelines for Texas. Texas State Library and Archives Commission." 2017. https://www.tsl.texas.gov/sites/default/files/public/tslac/ld/schoollibs/sls/Texas%20School%20Library%20Standards%20E-Version%20FINAL.pdf.

Vega, Desireé. 2016. "'Why Not Me?' College Enrollment and Persistence of High-Achieving First-Generation Latino College Students." *School Psychology Forum* 10 (3): 307–20.

Wood, Carla, Lisa Fitton, Yaacov Petscher, Estrella Rodriguez, Gretchen Sunderman, and Taehyeong Lim. 2018. "The Effect of E-Book Vocabulary Instruction on Spanish-English Speaking Children." *Journal of Speech, Language, and Hearing Research: JSLHR* 61 (8): 1945–69. https://doi.org/10.1044/2018_JSLHR-L-17-0368.

Wright, Lee A., and John R. Slate. 2015. "Differences in Critical-Thinking Skills for Texas Middle School Students as A Function of Economic Disadvantage." *Journal of Education Research* 9 (4): 345–56.

Wouldn't it be great if there was a single vendor offering everything you need for your library?

Oh wait, there is. Brodart!

Books

- Spanish-language Materials
- Graphic Novels
- Selection Lists

Supplies

- COVID-19 Equipment
- Book Jacket Covers
- Circulation Supplies
- STEAM & Makerspace

Furniture

- Children's Shelving & Display Furniture
- Lounge Furniture
- Activity Furniture

And much more...

Libraries? Brodart. Period.

Developing Cataloging Workflows at the University of Houston Libraries During the Implementation of Ex-Libris Alma

By Xiping Liu

ABSTRACT

The University of Houston Libraries migrated its ILS from III Sierra to Ex-Libris Alma in 2019. The migration called for the need to create new cataloging workflows for purchased and donated print resources. Alma's acquisition and cataloging functions are closely integrated that a brief bibliographic record and an inventory are created at the time of purchase, unlike in Sierra where the two functions are distinctly separate. This paper will describe how the Resource Description Librarian has identified and researched on several key areas when developing the cataloging workflows for print resources. It will conclude with lessons learned and future plans.

Keywords: Ex-Libris Alma, migration, cataloging workflows

INTRODUCTION

The University of Houston Libraries went live with Ex-Libris Alma and Primo VE in July 2019. Prior to the migration, the University Libraries shared III's Sierra system across its three campuses including UH Main, UH-Clearlake, and UH-Downtown. To prepare for the migration, the University of Houston Libraries formed functional teams to focus on each different work area, such as Acquisitions, Circulations, and Electronic Resource Management. A Resource Management Team was formed and charged to develop policies and procedures around cataloging workflows in Alma (University of Houston Alma Migration Project Charter, 2018). This article will focus on how the Resource Description Librarian has identified key areas in developing the cataloging workflows for print resources in Alma.

INVENTORY STRUCTURE

In Alma, print resources have a three layer structure: the MARC bibliographic record which represents the intellectual entity, the middle level holding record which contains the location and call number information, and the item record which contains all the item level information such as barcode, receiving date, etc. (ExLibris, n.d.). However, in Sierra, item records are directly attached to the bib record. Figure 1 shows the bib record with two holding records and each has one item attached in Alma.

Figure 1. Alma holding record and item record

INVENTORY CREATION

In Sierra, after a brief bib record is imported from OCLC, an order record is created and directly attached to the bib record. No item record is created. The cataloger will import a new bib record, overlaying the brief record in Sierra. During the process of which, a predefined item record is generated through a local 949 field added in OCLC Connexion (Sierra is set up to generate an item record if there is a 949 field in the incoming bib record). But with Alma, when a PO line is created and is directly attached to a brief bib, an inventory (a holding and an item record) is also generated and the order record is embedded in the item record (ExLibris, n.d.), see Figure 2. This feature determines that all the item specific information can be added either at the time of purchase, such as location, material type or at the time of receiving the item, such as barcode and receiving date. When the item is passed onto the catalogers, their job is to update the brief bib record to a full level record and make sure the item and holding information are correct.

Figure 2. A PO line which contains inventory information
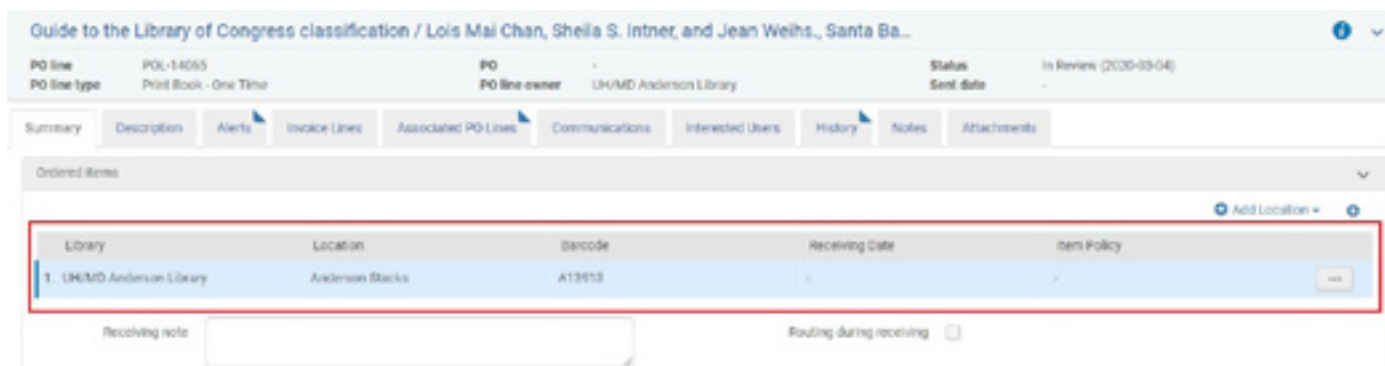
Because the donated gifts don't go through any ordering process, there is no pre-existing bib record with inventory available in the repository when it is ready to be cataloged. It means that donated gifts will go through a different workflow from the purchased items. With donated gifts, the cataloger will import a new bib record from OCLC and manually create the inventory.

SEARCH IN OCLC

Alma offers the ability to search external resources within its Metadata Editor, see Figure 3. This function allows users to search OCLC and import a record into Alma without leaving the platform. Therefore the catalogers have the option to either continue using OCLC Connexion to fetch a new record or remain in Alma to complete the cataloging process.

Figure 3. Search external resources through the Metadata Editor
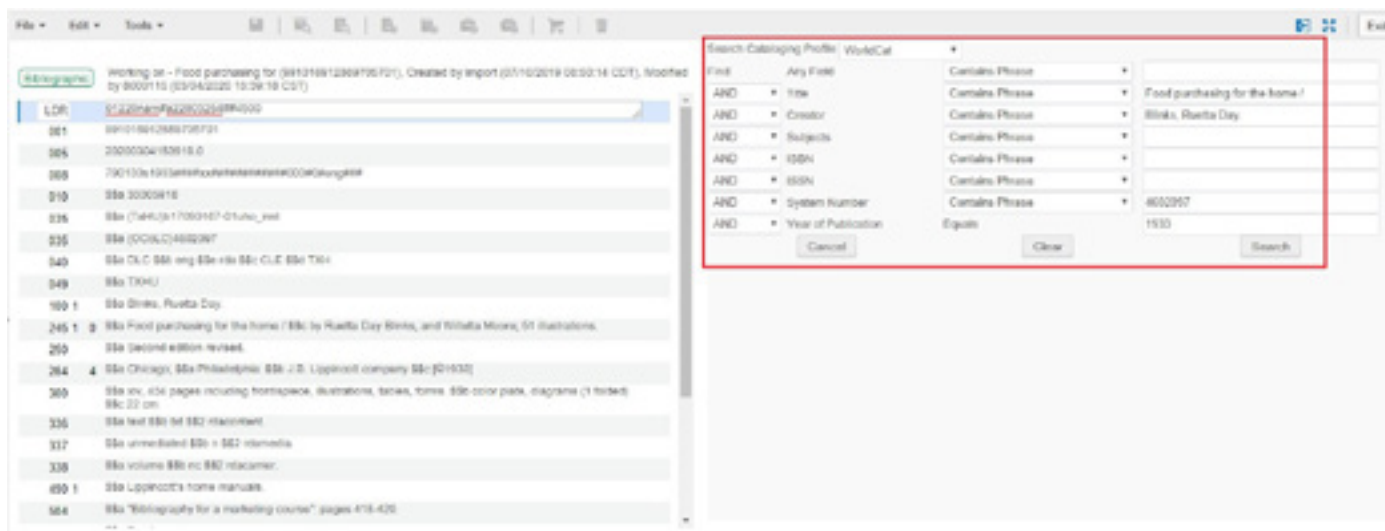
With the production server set up, the resource management team was able to test out importing new records both within Alma and through the use of OCLC Connexion. In Alma, with the brief record open in the Metadata Editor, the search external resource window takes up half of the screen space which can make navigating the search results somewhat awkward. Also, on the search result list, it shows the cataloging

agency who created the record, but it doesn't show the number of library holdings the record owns, see Figure 4. So unless it is a DLC record, the cataloger has to click to view the record in order to see the number of library holdings. Because the number of library holdings can indicate the record quality, an extra click to view it makes the record selection process less efficient. Additionally, editing cannot be made in the search results but has to be done after the record is imported into the repository. Alma's Metadata Editor has all the functionalities needed to edit a bib record, but the smaller screen space, the extra clicks and the unfamiliar shortcut keys can make the catalogers less willing to work in it.

Figure 4. Search results in the Metadata Editor
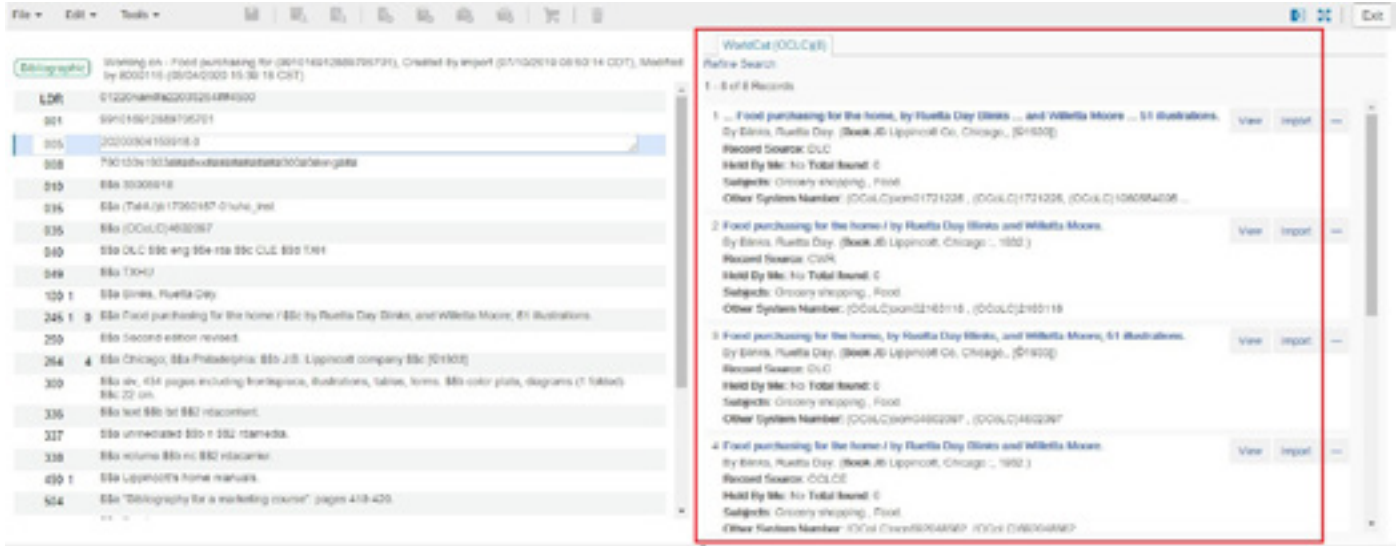
OVERLAYING A RECORD IN ALMA

One important question that came up in developing the cataloging workflows was determining the best way to overlay a record in Alma when importing a new record from OCLC. We had two options. Catalogers can bring up the brief record in the Metadata Editor, search in OCLC through the search external resources dialog box in the split screen. After selecting a desired record, use the copy and merge command to merge with the brief record being displayed (Harvard Library Technology Services, n.d.), see Figure 5. The other option is to import the record directly from OCLC Connexion and overlay the brief bib in Alma. The second option needs additional configuration work but it is more straightforward and is the method that catalogers are most familiar with. After consulting with a colleague from Binghamton University and reading the documentation from some other universities, we decided on the second option. The next step is to set up the configuration and create the merge rules needed to ensure the successful overlay.

Figure 5. Copy and merge record in the Metadata Editor
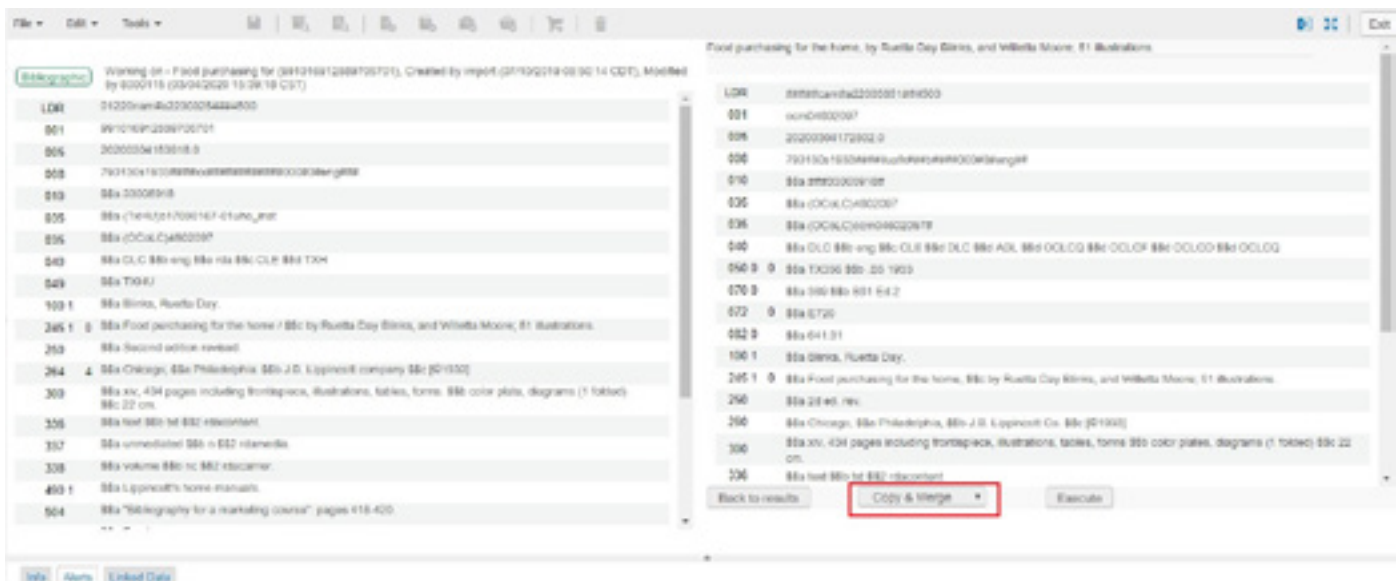
SETTING UP MERGE RULES AND OTHER CONFIGURATION

Alma's merge rules allow it to keep certain fields when overlaying a record (ExLibris, n.d.). For example, at University of Houston, after discussing with catalogers from all campuses, the team decided to keep the call number fields (050, 086, 090, 092, 098, 099), local note field (541, 583, 586, 590, 599), local subject headings (690) and local collection names (710) unchanged when importing a record from OCLC.

The match point tells Alma what to look for as the record match point when overlaying a record (ExLibris, n.d.). At the University of Houston, we chose the unique OCLC number as the match point. Before overlaying the record, catalogers need to make sure the brief record has the same OCLC number as the incoming record in order for the overlay to succeed.

We also applied the initial normalization rules which allows the removal of unwanted fields from OCLC during the import (ExLibris, n.d.). At the University of Houston, we decided to remove the following fields: "012, 015, 016, 019, 029, 055, 263, 653, 938, 948, 994, any 6xx fields with second indicator 4 and any 6xx fields that has $2 bisacsh.

Many universities shared their merge rules and normalization rules in the Alma community. We were able to set up our own rules following the examples from Tufts University (McDonald 2018).

WHERE DOES CATALOGING BEGIN IN ALMA AND WHERE DOES IT END

Because of the close integration of acquisition and cataloging functions in Alma, catalogers can find all the received physical items in the receiving department items list which resides in the Acquisitions tab on the top menu bar, see Figure 6. When the cataloger receives the item, they can easily pull up the brief bib record by scanning the barcode in the search box on this list and start working. Because Alma uses work orders to track the processing of physical items between departments (ExLibris, n.d.), the acquisition staff generates a cataloging work order when they receive the item by checking the box "Keep in Department", see Figure 7. It will show the item status as in "Cataloging and Physical Processing" while it is being processed. After the cataloging work is completed, the cataloger needs to go back to the list, find the record and click on "Done" to change the item status to "In transit" and thus complete the cataloging process, see Figure 8.

Figure 6. Receiving Department Items
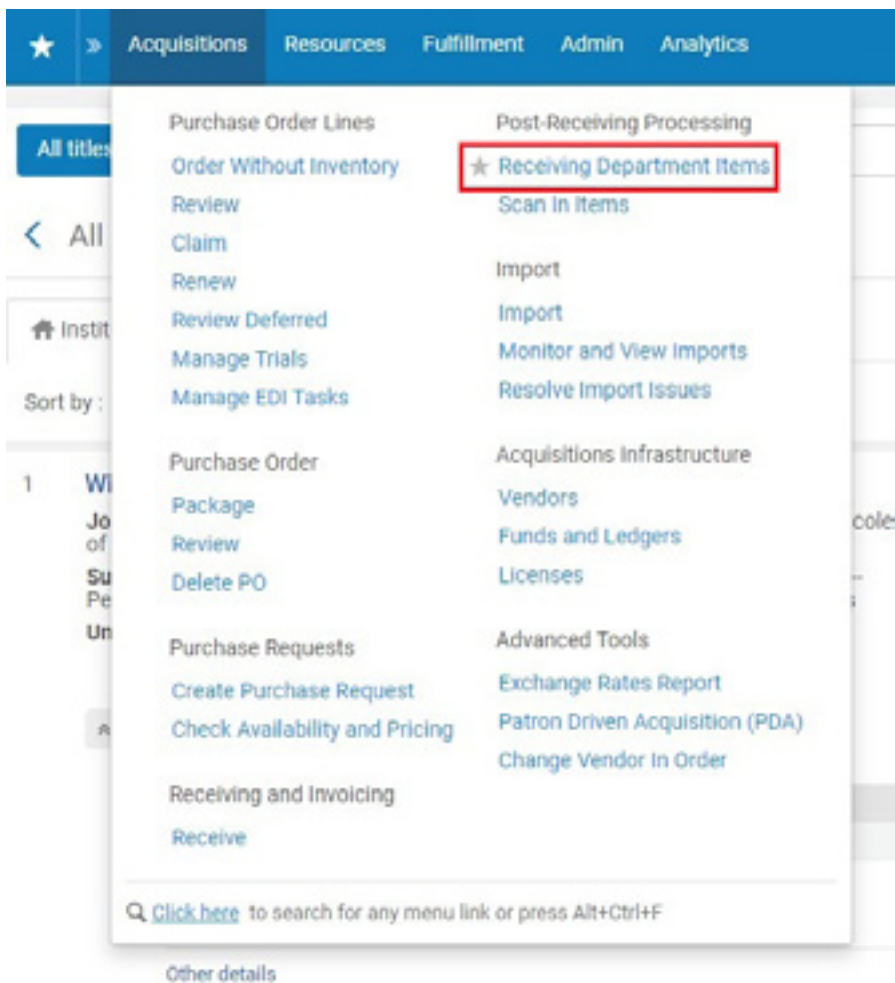
Figure 7. Check the "Keep in Department" button to generate a cataloging work order
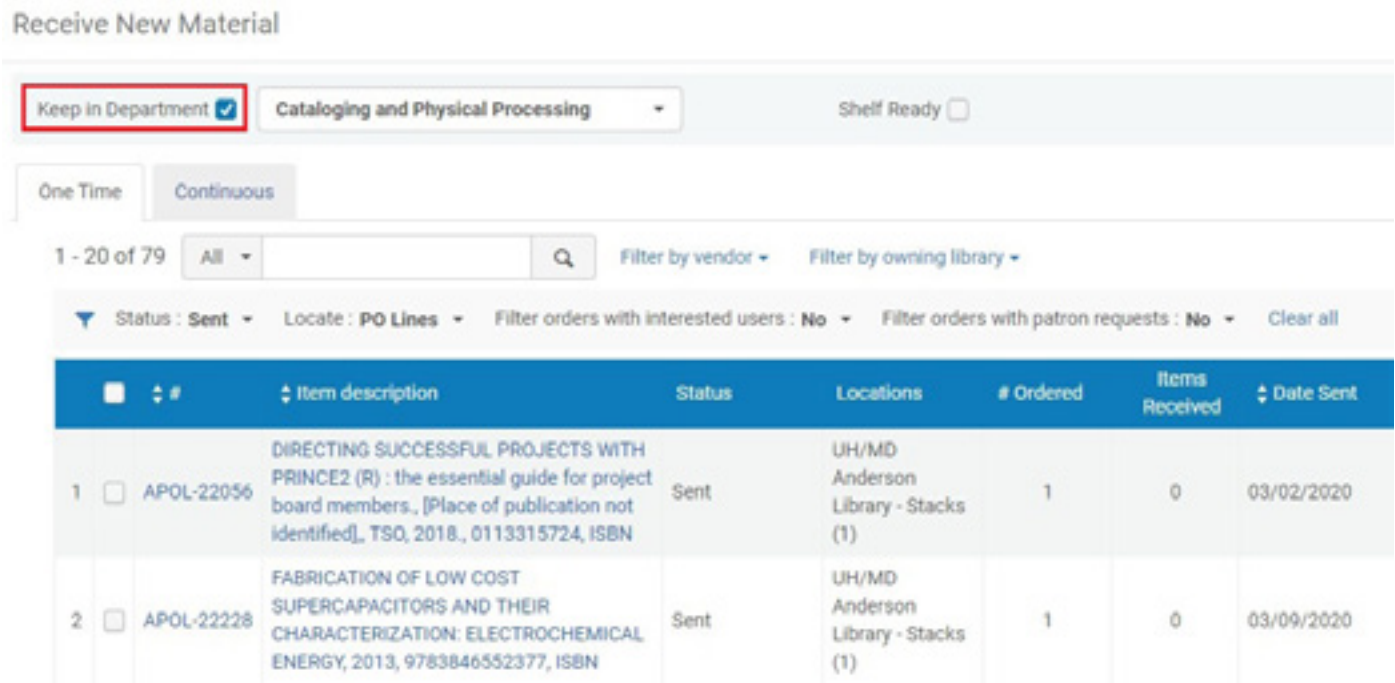
Figure 8. Click on "Done" to finish the cataloging process
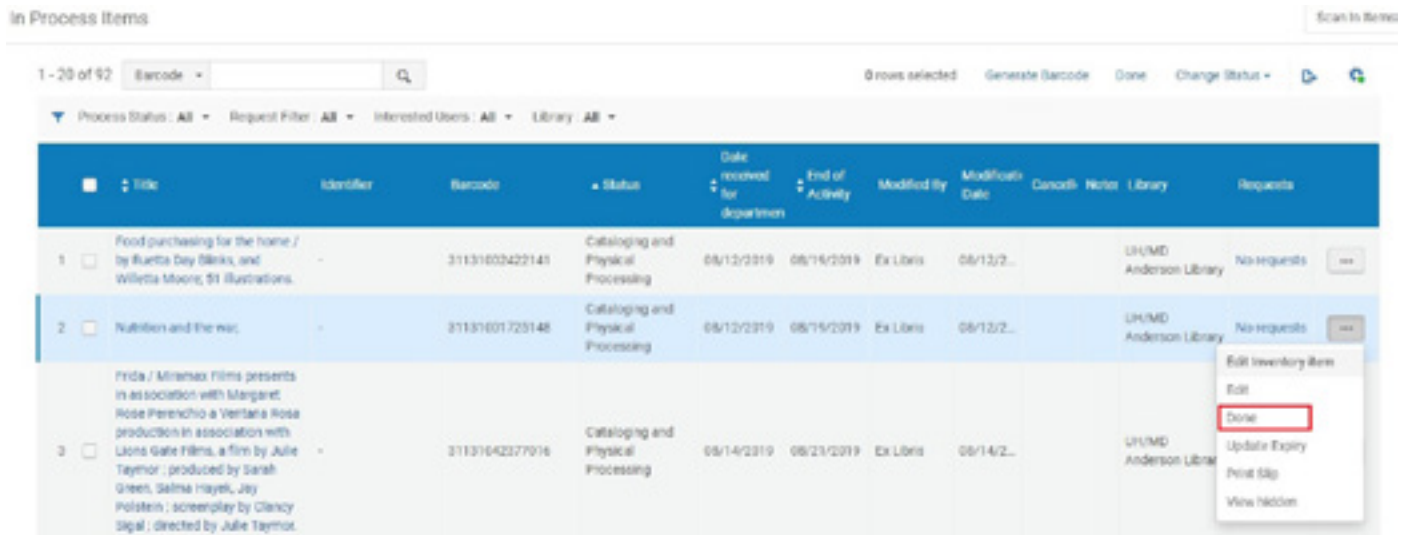
DEVELOPING CATALOGING WORKFLOWS

After the above key areas were identified and configured, the Resource Description Librarian started to gather all the pieces together and write down the cataloging workflows depending on how an item is acquired. The four basic workflows include: copy catalog one-time purchased physical item, copy catalog for gift items, original catalog for one-time purchased physical item, and original catalog for gift items, see Appendix for the instruction on copy catalog one-time purchased physical item as an example.

LESSONS LEARNED AND FUTURE PLANS

At the University of Houston Libraries, training with ExLibris started from the very beginning so everyone learned how to search and navigate in Alma and work with the Metadata Editor early on. But the configuration in Alma such as setting up the OCLC profile and the merge rules were waited until much later. We were able to figure out how to do it correctly before go-live, but it would be nice to have it done sooner, so people can test to see how the cataloging workflows work.

When developing the cataloging workflows, a colleague from Binghamton University was kind enough to share their Alma documentation and it helped the Resource Description Librarian to make the decision on what is the best way to overlay a record in Alma. Because Alma offers multiple options to perform a job, it is

helpful to learn from the other institutions on any good tips and experiences to determine the best way to work in Alma for your institution.

For future plans, we are always working on ways to improve the cataloging efficiencies. Some of the areas that we are currently looking into include creating holding templates, and using APIs. With gift materials, we are currently investigating ways to batch import records through an import profile. Alma allows the creation of inventory through import profiles, so it could potentially reduce the time for catalogers to manually create the inventories if it can be done through a batch process.

ExLibris is scheduled to release a new UI interface for the Metadata Editor later this year (Veltzman, Itai. 'Whatever happend to the new Metadata Editor', email, 2020). We look forward to this new release and eager to learn any new features to improve the cataloging experience.

We are also planning to create a cataloging unit wiki so we can easily share and edit the documentation with colleagues.

CONCLUSION

The University of Houston Libraries started the migration preparation work in late 2018 and went live in July 2019. It took the Resource Description and Management Team about six months to get trained and prepare themselves for the transition. The relatively short period of preparation time was challenging but everyone did their best to adapt to the changes. The migration turned out to be a learning experience for everyone. As we learn about Alma's new features, this learning will continue as well with the goal of optimizing the cataloging workflows to increase the catalogers' work efficiencies.

Xiping Liu is a Resource Description Librarian at the University of Houston.

Appendix

a. Go to Acquisitions ➜ Post-Receiving Processing➜ Receiving Department items
b. Search for the item in hand with the barcode
c. After the record is found, click on the title to bring up the bib record in record view
d. Click on Edit on the top right corner to open it up in the Metadata Editor.
e. If the record needs minor edit, you can edit the record here in the Metadata Editor
f. If it is a brief record and you need to bring in a full record from OCLC, go to the next step.
g. Search in OCLC Connexion Client for a full record and update our holding.
h. When you are ready to import the record, go back to Alma and check the 035 field that contains the OCLC number
i. If the OCLC number is the same as the incoming record from OCLC Connexion, save and release the record in Alma, go back to OCLC Connexion and click on Export (If the record is not released in Alma, then the export will fail)
j. If the brief record has an OCLC number that is different from the incoming record, click the 035 field with (OCoLC) prefix, paste the incoming OCLC record number directly over the old OCLC number leaving (OCoLC) in place. **Note: If the brief record doesn't have an OCLC number, you will need to add a 035 field with the new OCLC number. So it will look like this: 035** (OCoLC)xxxxxxxx
k. Go to File -->Save and Release record
l. Go back to Connexion and click on Export
m. If the Export is successful, the host message should read: The record has been processed successfully, MMS id is: xxxxxxxxxxxxxx. Copy the MMS ID and search with the MMS ID in Alma (Select All titles + MMS ID) to bring up the record
n. Notice the overlayed record now has the new OCLC number in the two 035 fields
o. This will complete the import process
p. Click on view inventory icon on the menu bar and check to see if the holding and item records need any update
q. Go to File➜ Save and release record
r. Before handing over to label printing, go back to Acquisitions ➜ Post-Receiving Processing➜ Receiving Department items
s. Find the title you just cataloged, click on the eclipse and select "Done". This will change the process type to transit
t. Hand over the cataloged material to label printing

REFERENCES

"05 Work Orders (8 min)." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Training/Alma_Essentials/Alma_Essentials_-_English/E_Resource_Management/05_Work_Orders

"Creating & Updating Bib Records and Using Search External Resources (Z39.50)." Harvard Wiki. March 12, 2020. https://wiki.harvard.edu/confluence/pages/viewpage.action?pageId=228533999

"Explanation of Purchase Types Workflow and Inventory." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/020Acquisitions/020Purchasing/010Purchasing_Workflow#Explanation_of_Purchase_Types_Workflow_and_Inventory

"Introduction to Alma Inventory." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/040Resource_Management/050Inventory/010Introduction_to_Alma_Inventory

McDonald, Steve. "How to Write Alma Normalization Rules." Presentation at ELUNA 2018 Annual Meeting, Spokane, Washington, May 1-4, 2018.

"Resources 05: Match Methods (15 min)." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Training/Alma_Administration_Certification/Resources/Resources_05%3A_Match_Methods

"University of Houston Alma Implementation Project Charter-Resource Management Team." University of Houston Alma Implementation Blog. March 12, 2020. https://sites.lib.uh.edu/alma/2018/11/19/project-charter-resource-management-team/

Veltzman, Itai. 'Whatever happened to the new Metadata Editor', email, 2020.

"Working with Merge Rules." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/040Resource_Management/040Metadata_Management/080Working_with_Merge_Rules

"Working with Normalization Rules." ExLibris. March 12, 2020. https://knowledge.exlibrisgroup.com/Alma/Product_Documentation/010Alma_Online_Help_(English)/040Resource_Management/040Metadata_Management/070Working_with_Normalization_Rules

PebbleGo Health

Introduce K-3 students to fundamental health, safety, and social-emotional concepts

With over 150 age-appropriate articles connected to state and national health standards—from body systems and safety to self-awareness and relationships and more—your students will never run out of new topics to spark curiosity about health, wellness, and safety. With PebbleGo Health, you'll always have a safe and comprehensive health resource you can rely on to boost learning and engagement with all your students on cross-curricular subjects they want and need to know in the classroom or at home.

Special features include:

- Activities that provide students an opportunity to develop foundational health skills required to adopt, practice, and maintain health-enhancing behaviors

- Articles aligned to state and national health standards to help students learn functional health information and develop foundational health skills

- Content promotes personal, family, and community health

- Content includes a wide range of topics, to help build positive social emotional skills, that support Collaborative for Academic, Social, and Emotional Learning (CASEL) framework
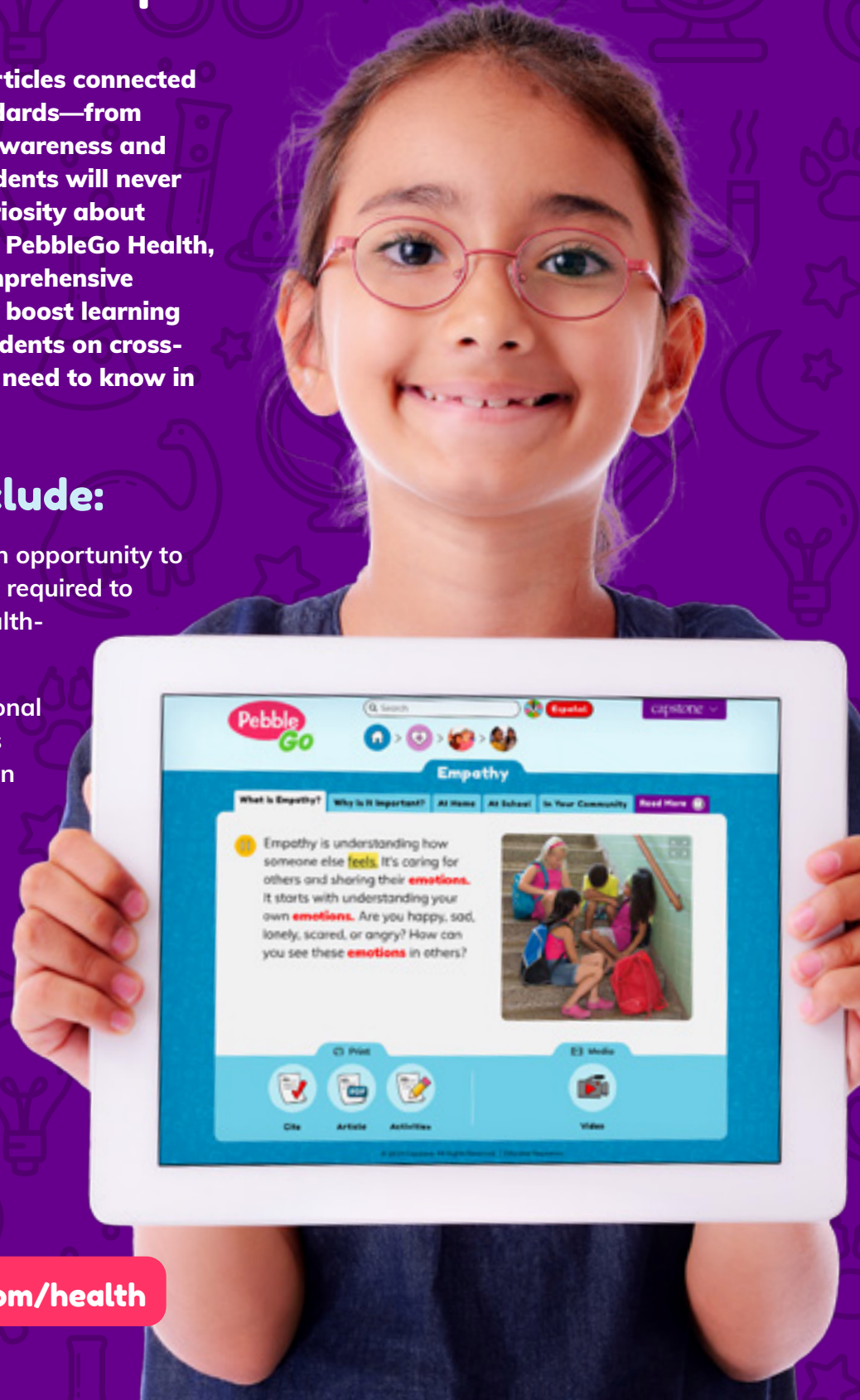
Learn more at pebblego.com/health

Pebble Go®

by capstone™

HOT TITLES *for* FALLING BACK INTO BUSINESS
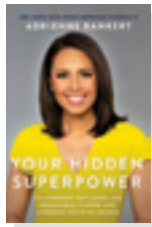
Your Hidden Superpower
Adrienne Bankert

Emmy Award winning ABC News journalist and *Good Morning America* correspondent Adrienne Bankert shows how kindness is a game changer in business, the door-opener to opportunity, and the key to authenticity and confidence. It's a superpower that can be honed through an intentional lifestyle of kindness and is especially important in these divisive times.

9781400218141 $24.99   Hardcover Motivational

The Most Powerful You
Kathy Caprino

Career, executive, and leadership coach Kathy Caprino helps women identify the 7 most damaging power gaps that are holding them back from the success they want and deserve, outlining the key steps you can take today to access greater positive power.

9781400217489 $27.99   Hardcover Leadership

The Business of Friendship
Shasta Nelson

An expert in the field, Shasta Nelson inspires readers to see why workplace friendship is crucial to employee health and careers, and teaches how to develop the healthy and appropriate friendships that can benefit employees and their organizations.

9781400216963 $24.99   Hardcover HR & Personnel

Game Changer
Michael Solomon & Rishon Blumberg

Game Changer shows companies how to attract and manage 10x talent by ditching traditional business structures for a more agile approach. These extremely talented individuals can be plugged in where they will make the most impact—and where they themselves will find the most fulfillment.

9781400218707 $28.99   Hardcover Career
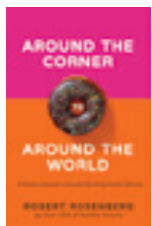
Around the Corner to Around the World
Robert Rosenberg

Learn twelve key lessons from former Dunkin' Donuts CEO Robert Rosenberg that offer critical insights and a unique, 360-degree perspective to business leaders and managers on building one of the world's most recognized brands.

**9781400220489 $24.99   Hardcover
Corporate & Business History**
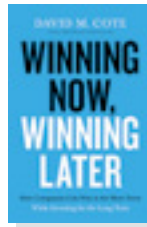
Winning Now, Winning Later
David M. Cote

"Dave Cote just delivered the War and Peace of books on corporate leadership. The former Honeywell CEO's *Winning Now, Winning Later* is such a rich, unusual entry in the genre because instead of running through his favorite management maxims, Cote provides a gripping, on-the-scene account of how he deployed a series of bedrock principles to transform a flailing conglomerate." Forbes.com

**9781599510217 $28.99   Hardcover
Organizational Development**

Courageous Cultures
Karin Hurt, David Dye

Courageous Cultures provides a road map to build a high-performance, high-engagement culture around sharing ideas, solving problems, and rewarding contributions from all levels. The book offers practical tools to uncover, leverage, and scale the best ideas from every level of your organization.

9781400219537 $24.99   Hardcover

The Unstoppable Startup
Uri Adoni

Israel has one of the highest concentrations of startups in the world, has the highest venture capital per capita, is one of the top countries in terms of number of companies listed on NASDAQ, and is well recognized as a global leader in research and development. In *The Unstoppable Startup*, Uri Adoni goes behind the scenes to explain the principles and practices that can make any startup, anywhere in the world, become an unstoppable one.

9781400219162 $28.99   Hardcover Entrepreneurship

Digital Goddess
Victoria R. Montgomery Brown

Told from the unique, female entrepreneurial perspective that unpacks all the hurdles other female founders may face in their own journey to the top, Victoria Montgomery-Brown, founder of Big Think, shares the real-world lessons she's learned along the way.

9781400220618 $27.99   Hardcover Entrepreneurship

Undaunted
Kara Goldin

Part autobiography, part business memoir, and loaded with insights on overcoming fears and doubts, *Undaunted* offers inspiring stories that impart lessons any reader can apply to their own path towards building a great business and a life they love. Written by entrepreneur Kara Goldin, who grew Hint Water into a brand worth hundreds of millions of dollars.

9781400220281 $24.99   Hardcover Motivational

How Can Reading Engagement Benefit from Social Networking?

By Erica Esqueda

ABSTRACT

Technology has changed many aspects of education. Reading has also been influenced by the social networking facet that technology brings. The access of technology in the classroom allows many activities, including reading, to become social. Reading can transform from an activity that is widely accepted as a solitary act into a social experience. Students read and then can use their new-found knowledge and interest to create and share ideas interacting on various online platforms. The combination of reading and social networks continues conversations outside the classroom. Educators and students can share what they are reading, review books, and talk about books. The question posed is: Can devices and social network technology applications empower students to become devoted readers by participating in their school environment and making connections with their peers? This paper shares different technology applications that can be used to extend reading, as well as review literature related to social networking use with books and the connection to student's engagement.

INTRODUCTION

Digital media in out lives has substantially changed the way we approach different situations. The educational setting and approach to teaching is not unaffected. Fostering the importance of reading has numerous benefits for students beyond their school years. Many times, reading is seen as a solitary activity, but it can benefit from transforming into a social experience. Social media plays a large part in our society, important in its ability to reach and connect people. Students are social beings and combining their familiarity with ubiquitous technology applications can encourage themselves and others to read while simultaneously building relationships with students and the library. Social media platforms allow the users to generate and display their own content while participating in social networking. This technology influences the lives of most students and harnessing that capability in education can be beneficial to instructors. Educational institutions play a large role in the socialization of students and the implementation of a social networking while promoting the love of reading can enrich subject knowledge as well as social skills.

Interactions have been forever changed due to the use of social media. Substantial changes are the ability to constantly share thoughts increasing the speed of communication is the ease of accessibility from computer, tablet or smartphone. Where it might have been harder to have meaningful connections with students due to time constraints social networks can now make it possible to create relationships and actively engage in an effective and relevant way. A well-chosen book can prompt thoughtful discussion especially when it touches topics that are not part of everyday occurrences. Social networks provide opportunities to learn and become more socially conscious of the world around us, but they also give us a chance to speak. Incorporating social media also allows for adolescents who may have felt they did not have voice before now to can communicate to a

considerably large audience. Not only are they given the opportunity to be heard but they can do so in their preferred medium be it recording videos, sharing pictures, creating images, sending voice message, or text.

This paper explores previous research that discusses the presence of social media in literacy education. Examples are given of the possibilities available for social networking with current technological applications and the encouragement of reading. It also shares the challenges as well as benefits and future implications that might arise with integrating that type of technology in a program meant for a K-12 educational setting.

LITERATURE REVIEW

Every aspect of our lives is touched by developments in technology. Literature education is the most impacted by advances in technology in its ability to give access to literary works, allowing for mass discussions, and changing engagement from not solely print to a hybrid of mediums (Vlieghe, Vandermeersche, & Soetaert, 2016). Technology is allowing for education to evolve supporting more open communication. Attitude of the participants is a key factor in having a successful learning experience it is important to find the proper tools and methods to instill enthusiasm in teaching (Jones, 2011). Embracing technology with the use popular devices and apps has the ability to motivate. The transformation of traditional reading practices changes from one-directional strategies to an approach that allows for the crucial part of evaluating literature with the opportunities of digital and multimedia advances including expression and communication. (Vlieghe, Vandermeersche, & Soetaert, 2016).

Learners benefit from being more active in their learning process and the right setting enables them to be engaged, productive participants. Social media platforms can open conversations about books and create relationships among the people that use it, a community begins to take form, a network of "friends" who share a supported interest begin to create new meaningful content from their own understanding of the book as well as other's perceptions (Vlieghe, Vandermeersche, & Soetaert, 2016). Implementing social networking tools offers a social and causal approach to improving the quality and significance of contributions to discussions that would take place in the physical classroom (Jones, 2011). The question posed is: Can devices and social network technology applications empower students to become devoted readers by participating in their school environment and making connections with their peers?

APPLICATIONS

In the article by Vlieghe, Vandermeersche, and Soetaert (2016) they look at the application of Goodreads for exploring the idea of social reading. Goodreads is a social cataloging website whose goal is to help readers find their next books. Students can keep track of their books with a virtual bookshelf, see what others are reading, review books, and recommendations can be made either automated or by teacher and peers. Within this social media environment discussions can be held whether it be a private discussion limited to a group of students, or one posed to a larger community. The groups are not limited to text, there is the opportunity to include videos and polls within a discussion group. Students can take initiative in this community situation by tracking their reading, writing book reviews, sharing recommendations with their peers, participate in reading challenges and discussion groups.

In the article by Jones (2011) the opportunity was given to student to utilize Twitter to place responsibility on the student to take ownership of their learning and discuss class texts. Twitter is a social media platform that allows users to "microblog" employing posts that are limited to 140 characters in length. By establishing guidelines for the student's posts the instructor can effectively assess student's understanding and offer feedback. The opportunity to build relationships comes in the ability to create a Twitter presence, follow other users, retweet others, use hashtags to link conversations, share topics of interests with valuable Tweets.

CHALLENGES

In a school district where the emphasis is on standardized testing it may be difficult for teachers to move away from existing literary practices. To incorporate approaches that promote open discussion and interaction teachers have to give up much of the control. Educators often deal with a rigid curriculum because of time constraints on instruction. To find the additional time to learn how to effectively incorporate a social media application as well as allowing for the classroom time necessary for successful opened-ended student led discussions that social media allows can be daunting. If time outside the classroom is allotted to continue these discussions students must be able to acquire the applications which would mean access to a device along with internet access. Many teachers as well as students may also be resistant to incorporate social networks in their classrooms. Teachers push back for the reason stated above but students resist because they are

accustomed to look at education as separate from the outside world, definitely not a place for popular social media networks they use regularly.

Educational institutions tend to be wary of social media because of the harm that can come to their students. Social networks are valuable in their ability to connect a growing peer group but that also brings with it the possibility of dangerous consequences when working with K-12 students. Problems with privacy, miscommunication, and negative postings can escalate quickly without the constant monitoring and guidance by the teacher. With any educational technology the goal is to enhance instruction and without the proper structure social medal networks become just another distraction that deters learning.

BENEFITS AND FUTURE IMPLICATIONS

Human beings learn from their environment, complex conversations that include a diverse audience about various topics bring about meaningful ideas. The capability of social media applications to create networks and a more organic discussion is powerful. When you base those discussions on literature students can learn not only about themselves, but others and begin to grasp a better understanding of the human experience. The two-way communication dynamic of social networks continues to allow communication with teacher and student but

also greatly encourages peer interactions. Those students that would be unlikely to speak up in a classroom full of their peers maybe more easily persuaded to communicate online. Networks of constant peer communication support and encourage the members to continue to participate within the social media platform and can inspire them to continue reading.

Social media continues to play a large role in information and communication technologies. Reading is believed to be important in education, but reading is not enough, intellectual development comes from conversations about reading (Van der Westhuizen, G. J., 2013). The fact that students are familiar with this online environment prompts them to continue knowledgeable engagement when social media and reading are combined. Pedagogical value arises when collaboration and communication begin to construct meaning. The future of education continues to rely on the ability to communicate with digital content. The sustained popularity of social media within our society makes it a valuable tool to leverage in the interest of promoting reading in our classrooms.

Erica Esqueda is a PhD student in the College of Information, Department of Learning Technologies at the University of North Texas.
*EricaEsqueda@my.unt.edu*References

REFERENCES

Jones, A. (2011). How Twitter saved my literature class: A case study with discussion. *Teaching Arts and Science with the New Social Media*. A collection edited by Charles Wankel. United Kingdom: Emerald Group Publishing Limited, 91-106.

Van der Westhuizen, G. J. (2013). Reading, social media and learning conversations. *Mousaion*, 31(1), 94-109.

Vlieghe, J., Vandermeersche, G., & Soetaert, R. (2016). Social media in literacy education: Exploring social reading with pre-service teachers. New Media & Society, 18(5), 800-816. doi:10.1177/1461444814547683Di Serio, A., Ibanez, M. B., & Kloos, C. D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586. doi:10.1016/j.compedu.2012.03.002

IMPACT OF LIBRARY INSTRUCTION CLASS ON STUDENT WRITING
at the Two-Year College Level

By Drs. Yumi Shin and Michelle Judice

ABSTRACT

The effectiveness of library instruction class in ensuring students find and use library resources has gained keen attention from academic librarians. There is, however, a lack of quantitative study on the impact of library instruction on student learning. In order to fill the gap, an experimental study was conducted with students taking College English courses at Lamar State College Port Arthur (LSCPA)—a two-year college located in Southeast, Texas. It was predicted that collaboration between the classroom instructor and the instruction librarian would result in a positive impact on student learning, more specifically on their writing. Two writing assignments with the same level of difficulty and significance were used to examine the impact. One assignment was given and graded before the library instruction class, and the other after the class. In total, 94 students attended the instruction class before the second assignment was issued, in which they learned how to (1) find books and articles needed for the assignment from library resources and (2) cite references according to Modern Language Association (MLA) citation. A statistical analysis of the grades for the two assignments shows that students significantly improved their writing after taking the instruction class. In other words, the research hypothesis was found to be true. An additional study with a larger sample size in more diverse classes is underway to draw a more robust conclusion.

Keywords: library instruction, English courses, information literacy, college libraries, academic libraries, evaluation, collaboration, assessment

INTRODUCTION

The services at the academic libraries have been considerably affected by rapid changes in a budget situation, emerging new technologies, growing online learning, and globalization (Coiffe 2012; Crawley-Low 2013; Guo 2014; Matarazzo and Pearlstein 2016; Shamchuk 2015). These changes present unprecedented challenges to academic librarians, including instruction librarians, and demand new roles from them. The primary purpose of the library instruction classes, which are typically delivered by the instruction librarians, is to help students find resources and information relevant to and needed for their classwork. Under the circumstances, the instruction librarians have fervently recognized the need for assessing the effectiveness of library instruction. However, it has not yet been clearly understood how much the library instruction class affects student learning, although such an understanding is indispensable to designing and delivering classes satisfying students' needs.

Meanwhile, the deficiency of understanding is inevitable to a certain extent due to two critical reasons. One of the reasons is that, despite the involvement in teaching students, there is virtually no direct mechanism allowing the instruction librarians to examine the effectiveness of library instruction classes on student learning where the librarians do not engage in evaluating students' works. Another and even more significant reason is that there is a shortage of quantitative study that objectively measures the impact of library instruction on student learning.

To fill the existing gap, the present study aimed to increase the understanding of the influence of library instruction class on student learning through an experimental study. Among many learning areas, the present study specifically focused on student writing as the subject of examination. The library at LSCPA offers face-to-face library instruction classes as per requests from the classroom instructors. The specific objective of this study was to examine how much students benefit from the classes towards improving their writing. To this end, the experiment was conducted with the students taking College English courses at LSCPA. In pursuit of objective findings, this

study adopted a quantitative, statistical method to analyze the data resulting from the experiment.

BACKGROUND OF INSTITUTION

LSCPA, located in Port Arthur, two hours to East from Houston, TX, was established in 1909 as the name of Port Arthur Business College to train the workforce for the petrochemical industry in Southeast Texas. The college became Port Arthur Collegiate Institute in 1911 and was operated by the Methodist Episcopal Church until 1918. Since then, the name of the institution had been changed a few more times until it was finally given the current name in June 1999. LSCPA offers more than thirty academic and technical programs and creates smooth pathways to transfer to four-year institutions or to work. As a member of The Texas State University System, the institution values the students' educational achievements, the employees' contributions, and the community's support. LSCPA has been continuously growing in the number of students and programs, including distance education.

The Gates Memorial Library at LSCPA was initially established in 1917 for Port Arthur residents and later became the National Register of Historic Places in 1981. The library provides a vast amount of full-text journal articles, books, e-books, and streaming video collections. It also offers other library resources, including the library catalog for book collections, databases for articles, faculty guide information, and research tutorials. Its library services comprise circulation, distance learning support, electronic devices rental, and interlibrary loan. In addition, the library offers library tours and library instruction classes based on the request of disciplinary faculty members. Having limited staffing with only two full-time librarians, the library utilizes many student assistants for its operation.

LITERATURE REVIEW

Library instruction plays an essential role in helping students learn how to use library resources and services effectively and efficiently. Academic libraries, thereby, provide students with various types of library instruction classes, including library tours, workshops, credit courses, and a one-time library instruction class. As the demand for library instruction class increases, the research on the significance of library instruction and the assessment of the impact of library instruction has been actively conducted (Gaha, Hinnefeld, and Pellegrino 2018; Luetkenhaus et al. 2017; Sherman, Martin, and An 2012; Victor Jr., Otto, and Mutschler 2013).

Gaha, Hinnefeld, and Pellegrino (2018) examined the relationship between library instruction and students' grade-point average (GPA). They collected the transcripts and cumulative GPAs of 1,380 students who attended Saint Mary's College, Notre Dame in Indiana from Fall 2008 through Spring 2015. They compared GPAs of two groups of students: the students who had a library instruction session and the students who did not. The comparison showed that the former group had a significant increase in the four-year cumulative GPAs, which indicates a statistically meaningful connection between library instruction and students' GPAs.

Vance, Kirk, and Gardner (2012) investigated the relationships among three variables—library instruction, student performance, and retention—at Middle Tennessee State University (MTSU) during Fall 2008 and Spring 2009. In this study, the researchers found that there was a strong, positive relationship between a student's first-year GPA and retention. They also identified the positive impact of the library instruction on student performance and student retention, respectively.

A few previous studies analyzed the correlation between library instruction and information literacy skills (Beile 2003; Hobbs et al. 2015; Luetkenhaus et al. 2017; Shao and Purpur 2016). The results of those studies discovered the direct influence of library instruction on students' library information skills. Hobbs et al. (2015) argued that the library instruction enabled students to improve skills considerably for database selection, searching strategy, locating peer-reviewed journal articles, and citation. Beile (2003) claimed that students with multiple experiences of library instruction had significantly outperformed on a library skills test than students with no prior library instruction experience. Shao and Purpur (2016) analyzed especially the correlation between student information literacy skills and their writing skills, concluding that information literacy skills could directly help improve student writing. These studies commonly concluded that the library instruction, whether it is one-time or repeated class, is a useful tool enabling students to develop and improve library skills and, thereby, strongly recommended academic libraries to offer instruction classes to students.

The collaboration between librarians and faculty is essential to delivering information effectively via course-integrated library instruction (Hobbs et al. 2015; Kinsley, Hill, and Maier-Katkin 2014; Simons 2017; Squibb and Mikkelsen 2016; Victor Jr. et al. 2013). According to the Guidelines for Instruction Programs in Academic Libraries from the Association of College and Research libraries (ACRL) website, librarians and faculty should closely coordinate and collaborate for planning instruction that can effectively engage students in library class and assure them accomplish the expected learning outcomes. The guidelines also emphasize that librarians should also collaboratively work with administrators and staff to create a variety of instruction programs. To this end, Simons (2017) introduced the partnership of librarians, faculty, and the writing center to build an interdisciplinary course at the University of Houston by utilizing the partnership. The library at the institution expanded its instruction programs, which was led to fostered better research skills and encouraged interdepartmental collaborations. Kinsley, Hill, and Maier-Katkin (2014) argued that such collaborative efforts between librarians and faculty in instruction and research could contribute to generating knowledge and resources for creating library programs at other institutions.

Many previous studies have investigated the effect of specific library instruction courses on student performance (Daugherty and Carter 1997; Kinsley, Hill, and Maier-Katkin 2014; Sherman, Martin, and An 2012; Victor, Otto, and Mutschler 2013; Zhang, Goodman, and Xie 2015). Zhang, Goodman, and Xie (2015) examined the impact of a newly developed online library instruction class module, which also includes optional in-person tutorials, on students' performance in a first-year

Table 1. The number of students participated in Fall 2019 and Spring 2020

Semester	Fall 2019			Spring 2020	
Class	ENGL 1301-03	ENGL 1301-08	ENGL 1302	ENGL 1302-01	ENGL 1302-04
Number of students in class	24	24	23	22	15
Number of participants	22	19	19	20	14

engineering class. The results indicated that students could achieve significant improvement after completing the module and preferred the online class due to its flexible learning mechanism. Sherman, Martin, and An (2012) conducted a similar study in an advanced financial management class, in which they discovered the positive impact of library instruction on students' performance. Daugherty and Carter (1997) also reported the same result in a psychology class. Kinsley, Hill, and Maier-Katkin (2014) also found in a study that the students in a criminology seminar class were able to learn and hone skills for critical thinking, research, and writing skills through library instruction at the Florida State College of Criminology and Criminal Justice (CCJ). All of these cases clearly pronounce that the library instruction can benefit various academic programs, particularly through collaboration among faculty, staff members, and librarians.

METHODOLOGY

Purpose Statement and Research Questions

Although previous studies may have examined the effectiveness of library instruction in various classes, its impact on student writing at the two-year college level has not been sufficiently investigated. In order to fill the gap, the present study aimed to quantitatively measure the impact of the library instruction class on the writing performance of the targeted students. In pursuit of the goal, the present study attempted to answer the following research questions:

Is there a statistically meaningful difference in student's writing performance before and after taking library instruction classes?

If there is, how much impact does the library instruction class have on improving student writing?

Research Design

The present study adopted an experiment-based approach to measuring the impact. The experiment was conducted with students taking College English courses at LSCPA. The collaboration between the English instructor and the instruction librarian was critical to ensuring the success of the experiment. The collaborators had several meetings to design and conduct the experiment, including determining the context and content of instruction materials, instruction class schedules, and development of assessment metric. The assessment metric, which was collaboratively developed to measure and compare the improvement of student performance, comprises two writing assignments with the same level of difficulty and significance. The two assignments were completed by the first-year and second-year students who registered in English 1301 (2 classes) and English 1302 (3

classes) in the Fall 2019 and Spring 2020 (Table 1). Assignment 1 was given and graded before the library instruction class and Assignment 2 after the class. The librarian provided the students with a one-hour library instruction class after they completed and submitted Assignment 1. The class focused on learning skills for searching references, i.e., books and articles, necessary to complete the Assignment 2. Both assignments were graded by the English instructor.

Data Collection and Analysis

The English instructor provided the grades without students' names to the librarian. A paired sample t-test was conducted to analyze the results by using SPSS, a statistical analysis package. The grades were divided into two samples – one for Assignment 1 and another for Assignment 2. The null hypothesis for the t-test was that the library instruction class has no impact on students' writing performance. The alpha level of .05 was used as the level of significance to determine the acceptance or rejection of the null hypothesis. Table 1 shows the number of students in each class who participated in the experiment. In total, 94 students participated in the experiment, and accordingly, a paired sample of 94 grades was collected.

See Table 1. The number of students participated in Fall 2019 and Spring 2020

RESULTS OF ANALYSIS

Data classification

ENGL 1301 is English composition I course for the first-year college students, while ENGL 1302 is English composition II for the students whose degree plan requires both ENGL 1301 and 1302 courses. Since ENGL 1302 is more advanced, only those who passed ENGL 1301 can take ENGL 1302. In order to account for the different course levels between ENGL 1301 and ENGL 1302, two subsets were created from the entire sample. Subset 1 includes the grades for ENGL 1301 (all sections in Fall 2019), while Subset 2 comprises the grades for ENGL 1302 (all sections in Fall 2019 and Spring 2020). In addition, subset 3, which is the entire sample, was also prepared to examine the impact of the library instruction class on student writing. Each subset was further divided into two groups—grades for Assignment 1 completed before taking the library instruction class and grades for Assignment 2 grades after taking the class. In other words, each student has two grades, which are paired later for the paired sample t-test analysis.

Outlier test

Prior to the paired sample t-test, the classified sample data were tested to determine any existing outliers. Figure 1 presents the outliers detected from subset 1 and 2. For
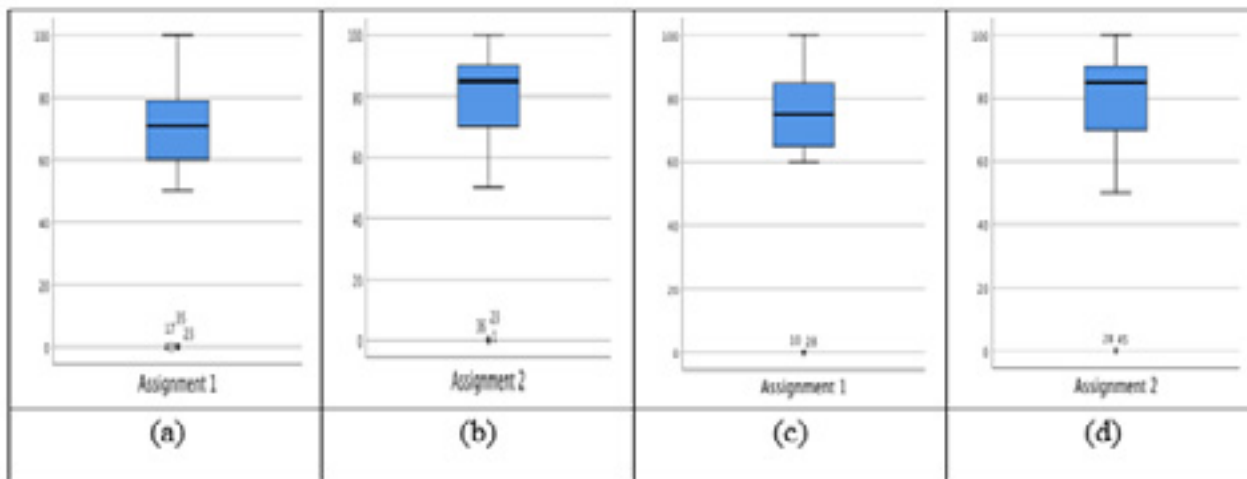
Figure 1. Outlier test results:
(a) ENGL 1301 before class, (b) ENGL 1301 after class, (c) ENGL 1302 before class, and (d) ENGL 1302 after class

instance, four students' grades for ENGL 1301 (Assignment 1) before class were found to be outliers, and three students' grades for ENGL 1301 (Assignment 2) after class. One student's grades were detected in both cases. As a result, subset 1 had 35 paired sample grades after removing the detected six (6 = 4 + 3 – 1) students' grades from 41 students' grades for ENGL 1301 class. Similarly, 50 students' grades were left in subset 2 after removing three students' grades from 53 students' grades for ENGL 1302.

See Figure 1. Outlier test results:
(a) ENGL 1301 before class, (b) ENGL 1301 after class, (c) ENGL 1302 before class, and (d) ENGL 1302 after class

Paired sample t-test results

A paired sample t-test was run to determine if there is a statistically meaningful difference in students' writing performance before and after taking the library instruction class. The test was conducted for all three subsets, excluding outliers, discussed above. Prior to the test, the sample was first examined based on the descriptive statistics for a simple comparison. Table 2 presents a summary of the descriptive sample statistics of the three subsets, including means and standard deviations. The increase in a sample mean of each

subset clearly indicates an improvement in students' writing. For instance, 31 out of 35 students in ENGL 1301, i.e., 89% of class, could improve their writing as much as 15.38%, from 72.31 to 83.43, on average after taking the library class. A similar trend was observed from the other two subsets—6.94% and 10.33% increase on average in subset 2 and subset 3, respectively.

See Table 2. Descriptive sample statistics

For a more robust examination, the subsets were examined by using a paired sample t-test method. Table 3 summarizes the result of the test. The test essentially examines if the means of grades before and after the instruction class are significantly different in a statistical sense, which is determined based on t-value and p-value. All three subsets were found to have a significant difference between the compared means as a very small p-value for each case indicates. For example, the means of grades for ENGL 1301 before and after the library class t-value was -5.97, resulting in $p < 0.001$. The p-values for all three subsets are significantly smaller than 0.05. The test results clearly indicate that the null hypothesis is to be rejected. In other words, the library instruction class has a significant impact on students' writing performance.

Table 2. Descriptive sample statistics

Class	Sample	Mean	N	Standard Deviation	Standard Error Mean
ENGL 1301	Assignment 1 grades	72.31	35	11.432	1.932
	Assignment 2 grades	83.43	35	12.763	2.157
ENGL 1302	Assignment 1 grades	75.80	50	11.789	1.667
	Assignment 2 grades	81.06	50	13.219	1.869
ALL	Assignment 1 grades	74.36	85	11.703	1.269
	Assignment 2 grades	82.04	85	13.010	1.411

Table 3. Assignment 1 and 2 paired samples test

| Class | Mean | Paired Differences | | 95% C.I interval | | t | df | p-value |
		Std. Deviation	Std. Error Mean	Lower	Upper			
ENGL 1301	-11.11	11.02	1.86	-14.90	-7.33	-5.97	34	0.000
ENGL 1302	-5.26	11.57	1.64	-8.55	-1.97	-3.22	49	0.002
ALL	-7.67	11.64	1.26	-10.18	-5.16	-6.07	84	0.000

See Table 3. Assignment 1 and 2 paired samples test

DISCUSSION

The librarian and the English faculty developed a supportive relationship at LSCPA with a goal to increase student learning in information literacy. This collaborative effort enabled students to enhance their library skills. The collaboration ultimately culminated in a significant improvement in student writing.

The successful outcomes suggest that such a coordinated library instruction class should be more widely offered in more classes across the campus to benefit students more broadly. It is also notable that the experiment conducted in this study was found to be an effective method for answering the research questions of the present study.

Despite the meaningful findings, the present study has a few limitations. There is still a need to test the collaborative approach with more samples in order to reach a more concrete and generic conclusion. In the present study, the impact of library instruction classes was measured within a short-term period; therefore, the long-term efficacy of the library instruction still needs to be evaluated. In order to overcome these limitations, an additional study is currently underway at LSCPA. The study involves more classes in English and other disciplines. In addition, a follow-up assessment in six months after the initial library instruction is also planned to evaluate the students' long-term knowledge retention.

CONCLUSION

This study showed that library instruction classes could significantly help students learn and hone library skills for finding and using library resources. It was evidently observed in the present study that such improvement was led to enhancing students' writing performance in English classes at the two-year college level. Finally, this study emphasized the need for partnership between the librarians and faculty in various majors to educate the students efficiently and productively.

Dr. Yumi Shin and Dr. Michelle Judice are faculty at Lamar State College Port Arthur.

REFERENCES

Association of College and Research Libraries, "Guidelines for Instruction Programs in Academic Libraries," accessed March 3, 2020. http://www.ala.org/acrl/standards/guidelinesinstruction.

Beile, Penny M. "Effectiveness of Course-Integrated and Repeated Library Instruction on Library Skills of Education Students." *Journal of Educational Media & Library Sciences* 40, no. 3 (March 2003): 271-277.

Coiffe, Dorothea J. "Webinars: Continuing Education and Professional Development for Librarians." *Journal of the Leadership & Management Section* 9, no. 1 (Fall 2012): 37–48.

Crawley-Low, Jill. "The Impact of Leadership Development on the Organizational Culture of a Canadian Academic Library." *Evidence Based Library & Information Practice* 8, no. 4 (December 2013): 60-77.

Daugherty, Timothy K. and Elizabeth W. Carter. "Assessment of Outcome-Focused Library Instruction in Psychology." *Journal of Instructional Psychology* 24, no. 1 (March 1997): 29-34.

Gaha, Ula, Suzanne Hinnefeld, and Catherine Pellegrino. "The Academic Library's Contribution to Student Success: Library Instruction and GPA." *College & Research Libraries* 79, no. 6 (September 2018): 737–746.

Guo, Shu. "Developing Effective Professional Development programs: A Case Study." *New Library World* 11, no. 5 (November 2014): 542-557.

Hobbs, Dan L, Ruiling Guo, Wendy Mickelsen, and Christopher Ira Wertz. "Assessment of Library Instruction to Develop Student Information Literacy Skills." *Radiologic Technology* 86, no. 3 (January 2015): 344–349.

Kinsley, Kirsten, Leslie Brook Hill, and Daniel Maier-Katkin. "A Research and Class Model for Future Library Instruction in Higher Education." *New Library World* 115, no. 9-10 (October 2014): 482-495.

Luetkenhaus, Holly, Erin Hvizdak, Corey Johnson, and Nicholas Schiller. "Measuring Library Impacts through First Year Course Assessment." *Communications in Information Literacy* 11, no. 2 (January 2017): 339–353.

Matarazzo, James and Toby Pearlstein. "Leadership in Disruptive Times." *IFLA Journal* 42, no. 3 (September 2016): 162-178.

Shamchuk, Lisa. "Professional Development on a Budget: Facilitating Learning Opportunities for Information Literacy Instructors." *Partnership: The Canadian Journal of Library and Information Practice and Research* 10, no. 1 (June 2015): 1-14.

Shao, Xiaorong and Geraldine Purpur. "Effects of Information Literacy Skills on Student Writing and Course Performance." *The Journal of Academic Librarianship* 42, no. 6 (November 2016): 670-678.

Sherman, Michael, Julia A. Martin, and Xiaoran An. "The Impact of Library Instruction on the Quality of Student Project Performance in an Advanced Financial Management Case Class." *Journal of Business & Finance Librarianship* 17, no. 1 (January 2012): 51–76.

Simons, Alexandra C. "Librarians, Faculty, and the Writing Center Partnering to Build an Interdisciplinary Course: A Case Study at the University of Houston, USA." *New Review of Academic Librarianship* 23, no. 1 (January 2017): 28–41.

Squibb, Sara Davidson and Susan Mikkelsen. "Assessing the Value of Course-Embedded Information Literacy on Student Learning and Achievement." *College & Research Libraries* 77, no. 2 (March 2016): 164–183.

Vance, Jason M, Rachel Kirk, and Justin G. Gardner. "Measuring the Impact of Library Instruction on Freshmen Success and Persistence: A Quantitative Analysis." *Communications in Information Literacy* 6, no. 1 (December 2012): 49-58.

Victor, Paul Jr, Justin Otto, and Charles Mutschler. "Assessment of Library Instruction on Undergraduate Student Success in a Documents-Based Research Course: The Benefits of Librarian, Archivist, and Faculty Collaboration." *Collaborative Librarianship* 5, no. 3 (July 2013): 154–176.

Zhang, Qinqin, Maren Goodman, and Shiyi Xie. "Integrating Library Instruction into the Course Management System for a First-Year Engineering Class: An Evidence-Based Study Measuring the Effectiveness of Blended Learning on Students' Information Literacy Levels." *College & Research Libraries* 76, no. 7 (November 2015): 934–958.

LESSONS FROM IMPROV THEATER

Applying Improvisational Concepts and Techniques to LIS

By Jay Edwards

ABSTRACT

This article explores improv theater concepts and techniques that are relevant to LIS and can be integrated into student training and librarian workshops. Some LIS literature applies these practices directly to library contexts. Substantial research exists in applying improvisation to three general areas: 1) collaboration and teamwork, 2) interacting with patrons and customers, and 3) teaching and instruction. Further research is needed in applying improvisational concepts to two LIS-specific areas: reference and information literacy.

IMPROVISATION IN THE LIBRARY?

Any time a patron walks through the door or messages the library online, the unpredictable can happen. No matter how well we plan, think out, and organize our day, there will still be some moments we will not see coming. Such moments enter our libraries in the form of patrons and users, manage our libraries in the form of staff and coworkers, and encroach upon our libraries in the form of ever-shifting technologies, budgets and environments. Even a routine conversation can suddenly go in an unfamiliar direction. We all improvise every day.

In general, improvisation refers to "creativity, adaptation and innovation under time pressure" (Ratten and Hodge 2016, 149). It can be thought of as "making do" with the resources that are available, while "letting go" of preconceived notions in order to move forward (Seham 2001, xx). Improvisational theater, also called improvisational comedy, Improv (US) or Impro (UK), entails performing without a script. This may be in the form of competitive games with increasingly absurd rules, structured formats that guide the direction of the narrative, or entirely free and unrestricted play. Improvisational traditions exist in music, dance and extemporaneous speaking. Unlike these forms, however, improv theater requires no special skills: only a common language and willingness to participate. This makes it a particularly accessible and flexible gateway to improvisational practice.

This article will explore how professional development activities derived from improv can enhance library and information services (LIS) in five areas: collaboration and teamwork; patron and user services; reference; instruction; and information literacy. Improv is not just a metaphor for good librarianship, but a practical set of skills and techniques we can immediately apply to all kinds of librarianship, as well as a repertoire of activities and exercises to train, practice and analyze those skills (Stamatoplos 2009).

THE CASE FOR IMPROV IN LIBRARIES

Jacqueline Donaldson Doyle (1996) describes improv as a metaphor for librarians successfully adapting to changing library landscape. Doyle identifies courage, creativity, and timely, effective response as critical attributes for librarians facing changing resources, technology and user expectations. Felix T. Chu (2007) discusses improvisation as one of several avenues of research relevant to practicing librarians and wondered whether improv might provide practical concepts and principles that could be "articulated and learned" and applied especially to reference work.

Anthony Stamatoplos (2009, 2015, 2019) approaches improv not just as a metaphor, but as a set of practical applications focusing on agreement, awareness, making connections, showing vs telling, and trust. In 2010, Stamatoplos worked with Edward Trout, director of ComedySportz (Indianapolis, IN), to develop exercises for building skills for information literacy instruction, such as paying attention, acceptance, teamwork, commitment and having fun.

Cathy Belben (2010) identifies improvisation as a set of skills, including "thinking quickly, forgetting inhibitions, having fun, and interacting positively with others," that enhance librarians' interactions with the public,

especially with teens (16). Jill Markgraf (2015) runs a blog on applying improv techniques in libraries, with a list of improv games to help librarians develop skills in leadership, planning, reference, teaching and teambuilding. Jennifer Laredo, Melissa Maglio and Heidi Murphy (2016) report using improvisation workshops and techniques to boost customer service skills among their library's employees.

Kate Dohe and Erin Pappas (2016, 2017a, 2017b) have developed a series of workshops for librarians focusing on collaboration and outreach. Inspired by Dohe and Pappas, Allison Hosier (2019) began attending improv workshops for teachers in New York and found immediate benefits in her approach to teaching information literacy.

INTRO TO IMPROV

The fundamental concept of improv is the rhetorical formula, "yes, and," which guides a back-and-forth dialogue between two or more people (Alda 2017, Frost and Yarrow 2016, Johnstone 1979, Kulhan & Crisafulli 2017, Seham 2001, Wasson 2017). An example of "yes, and" would look like this:

A: Do you want to go to the movies?
B: Yes, and let's go off our diets and eat a lot of greasy popcorn.
OR
B: Yes, let's sneak out of the house through the basement.
(Halpern, Close and Johnson 1994, 47)

Even when the participants do not literally utter the words "yes, and," this phrase guides improvisational dialogue:

Sarah: This is a picture of me and my mum.
James: Oh, that's too cute! How old are you here?
Sarah: About five. It's my first day at school.
(Salinsky and Frances-White 2017, 245)

"Yes" represents the perception and acceptance of incoming information; it creates affirmation and establishes a shared reality between participants. On the other hand, saying "no" or rejecting a participant's information would disrupt the process of collaboration, halting forward momentum and

requiring all participants to backtrack and start over. This part of the "yes, and" process recognizes all contributions as valid and establishes a platform necessary to move on to the next step.

The second and equally important component is "and," which signals the contribution of additional information. This is not the introduction of just any information, such as tangential details or non-sequiturs, but a specific response that builds on and expands the information previously accepted. This second component of "yes, and" ensures active participation within the creative process, rather than simple observation.

When two or more people are active in this receive-respond process, they can generate, explore, and expand upon ideas in new and surprising ways. Sawyer (2004) names this phenomenon "collaborative emergence" (13), in which no one person is in charge of the direction or outcome, and the new ideas that develop from the process prevent the outcome from being predicted in advance. But even though each improv session is new and unpredictable, the skills that lead to successful improv can be developed and enhanced over time. Workshops and classes that include "yes, and" activities can build such skills.

1) COLLABORATION AND TEAMWORK

Since improv theater's beginnings in the mid-1950s, and especially within the last few decades, improv performers and teachers have found ways to apply improvisational methods to corporate training (Ratten and Hodge 2016). This new product, termed "applied improvisation," sees teams of teachers traveling to business sites across the country to hold workshops that build employees' skills in areas such as communication and teamwork. These workshops' activities build trust, openness, and agreement between teammates, both among employees and between the organization and its wider community. Although these workshop activities are derived from improv theater, they rarely involve performing in front of an audience. Instead, as Belben (2010) describes, group activities are typically low-risk, low-anxiety and "designed to get participants to feel less self-conscious and more comfortable

with each other" (16).

Dohe and Pappas (2017a) have developed workshops geared specifically toward librarians that explore de-centering (putting ego aside to work with others), building ensemble and support, creating meaningful contributions, communicating, and learning to view failures as challenges and opportunities. Workshop activities give participants practice in supporting and respecting each other and their choices, helping each other succeed, and "mak[ing] your partner look good" (p. 3). Similarly, participants learn to trust each other and know that the other person will support them.

Although applying improv to teamwork has numerous benefits, many authors have also pointed out the limitations of improvisation. According to Dohe and Pappas (2016), improvisation takes place in a "creative space" in which ideas are allowed to flow freely, as opposed to an "implementation space" in which ideas must adapt to outside constraints. The creative space is a good place to practice specific skills, but participants must still understand the importance of practices outside the creative space, such as developing and internalizing shared values and ethics (Evans and Christie 2017), reflection and feedback (Reale 2017), and equity and inclusiveness for all voices (Seham 2001).

2) USER SERVICES

The improv-based training industry also applies improvisation to the relationships between employees and customers, patrons and users (Robson, Pitt & Berthon, 2015). In the library realm, this kind of professional development focuses on improving and exploring how public-facing library employees, including para-professional staff and student employees, interact with customers or library users. These workshops break down one-on-one interactions into component parts: active listening, spontaneity, avoidance of preconceptions, self-awareness (such as tone of voice, facial expressions and body posture), verbal communication, and so on.

Doyle (1996) recognizes that improvisational training "has value

[for participants] whether or not they're working with a script because it helps them stay in the moment, to be spontaneous and responsive" (78). Activities that require participants to listen closely to each other enhance their awareness of others, including library patrons. Participants gain practice in staying in the moment, focusing on the issue at hand, thinking flexibly, and avoiding preconceived ideas of what a user may want.

Los Gatos, CA librarians Laredo, Maglio and Murphy (2016) recruited an improv teacher to help their staff develop customer service skills in the face of growing demand for library services. After their improv training, Los Gatos staff continued to incorporate role-play elements into their regular meetings, which are a safe and analytic environment where they can try out various responses to potential patron interactions. Even though not all employees take part in the role-play scenarios, all employees are engaged in debrief conversations held immediately afterward, where they are more comfortable participating.

3) REFERENCE

Improvisational concepts can apply not only to basic customer service but directly to the reference interview. Taylor (1968) considers the reference interview one of the "most complex acts of communication" (180). Indeed, the reference interview is highly improvisational, as a librarian attempts to find out what information a patron needs (which is often hard to define), and helps them find that information. The process, according to Cassell and Hiremath (2018), means that "librarians must learn to improvise like expert jazz musicians" (15).

Dohe and Pappas (2017b) link the reference interview to the process of "yes, and," pointing out that every step involves "drawing out the thread of a workable idea... moving an idea forward [and] shaping it into something manageable" (424). The process begins when a user approaches a librarian and asks a question. The librarian accepts the user's question, then provides a response that includes information or solicits clarifying information from the user. Although the user may not

be aware of improv history or improv techniques, their response is part of the give-and-take process: they receive the librarian's response and respond with answers, feedback, or additional information of their own. In an effective reference interview, each turn provides additional information, such as a deeper understanding of the user's information need or an answer that meets their need.

This does not mean every turn must head in the same direction. Users may need to backtrack if they realize they're going off course as they attempt to articulate their needs. And librarians must be willing to let go of previous assumptions when they receive new information from users. In some cases, librarians may need to tell users that the information they need is not immediately accessible, or that a search did not retrieve relevant answers. Rather than giving up and sending the user away empty-handed, the librarian can offer alternative access or perform different searches. Although the words "yes, and" are not always expressed literally, the concepts of affirmation and contribution are still applicable and significant to a successful reference transaction.

Librarians and library schools have struggled to "replicate the immediacy and spontaneity of the reference interview" in the "artificial environment" of the classroom (Saunders and Ung 2017, 50). But activities derived from improv can create a sense of immediacy and spontaneity in a systematic way. To begin, components of the reference interview can be identified, broken down and rehearsed. The RUSA Guidelines for Behavioral Performance of Reference and Information Service Providers (American Library Association 2008) lists attributes necessary for a successful interview, such as engagement, focusing attention, verbal and nonverbal communication, listening skills, and encouragement. Jennerich and Jennerich (1997) identify twelve major skills needed in the reference interview, including eye contact, avoiding premature diagnosis, reflecting feelings verbally, and restating or paraphrasing content. These are

concepts frequently undertaken in improv workshops and rehearsals, using activities, games and discussions to target and strengthen confidence and ability. Later, after participants are comfortable with the elements of interpersonal communication, further workshops can include role-playing scenarios based on real-world patron inquiries.

4) INSTRUCTION

Sawyer (2004) explores the frequently cited metaphor of teaching as a scripted performance but concludes that teaching is best approached as an improvisational performance, in which teachers collaborate with students to generate educational play. The Association of American Colleges & Universities emphasizes active, collaborative learning as opposed to the lecture-based methods typically used in library instruction sessions (Kuh and Schneider 2008). As the trend toward active learning grows, library instruction is likely to focus more on collaborative activities, group discussions, and even student-led learning, and we should therefore expect that improvisational skills for librarians will become even more valuable.

Effective teaching requires a balance between structure and freedom. In a study for the Improvisation in Teacher Education (IMTE) project in Norway, Aadland, Espeland, and Arnesen (2017) found no contradiction between the use of scripts and improvisation. Teachers frequently alter, manipulate and make minor adjustments to their lesson plans to accommodate various student needs and various circumstances. Teachers also employ a repertoire of examples and explanations, mixing and matching them to suit the situation. In addition, they identify and act upon "teachable moments," opportunities to highlight, explain and reinforce concepts and skills.

Teachers gain valuable experience in the classroom, but they can hone and analyze their skills using improv techniques, which "can help librarians be flexible and respond creatively in the classroom" (Stamatoplos and Trout 2010, 195). Lobman (2011) argues that improv "provides teachers with a

concrete way of being playful with the scripts of schooling while including students as active participants in creating the environment of the classroom" (75). Both Stamatoplos (2019) and Hosier (2019) report that improv training has enhanced their performance in the library classroom.

5) INFORMATION LITERACY

No literature explores the relationship between improvisation and information literacy, but Lenters and Whitford (2008) and Howard et al. (2017) both demonstrate a strong link between active, collaborative learning and language literacy skills, as students are able to apply previous knowledge with a creative outlet. The most effective learning for students happens "in an open, improvisational fashion," where learners are allowed to "experiment, interact, and participate" with each other and the material (Sawyer 2004, 14). Limited time is a major challenge in an information classroom, with little time left for the active, collaborative learning that fosters creativity, curiosity and play. In fact, Hensley, Arp and Woodard (2014) suggest that in-depth information literacy education might be better left to one-on-one instruction so that group sessions can be devoted to creative pursuits.

With regard to information retrieval, it might be helpful to apply the "yes, and" formula to interactions between a user and a database. When the user enters search terms into a database, the system accepts that information and responds with information on its own: the number of results, a list of results with methods of accessing them, and suggested subject terms and other bibliographic information. The user then accepts the information from the database and responds with

additional information, this time in the form of item selection, filter selection or clarifying information, such as additional or alternate search terms.

A student's experience with information searching is necessarily slower and less immediate than in-person improvisation and can be more self-reflective and considered. However, several improvisational skills, such as adaptability, collaboration, creativity, flexibility, and an open mind are useful learning goals for information-literate learners (American Library Association 2015). Students must practice awareness when viewing search results, looking for information that explains why those results appeared. They must have the "mental flexibility to pursue alternate avenues" when the results are unsatisfactory (22). They must learn how to manipulate the database's search tools and become comfortable "playing with" interfaces and new methods of searching. They must also learn to trust others (namely, librarians) enough to ask for help, and eventually learn to support and encourage other users in their searches for information. Beyond language literacy and information literacy, these skills are also applicable to metaliteracy skills, such as digital literacy, digital collaboration and adaptation to ever-evolving technology and information landscapes (Mackey and Jacobson 2014).

CONCLUSION

What role does improv have in librarianship? Just like any other skill, such as doing arithmetic or playing an instrument, interpersonal skills take practice. Although one can read theory, history, commentary, and advice regarding the skill, the best and most reliable method of improving is to do it.

Every major city will have one or

more institutions dedicated to improv theater. Such theaters typically feature shows, workshops, and classes, as well as teachers who will travel for corporate or non-profit workshops. Smaller libraries may want to inquire about an improviser's rates for non-profit institutions. Public libraries may also consider booking public workshops and shows in addition to a staff workshop.

However, workshops are not the only way for individuals and groups to build improvisational skills. A wide variety of board games, card games and role-playing games combine structured sets of rules with freedom and play and provide various levels of interpersonal interaction. Library board game events are an excellent opportunity for librarians and community members to practice awareness, flexibility, and other improvisational skills, even if they are not branded as "improv."

The central concept underlying improv is "yes, and," which entails receiving and responding to information positively. This has multiple applications in library services. According to current research on improv theory and improv-based training, "yes, and" enhances team building, user interactions, and teaching. However, no qualitative or quantitative studies have been undertaken to examine the precise effects of improv training on library performance, especially the reference interview, or on the application of improvisational concepts to information literacy instructions. Given the potential benefits, further research in this area would be worthwhile and informative.

Jay Edwards is the Circulation Supervisor at the University of Oklahoma libraries.

REFERENCES

Aadland, Helga, Magne Espeland, and Trond Egil Arnesen. "Towards a Typology of Improvisation as a Professional Teaching Skill: Implications for Pre-service Teacher Education Programmes." *Cogent Education* 4, no. 1 (2017): 14.

American Library Association. "Framework for Information Literacy for Higher Education." 2015. http://www.ala.org/acrl/standards/ilframework

American Library Association. "Guidelines for Behavioral Performance of Reference and Information Service Providers." 2008. http://www.ala.org/rusa/resources/guidelines/guidelinesbehavioral

Alda, Alan. *If I understood you, would I have this look on my face?: my adventures in the art and science of relating and communicating*. New York: Random House, 2017.

Belben, Cathy. "YES, Indeed! Improv and the Art of Library Science." *Library Media Connection* 29, no. 2 (2010): 16-17. http://search.ebscohost.com.ezproxy.lib.ou.edu/login.aspx?direct=true&db=afh&AN=55094304&site=ehost-live

Cassell, Kay Ann., and Hiremath, Uma. *Reference and Information Services : An Introduction*. Chicago: ALA Neal-Schuman, 2018.

Chu, Felix. "Bridging the LIS-Practitioner Gap: Some Frames for Research." *Library Philosophy and Practice* 2, (2007).

Dohe, Kate, and Erin Pappas. "Lessons From the Field: What Improv Teaches Us About Collaboration." *Library Leadership & Management (Online)* 32, no. 1 (2017): 1-16. https://search-proquest-com.ezproxy.lib.ou.edu/docview/1966065804?accountid=12964

Dohe, Kate, and Erin Pappas. "The Many Flavors of "yes": Libraries, Collaboration, and Improv." *College & Research Libraries News* 78, no. 8 (2017): 422. DOI: 10.5860/crln.78.8.422

Dohe, Kate, and Erin Pappas. "Starting with "Yes, And…": Collaborative Instructional Design in Digital Scholarship." *Proceedings of the Library Orientation Exchange (LOEX) National Conference* (2016). https://doi.org/10.13016/M2QV3C52P

Doyle, Jacqueline Donaldson. "Librarians as Players in Improvisational Theater: Our Roles in the Changing Clinical Environment." *Medical Reference Services Quarterly* 15, no. 4 (1996): 73-79. https://doi-org.ezproxy.lib.ou.edu/10.1300/J115V15N04_07

Evans, G. Edward, and Holland Christie. *Managerial Leadership for Librarians: Thriving in the Public and Nonprofit World*. Santa Barbara: Libraries Unlimited, 2017.

Frost, Anthony, and Yarrow, Ralph. *Improvisation in Drama, Theatre and Performance : History, Practice, Theory*. New York: Palgrave. 2016.

Halpern, Charna, Close, Del, and Johnson, Kim. *Truth in Comedy : The Manual of Improvisation*. Colorado Springs: Meriwether Pub., 2001.

Hensley, Randy Burke, Lori Arp and Beth S. Woodard. "Curiosity and Creativity as Attributes of Information Literacy." *Reference & User Services Quarterly* 44, no. 1 (2004): 31-36.

Hosier, Allison. "I was once a world famous magician: Using improv to improve performance in the classroom" *College & Research Libraries News* [Online] 80, no. 8 (2019): 456. doi:https://doi.org/10.5860/crln.80.8.456

Howard, Christy, Melissa Adams-Budde, Joy Myers, and Grant Jolliff. "Shaping Our Literate Lives: Examining the Role of Literacy Experiences in Shaping Positive Literacy Identities of Doctoral Students." *International Journal for the Scholarship of Teaching and Learning* 11, no. 2 (2017): 7. DOI: 10.20429/ijsotl.2017.110208

Jennerich, Elaine Zaremba, and Edward J. Jennerich. *The reference interview as a creative art*. Englewood: Libraries Unlimited, 1997.

Johnstone, Keith. *Impro : Improvisation and the Theatre*. New York: Theatre Arts Book, 1979.

Kuh, George D., and Carol Geary Schneider. *High-impact educational practices: what they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities, 2008.

Kulhan, Bob, and Chuck Crisafulli. *Getting to "yes and": the art of business improv*. Stanford: Stanford Business Books, an imprint of Stanford University Press, 2017.

Laredo, Jennifer, Melissa Maglio and Heidi Murphy. "Library reality TV : Using Improv Techniques to Transform Your Approach to Customer Service." In *Stellar Customer Service: Training Library Staff to Exceed Expectations*, edited by Mou Chakraborty, 136-142. Santa Barbara: Libraries Unlimited, 2016.

Lenters, Kimberly, and Alec Whitford. "Failing with Grace: Kids, Improv and Embodied Literacies." *Literacy* 52, no. 3 (2018): 117-27. https://doi.org/10.1111/lit.12134

Lobman, Carrie. (2011). "Improvising within the system: Creating new teacher performances in inner-city schools." In *Structure and Improvisation in Creative Teaching*, edited by R. Keith Sawyer, 73-93. Cambridge: Cambridge University Press, 2011.

Mackey, Thomas P., and Trudi E. Jacobson, *Metaliteracy: Reinventing Information Literacy to Empower Learners*. Chicago: ALA Neal-Schuman, an imprint of the American Library Association, 2014.

Markgraf, Jill . "Library Improv." Last modified January 23, 2017. http://libraryimprov.blogspot.com/

Ratten, Vanessa, and Josh Hodge. "So Much Theory, so Little Practice: A Literature Review of Workplace Improvisation Training." *Industrial and Commercial Training* 48, no. 3 (2016): 149-155. DOI: 10.1108/ICT-08-2015-0053

Reale, Michelle. *Becoming a reflective librarian and teacher: strategies for mindful academic practice*. Chicago: ALA Editions, an imprint of the American Library Association, 2017.

Robson, Karen, Leyland Pitt, and Pierre R Berthon. ""Yes, And. . .": What Improv Theater Can Teach Service Firms." *Business Horizons* 58, no. 4 (2015): 357-62. https://doi.org/10.1016/j.bushor.2015.02.002

Salinsky, Tom, and Deborah Frances-White. *The improv handbook: the ultimate guide to improvising in comedy, theatre, and beyond*. New York : Bloomsbury Methuen Drama, 2017.

Saunders, Laura and Tien Ung. "Striving for success in the reference interview: A case study." *The Reference Librarian* 58, no. 1 (2017): 46-66. DOI: 10.1080/02763877.2016.1157778

Sawyer, R. Keith. "Creative Teaching: Collaborative Discussion as Disciplined Improvisation." *Educational Researcher* 33, no. 2 (2004): 12-20. https://doi.org/10.3102/0013189X033002012

Sawyer, R. Keith. *Structure and improvisation in creative teaching*. Cambridge: Cambridge University Press, 2011.

Seham, Amy E. *Whose improv is it anyway?: beyond Second City*. Jackson: University Press of Mississippi, 2001.

Stamatoplos, Anthony. "Improvisational Theater as a Tool for Enhancing Cooperation in Academic Libraries." In *Pushing the edge: explore, engage, extend: proceedings of the Fourteenth National Conference of the Association of College and Research Libraries, March 12-15, 2009, Seattle, Washington*, edited by D.M. Mueller, 136-142. Chicago: Association of College and Research Libraries, 2009.

Stamatoplos, Anthony. "Creativity in information literacy teaching: Part two – Applying creativity to teaching." *LOEX Quarterly* 41, no. 3 (2014): 8-9, 3. https://commons.emich.edu/loexquarterly/vol41/iss3/5

Stamatoplos, Anthony. "Applying Improvisation in Libraries and Librarianship." In *Creativity for Library Career Advancement: Perspectives, Techniques and Eureka Moments,* edited by Vera Gubnitskaia, Carol Smallwood, and Deb Biggs Tenbusch, 50-57. Jefferson, NC: McFarland & Company, 2019.

Stamatoplos, Anthony and Edward Trout. "Librarians as Improvisers: An Improvisational Approach to Teaching Information Literacy. " LOEX Conference Proceedings 2010, 33 (2012). https://commons.emich.edu/cgi/viewcontent.cgi?article=1032&context=loexconf2010

Taylor, Robert S. "Question-Negotiation and Information Seeking in Libraries." *College & Research Libraries* 29, no. 3 (1968): 178-94. DOI: https://doi.org/10.5860/crl.76.3.251

Wasson, Sam. *Improv nation: how we made a great American art*. Boston: Houghton Mifflin Harcourt, 2017.

MY PROFESSOR WANTS A HARDCOPY!

A Qualitative Study of the Effects of the Digital Divide on a Small HBCU Campus

By Martha López Coleman, Ed.D

A STUDENT RUSHES INTO THE LIBRARY on the last day of finals and asks, "Can I print? My professor wants a printout. I don't have any money." In the digital age with colleges and universities full of digital natives, why does printing stress students out? Why do professors demand hard copies?

As a mid-career librarian, I have always had the pleasure of serving populations of under-served, underprepared and communities of low socioeconomic status (SES). I have served in two schools with low SES populations, a public library within a low SES area and now I serve at an HBCU with a high population of students on financial aid many of whom are first generation college students. In each setting, there has been a standard charge for printing in the library. In seven years, in three different states, in three distinct library settings, the charge has been ten cents per page. One dime could be the difference between leaving with a copy of your paper or going home empty handed.

For a librarian the charge just makes sense. Ink is costly. Copy machines and printers require maintenance. The price of printing paper continues to increase. Printing is not free for the institution/school/organization so why should it be free for the patron? Until I saw the stress on a student's face during exams, I never questioned the printing charge. Now, I wonder about issues of equity and access.

When I began my tenure at Wiley College, the college was in a state of transition. I was taking over "Library Lab" rather than an actual library because the library had been closed several years prior due to concerns with the building. As my supervisor walked me to library lab, which had been closed for a few weeks during the transition, she noticed a "$.10 per page to print" sign. Her immediate question, "Where is the money that should have been collected?" She then authorized me to allow students to print for free.

My time in library lab was spent promoting the use of library resources, while working on the remodeling of Cole Library. My number one selling point: Print Your Papers for Free! Free printing is unusual in the library circuit. Students would drop in to quickly print a paper and then offer me ten cents per page. When I refused the money, they would smile and breathe a sigh of relief. At first I did not understand why a student would worry about a dime, then the students began to share their stories with me.

I too had been a first-generation college student. Rather than attend a minority-serving institution (MSI), I attended a beautiful women's college known for producing amazing writers and scholars. We had free printing

privileges, but you had to get to the computer lab at the right time. If the printer ran out of paper it might be a few days before it would be refilled. I remember worrying about paper being in the printer. I worried about notebooks and pencils. I was on a budget with no car on a campus that was about a mile from the nearest grocery store, i.e. cheap school supplies, but I could call my parents for a modest supply bump if I really needed it. Our campus bookstore had supplies but like all campus bookstore prices were higher than the grocery store.

Things are different for my Wiley students since, as stated before, Wiley is in transition. There is no campus bookstore. Campus is near downtown but still close to a mile from a discount store or grocery store. Yes, students have access to Amazon but when you are on budget with no help from outside sources and in immediate need, Amazon is not always an option. I did not initially understand that our students are surviving on their own. Most have no one to turn to for extra funds for things like pencils. A dime might in fact be the only money they have. In a digital age, are hardcopies the new evidence of the digital divide?

BACKGROUND OF THE PROBLEM
Access:
Since President Clinton addressed

internet access in his 1994 State of the Union address, a focus on internet access has dominated in educational literature and dialog (Bertot, Jaeger, et al, 2014). Equal access to the internet via libraries and schools is vital to help bridge the digital divide created by lack of access to personal computers. Black communities in particular report using libraries for internet access at a rate twice that of Whites and Hispanics (Perrin and Turner, 2019). Despite President Clinton's call to provide greater access in 1994, Perrin and Turner found in 2019 less than 60% of Black and Hispanic households report having a desktop or laptop computer. They also found access to broadband connections in the home was less likely in Black and Hispanic homes. With libraries and other public institutions working to provide internet access in order to level the playing field, does access also apply to printing?

Ashmore and Morris (2002) state, "Any librarian or library patron will acknowledge that printing is an essential part of patron services in the modern academic library . . . Yet, the topic of printing has made few appearances in the literature" (343). In 2014, Bertot et al, reported 91.1% of public libraries provided access to color printers and 33.2% to wireless printing but noticeably absent from the report: fees for such services. Even now the literature about printing is focused on 3-D printing rather than paper printing. The 2016 Pew Center report on Libraries did not even include a question about paper printing while asking specifically about 3-d printing (Horrigan, 2016). Access to laser printing in libraries is simply taken for granted.

Printing Fees:
Since printing is a ubiquitous library service, where does the "printing fee" come from? In 1999, Jones Walker, and Thiss reported five objectives for moving to a pay for print system:

- Recover at least partial printing costs;
- Improve management of public printers services;
- Significantly reduce wasted printing;
- Increase network efficiency;
- Utilize card access technology (2).

While the fifth reason is not universal, the top four reasons have been noted in other publications. Ashmore and Morris (2002) noted printing fees serve many purposes: cost recovery, deterring wasteful printing/printer abuse, and allowing libraries to better manage resources. The cost of equipment, paper, and toner/ink are real and can take a significant amount of money to cover. However, at a time when database fees are increasing while budgets are being cut, does a dime per page make a difference?
Status of Printing Fees:

According to the 2018 Campus
Computing Survey (Green, 2018), 56.3% of the 242 or approximately 136 institutions of higher learning charge some kind of technology fee with the fee averaging about $278 per academic year. Of that fee only about 27.8% is spent on providing free or discounted printing services for students (Green, 2018, 20). Private 4-year colleges and universities had the highest technology fees, $324 and $569 respectively, and provided only 21.5% and 25%, respectively to covering printing costs. Unfortunately, Green does not provide a further breakdown by MSI status; however, about 50% of HBCUs would fit the private college and university category (NCES).

A self-reporting survey conducted by the University of Richmond in 2014 of law school libraries found that, of the 140 institutions, 41 or about 29% provided no free pages to students at all. 22 intuitions allowed student over 1000 free pages but only one institution, the University of Minnesota, allowed students unlimited printing. As printing fees ranged from five cents to 48 cents per page depending on institution, it is unclear what the average amount a student could expect to spend out of pocket on printing. Whether a student used a university printer or invested in a home printer the lack of cost tracking obscures any useful data-driven predictions. So the question is left open, do students from poorer backgrounds suffer disproportionately due to lack of funds for printing?

Methodology:
While data can tell researchers the number of people effected by

something, personal interviews capture a person's feelings about the research topic. Qualitative researcher Brené Brown (2010) described qualitative research thus, "...stories are data with a soul." Stories, as Brown calls them, provide researchers with rich life details rather than just a steadfast number. The following research does provide graphs and tables corresponding to the use of the printers in Cole Library; however, the findings and recommendations are based on one-on-one structured interviews with the students and patrons of the library

Sampling:
The research was structured to include one-on-one interviews therefore a Likert scale survey sent via email would have been inappropriate. As a result, a mixture of convenience and purposeful sampling of library patrons was used. Creswell and Plano Clark (2011) describe purposeful sampling as, "researchers intentionally select (or recruit) participants who have experienced the central phenomenon or the key concept being explored in the study" (173). As the research only included students in Cole Library, they would be considered participants who the researcher knew had experience with printing in the library. When describing convenience sampling, Krysik (2010) writes, "As its name suggests, convenience sampling selects the most available elements to constitute the sample. . . . based on . . . ease of access, or other opportunity" (178). The researcher chose people in the library, which is where both her office and the library printer, which was at the center of the research, are located. Students in the library were easy to access and had experience with the use of library resources.

Semi-structured Interview:
Qualitative research typically has open-ended questions to allow participants freedom to express themselves (Creswell and Plano Clark, 2011). While many qualitative researchers use open or unstructured interviews, the nature of this research necessitated a limit to the scope of the interviews and therefore utilized a standardized open-ended interview or semi-structured interview. Semi-structured interviews allow the researcher to develop a set

of questions to ask all participants but do not limit the participants answers (Krysik, 2011). The researcher developed twelve open-ended questions that all participants answered. This ensured key points were covered while "not restricting participants' options for answering" (Creswell and Plano Clark, 177).

Statistics Collection:

In order to better understand the actual usage of the library printer and total cost of the usage, the researcher contacted the service provider for usage data for Spring 2019 and Fall 2019. The researcher also used student visit data from the same time period, which is kept by the circulation department. Cost figures were obtained by combing budget reports.

Limitations of the Study:

The researcher understands the findings contained are limited in applicability outside of the setting. The transition from Library Lab to Cole Library impacted the use of library resources, especially in Spring 2019. Not only did this effect the usage numbers for Spring 2019 but also skewed the participants in the study. Cole Library was closed for almost 4 years and as a result, several student "classes" are not library users. This is evident in the participants, who are mostly freshmen and sophomores. During the transition back into Cole Library, the printer was not moved until about mid-month causing a dip in the number of prints since the printer was not available.

FINDINGS

Student visits and printing:

As part of the study, the researcher chose to graph student visits to the library versus the number of prints actually made during the month. The graphs for both Spring 2019 and Fall 2019 note a general trend to an increase in students visits correlating to an increase in prints. Chart 1, below, shows the transition from Library Lab to Cole Library during April of 2019.

The trend in students visits peaks in April reflecting the move back into Cole Library located at the center of campus directly across from both the Student Union and Chapel. Counterintuitively the number of copies actually plummets; however, this is explainable as the printer was not moved immediately with the opening of the building. The cresting of prints in February may be attributable to students printing syllabi and e-books needed for classes. The increase in prints despite a decrease in student visits in the month of May maybe due to finals and students printing final presentations and such which are typically quite lengthy. The enrollment at Wiley in Spring 2019 was approximately 700 students, which averages out to 26 pages per student.

The trends for Fall 2019 show a general constant rate for student visits. It is notable in September 2019, printing hits an all-time high of 20,222. The staff of Cole Library had been making the rounds with various classes to promote library services. As part of these promotions, students were introduced to Learning Express Library,

part of the TexShare databases. This database includes several study guides for standardized tests, such as GMAT, MCAT, and GRE. Several students took advantage of free printing and printed a copy of the 239 page MCAT test book. It is worth noting, a MCAT practice book on Amazon costs $30 but, even at a charge of ten cents per page, at the library the printed book would cost less than $25.

The Fall semester ended at Thanksgiving break which marks a trend upward in printing as students were taking finals and turning in final projects for the semester. The enrollment for the Fall was 712, which averages out to just under 60 pages per student. Overall, these graphs show an upward trend in printing as the number of visits to the library increases.

Cost of Operation:

As stated in the background of the problem, printing has many associated costs. Along with the purchase of the machine, there are ongoing costs for printing including toner/ink, paper, and general machine maintenance. Wiley has upkeep contracts for their machines. The cost of the library printer for 2019, all 12-months, was $5,519.40. This is a fixed cost for the year, regardless of the number of prints. Whether there are zero prints in a month or 100,000, the cost is the same.

The fixed cost includes toner and basic maintenance for the printer but not paper. During 2019, 68,274 prints were made; of those 60,177 (approximately 88%) were made during active on-campus instruction. A case of regular letter size paper contains

Spring 2019

Fall 2019
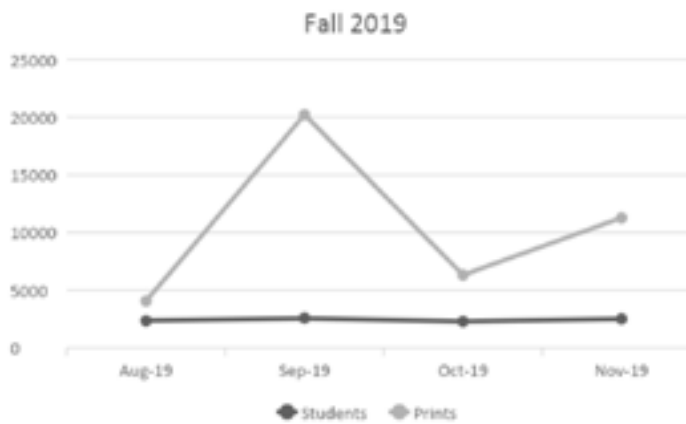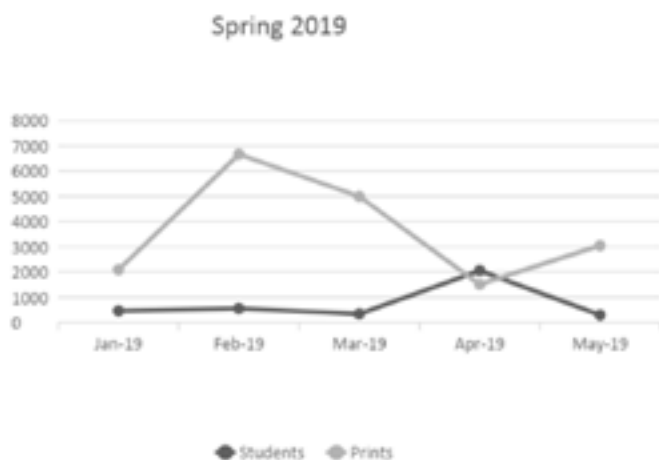
5,000 sheets, which means in 2019, Cole Library used approximately fourteen cases of paper. At a cost of around $34 per case, Cole Library spends around $476 for paper.

When adding fixed cost and paper cost for 2019, the total cost of printer service at Cole Library was $5,995.40. After dividing the total cost by the total prints to arrive at the approximate cost per print/copy, nine cents seems to be the right price point validating the argument for a dime per page at Cole Library. However, Ashmore and Morris (2002) warn that a printing fee could dramatically decrease the use of the library. Looking at printer numbers before the elimination of the printing fee at Cole Library, the average month had around 300 prints per month. At that number, the potential of a $360 cost to the students for the year could alienate library users and would only barely cover the operating cost for one month.

QUALITATIVE FINDINGS

Demographics of the Participants:
Thirty-six students participated in the research. These thirty-six students were found in the library and therefore are not necessarily representative of all of the students at Wiley College. There were 28 females participants and 8 male participants. They averaged just under 2 years at Wiley, which is explained by the overwhelming number of participant who were in their Freshman or Sophomore year (seven and twenty-one respectively). Only 1 Junior participated and only 7 Seniors which corresponds to the "generational" use of the library. As described in the methodology section, Cole Library was closed for several years, which means older students were simply not accustomed to using the library.

Perceptions of Printing:
The need for technology and access to technology is evident in the students' answers. All thirty-six participants indicate that technology is of utmost importance since much of their work is submitted electronically. Twenty-nine participants had their own computers but no participants had their own printer. This statistic appears to be indicative of the pool used to

find participants. Despite the lack of personal printers, only 15 students, roughly 41% indicate they feel stressed over printing. When asked where they would print if the library did not provide the service, each student is able to name at least one other place on campus.

Some students indicate that they do not actually have a need to print for class. Seven students express a need to print for "almost every class" for printing class notes rather than assignments. Eight students indicted they "sometimes" need to print. While the rest fall into a "hardly ever" or "never" categories.

Regardless of their own struggles or stress when printing, all of the student participants say they know someone who had struggled to print and/or find a printer on campus. While they all admit knowing someone who had struggle to print, fifteen students say they didn't believe a ten cent charge would be a hardship for themselves; however, twenty-two students do believe that it could cause a hardship for other students.

Due to student government elections, eight of the students who were interviewed happened to be involved in campaigns and were printing for that purpose. Those students all express the need for access to color printers. Cole Library does allow students printing for school purpose to print a very limited number of prints in color; however, this is done on a case by case basis. Color printing is much more expensive than printing in black and white and access is limited on campus. This study focused on black and white printing and therefore printing to the color printer is not reflected in the data.

CONCLUSIONS
The participants of this study confirmed the need for access to technology. Each participant came to college with a personal laptop and/or a cell phone to facilitate access to course work. The need for a printer was not as clear within this research. 41% of the participants had been stressed and in need of a printer at some point during their time at Wiley but none of the participants had personal printers. The need for a follow-up study is evident. The research questions given to

participants did not include an inquiry into the students' majors. It is possible certain majors require more printing and these participants were outside of those majors. The questions did not ask the students to estimate the number of pages they have printed in the previous semesters. Students in general may not realize or think about how much they print. When averaged out over all of 2019, each student prints about 50 pages. While 50 pages does not sound like a large number, for the students who need access, printing service is critical.

While about 40% of the participants did not think of printing as a source of stress or feel that a printing charge would be a hardship for themselves, they do perceive the need to print as a stressor for their fellow students and indicate that a charge per page, no matter how small, would cause a hardship. With an enrollment of less than 1,000 students, the community is small and students know each other fairly well. Is it possible this intimate knowledge of other students makes them more sensitive to the needs of their fellow students? The participants could have easily avoided the question but each participant could quickly identify a student who would struggle to find a dime.

Not only did the participants indicate that a charge per page would be a hardship but the cost data echoes their sentiments. When Cole Library was charging for prints/copies, very few prints were actually made. While this may seem like a victory, the fixed cost of providing the service means that whether students print zero pages or 100s of pages the money must still be spent. In an electronic age, can a library cut printing services? 3-D printing has become the focus of research in library printing service precisely because laser printing is a considered a given service that will always be available.

This study set out to prove that printing charges are deepening the digital divide. In conclusion, this topic warrants further study. Students do need to print and charging for that service can cause a hardship to some. Access to printers is also more difficult for some students than others and that

may follow socio-economic lines. The limitations of this study do not allow us to make the conclusion that the digital divide is made worse by printing charges; however even though the participants said their biggest need was for a computer and internet access, each participant in this study was found printing in the library.

AFTERWARD

Since the conclusion of the study, college and university campuses have been greatly affected by COVID-19. At Wiley, students were sent home on March 20 to finish the semester via online platforms. Internet access at a student's home is outside the scope of this research and new research is currently being published by other researchers as we prepare for Fall 2020. The usual end of semester rush for

the printer did not occur. The entire campus was quiet. Issues of printer access took a backseat to student health and safety. The path for the Fall semester is currently unclear for many college and universities, once "normal" returns to our campuses then maybe printer access can again be researched.

Martha López Coleman is the Director of Library Services at Wiley College.

BIBLIOGRAPHY

Ashmore, Beth and Sara E. Morris. 2002. "From Scraps to Reams: A survey of printing services in Academic Libraries." *College and Research Libraries* 63, no. 4 (July 2002): 342-52. https://doi.org/10.5860/crl.63.4.342

Bertot, John Carlo, Paul T. Jaeger, Jean Lee, Kristofer Dubbels, Abigail J. McDermott, and Brian Real. 2014. 2013 Digital Inclusion Survey: Survey Findings and Results. College Park, MD: Information Policy & Access Center, University of Maryland College Park. Available at http://ipac.umd.edu/.

Brown, Brené. 2010. Brené Brown: The power of vulnerability. [Video file]. Retrieved from http://www.ted.com/talks/brene_brown_on_vulnerability.html

Creswell, John W. and Vicki L. Plano Clark. 2011. *Designing and Conducting: Mixed methods research*. Los Angeles: Sage Publications.

Green, Kenneth C. 2018. *Campus Computing 2018: The 29th national survey of computing and information technology in American higher education*. The Campus Computing Project. Accessed on December 10, 2019 www.campuscomputing.net

Horrigan, John B. 2016. *Libraries 2016*. Pew Research Center. Accessed on January 21, 2020 http://www.pewinternet.org/2016/09/09/2016/Libraries-2016/NUMBERS, FACTS AND TRENDS SHAPING THE WORLD

Jones, John, Michael Walker, Mona Thiss, and Shirley Thomas. 1999. *"Pay for Print: Implementing fee for service programs"*. Paper presented at the ninth annual meeting of the American Council of Research Libraries, Detroit, MI, April 8-11, 1999.

Krysik, Judy. 2010. *Research for effective social work practice*. New York: Routledge.

National Center for Education Statistics (NCES). 2019. "Fast Facts: Historically Black Colleges and Universities." NCES accessed December 9, 2019, https://nces.ed.gov/fastfacts/display.asp?id=667

Perrin, Andrew and Erica Turner. "Smartphones help blacks, Hispanics bridge some – but not all- digital gaps with whites." *Facttank: News in the Numbers*, (August 20, 2019). Accessed March 10, 2020, https://www.pewresearch.org/fact-tank/2019/08/20/smartphones-help-blacks-hispanics-bridge-some-but-not-all-digital-gaps-with-whites/

University of Richmond School of Law Library. 2014. *Printing Survey*. Access January 15, 2020. https://law.richmond.edu/faculty/initiatives/printsurvey.html

PAST INVESTIGATIONS FUELING FUTURE INNOVATIONS:

An Analysis of the Institute of Museum and Library Services National Leadership Grants for Libraries

By Wenli Gao, Reid Boehm, Jingshan Xiao, and Jingjing Wu

ABSTRACT

The Institute of Museum and Library Services (IMLS), a major funding agency for museums and libraries in the United States, offers a variety of grant programs to support strategic goals of providing lifelong learning, building capacity, increasing public access, and achieving excellence. Among its diverse grant programs, the National Leadership Grants for Libraries (NLG-L) program supports innovative projects that generate new tools, research findings, services, and practices, enhancing the quality of library and archive services nationwide with advancements in theory and practices. This project analyzes data retrieved from the IMLS website for NLG-L awards from 2010 to 2019. The purpose of the project is to investigate trends in grant award distribution including institutions, types of institution, years awarded, and monetary amount. Additionally, this project looks at recurring themes in awards. As external funding becomes more important for libraries and archives to demonstrate their reach within their communities, the results of this project provide librarians and administrators an overview of NLG-L grant trends and gaps, to inspire future grant ideas.

Keywords: National Leadership Grants for Libraries, grant analysis, grant trends

INTRODUCTION

A major federal funding agency for libraries, museums, and related institutes across the nation, the Institute of Museum and Library Services (IMLS), awards grants annually through myriad grant programs. Of these programs, the National Leadership Grant for Libraries (NLG-L) draws applicants from a broad range of institutions and often proposals are collaborative efforts among different types of libraries. In aligning with IMLS's 2018 – 2022 strategic plan, the current focus of the program is, "to motivate the library and archival field to innovate, implement and adapt potentially transformative approaches in response to our society's demographic and cultural shifts" (IMLS 2018). The impact of the program for libraries is substantial. For example, between 1998 and 2019, a search via the IMLS "Awarded Grants Search" Database retrieves 873 results (IMLS 2020). As such, a systematic analysis of the awarded proposals for this program over time is an essential tool providing nuanced understanding of the current landscape of themes and projects, and in consideration of effective avenues for future proposals.

According to IMLS (2019), NLG-L supports one of the following three goals and an associated objective from the IMLS strategic plan, *Transforming Communities: promoting lifelong learning, building capacity, and increasing public access*. Promoting lifelong learning covers learning and literacy for people of all ages, building capacity includes strengthening the capacity of libraries and museums to improve the well-being of their communities, and increasing public access involves strategic investments that increase access to

information, idea, and networks. Libraries and museums are trusted sources and spaces in these activities. To evaluate proposals, NLG-L establishes four indicators: national impact, current significance, strategic collaborations, and demonstrated expertise. The evaluation criteria emphasize that NLG-L aims to address critical issues and challenges of high priority facing libraries and archives. The program encourages the development of skills, in addition to collaborations, to expand boundaries within and beyond the operation of libraries and archives.

The research team did not find any official documentation reporting the funding rates of NLG-L for proposals. In a 2018 news release (Holtan), indicated that in the fiscal year, NLG-L received 113 preliminary proposals in the second grant proposal cycle. Of these, 46 projects were invited to submit full proposals, and 31, were awarded. Therefore, the NLG-L can be considered quite competitive with a funding rate of 27% for 2018 in comparison with the National Science Foundation (NSF) overall funding rate of 24% (NSF, 2019) in the same financial year. This study investigates the overall trends of NLG-L awarded projects including their distribution by states, institutions and themes. The expectation is that the analysis assists in development of insightful views of past projects and future potential, provoking new ideas for archivists, librarians, library practitioners, and other information professionals from diverse backgrounds.

LITERATURE REVIEW

The ways with which information about IMLS NLG-L grants is reported varies widely. At the outset, grants are announced by the IMLS and the information is shared via news outlets, including in recent years, tweets and social media posts. The #IMLSgrant search on Twitter shows a picture of awarded grants and project-related events in real time. Library associations and professional groups often share information about newly awarded grants as part of newsletter publications or blogs. For example, The Association of College and Research Libraries shared their 2011 National Leadership Collaborative Planning Grant, "Building Capacity for Demonstrating the Value of Academic Libraries" as part of their ACRL Insider blog (Malenfant 2011). This was followed by a second post in 2012 announcing a second National Leadership Demonstration grant for the continuation of the project (Malenfant 2012).

In a similar vein, colleges and universities also report IMLS awards as part of library or department newsletters, reports, and blogs. At Lewis and Clark (2018), the Sponsored Projects and Research Compliance Office reported that the campus library received a Spark Innovation Grant as part of the NLG-L program in 2018 entitled, "Data in the Disciplines: Developing a Network to provide Data Management and Data Information Literacy Services at Small College and University Libraries." Large public universities will often issue reports of librarian awards via the library newsletter, as is the case for the 2017 University of Houston Library news posting for the project "Developing a Framework for Measuring Reuse of Digital Objects" (Fisher 2017).

LIS professionals may also hear reports directly from the IMLS at professional conferences or meetings such as the Coalition for Networked Information (CNI). CNI hosts an annual update from federal agencies that award grants to libraries at their Spring meeting, and prior to the mid 2000s, this was specifically focused on the landscape of current IMLS grant awards. Materials from these meetings are archived on the CNI website (Crawley et al. 2006). As projects come to fruition and outcomes are delivered to the communities with which they are relevant, conferences and meetings of professional societies may be some of the main venues for distribution of information or the place in which the project is executed. Other than reports that grant recipients must send to the IMLS, white papers, toolkits, and conference proceedings are often the main forms the information takes. The Digital Collections and Content (DCC) project funded by an IMLS NLG-L grant, has several published conference proceedings as project participants shared outcomes of the work overtime (Jett et al. 2010; Palmer et al. 2010). Grant recipients may also write articles detailing the process of the work and the outcomes of efforts. The Software Preservation Network's 2017 needs assessment, convened as part of a National Forum Grant, produced an article detailing the creation of a community roadmap and the outcomes for future work (Meyerson, et al 2017). Such efforts give deep perspectives into the actions of these projects and provide frameworks or guidance for others leading similar events. The amount of literature that reports on IMLS NLG-L projects is overwhelmingly broad because of the diversity of reporting venues, media, and relevant audiences, making it quite difficult to get a clear picture of the full landscape and context of grant awards overtime.

Scholars have done over-arching discussion and analysis of IMLS NLG-L grants or related grants. In a 1987 Congressional Report, Riddle (1987) relays the need for coordination of activities and development of award levels to enhance the effectiveness of federal funding to libraries. Two decades later, Weiss (2018) provides a historical look at the role of IMLS in the development of the grant program for African American Museums, and later, Apley et al. (2011) present a full report of the Museums for America program looking at patterns of funding and topics addressed between 2004 and 2010. Often these analyses have a very specific utility. Benevito (2005) wrote a white paper detailing the collection characteristics of IMLS NLG-L community

digital collection holdings, Lisenbee (2018) uses network analysis to visualize the extent of National Digital Platform grants from 2014 – 2017, and Gao et al. (2020) presents the scope of the Laura Bush 21st century library program awards between 2003 and 2018. Other articles address the grant writing process for library information science professionals (Gerding 2006) and sources of library funding (Maxwell 2014).

In other disciplines there is evidence of grant analysis in which scholars address the return on investment (Hippel and Hippel 2015) and analyze linguistic components of review reports from proposals to understand concepts of decision-making (Besselaar et al. 2018). These studies all add nuance to a collective understanding of grant award perspectives within the discipline. While these contributions demonstrate attention to the concept of grant-centered analysis, we see demonstrated here, a need for a clearer picture of the IMLS NLG-L landscape of awarded projects. This study brings a broad view of the scope of NLG-L awards to provide perspective to LIS professionals and groups as they consider and shape future proposals.

METHODOLOGY

The IMLS offers a search interface for awarded grants on their website. The research team searched and downloaded all the awarded NLG-L grants from 2010 through 2019 as a Comma Separated Value (CSV) file on November 11th, 2019. The file included 424 records and each record had 11 fields, including institution, fiscal year, award amount, recipient type, program categories, city, state, and the main body text, which is the abstract of the project.

The research team imported the CSV file into Microsoft Excel 365 and used Excel power query and pivot table functions for data cleaning and preliminary analysis. The team then ran a word frequency analysis for the main body text field using a Python script. The following three rules were employed for normalizing institution names. First, if an institution has multiple names in the data set, one of these names is chosen as the unique name. For example, both "Rhizome" and "Rhizome Communications, Inc." were used for an affiliate in residence at the New Museum in New York City, and "Rhizome Communications, Inc." was selected as its unique name. Second, if several child organizations or both child and parent organizations appeared in the data set, the parent organization was used as the unique name. For instance, "Regents of the University of Michigan", "University of Michigan", "University of Michigan, School of Information", and "University of Michigan's School of Information" were replaced with "University of Michigan". Last, universities in the same system but located in different cities were considered as different institutions. For example, University of Wisconsin at Madison and University of Wisconsin at Milwaukee were two institutions. This process decreased the number of institutions from 280 to 243.

The original data set downloaded from the website categorized institutions into two types, library and museum. Out of 424 records, 418 were designated as "library." This does not include enough information for librarians to gain an understanding of the institution type of grant winners. Research team members manually encoded these institutions as seven types: consortia, corporate, higher education, library association, museum, public library, and other. Coders based the distinctions primarily on the name and known identity and referred to their websites for clarification as needed. Another team member randomly checked 30% of the records to ensure the accuracy and reliability of the encoding.

RESULTS AND DISCUSSION

Award Distribution by Institution Type

Data populated from the IMLS website shows that from 2010 through 2019, NLG-L granted over 109 million dollars to 424 projects. The mean and median of these awards are $257,415 and $231,253 respectively. The maximum grant, $1,999,897, was awarded to the Digital Public Library of America to foster a large expansion to a network of open-access, content-hosting "hubs" that will enable discovery and interoperability, as well as foster reuse of digital resources by people from this country and around the world. Although the minimum and maximum award amount varies widely, the median award amounts between different institution types are similar, except for corporate. Higher education institutions receive 59% of the total number of grants and 57% of the total amount, followed by public libraries. Table 1 shows the award distribution by institution type.

Table 1. Awards distribution by institution type

Type	Count	Total	Median	Average	Minimum	Maximum
Higher Education	251	$62,088,243	$200,002	$247,364	$20,422	$999,493
Public Library	65	$19,654,509	$249,000	$302,377	$25,000	$1,999,897
Other	41	$13,009,857	$248,300	$317,314	$25,000	$1,214,780
Library Association	23	$5,489,302	$240,357	$238,665	$33,968	$581,609
Corporate	18	$3,175,504	$100,000	$176,417	$48,435	$749,418
Consortia	14	$3,664,519	$248,169	$261,751	$16,720	$590,766
Museum	12	$2,061,968	$193,825	$171,831	$48,920	$428,753

Award Distribution by Year

From 2010 to 2019, the year 2017 peaked in both the number and total dollar amount of awards, with 70 projects, for a total of $13,124,013 awarded. The year 2015 has the least grants among all years, with only 23 projects funded. In terms of grant money received, 2019 has the least, with only $8,283,940, a 37% drop from the highest year 2017. Since 2017, we see a steady decline in both award count and dollar amount, indicating an increasingly competitive grant application. Figure 1 shows the trends of award counts and total dollar amounts. Although 2015 is the year of the least in actual projects awarded, it has the highest average dollar amount, with an average of $460,183 per project. In recent years, from 2017 to 2019, the average dollar amount is about half that of 2015, ranging from $187,486 to $230,109. Figure 2 indicates the trends of the average dollar amount of NLG-L awards.

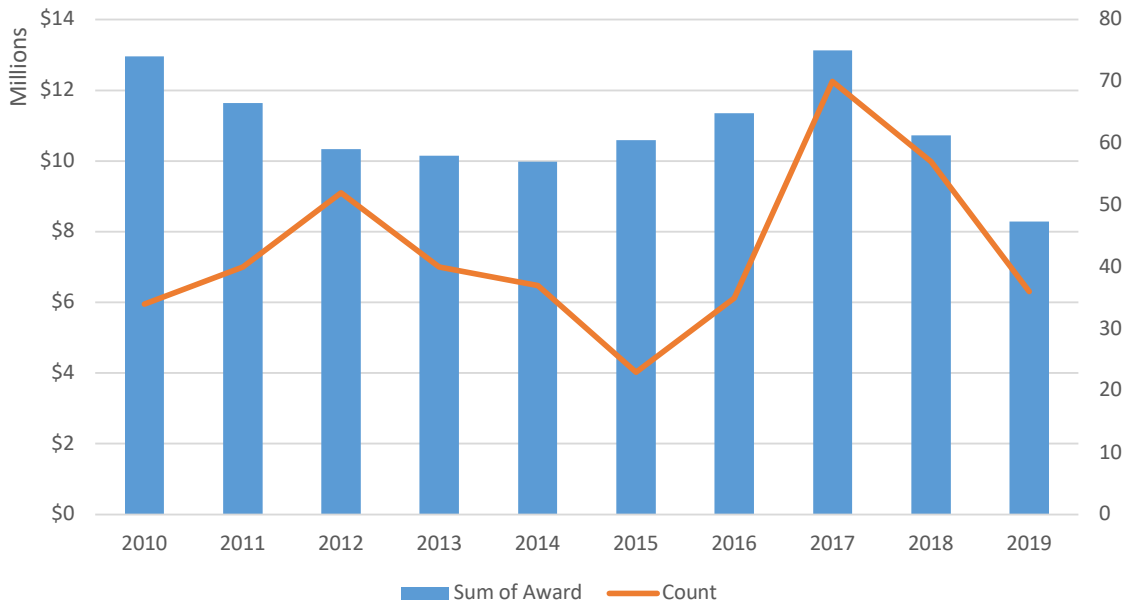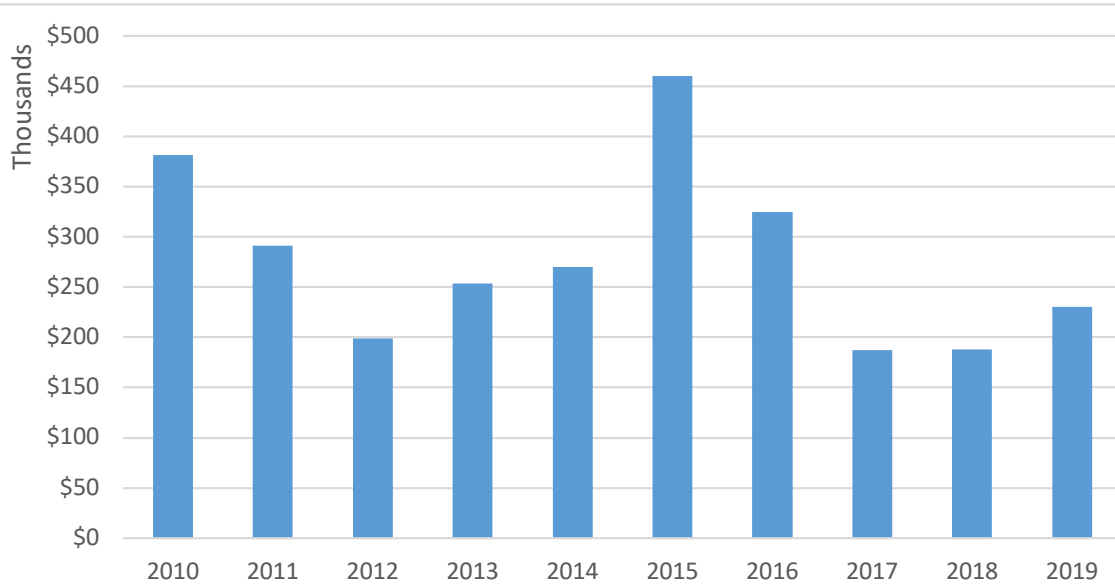**Figure 1.** Trends of count and total dollar amount of NLG-L awards

Award Distribution by Program Category

IMLS program categories are not consistent throughout the years and the data shows that some grants were not assigned any program categories, therefore, these grant records were labelled as "Not Categorized" in this study. Digital Catalysts projects received the most funding, with a total of $21,231,373. The projects in community - others and curating collections received less total funding, and average amount per award. With 44% of projects not categorized, it is hard to make conclusions based on program categories. Table 2 shows NLG-L awards by program category from 2010 to 2019.

Table 2. NLG-L awards by program category

Program Category	Count	Total	Median	Average
Not categorized	188	$44,569,959	$164,043	$237,074
Digital Catalysts	76	$21,231,373	$110,250	$279,360
Community Anchors	39	$8,678,308	$248,300	$222,521
Digital - Others	30	$12,122,953	$343,418	$404,098
Learning	24	$7,133,509	$249,855	$297,230
Digital Infrastructures	19	$4,315,723	$203,508	$227,143
Library-Museum Collaboration	15	$5,626,886	$257,767	$375,126
Community - Others	12	$1,637,271	$144,353	$136,439
Curating Collections	11	$1,100,800	$87,000	$100,073
Community Catalysts	10	$2,727,120	$245,023	$272,712
Total	**424**	**$109,143,902**	**$231,253**	**$257,415**

Top 10 States by Award Amount

Geographically, 43 states received NLG-L grants. New York (NY), Illinois (IL), California (CA), Massachusetts (MA), and Pennsylvania (PA) rank first through fifth in order of the total dollar amount. The total amount of grant money obtained by the top five states encompasses over 43% of the entire NLG-L grants, while the top ten states received 61% of the total award, indicating that the awards were concentrated in major states. Surprisingly, with only five grants, the state of Maine (ME) received more money per grant, with an average amount of $471,966 per grant project, the highest average amount among all states. The state of Virginia (VA), Maryland (MD), Wisconsin (WI) and North Carolina (NC) all received more than ten grants on smaller projects,

so they did not make the top ten list in terms of total award money. Table 3 illustrates the top ten states by total award dollar amount.

Table 3. Top 10 states granted NLG-L awards by total dollar amount

State	Total	Count	Median	Average
NY	$13,899,905	49	$248,553	$283,672
IL	$10,847,549	39	$213,932	$278,142
CA	$9,743,505	39	$248,300	$249,833
MA	$6,746,289	21	$89,728	$321,252
PA	$5,523,510	21	$224,761	$263,024
MI	$4,603,033	12	$460,248	$383,586
WA	$4,337,427	15	$254,072	$289,162
IN	$4,175,851	14	$174,696	$298,275
DC	$3,470,378	13	$248,670	$266,952
TX	$2,922,260	17	$150,000	$171,898

Top 10 Institutions by Award Count

Altogether, 243 institutions received NLG-L awards from 2010 to 2019. Among the top ten institutions, all are considered higher education institutions, except the American Library Association. The University of Washington received most of the grants by count, and University of Michigan ranks highest in total award money received. In terms of total award money, University of Washington, University of Illinois at Urbana-Champaign, Syracuse University, University of Michigan, Indiana University, and American Library Association are the top ten institutions by number of grants received that are also listed among the top ten by total award money received. Some institutions that are also on the top ten list by total award money were Portland State University, Providence Public Library, New York Public Library, and Digital Public Library of America. It is worth noting that these public libraries received only two or three grants, but each received a large amount of money per project. Table 4 lists the top ten institutions by award count. Of top ten institutions listed here, 4.5% institutions received 20% of the total grant money. When compared with the more concentrated number of awards in the top ten states, it seems awards have a wider distribution among institutions.

Table 4. Top 10 institutions granted NLG-L awards by award count

Rank	Institution Name	Count	Total
1	University of Washington	11	$2,677,516
2	University of Illinois at Urbana-Champaign	10	$2,352,680
3	Syracuse University	9	$1,670,215
4	University of Michigan	8	$4,167,420
4	Indiana University	8	$3,112,424
4	American Library Association	8	$2,370,898
7	University of North Texas	6	$1,481,852
8	Harvard University	5	$1,222,091
8	University of Maryland	5	$1,232,727
8	Montana State University	5	$722,950
8	North Carolina State University	5	$945,870

Themes

To gain a clearer picture of awarded topics, informing future project proposals, the research team used

Python scripts to run word frequency counts for the main body text field, which is also the abstract for grant proposals. After removing common stop words, some words appeared frequently. Digital, data, and community, appeared 304, 273, and 273 times respectively, giving only minor insights for the focus of the projects. However, results from frequently appearing two-word combinations provided more meaningful information. The phrase early literacy appeared 28 times and early learning appeared 21 times, indicating a focus for developing literacy skills at an early age. Another theme of note is the focus on data related work, as research data and data management appeared 24 and 22 times respectively. This demonstrates that within the past ten years, with the development of library data services and big data concepts, many grants are developing and receiving funding around these issues.

LIMITATIONS AND FUTURE RESEARCH

In this study there are several limitations to consider. First, the research team coded institution types to the best of their ability, but there are still many variations that might be applied for the "other" category. A standardized and more defined institution type might be developed to address this consistently. Second, the grant category for NLG-L varies over the years and contains missing data or categorical name changes, making analysis by category difficult. In future research, one may consider looking at the grant proposal and create categorical names based on the abstract. Moreover, since 59% of the grants were awarded to institutions of higher education, it will be interesting to see if specific trends and theme existed among those awarded projects. Finally, the abstract for each grant contained large amounts of information describing the project's scope and purpose. With Python scripts, the research team was able to quickly conduct word frequency analysis, but there are a lot more ways to analyze these data. In future research, researchers might code topics manually to identify recurring themes. Researchers might also code characteristics such as collaborations among different institutions to see if collaborations bring about more awards.

CONCLUSION

Analysis of the trends of NLG-L grants provide some insights to IMLS funding patterns in relation to the development of new tools and projects that improve the quality of library services. Based on ten years of data, institutes of higher education received 59% of the total number of grants and 57% of the total dollar amount, even with the study's six other institution type categories. Public libraries received 15% of the total number of grants and 18% of the total dollar amount as the second largest for institution type. In award distribution per year, the peak year is 2017 for both number of awards and total dollar amount of awards. In the last two years 2018 and 2019, the funding of awards is declining, reaching the lowest amount of money awarded in 2019. This indicates that researchers are facing a very competitive grant environment.

At the state level, the total amount of grant money obtained by the top ten states is 61% of the total awards, while at the institution level, the top ten received 20% of the award money. While grants are concentrated in the top awarded states, their distributions are spread among a greater number of institutions. Additionally, among the top ten institutions, all were institutions of higher education except for the American Library Association. This is indicative that institutions of higher education are more often the driver for leading innovation and tools and service development in the library information science field. Within the past ten years, quite a few grants focused on data-related projects, such as research data and data management. This is in accordance with research dataset acquisition, text mining, and data science, as one of the current leading trends in academic libraries (ACRL Research Planning and Review Committee 2018).

Understanding these trends of NLG-L grants will help researchers obtain a broader overview of the landscape of the grant awards, and to understand more clearly the availability and distribution of funding for projects. By employing categorical and thematic analysis to almost a decade of supported grants, researchers are more equipped with awareness about key areas IMLS plans to support and as a result, more prepared to make informed decisions on proposal development. As external funding becomes increasingly important in building library and information science researchers' portfolio, this study provides inspiration and information for relevant and innovative grant ideas.

Wenli Gao, Data Services Librarian, University of Houston Libraries
Phone 713-743-8370 Email: wgao5@uh.edu

Reid Boehm, Research Data Management Librarian, University of Houston Libraries
Phone 713-743-5291 Email: riboehm@uh.edu

Jingshan Xiao, Associate Director for Technology and Resource Management, University of Houston Clear Lake
Phone 281-283-3912 Email: xiao@uhcl.edu

Jingjing Wu, Web Librarian, Texas Tech University
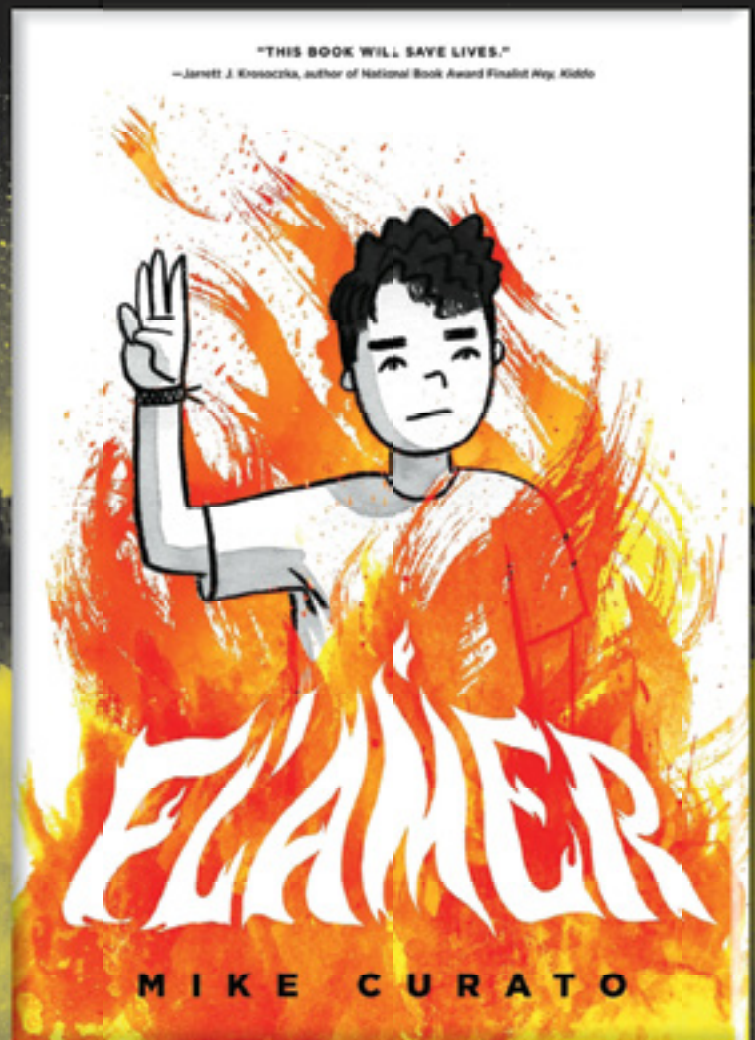*Phone 806-834-3991 Email: jingjing.wu@ttu.edu*

BIBLIOGRAPHY

ACRL Research Planning and Review Committee. "Top Trends in Academic Libraries: A Review of the Trends and Issues Affecting Academic Libraries in Higher Education." *College and Research Libraries News* 79, no. 6 (2018): 286-293.

Apley, Alice, Susan Frankel, Elizabeth Goldman, and Kim Streitburger. "Supporting Museums Serving Communities: An Evaluation of the Museum for America Program." *Institute of Museum and Library Services*, (2011), Washington, D.C.

Benevento, Jenny. "Summary of IMLS NLG Collections." *IDEALS @ Illinois*, (2005). https://www.ideals.illinois.edu/handle/2142/711.

Besselaar, Peter, Ulf Sandström, and Helene Schiffbaenker. "Studying Grant Decision-making: A Linguistic Analysis of Review Reports." *Scientometrics* 117, no.1 (2018): 313-329.

Crawley, Martha, Dan Lukash, and Barbara Smith. "IMLS Update: Programs, Initiatives, Projects." *CNI: Coalition for Networked Information*, (2006). https://www.cni.org/topics/digital-curation/imls-update-programs-initiatives-projects.

Figueroa, Miguel. "Center for the Future of Libraries Update." *American Library Association*, (2018). http://www.ala.org/aboutala/sites/ala.org.aboutala/files/content/governance/officers/eb_documents/2017_2018ebdocuments/ebd12.17_CenterfortheFuture_update.pdf.

Fisher, Esmeralda. "IMLS Grant Awarded for Measuring Reuse of Digital Objects." *UH Libraries News*, (2017, May 4). https://weblogs.lib.uh.edu/blog/2017/05/04/imls-grant-awarded-for-measuring-reuse-of-digital-objects/.

Gao, Wenli, Jingjing Wu, and Jingshan Xiao. "Training for Librarians: An Analysis of the Institute of Museum and Library Services Laura Bush 21st Century Librarian Program. " *Journal of Library Administration* 60, no.3 (2020): 282–294. https://doi.org/10.1080/01930826.2020.1711660.

Gerding, Stephanie. "Writing Successful Library Grant Proposals." *Public Libraries* 45, no 5 (2006):31.

Hippel, Ted, and Courtney Hippel. "To Apply or Not to Apply: A Survey Analysis of Grant Writing Costs and Benefits." *PLoS One* 10, no. 3 (2015): e0118494.

Holtan, Elizabeth. "IMLS Announces Investment of $8.1 Million to Strengthen America's Libraries: 45 Grants Will Fund Programs and Services for Communities across the Nation." (2018, August 24). https://www.imls.gov/news/imls-announces-investment-81-million-strengthen-americas-libraries.

Institute of Museum and Library Services. "Transforming Communities: IMLS Strategic Plan." (2018). https://www.imls.gov/about-us/strategic-plan.

Institute of Library and Museum Services. "Notice of Funding Opportunity for FY 2020. "(2019). https://www.imls.gov/sites/default/files/fy20-ols-nlgl-nofo.pdf.

Institute of Museum and Library Services. "Awarded grants search." (2019). https://www.imls.gov/grants/awarded-grants.

Jett, Jacob, Carole Palmer, Katrina Fenlon, and Zoe Chao. "Extending the Reach of Our Collective Cultural Heritage: The IMLS DCC Flickr Feasibility Study." *Proceedings of the American Society for Information Science and Technology* 47, no. 1 (2010): 1–2.

Lewis & Clark. "IMLS Awards Watzek an Innovation grant." *Sponsored Projects and Research Compliance Office*. (2018). https://www.lclark.edu/live/news/39306-imls-awards-watzek-an-innovation-grant.

Lisenbee, Diana. "Using Social Network Maps to Visualize Library & Grant Data." *Medium*. (2018). https://medium.com/@US_IMLS/using-social-network-maps-to-visualize-library-grant-data-a05db2ebb25d.

Malenfant, Kara. "ACRL Awarded IMLS Grant for Value of Academic Libraries Summits." *ACRL Insider*. (2011, September 27). https://www.acrl.ala.org/acrlinsider/archives/3983.

Malenfant, Kara. "ACRL Awarded Second IMLS Grant to Build Professional's Capacity to Demonstrate Value." *ACRL Insider*. (2012, September 20). https://www.acrl.ala.org/acrlinsider/archives/5817.

Maxwell, Nancy. *ALA Book of Library Grant Money*, Ninth Edition. Chicago: American Library Association, 2014.

Meyerson, Jessica, Zach Vowell, Wendy Hagenmaier, Aliza Leventhal, Fernando Rios, Elizabeth Roke, and Tim Walsh. "The Software Preservation Network (SPN): A Community Effort to Ensure Long Term Access to Digital Cultural Heritage." *D-Lib Magazine* 23, no. 5/6 (2017). https://doi.org/10.1045/may2017-meyerson.

National Science Foundation. "Funding Rate by State and Organization from FY 2018 to 2019 for NSF." (2019). https://dellweb.bfa.nsf.gov/awdfr3/default.asp.

Palmer, Carole, Oksana Zavalina, and Katrica Fenlon. "Beyond Size and Search: Building Contextual Mass in Digital Aggregations for Scholarly Use." *Proceedings of the American Society for Information Science and Technology* 47, no, 1 (2010): 1–10. https://doi.org/10.1002/meet.14504701213.

Riddle, Wayne. "Federal Assistance to Libraries: Current Grant Programs and Issues." *The Bottom Line* 5, no. 4 (1987): 22-31.

Weiss, Nancy. "Lifting Every Voice Throughout the Nation: Establishing IMLS's Grant Program for Museums of African American History and Culture." The Public Historian 40 no.3 (2018):142-162.

The Use of Augmented Reality in an English Language Learner Classroom Environment to Promote Learner Self Efficacy

By Erica Esqueda

ABSTRACT

The use of augmented reality is becoming more prevalent in our everyday lives. This technology has even found a place in education with apps that allow its easy utilization in K-12 classrooms. The value in these applications are due to the fact that they lend themselves to pedagogical situations. Augmented reality has the capability to capitalize on genuine connections to content by supplementing the transfer of information with multimedia aspects. English Language Learners are a group of students that can fall behind because of their lack of the English language. A multimedia tool like augmented reality in conjunction with traditional material might assist in empowering students and benefiting their educational growth. The purpose of this paper is to evaluate the involvement of an augmented reality application in a middle school setting and its effect on student motivation and ownership with an English Language Development population.

INTRODUCTION

Technology applications have proved beneficial in many areas of our lives. The educational sector is an area that can see many advantages with the use of technology but the question is what technology to use to be effective in your mission. There are numerous existing technologies but deciding which is appropriate for the classroom can be challenging. "During the last few decades, many professionals and researchers have been developing pragmatic theories and applications for the adoption of AR into both academic and corporate setting." (Lee, 2012, p.14) Not all technology effectively lends itself to the pedagogy necessary for the learning process. The capacity that AR provides for instruction is its ability to connect multimedia digital information to any image, still or environmental. "AR as a mixed and enhanced reality has compelling features for educational purposes; its potential and affordances can be further extended when an AR system is designed by connecting multiple types of technologies" (Wu, Lee, Chang, & Liang, 2013, p.43). An atmosphere that utilizes not only the practice but creation of such a tool can be a powerful instrument in a student's education.

This approach to teaching can be utilized in various subjects to offer an abundant level of engagement and numerous opportunities for comprehension which are not at all times obtainable with other technologies. "AR technology has gained a following in the educational market for its ability to bridge gaps and bring a more tangible approach to learning" (Antonioli, Blake, and Sparks, 2014, p.96). In the K-12 setting there are various circumstances that leave students with gaps in their knowledge. One common gap faced by many schools is created by the continuous influx of immigrants whose grasp of the English language minimal to none. Schools are left with the undertaking of not only having these students obtain the subject knowledge expected of all their students

but they must also simultaneously acquire a new, diverse language.

The purpose of this research is to understand the advancement, if any, that can be attained by a group of students in an English Language Development class of a middle school. According to Wu et al (2013), "teachers realized the benefits of using 3D imagery and believed that AR inaccessible subject matter available to students" (p. 43). AR technology has the ability to offer students personalized learning experiences along with a sense of empowerment that yields motivation. The focus of the study will concentrate on the improved self-efficacy of English language acquisition for these specific students using an Augmented Reality application entitled Aurasma.

LITERATURE REVIEW

Motivation plays a big factor in the perseverance of an engaging environment. Küçük, Yilmaz, Baydas, and Göktas (2014) stated that, "technology tools used in education present new opportunities to increase individuals' interaction and to provide learning by enjoying, making learning process more active, effective and meaningful, and trigger motivation"(p. 384). Technology can fuel that motivation that can lead to self-directed learners. Technology is not meant to rearrange educational practice but to support it. Like a pencil and paper it is a tool and its job is only to enhance the learning process. AR has the capability to "bring things to life." Diverse learners make up any classroom and they do not all benefit from merely reading and listening to others but by having an environment that also allows creating and interacting. "Creating environments with enhanced and augmented reality can increase students' motivation and interest, further resulting in more effective and deeper understanding of content learning" (Estapa & Nadolny, 2015, p.41). In research completed for mathematical implementations Estapa and Nadolny (2015) found that, "the group using an AR lesson more positively agreed that the lesson was eye-catching, instilled curiosity, and would like to know more about the lesson." (p. 45).

The interest to keep the motivation of these students in English Language Development classes high is important. They have the daunting task of attaining the social and academic aspects of a new language at a quick rate, the consequence of not achieving this task can hinder their success as students. "Technology has the potential to provide a dynamic and engaging context for which ELLs can practice and develop their language proficiency" (Gustad, 2014, p.76). The research question approached in this study is: Did the regular use of the augmented reality tool Aurasma in a student's English Language Development class increase student involvement and motivation in their studies that in turn lead to success in terms of their academics?

RESEARCH QUESTIONS

1. Can the use of Augmented Reality technology assist in the acquisition of the English language in middle school English Language Development classrooms?
2. Will the use of an augmented reality applications in combination with the school's curriculum materials show positive progression in the self-efficacy of English language development students?
3. When students create their own Augmented Reality Products does that improve students' ability to take ownership of their learning experiences?

METHODOLOGY

A mixed method study would assist in the appropriate responses to the research questions. Research would include the detailed description of the augmented reality additions to the school's curriculum. The quantitative study would measure a group of 12 students from grades 6th to 8th in their academic achievement tests to measure their progress, first Language Assessments Scale (LAS) exams taken when they are enrolled as new students and ending with their Texas English Language Proficiency Assessment System (TELPAS) rating. The qualitative part of the study would observe student behavior, and attitude toward their school work. Qualitative and quantitative data would show whether or not students that were exposed to the AR application will show a more advanced attainment of English than those that did not have access to this technology. Using a mixed methodology research can reflect on the holistic student experience.

BENEFITS AND FUTURE IMPLICATIONS

When students are motivated and empowered by their education they leave behind the passive roles and become active participants. Active participants are those that make appropriate choices, think about the content, and applying relevant skills about the information they are being presented. A personalized learning approach has students taking the lead while teachers become the facilitators. With technology oriented tasks students have increased motivation, learn technology skills, and have the ability to collaborate with peers. The intention when including technology into the school's curriculum is to provide students with relevant applications that can assist in a deeper understanding of necessary concepts. The use of several technology applications are advantageous in their ability to offer visual experiences allowing students to synthesize information internally. For English Language Learners the ability to connect language with experiences has powerful results. There is certain potential for AR integration in English Language education. Extensive research is needed to closer examine the knowledge that can be obtained by the use of AR in comparison to groups who do not use the application.

AR applications are still new experiences in education and how they assist in learner needs is still debatable. Are there substantial advantages to allowing students to create their own AR as opposed to just experiencing those that are teacher created? Previous research does show a connection included in the literature review encourages the use of AR in the classroom because of its power to motivate the learner. Though the participants in this research are solely English Language Learners who used Aurasma, there are other AR applications which provide an opportunity for all levels of students

to use AR constructively. There needs to be more in depth research to test the academic achievement of different levels of learners starting with those that are the low achievers and view if an impact results in the closing of their academic gap. There is a push in K-12 education incorporate more technology but does the utilization of digital tools like AR clearly support the academic success of the child.

The capabilities of AR might hold a lot of potential for students trying to understand concepts that are not so straight forward. Looking to future research on the topic of augmented reality it is reasonable to assume that at times the high engagement is caused by the excitement of the introduction to a different tool and not the effect of augmented reality itself. Though it is established that motivation can play a big factor in education it is difficult to pinpoint the exact definition of motivation and how it is elicited. If it can be determined that students are motivated then the question is how this motivation transfers into self-guided learning.

Erica Esqueda is a Library Media Specialist at A.P. Solis Middle School in Donna Independent School District.
e.esqueda@donnaisd.net

BIBLIOGRAPHY

Antonioli, M., Blake, C., & Sparks, K. (2014). Augmented Reality Applications in Education. *Journal of Technology Studies*, 40(2), 96-107.

Di Serio, A., Ibanez, M. B., & Kloos, C. D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers & Education*, 68, 586. doi:10.1016/j.compedu.2012.03.002

Estapa, A., Nadolny, L. (2015). The effect of an augmented reality enhanced mathematics lesson on student achievement and motivation. *Journal of STEM Education : Innovations and Research*, 16(3), 40.

Gustad, A. R. (2014). The impact of technology tools on literacy motivation on elementary school english language learners: Podcasting in a 4th grade EAL class. *The International Schools Journal*, 34(1), 75.

Küçük, S., Yilmaz, R., Baydas, Ö., & Göktas, Y. (2014). Augmented reality applications attitude scale in secondary schools: Validity and reliability study.*Egitim Ve Bilim*, 39(176).

Lee, K. (2012). Augmented reality in education and training. *TechTrends*, 56(2), 13-21. doi:10.1007/s11528-012-0559-3

Wu, H., Lee, S. W., Chang, H., & Liang, J. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62, 41-49.

CELEBRATE DIFFERENCES
EMPOWER VOICES

TLA★2021

★ SAN ANTONIO ★

APRIL 20 – 23

Mark Your Calendars!