HOW DIGITAL RESOURCES IMPACT SCHOOL LIBRARIES

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Introduction

The rapid change of technology has affected our culture greatly. One organization that is impacted immensely by the changes are school libraries. This includes impacts to resources, tools, instruction, curriculum, collections, and more. According to Lim et al. (2013), in the last two decades, technology investment in schools has increased more than hundredfold. However, the availability and advancement of technology has not resulted in uniform changes for all school libraries. Some have experienced more changes than others. Also, while the advancement has allowed for many positive impacts, negative impacts have also resulted. The people often at the center of trying to enhance positive technology benefits for students are school librarians. As technology continues to change and advance, school librarians, students, and other stakeholders must plan, collaborate, and follow through to make the most successful technology impacts occur in school libraries.

Technologies Affecting School Libraries

The use of technology in school libraries has become a high priority for many, yet not all school libraries implement technology in the same way. This paper will outline some of the more common technology tools, resources, and uses; however, it is important to understand that not all libraries possess these technologies or uniformly implement their use.

While there are many digital resources impacting learning and school libraries today, there are some that have impacted the organizations tremendously. These include the Internet, mobile devices, information clouds, and search engines (Becta 2008; Costley 2014). Collaborative technology, such as online forums, wikis, and social networking blogs are being used to communicate and collaborate (Hughes-Hassell 2008; Costley 2014). Computers, laptops, and tablets (with access to the Internet, applications, and electronic books) are commonly used in

school libraries. These technologies are supplied by various developers, and leaders in the field can be identified.

Developers and Leaders

As technology has expanded in the school and school library setting, a few developers/leaders have emerged. While the Internet is not owned by anyone, there are many Internet Service Providers (ISP) that play a major role in supplying the Internet to school libraries. The leaders in the ISP field typically depend on the location of the school library. Apple is the leading manufacturer of mobile devices with the inclusion of tablets (Makena 2018). In the area of cloud computing, there are several developers. For education, and school libraries, Cortez (2017) reported that 90% of school leaders plan to increase their investment in Chromebooks and Microsoft cloud-computing technology. In that same report, educators indicated Google's cloud-based tools were the most popular. Google is also the leader among search engines. Lastly, with the addition of tablets and smaller computing technologies, computers and laptops are still commonly used devices. It difficult to pinpoint the leaders in this field that specifically serve school libraries, so the resulting top two, Apple Inc. (first) and Microsoft Corp. (second) reflect overall top leaders in the United States (LaWell 2017). As technology options for school libraries further advance, developers/leaders may change as others may remain on top. These technology leaders have produced products that create both positive and negative impacts for school libraries, school librarians, and their stakeholders.

Positive Impacts of Technology

Technology use in school libraries results in both positive and negative impacts. The internet increases communication and collaboration, expands educational services, allows for more information to be accessed, and can serve as a source of teaching material (Costley 2014).

The increase of digital resources has allowed students to take a more active role in their learning process because of the ability to search for and assemble information as well as to publish and share their findings (Lim et al. 2013). Costley (2014) notes that students in one particular study stated that using technology at school makes learning fun and increases their educational gain. Technology can also help school libraries become spaces focused on the learning process where students can create information in addition to consuming it. The need to purchase shelves for print materials, which takes up space in the library, has now decreased. Some of that space can now be used with flexibility for collaborating, team problem solving, and more. "[S]chool libraries will continue to enjoy relevance by becoming the space where the learning community comes not just to retrieve but to create" (Grigsby 2015, 104). Technology makes it possible for the library to serve as the hub of the school. Along with all of the positive impacts digital resources have brought to school librarianship, there are also negative impacts.

Negative Impacts of Technology

School librarians, information technology personnel, and other school staff work to overcome the negative impacts that can result from the increase of digital resources in schools; however, this can be a difficult task. In the case of the Internet, it is difficult to protect students from all negatives because the internet is tremendously large and presents unreliable and/or outdated information (Loertscher 2003). Other negatives include safety issues such as sexual solicitation, harassment, advertising, hackers, and more (Hollandsworth et al. 2011; Loertscher 2003). Depending on school budgets, another negative can be the cost of technology as it often increases the overall costs of operation. The initial investment of acquiring the technology, in addition to the maintenance of hardware and software, is expensive (Lim et al. 2013). Technology has also added pressure for school libraries to keep pace with new developments. In

an effort for school libraries to stay relevant in today's world, where information is so readily available from most any location, school librarians must work to overcome these negatives, stay attuned to future trends in technology, and be willing to adapt.

Future of Technology

Recent trends in technology, as named by Cook and Gregory, include artificial intelligence, virtual reality, augmented reality, and experiential reality. The future of technology in education is to focus on what students do more than on what educators say (2018). The future of technology in school libraries have started to, and will continue to, provide for individual differences in ways that print libraries struggle to do efficiently. More digital resources, such as electronic books and applications, will result in libraries that can serve differing age ranges, ability levels, languages, personal preferences, and more (Loertscher 2003). Because of the fast development of technology and the vastness of the field, it is difficult to predict all the areas of future technology development and its impact on school libraries. The impact on school libraries will vary, however, because school budgets, guidelines, and use of technology is going to differ at different sites. In order to make the use of technology beneficial, and to prepare students for the 21st century, there are implications for school librarians and various stakeholders.

Future Implications for School Libraries

Library Curriculum

The Organization for Economic Co-operation and Development (OECD) noted this regarding technology use in schools, "[…] [T]he practices and their sociocultural contexts that have led to these positive teaching and learning outcomes have had a difficult time being sustained and spread across classrooms and schools" (Lim et al. 2013). As technology advances and becomes more prevalent, school libraries, including school library curriculums, have an

obligation to change in order to make the use of technology as beneficial as possible. For example, no longer can school libraries and librarians focus on print resources. While it is important to continue to teach students to read and use print sources, digital skills should be a core focus. Hollandsworth et. al notes that if skills, such as those encompassing digital citizenship are not taught, problematic and dangerous student conduct will result (2011). With the ever-changing Internet, firewalls are not always going to prevent negative exposure. In addition, consideration must also be given to how much access librarians should limit. It is inevitable that students will be exposed to negative content. School librarians must be a driving force in ensuring children have the digital literacy skills to handle these circumstances. School librarians must help students to realize the impacts their use of technology can have on themselves and those around them.

Library Space

"As libraries adjust to the needs of the 21st century, there needs to be a different way of thinking in regards to it design" (Grigsby 2015, 103). As digital resources increase, effective school libraries shift their usages away from storage spaces for print materials. Resources such as electronic books, database access, search engines, and smaller, portable technology continue to increase. This can negate the need for large library space dedicated to computers, encyclopedias, dictionaries, and some print materials. More school library spaces should focus on flexible uses and collaboration.

Collaboration

The increase of digital resources should also involve more collaboration between students. Students now have the ability to collaborate digitally through discussions and documents/presentations on a cloud-based program. Students should also be involved when

gathering information about the library and technology (Grigsby 2015). More collaboration is also necessary for school librarians, schools staff, and various other stakeholders. These people, along with students, can provide input as an advisory council and can provide feedback on how digital resources affect their library use, library trends, and more (Grigsby 2015; Figueroa 2018). Norton (2013) notes the importance of including stakeholders in an effort to foster understanding and to create a focus on people when developing an effective technology plan. School librarians should involve students and many other stakeholders to not only gain more ideas and input but to also help advocate for the advancement of digital resources in the library.

Johnston (2013) addresses the increased presence of instructional technologists and the importance of collaboration between them and school librarians. Johnston calls attention to problems that may arise because school librarians often were the sole person responsible for technology in schools, and now that responsibility must be shared with an instructional technologist. Partnerships between the two, in schools where both positions exist, can result in many technology benefits for educators and students. It is also pivotal that collaboration occur when making strategic plans for technology.

Planning

It is pivotal that planning occurs in an effort to maximize successful technology implementation. School librarians' leadership in the planning process can influence future strategies involving technology, and that can affect much more than school library programs. "School librarians can influence the integration of technology in a meaningful way – and advocate for the school library program – through a technology plan that reflects external and internal goals" (Norton 2013, 66). This plan should include aspects of assistive technology, accessibility issues, teaching and learning technologies, the technology schools currently use,

budget, and stakeholder input (Norton 2013). Without proper planning, technology can go unused or their uses may never benefit students to the full potential.

Conclusion

Technology has made immense impacts possible for school libraries. Some school libraries have experienced more changes than others due to budgets, leadership, planning and more. The core possible changes increased digital resources have allowed are more individual customization, more collaboration, and more flexible space changes. The focus can somewhat shift away from the print resources school libraries have to offer to more of a focus on being able to provide the varying spaces, programs, and resources students need. As technology progresses, school librarians must take steps to ensure that digital resources are being utilized as successfully as possible. This will involve being willing to adapt curriculums, change the uses of space, collaborate with students and stakeholders, and prepare in-depth plans for future technology. Because of technology, school libraries are now able to become so much more than a space that contains print resources. School librarians must be willing to embrace technology to assist school libraries in remaining relevant in modern society.

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