THE 21ST CENTURY LIBRARIAN AS A LEADER IN APPLYING EMERGING TECHNOLOGIES IN INFORMATION MANAGEMENT AND INFORMATION SERVICE DELIVERY

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Abstract

Technological innovations have allowed people to access information from diverse sources, some with questionable authenticity and credibility. This proliferation of information has changed the way information is managed and delivered, challenging not only those who use information but also the role of librarians in this new information dispensation (Jurkowski, 2006). However, emerging technologies provide librarians with opportunities to manage and deliver current information through a virtual environment. This requires not only the knowledge of emerging technology tools but also skills on how to use these tools. Librarians need to take up leadership roles in both knowing these tools and acquiring skills on how to use them in managing and delivering information services. This will allow librarians to develop proficiency in emerging technologies and become relevant and useful in the digital information world, where users are becoming more comfortable in using technology. This paper discusses how librarians assume leadership in using emerging technologies such as the Jing screen capture, web curators (scoop. it), Google drive, Google docs, and Delicious for managing and delivering information services to enhance collaboration, information sharing, and self-directed learning. The article is based on the review of literature from Mzuzu University subscription databases, subscription databases from University of Central Missouri, USA and free web articles from the Internet.

Keywords: Libraries; Emerging technologies; Information delivery

1. Introduction and Context

The emergence of technology in the 21st century changed the information landscape (Johnson, 2015; Davis, 2014). New social networking and internet technologies have increased individual communication. The advent of social media has created a virtual world where communication is mainly done through technology. New technologies have enabled people to interact with each other from distant places with ease and made information generation easy as everyone can create information (Cassidy, Britsch, Monolovitz, Shen, &Turney, 2011). The current information landscape has redefined the role of librarians.

Librarians are learning to integrate technology in their information delivery services not only to meet the current needs of users but also to prepare them for the demands of a digital society where information is managed, accessed, and used from remote places using emerging technologies (Johnson, 2012b). To achieve this, as information specialists, librarians need to be aware not only of new technological tools but also to have skills for using these tools for delivering library services. Twenty-first century librarians are working in an environment where users believe that all that they need is on the Internet. In order, to meet the needs of these new users, librarians need to get into technologies that they use (Quinnery, Smith, and Galbraith, 2010).

To keep abreast with new technologies and become relevant in the information service profession, librarians are assuming leadership roles in knowledge of new technologies and how they can be used (Stranack, 2012; Johnson, 2013). However, it has been noted that most librarians do not feel competent in using emerging technologies. They are still using traditional ways of reaching out to their users and those who use social networking and the Internet, cannot select technology to deliver library services (Johnson, 2012a). This not only makes them irrelevant in their role, but also causes them to underserve their clients (Cassidy et al., 2011). This paper discusses how librarians assume leadership in using emerging technologies for managing and delivering information services to enhance collaboration, information sharing, and self-directed learning.

2. Objectives

- To discuss reasons for librarians to take a leadership role in emerging technologies.
- To explain how librarians assume a leadership role through the use of emerging technologies.
- To discuss some emerging technologies that librarians use for collaboration, information sharing, and self-directed learning.

3. Methodology

A review of literature will be done using Mzuzu University subscription databases, subscription databases from University of Central Missouri, USA, and free web articles from the Internet.

4. Scope and Limitation

This article will only cover emerging technologies in the context of librarian leadership. In this article, the term librarian specifically refers librarians that serve in the academic environment. This includes schools, colleges, and universities. Most of the examples relate to school libraries; however, the applications can be transferred to other academically related environments.

5. Theoretical Framework

Librarian technology leadership is based on the educational theory of distributed leadership. Hulpia, Devis, and Van Keer (2010) define distributed leadership as a "social distribution of leadership, in which the leadership function is stretched over a number of individuals and task is accomplished through interaction of multiple leaders" (p.40). It focuses on practice, not the leader's role, function, or institutional structure. Leadership is accomplished based on interaction among leaders, followers, and their situation (Spillane, 2005). Practice in distributed leadership means what is done to respond to a situation (Spillane and Orlina, 2005). Practice addresses activities that leaders are involved in while interacting with others in particular contexts of specific tasks (Spillane, Halverson and Diamond, 2004).

Distributed leadership is a new concept of leadership in primary, secondary, and higher education in the USA. It brings into leadership all institutional employees in all roles that help create learning and teaching environment, including librarians and administrators. It depends on context, culture, relationships, and activity (Jones, Lefoe, Harvey, and Ryland, 2012). Spillane (2009) explains that "distributed perspective of [leadership] frames practice as a product of the interactions among school leaders, followers, and aspects of their situation" (p.70). The quality of relationship with others, expertise, and context define librarian leadership (Johnson, 2012a).

6. Review of Literature

6.1 Leadership

Leadership has been defined in different forms and contexts with different attributes. Pillane defines leadership as "activities tied to the core work of the organization that are designed by organization members to influence motivation, knowledge, affect or practices of other organizational members or that are understood by organizational members as intended to influence their motivation, knowledge, affects or practice" (Pillane, cited in Spillane and Orlina, 2005, p.158). Prenger, Adcock, Gibbons & Robins (2007) explain that leadership involves ability to motivate others to achieve shared goals. Leaders are goal oriented and often work to break status quo, risking to do something different out of the comfort zone to effect change. It involves interaction between leaders, followers, and context (Spillane, 2005). Good leaders build strong relationships with members of the community through collaboration. Strong relationships help to influence and persuade others to follow them (Trieu, 2012).

6.2 Reasons for Librarian Leadership in Emerging Technologies

Despite the increase and use of technologies, there is limited integration in users' activities. Librarians need to play a role (Johnson, 2015). As the information and technology specialist for the whole school community, librarians are uniquely positioned to assume leadership roles in the use of technology (Clephane, 2014; Ray, 2013). The librarian's job is to provide information and skills training that will enable users to use this information. In the 21st century, information is in digital forms and librarians need to be proactive in learning new technologies, integrating them in their information delivery jobs, and teach users how to use them (Johnson, 2013).

One key aspect of leadership is relationships. The librarian's role involves working with all people in the building: teachers, students, administrators, and other community members. These relationships assist librarians to integrate technology into instruction and information delivery services (Witting, 2014). A study of school librarians' role as technology leaders in New Zealand revealed that the relationship between teachers, principal, and other community members was an important aspect that determined librarians' role as technology leaders (Clephone, 2014). Librarians' close relationship with users help them understand user needs and bring technologies that respond to these needs; in the process librarians become mentors and leaders in technology innovations and use (Perez, 2013; Hunt &Luetkehans, 2013).

Librarians are professionally directed by their job to be technology leaders. *Information Power: Building Partnerships for Learning* (American Library Association, 1998) stresses technology leadership as a fundamental activity of librarians in the community. Librarians integrate technology to create a learning community. *Empowering Learners: Guidelines for School Library Programs* (American Association of School Librarians, 2009) mandates that librarians assume a leadership role in building 21st century information literacy skills, which include digital and technology literacies (American Association of School Librarians, 2007).

Further, Spillane (2005) explains that leadership comes by situation or context. In a time of funding challenges in libraries, technology has provided librarians with opportunities to offer possible solutions to information delivery by integrating free emerging technologies within a limited budget. Such types of innovations have made libraries visible, important, and indispensable partners in achieving organizational goals, while leading in technology integration (Enhancing library impact…, 2015; Maloy, 2015).

Lastly, the digital native generation wants to access information, communicate, and work in a digital environment (Kuzo, 2015). Libraries are the most technology rich environments in schools. Librarians being information experts, technology integration leadership has become a must for the 21st century librarian. As their job demands, librarians are forced to lead in learning emerging technology as preparation to integrate it into their services and meet the needs of users (Johnson, 2012a).

6.3 Librarian Emerging Technology leadership through collaboration

Libraries can use different emerging technologies for collaboration. Collaboration is the action of working with one or more people to produce or create something or simply a repetitive process where two or more people work together towards a common goal (Lomas, Burke, and Page, 2008). Working through collaboration in an academic environment helps students to explore how they can share, engage, and connect with other learners and content that assists them to learn. Different tools are used for collaboration by librarians and educators. For example, Google Drive, Google docs, Instant Messaging (IM), Skype, Twitter, Wikis, etc. Google docs is a free, online application that give users the ability to create, edit, and collaborate in real time online. Kulikowski (2012) supports the use of Google Drive by librarians and observed that librarians can use it for communication and collaboration since it allows them to create and store documents online (in the cloud) free of charge. What is required is Internet connectivity and a Gmail account that can be used to login. Documents that are created and stored in the cloud can be accessed anywhere, allowing those who share the documents to work on them in real time. Kulikowski (2012) has pointed out that in the library, Google Drive can be used for communication, registration of users on a particular program, producing a work schedule for staff, compiling wish lists, and conducting surveys among others. To collaborate, one needs to set a sharing feature. Once one has set the sharing feature, anybody sharing the document has permission to view and edit the document (Louisville Free Public Library, n.d.). In addition, Google docs is a key web 2.0 tool for collaboration. It allows multiple editors to edit a single document. Google docs have features that allow editors to chat and look up dictionary definitions, and translate documents into different languages (Hoya, 2010). In a school environment, students using Google docs can work together amongst themselves on a group assignment while being monitored and guided by their teachers online. Teachers can also work on joint projects while far apart (Fredrick, 2008). Introducing these technology tools and helping teachers and students on how to use them gives a librarian a leadership position.

6.4 Librarian Technology leadership through information sharing

One of the most important features of emerging technologies is how virtual reference services are being offered in some libraries. Virtual reference service is an online reference service where information sharing is done online in real time. There are several tools that can be used to provide this service in libraries. Some of them include Jing Screencast, Delicious, and Scoop.it.

6.4.1 Jing

Jing is free application software that gives you a quick and simple way of showing a process or procedure on a computer screen to others and for them to learn how to do something. Jing is a screencast that allows you to take an image or a video of a document one is looking for to share with others. Jing facilitates instant sharing. With Jing, the user is able to get an option of setting up a screencast.com account that can be used with Jing (Carleton University Data Center, 2013).With Jing librarians can create screen-casts video recordings of the library's activity on a computer screen showing every step being demonstrated while listening to narration (English, 2011). Once Jing screen cast is uploaded, screencast.com provides URL that can be shared through email, instant messaging and web site (Griffis, 2009). This technology can be used in libraries, archives, and museums to produce informative tutorials and to explain step by step procedures on how to use the library's websites, repositories, catalogues, and databases.

Jing is being used by University of Wisconsin to share live demonstrations; for example, to show how to find a source, determine credibility, use features of a program, or navigate a resource in the field. Secondly, Jing can also be used in delivering tutorials; for example, explain a difficult concept or idea, address a common misconception about a task, or answer frequently asked questions. Jing can also be used to give assignment tips; for example, highlight important or commonly misunderstood aspects of an assignment or provide a personal introduction to a project. Finally, Jing can be used to give feedback on student work; for example, narrate a response to a student paper or discussion post, illustrate strengths of sample work, and give a group or whole class feedback (Koepke and Kopp, n.d). In the Everglades University librarians capture topic tailored videos that are shared to distance learning students through their web site (English, 2011). This technology integration initiative by librarians at University of Wisconsin and Everglades University that help teachers and students make librarians assume leadership role in emerging technology

6.4.2 Scoop.it

O'Connell, (n.d) explains that 21st century information users are challenged by information overload. To overcome this challenge web content curation has become every librarian's business. This involves identifying, organizing, and sharing information that is related to a specific topic. Content and web curation should be thought of as a skill that is specifically needed by librarians, educators, and information users. Robertson (2013) argues that curation is an important 21st-century skill for information seekers and users as he points out that "information users need to learn how to locate, filter, evaluate, and rank content, activities that lead to organizing and sorting information and ideas, and creating original content" (p. E2). Scoop.it is one of several tools that librarians can use for web content curation. Scoop.it is easy to use as it only requires one to create an account just like any other social media site (O'Connell, nd).

One can curate information by finding preselected information on a chosen topic or search on one's own using comprehensive search terms on the chosen topic. The curator has to choose if information is relevant to the topic. Curated information can be shared with students or teachers (Bouffard and Owen, 2014). The advantage of Scoop.it is that it can be linked to a traditional catalog record to be accessed through the Online Public Access Catalog (OPAC).

Deakin University Library in Australia uses Scoop.it to provide an information service on specific resources based on areas of research and teaching. Members of the staff at the university value this service provided by the library because of information overload and the explosion of new technologies that are becoming overwhelming (Chua and Carruthers, n.d.).

6.4. 3 Delicious

Delicious is a social bookmarking Internet application that allows users to collect and label information for their own use or to share with others. Users can bookmark links and tag them with specific key words of their choice (Gilmour and Stickland, 2009). Some librarians use this social bookmarking service to collect lists of Web resources that they later include in subject guides, use during bibliographic instruction sessions, or use for their own research. Delicious puts together websites and groups them using keyword tags. North Metro Technical College Library (Stirk 7), Health Sciences Libraries at the University of Michigan (Anderson), Thomas Ford Library, and other libraries use Delicious to collect bookmarks and share them with patrons (Corrado, 2008). Bookmarks in delicious can be accessed from any computer. Anything with URL can be bookmarked which includes web pages, scholarly articles and library catalog (Darby and Gilmour, 2009). Delicious can be used to index websites and link them to other users of delicious. Users can comment on the tagged information and link with other people with same tags. Mabee-Simpson Library uses delicious to index website for students and staff. Users can also access information from other delicious users through searching in delicious (Beary, 2013).

6.5 Emerging Technology Leadership through Self –Directed Learning.

A shift from teacher-centred to learner-centered learning is a paradigm shift that has been developed and enhanced by introduction of information and communication technologies (ICT). With modern technologies learning can take place anywhere. Students can be in their homes or classrooms and attend lectures. There are specific tools that facilitate self-directed learning like E-learning. E-learning is the electronically enabled learning that is facilitated by deployment of digital technologies; for example, web pages and video conference system. Some tertiary institutions implement web-based learning systems for their e-learning courses (Adewole-Odeshi, 2014).

Librarians are faced with the need to continually update their knowledge and skills based on new technological developments. Technology is so dynamic and fast-moving that formal training cannot catch up with it. This calls for a self-directed learning approach among librarians as well as students. According to Karakas and Manisaligil (2012) self-directed learning leads to increased performance, increased ability for critical thinking and questioning, increased confidence and problem solving abilities, sharing of knowledge, and building networks with others. Park (2008) has cited several efficacy and effectiveness reasons for utilizing self-directed learning: greater relevance to the particular needs of the individual learner, greater scheduling flexibility, promoting meta-skill development, problem-solving beyond the problem at hand, and allowing frequent and timely updating of skills and knowledge. A survey conducted at Edith Cowan University in 2013 revealed that although staff engages in formal training which is valuable to staff, this type of training falls short in providing all the necessary learning needs. Staff engages in self-directed learning in an effort to meet more learning needs (Wiebrands and Wiebrands, 2014).

Librarians can develop personal Learning network to facilitate self-directed learning. Personal learning network is learning community where people within a profession share ideas. This can be through following specific blogs with RSS feeds, Google alert. For example, librarians can follow free technology for teachers blog at http://www.freetech4teachers.com. The blog presents emerging technologies that teachers and librarians can use (Byrne, 2016) In addition, librarian can listen to webinars.

Webinars are web based communication. Participants read description and profile of presentation and presenters respectively. They choose sessions based on their interests. Librarians can register to participant on live Webinars, where they can ask questions or access archive where they can just listen. If one subscribes to Library 2.0 blog, he or she is notified about oncoming Webinars (Moreillion, 2016).

Stranack (2012) explains that "without developing ourselves, we risk stagnating in our practice: relying on past successes and not exploring new opportunities for improvements in how we do our work and build our libraries and services" (p.1). Emerging technologies have brought opportunities for professional development with little cost. Quinnery, Smith, and Galbraith, (2010) observe that "self-directed learning fosters development of technology skills that librarians need to serve users, and promotes a [culture]of lifelong learning habits that help [librarians to keep abreast of emerging technologies]" p.205.With the rise of social networks, librarians have opportunities to get connected to learning communities that support them with information needs, solve their personal problems, and develop professional expertise (Moreillion,2016).

7. Conclusion

The emergence of new technology has redefined information services by librarians. The new demands to meet information needs of the digital society require librarians not only to acquire knowledge and skills about these technologies but to also assume leadership roles in integrating them in information delivery, teaching, and learning activities in schools. This is only possible if librarians can take the initiative in using emerging technology for collaboration and information sharing in the learning communities. The vast growth of technology creates challenges for librarians to keep abreast with new developments in technology through formal training. Self – directed learning through the use of different emerging technologies has becomes a key strategy of making librarian acquire knowledge and skills for new technology and use such expertise to help students and teachers use them for learning. In other words, if librarians are to remain relevant in the 21st century, they need to take leadership roles in the use of emerging technology through collaboration, information sharing and self-directed learning to acquire expertise in emerging technology that will allow them to lead.

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