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Teacher librarians and technology leadership

Jennifer Kizer
University of Northern Iowa

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Teacher librarians and technology leadership

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Abstract

The purpose of this study is to examine the strategies and techniques of current teacher librarians who are technology leaders in their schools. It aims to clarify teacher librarians' roles in technology integration for administrators and newly hired professionals. In order to investigate the techniques and strategies, that make teacher librarians successful technology leaders, the researcher used a qualitative approach to gather data from participants via a focus group.

The study set out to find the ways technology leaders and teacher librarians are able to successfully integrate technology in lessons, how frequently they collaborate with classroom teachers, the strategies and techniques which are used to implement the technology leadership role, and how teacher librarians work with administrators and teachers to advocate for technology leadership.

The researcher discovered successful teacher librarians and technology leaders work to find ways to bring the library and love of books to students by using technology. They make continued efforts to collaborate with classroom teachers and give them ideas and suggestions for technology integration. Strategies and techniques used in technology leadership included becoming involved in school leadership and making sure decision makers are aware of what is happening in the library. This includes meeting frequently with administrators to discuss technology and technology integration.

TEACHER LIBRARIANS AND TECHNOLOGY LEADERSHIP

A Graduate Research Paper
Submitted to the
Division of School Library Studies
Department of Curriculum and Instruction
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Jennifer Kizer
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has been approved as meeting the research requirement for the

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Date Approved

Karla Krueger, EdD.- Graduate Faculty First Reader

Date Approved

Joan Bessman Taylor, PhD. - Graduate Faculty Second Reader

Date Approved

Deborah Tidwell, PhD. - Head, Curriculum and Instruction

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CHAPTER 1

INTRODUCTION

Mrs. Smith has been a classroom teacher for over ten years. She decides to apply for a new position as a technology integrationist in a different school district. As she is being interviewed by administrators, they explain there may be a few library duties involved in addition to technology integration. However, they stress that the focus of the job should be on helping teachers with technology. Mrs. Smith is very excited and accepts the position as technology integrationist/media specialist. The administrators inform her that she will need to acquire her teacher librarian endorsement. After being on the job and taking library classes she soon comes to the realization that a teacher librarian is a technology integrationist. There is no need for a dual job title.

Problem Statement

Teacher librarians are leaders in their schools. According to the American Association of School Librarians (AASL, 2009) they are information specialists, reading advisors, information literacy instructors, and program administrators. Classroom teachers are able to rely on teacher librarians to help students meet learning goals because there is an instructional partnership. They collaborate to provide the instruction of multiple literacies, which includes emerging technologies and formats (AASL, 2009). The AASL identifies teacher librarians as playing a crucial role in integrating technology tools to supplement school resources and create engaging learning tasks. The AASL (2007) *Standards for 21st Century Learners* indicate that teacher librarians are in a unique position to reach every student in the school as they help twenty-first century learners use technology tools for learning in schools and in preparation for future learning and careers. Likewise, the International Society for Technology in Education (ISTE,

2010) released a statement recognizing the unique role school librarians play in technology integration:

School librarians perform an integral role in promoting the effective use of educational technologies in their schools. School librarians are in unique positions within their schools because they work with all students during their academic careers and often serve as primary technology integration specialists in their buildings. (p. 1)

Furthermore, teacher librarians take the lead in developing technology rich lessons. Yet, despite these professional expectations, there are often discrepancies among the expectations for teacher librarians, administrators, and teachers. The roles of both technology integrationists and teacher librarians overlap. This has caused confusion amongst the two professions, as well as with some teachers and administrators (Johnston, 2015).

Despite the potential for teacher librarians to be technology leaders, some schools are creating positions such as technology integrationists or instructional technology specialists to meet the changing needs of learners. The job descriptions for these positions are broad and sometimes include technical as well as instructional responsibilities (Ledesma, 2011). However, as technology continues to become necessary in teaching, more of the focus of these positions is on curriculum and less on maintenance (Ausband, 2006). According to Wine (2016) there are a variety of terms used to describe educational technology professionals. Instructional technology specialists, technology integrationists, instructional technologists, instructional technology resource teachers, technology coordinators, or technology coaches are all terms which can describe this technology leadership role. For the purpose of this paper, technology integrationists or specialists will be used to describe the position of those using technology to support teachers and student learning.

Johnston (2015) maintains that many school librarians need clarification on their roles as technology leaders. The roles of the technology specialists or integrationists and teacher librarians have become blurred. Unfortunately, this lack of a definition in the positions has created a competitive atmosphere between the two (Johnston, 2015). As technology specialist jobs expand, many teacher librarians feel the need to compete to retain their position as technology integration leaders, when they should be collaborating (Johnston, 2015).

This lack of understanding has led some administrators to ask teacher librarians to be both librarians and technology integrationists (Johnston, 2015). However, a definition for how to be efficient at both roles is not always clarified, and the dual job title may not be necessary. Examining the strategies and techniques for those teacher librarians successfully enacting a technology leadership role will lead to a better understanding for administrators, teachers, and new teacher librarians.

This research study examined the strategies and techniques of teacher librarians who are currently technology leaders in their schools and who may or may not also have been given joint position titles as technology integrationists. This benefits new teacher librarians who are called upon to be leaders in technology in their schools as well as current librarians who are struggling to enact the leadership role. It also informs both administrators and classroom teachers to provide them a better definition of the teacher librarians' role in technology integration.

Summary of Problem Statement

Many administrators are giving teacher librarians dual job titles to also serve in the role of technology integrationists or specialists, despite the fact that technology leadership is inherently a part of their jobs. Dual titles may create additional confusion for teacher librarians and other teachers.

Purpose

The purpose of this study is to examine the strategies and techniques of current teacher librarians who are technology leaders in their schools to clarify teacher librarians' roles in technology integration for administrators and newly hired professionals.

Research Questions

1. In what ways are teacher librarians integrating technology into lessons?
2. How often do they collaborate with classroom teachers to integrate technology?
3. What strategies and techniques are used to implement the technology leadership role?
4. How do teacher librarians work with administrators and teachers to advocate for technology leadership?

Assumptions/Limitations

The study is limited to two Iowa teacher librarians who are technology leaders in their schools. They are classified by their districts as both teacher librarians and technology leaders.

CHAPTER 2

LITERATURE REVIEW

The purpose of this study is to examine the strategies and techniques of current teacher librarians, who are technology leaders in their schools, to inform administrators and newly hired professionals as to teacher librarians' roles in technology integration. The research related to this topic falls into the following three categories: defining the role of technology integrationists or instructional technology specialists in schools, the role of teacher librarians and technology in schools, and administrators' perceptions of teacher librarians.

Role of Technology Integrationists or Specialists

Ausband (2006) conducted a case study to investigate the job responsibilities of instructional technology specialists related to curriculum. She included professional duties of the technology specialists and specific job responsibilities that were related to curriculum work. Four participants were chosen from a public school district in South Carolina. These participants worked under the Instructional Technology Services department, which also oversees media specialists. Data collected included documents, notations during shadowing, individual interviews, and a focus group interview. The syllabi of the participants were analyzed, and it was determined that 61% of their work had strong ties to the district's curriculum and instruction. All the participants felt they had many responsibilities that combined technology and curriculum. This included working with teachers to help them integrate technology and helping them develop lessons that fully utilized technology. The majority of the technology specialists interviewed felt the most important aspect of their jobs was getting technology to the students and providing staff development. However, they did feel there was a disconnect with technology and curriculum by teachers and district level instructional support personnel, which included curriculum specialists. Technology specialists specifically cited exclusion from decision

making, lack of communication, and leadership problems that led to limiting the contributions they made to curriculum work.

In a continued effort to determine the job definition for instructional technology positions, Ritzhaupt and Martin (2014) conducted a study to identify the competencies needed to become education technology professionals. Their question focused on the knowledge, skills, and abilities needed to be effective in the educational technology field. Three steps were used in the research process. These included an extensive literature review, an analysis of over 200 technology job announcements, and a survey which was completed by 192 participants in the technology field. Ritzhaupt and Martin discovered that the knowledge of theories and methods of instruction were frequently cited as an important factor in the educational technology field. The job skills which participants found most important were interpersonal skills and multimedia and production skills. Finally, those surveyed felt it was essential to be able to work in a team oriented environment. Ritzhaupt and Martin concluded that educational technology professionals must have a wide array of knowledge, skills, and abilities to be successful in their positions.

While understanding the job responsibilities of technology educators is essential, Sugar (2005) set out to determine the benefits of technology coaches and their effectiveness in educating teachers about technology integration. Nine teachers with diverse curricular areas were chosen to meet weekly with a technology coach. The teachers' experience with technology varied greatly. The meetings were open ended and it was the job of the teachers to determine the goal of each meeting. Participants completed three surveys during the project. These surveys were spaced throughout the seven month project to determine overall effectiveness, allow for reflection about the experiences with the technology coach, and determine if there was progress

on learning any new technologies to incorporate in their classrooms. The teachers were also interviewed at the end to comment on the overall experience. The teachers involved overwhelmingly responded with positive comments about the technology coach program. Teachers stated the need to extend the program to more teachers and found it very helpful. All of the nine teachers believed the project should continue and be fully implemented in the future. Sugar (2005) ascertained individual technology training for teachers is essential in successful technology integration. A technology coach can help address the individual teacher's technology needs and assist in overcoming any obstacles. Therefore, a technology coach must not only provide knowledge of technology skills but must also be empathetic and patient to understand the needs of the teachers. These studies and responsibilities of instructional technology professionals inform the current study through their findings that their most valued attributes include interpersonal skills, empathy, technology knowledge and multimedia production skills, staff development, and getting technology into students' hands (Ausband, 2006; Ritzhaupt & Martin, 2014; Sugar, 2005). There was also a disconnect resulting in exclusion of technology integrationists from decision making, lack of communication, and leadership problems that led to limiting the contributions they made to curriculum work (Ausband, 2006).

Teacher Librarians and Technology

Branch-Mueller and deGroot (2011) understood the importance of teacher librarians being comfortable with the changing world of technology. Their study analyzed the impact a Web 2.0 course had on teachers and teacher librarians, both in their professional and personal lives. The research examined the effectiveness a graduate level course had in helping teacher librarians integrate new Web 2.0 technologies. Another goal was to discover how teacher librarians would use the knowledge and skills developed from the Web 2.0 course into their own classes. The

course was taken through the University of Alberta's distance learning program by sixty teachers and teacher librarians. All were contacted and asked to complete a survey once the course was completed, thirty four of the students responded. Branch-Mueller and deGroot's (2011) findings indicated taking a class which allowed teacher librarians to explore and experiment with new technologies changed the teachers both personally and professionally. About one half of the participants indicated they had not used any of the technology tools taught in the course in their own teaching before they had taken the course. However, after completing the class, the teacher librarians reported using a wide variety of the technology tools which were taught in the course. All of the respondents reported having more confidence to integrate the technology tools into their own teaching.

The role of teacher librarians continues to evolve due in part to the continued use of technology in classrooms. Johnston (2012) recognized the crucial element of technology and teaching and the need for school librarians to become leaders in integrating technology. However, many teacher librarians need more guidance as to how to enact this leadership role (Johnston, 2012). The purpose of her study was to support teacher librarians by finding those who are successfully filling this technology leadership need and determining the enablers and barriers they have encountered. A secondary analysis method was used to take a closer look at survey research which had been previously completed by the University of North Carolina at Greensboro and sponsored by the Partnerships Advancing Library Media Center at Florida State University. In the original survey, 295 National Board Certified school librarians answered two open ended questions about enablers and barriers to their leadership roles in technology integration. These questions had not been previously reported or analyzed. Many participants listed more than one enabler or barrier to technology integration, over 724 enablers and 366

barriers were identified. Positive relationships were determined to be a commonly occurring enabler to technology leadership. This included teachers and administrators. However, the most frequently stated enabler was a supportive principal. According to Johnston (2012), those school librarians who were involved in a high level of technology integration identified the importance of principals' support more than other participants. Teacher librarians also cited leadership opportunities as an enabler to technology leadership. Being involved in decision-making and knowing their voices mattered was essential. Comparatively, one of the most consistently listed barriers to technology integration was not being involved in leadership opportunities.

Consequently, Johnston (2012) discovered when instructional technologists were viewed as the technology experts in the school, teacher librarians felt they were unable to enact a leadership role and were overlooked in technology decision making. Unfortunately, many times competitive relationships were developed between the two positions, and it limited the teacher librarians' technology integration leadership. However, those teacher librarians who were serving in dual roles as both librarian and technologist, were able to be highly involved in technology integration leadership.

Everhart and Johnston (2016) acknowledged the significance of teacher librarians being viewed as leaders in their schools. They set out to build a theoretical foundation for teacher librarians and leadership, with an emphasis on technology integration. A meta-ethnography approach was used to gain a deeper understanding of the leadership practices of school librarians. Meta-ethnography allows researchers to compile findings of two or more qualitative studies which have similar research questions or topics and create meaning to support theoretical development. In this case, six different research studies were analyzed to build a framework for school librarian leadership, with an emphasis on technology integration. This method of

research allowed Everhart and Johnston to reflect on the overall meaning of school librarian leadership as it exists now and identify categories, ideas, concepts, and patterns which occurred in all studies. Then, they were able to draw conclusions and develop an informed conceptual model to explain the dynamics of school library leadership. Five concepts became apparent: resistance, growth, relationships, communication, and confidence. The relationships between these concepts were analyzed and led to the creation of five proposition statements. Proposition statement number one stated the need for education. Education provides a leadership skill which can help build confidence in school librarian leadership, including with technology. This not only includes preparation programs but also professional development. The next proposition statement addressed school culture. The studies pointed out that when school librarians met challenges from other teachers or instructional technology specialists, leadership suffered. School environments which had collaborative teachers, supportive principals, and involved librarians in decision making were effective in allowing for librarians' leadership growth. Librarians' peers are also viewed as essential. Proposition statement three stated that school librarians need to communicate with other school librarians to aid in leadership development. Librarians must also have a desire to lead. Those who were resistant to leadership roles lost out on many opportunities. This was especially apparent with technology expertise. Being a technology expert or integrator can help develop the mindset for leadership. Librarians sometimes need to step out of their comfort zones in order to lead (Everhart & Johnston, 2016). The previous studies of teacher librarians and technology leadership inform the current study by recognizing the need for collaborative relationships, education, and leadership opportunities as important factors in enabling leadership in technology (Branch-Mueller & deGroot, 2011; Everhart & Johnston, 2016; Johnston, 2012).

Administrators' Perceptions of Teacher Librarians

As previously stated, supportive principals are essential to helping teacher librarians enact leadership roles. Church (2008) studied how elementary principals perceive media specialists in instructional roles and how those perceptions are formed. Five hundred principals in Virginia were invited to participate in a survey which included several statements about the teaching roles of the media specialists, instructional partner roles, and overall contributions. One hundred ten principals completed the survey and ranked statements on a five point Likert Scale (strongly disagree to strongly agree). They also completed one open ended question which asked them to describe a time they had with library media specialists that helped them form their view of the media specialist role. Overall, 90% of the participants understood the need for media specialists to teach information literacy skills using print and subscription database resources. However, only 80% agreed with library media specialists teaching how to find information on the free web. Ninety five percent of the principals surveyed agreed with the media specialists teaching students to find and evaluate information, but 75% of those thought it was the responsibility of the classroom teacher or instructional technology teacher's job to teach students how to use the information found. The majority of the principals surveyed understood the need to collaborate, but felt it was the library media specialists' job to initiate collaboration and be proactive in promoting the school library program. The respondents also felt media specialists should put themselves in a secondary role. Finally, Church (2008) discovered less than two percent of the principals surveyed had any coursework related to the duties and responsibilities of school media specialists during their principal preparation program. They based their perceptions of the instructional role of media specialists through their interactions with media specialists during their administrative careers.

In a similar study, Lupton (2016) recognized principals' perceptions of the roles of teacher librarians are crucial to the success of the school library program. However, she felt that most of the existing research on principals' perceptions were based on responses to questionnaire items in which the teacher librarians' roles were already predefined, with a majority of research being done in the United States. Lupton (2016) set out to determine how principals viewed teacher librarians in Australia. Nine principals in Queensland, Australia volunteered to participate in the study. It should be noted they were recruited by their teacher librarians to participate. Each of the principals was interviewed and asked seven different questions about the teacher librarian's role in his or her school. Lupton (2016) found that each of the nine principals viewed the role of the teacher librarian differently. However, several themes emerged in the study. A majority of principals stressed that a teacher librarian was a teacher first and librarian second. They felt the teacher librarian should be an experienced teacher. The participants also commented on the teacher librarian's broad perspective on what is happening in the school. They considered the ability to see the big picture as a value because the teacher librarian is able to give advice and provide ideas to principals. The principals also cited the need for a school librarian to provide a leadership role and go beyond the books. This included providing professional development opportunities and coaching with digital technologies. Finally, the principals stated that it was the person in the teacher librarian role who made the role valuable. A teacher librarian needs to have leadership qualities which include; a vision, advocacy, being proactive, and a "mover and a shaker."

Unfortunately, uninformed school administrators can lead to cuts in school library programs. According to Everhart and Mardis (2014), a lack of concern for school librarians can lead to a disappearance in jobs. Advocacy for school librarians and library programs is needed

to better inform decision makers. Everhart and Mardis' (2014) study focused on determining what stakeholders expected from school library programs. Stakeholders included teachers, parents, administrators, school and community leaders. The study reported on the one year project called The Pennsylvania School Library Project. The leaders of this project recognized the need to advocate for library programs by educating the non-library audience. Four focus groups were formed using a focus group methodology. A total of 71 people participated in four different sessions. The groups listened to a presentation about the current state of school libraries in Pennsylvania and key research findings. Then, small groups were formed to discuss what participants felt were important components of school library programs. Selected participants were interviewed following each session. Many people cited they received important knowledge about school librarians, especially about their roles in instructional partnerships. The interviewed participants indicated they were unaware of this instructional role before. Many also came to understand the need to have full time certified school librarians in schools. They recognized that quality school library programs could not exist without certified librarians. These studies on the perceptions of teacher librarians by administrators informs the current study by recognizing teacher librarians' roles as teachers and instructional partners (Church, 2008; Everhart & Mardis, 2014; Lupton, 2016). The studies also found that advocacy by teacher librarians for school library programs is essential (Church, 2008; Everhart & Mardis, 2014).

Summary

Many studies have shown the importance of teacher librarians being viewed as leaders in their schools (Everhart & Johnston, 2016; Johnston, 2012). In order to enact this leadership role in technology integration, teacher librarians need to form collaborative relationships, have

supportive principals, and advocate for the school library program (Church, 2008; Everhart & Mardis, 2014; Everhart & Johnston, 2016, Johnston, 2012). However, studies indicate further research needs to be done to investigate technology integration leadership by school librarians. This includes role definition, explicit techniques, and strategies for enacting the technology leadership role.

CHAPTER 3

METHODOLOGY

The need for teacher librarians to enact leadership roles in their schools is vital. However, their role in technology integration takes many forms and is not always well defined by the profession or the schools. Prior research identified supports and barriers to technology leadership but has not offered explicit techniques and strategies to further study how to become successful technology leaders in schools. This study examined the strategies and techniques of current teacher librarians who are technology leaders in their schools in an effort to better inform administrators and newly hired professionals to clarify teacher librarians' roles in technology integration.

Research Design

In order to investigate techniques and strategies that make teacher librarians successful technology leaders, the researcher used a qualitative approach gathering data from participants via a focus group. Wildemuth (2009) states, "Because the focus group members are encouraged to talk with each other as well as the researcher, the data produced by the focus group are more than just answers to an interviewer's questions" (p. 242). Furthermore, "One of the core strengths of the focus groups is that participants can compare their views with those of other participants in the group, rather than simply reporting their views to an interviewer" (Wildemuth, 2009, p. 242). The researcher used the discussion of the focus group to better determine a role definition for technology integration and teacher librarians, as well as techniques and strategies to successfully enact the role.

Participants

The focus group included two teacher librarians within one rural regional education center in northeast Iowa. These teacher librarians were chosen because they are teacher librarians in their schools with an additional role in their districts' teacher leadership programs focusing on technology.

Procedure

Data Sources

A list of questions was prepared by the researcher for the participants of the focus group (see Appendix A). The researcher moderated the focus group, allowing participants the opportunity to elaborate on the questions. Wildemuth asserts "A less structured approach is also possible. In it, the moderator allows the group to move to a topic not included in the moderator's guide or to skip a topic they do not consider important" (p. 247). In this less structured approach, the participants were able to expand on the strategies and techniques they felt were most important.

The group's discussion session was audiotaped. The researcher also took notes during the discussion. According to Wildemuth (2009) if one is able to take notes and audiotape, it allows the researcher to augment notes and focus on important details. Furthermore, "This approach achieves the dual goals of developing a rich data set and completing the process efficiently" (p. 247).

Data Analysis

Qualitative content analysis was used for data analysis. The data was coded based on emerging themes. Wildemuth (2009) indicates "Qualitative content analysis does not produce

counts and statistical significance; instead it uncovers patterns, themes, and categories important to a social reality” (p. 312).

Once the session ended, the researcher analyzed the responses and coded the information. The researcher examined the responses for patterns and relationships which emerged. As Wildemuth (2009) states, it is necessary for the researcher to have a balance of all participant views, not just the talkative ones. The themes which developed within the focus group were identified and represented as the views of the group and not just the opinions of one. Wildemuth (2009) asserts that the researcher needs “not to be rigid about the basic unit of analysis (e.g., defining the unit of analysis as a single comment made by a single participant) or you will lose ideas that were generated across multiple participants” (p. 248). Once the data was analyzed from the focus groups, the researcher produced a “report providing evidence on each theme and thoroughly discussing the implications of each theme in terms of the original research questions” (p. 248).

Limitations

The focus group was limited to two teacher librarians in one region of eastern Iowa. These teacher librarians serve in schools which classify them as both teacher librarians and technology leaders. Both participants are in multiple buildings, with one of the participants being shared between two school districts. They serve students in PreK-12th grade.

CHAPTER 4

FINDINGS

Many administrators are assigning teacher librarians dual job titles to serve in the role of technology integrationists or specialists, despite technology leadership being an inherent part of the teacher librarians' jobs. Having dual titles may create confusion for teacher librarians and other teachers. The purpose of this study is to examine the strategies and techniques of current teacher librarians who are technology leaders in their schools, to clarify teacher librarians' roles in technology integration for administrators and newly hired professionals. A focus group was conducted with a list of questions to determine how teacher librarians can successfully be technology leaders.

Teacher Librarians and Technology Integration

Both participants for this study have more than one job title. Participant A is classified as both an instructional coach and teacher librarian. However, she is involved in the technology leadership committee for her school. Even though she is not specifically classified as a technology integrationist, she said it was a role that was assumed as part of her job. Participant B has three titles. She is considered an instructional coach, teacher librarian, and a technology integration specialist.

In what ways are teacher librarians integrating technology into lessons? A series of questions was asked to determine the answer to this research question. The overall theme which emerged was finding ways to help students better utilize technology to meet learning needs. This included integrating technology into library lessons by using technology to promote books, help students learn how to code, use Google and other online resources.

Table 1 lists questions and participants responses to them emerging from the discussion. Both participants agreed there was a disconnect between classroom teachers and different technology teaching models such as TPACK (Technological Pedagogical Content Knowledge) or SAMR (Substitution Augmentation Modification Redefinition). They believe that classroom teachers are not familiar with these models and choose not use them in their lessons. They also do not use these models when planning their own lessons. They both discussed using technology for book reviews, digital storytelling, and promoting of books. Teaching students how to use Google and Google Classroom were also a big part of how they used technology in their lesson planning.

Table 1

Teacher Librarians and Technology Integration

Question	Participant A Response	Participant B Response
Do you use technology in your information literacy lessons? Describe.	-Teach students how to manage information and determine what are credible sources online -teach how to manage tabs on browser and navigate	-Use Google slides to present lessons on ethical use of information, copyright, and plagiarism -demonstrate how to use information ethically especially online with text and images
Are you familiar with TPACK framework and does it influence lessons?	-overlaps with instructional coaching role -doesn't use the language but feels like it gets used	-no
Are you familiar with SAMR model and do you use it?	-there is a disconnect because most teachers are not familiar with it -too much substitution in lessons and not enough	-more familiar with this model -agrees there is a disconnect with classroom teachers and the models

	redefinition or modification	-chooses to focus on the Iowa Core standards and use those to guide instruction
Do you use technology for media sharing?	-uses DoInk for Book reviews	-Book Reviews, infographics, Follett Destiny, podcasts to promote books
Do you use technology to manage and organize? Explain.	-tried Evernote, but students did not latch onto it -Google	-Google
Do you use technology for social networking and communication?	-wishes she had time to promote more books on social networking -spread too thin -school email -tries to send emails on new books with teasers	-not really used for library purposes -Twitter account for professional sharing -too many job titles and not enough time to just focus on library
Do you use technology for curriculum collaboration?	-Iowa AEA Online Resources -Google	-Iowa AEA Online Resources -Google
Do you use technology for digital storytelling?	-DoInk -Green Screen room -uses SeeSaw to add book covers and audio	-SeeSaw -iMovie -StopMotion
Do you use technology for content resources?	-teaches code.org -tries to introduce a lot of content for teachers -feels like they only scratch the surface of some of the	-set up Epic for teachers -teaches code.org

	content resources and doesn't continue	
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Table 2 examines the similarities and differences between the ways teacher librarians are integrating technology into lessons. The researcher analyzed similarities and differences in the questions and discovered the overall themes, which are to help students better utilize technology and to better use technology in one's lessons to promote books, to help students learn to code, and to help students use Google and other online resources.

Table 2

Research Question One Responses

In what ways are teacher librarians integrating technology into lessons?

Similarities	Differences	Overall Theme
<ul style="list-style-type: none"> ● Use technology to help students create book reviews and book trailers ● Teach students how to use Google ● Help teachers and students learn how to code ● Demonstrate to students how to find information using Iowa AEA Online and other online resources 	<ul style="list-style-type: none"> ● Participant A more familiar with technology learning models ● Participant B does not get as much time to focus on the library 	<ul style="list-style-type: none"> ● Finding ways to help students better utilize technology to meet learning needs ● Teacher librarians are integrating technology into their lessons by using technology to promote books, help students learn how to code, use Google and other online resources.

Technology Integration Collaboration

Research question number two asked participants, how often do you collaborate with classroom teachers to integrate technology? This study showed classroom teachers are able to rely on teacher librarians to help students meet learning goals because there is an instructional partnership with teacher librarians. Teacher librarians need to continually foster good relationships with classroom teachers to offer ideas and support with technology.

Table 3 lists the questions and discussion from the participants pertaining to collaboration. Both agreed to the importance of sharing resources and new ideas with teachers, being the support person, establishing good relationships, and finding new ways to use technology to bring the library to the students. They both felt it is necessary to find ways to use technology to help foster a love of reading.

Table 3

Technology Integration Collaboration

Question	Participant A	Participant B
How often do you collaborate with classroom teachers to integrate technology?	-she is the go-to person for support and troubleshooting	-good relationship with teachers and feels like she is always collaborating
Approximately what percent of all your teachers is it that collaborate with you?	-always offering ideas for technology integration -writing, research, and information literacy collaboration -using technology to do books reviews and tv newscasts -embedded in job to be a support person	-need for support and ideas for integration is high -sharing of resources and ideas

	<ul style="list-style-type: none"> -formally going into classroom to plan lessons with teacher happens about three to four times a semester -hard to put a percentage on the collaboration 	
<p>What are 2-3 of the best collaborations you've been involved in?</p> <p>What is one that you consider an entry level collaboration with a teacher?</p>	<ul style="list-style-type: none"> -Weather research project that used technology to show weather forecasts -wrote scripts and used green screen with students to do their forecasts -global read alouds -blogging about books -Skyping with authors 	<ul style="list-style-type: none"> -bring love of reading background and using technology -using Google Classroom with lit circles to discuss the book <i>Wonder</i> -entry level activity to foster discussions about text with students
<p>Do you think classroom teachers view you as a source of information when they have questions about technology? Why or why not?</p>	<ul style="list-style-type: none"> -Yes, she is on the tech support emails and technology committee -trainer of new technology -unfortunately, sometimes viewed as the person forcing technology on them 	<ul style="list-style-type: none"> -Yes, she offers a lot of technology support outside of the IT person

Using the transcripts, a content analysis was conducted to answer research question number two. Table 4 lists the similarities and differences which were found when determining how often teacher librarians collaborate to help classroom teachers integrate technology. The theme that emerged from this discussion was the importance for teacher librarians to share ideas, offer support to classroom teachers, and foster good relationships.

Table 4

*Research Question Two Responses**How often do they collaborate with classroom teachers to integrate technology?*

Similarities	Differences	Overall Theme
<ul style="list-style-type: none"> ● Both always feel like they are collaborating with teachers ● Foster good relationships ● Both are viewed as people who can offer support and troubleshoot issues ● The need for technology integration ideas is high ● Sharing ideas is essential 	<ul style="list-style-type: none"> ● Participant A sometimes feels she is forcing technology onto teachers 	<ul style="list-style-type: none"> ● Share ideas, offer support, and foster good relationships

Strategies and Techniques

Examining the strategies and techniques for those teacher librarians successfully enacting a technology leadership role will lead to a better understanding for administrators, teachers, and new teacher librarians. Research question number three asked what strategies and techniques are used to implement the technology leadership role? The overall theme emerging from this question was to be visible. This study showed the importance of being involved in school leadership opportunities and to continue to advocate for the library.

Table 5 shows the responses to focus group questions relating to this research question. Both agreed that in order to be successful, technology leaders need a flexible schedule. It is also necessary to become members of different committees in the school, to be a part of the

Comprehensive School Improvement Plan and the School Improvement Advisory Committee and to be visible and make sure people know what is happening in the library. For example, showcase the work that is being done in the library by using technology to blog, email, and tweet about it.

Table 5

Strategies and Techniques

Question	Participant A	Participant B
What techniques or strategies do you intentionally use to grow or sustain your technology leadership role?	-helping others understand her role in technology and library	-continued advocacy for teacher librarians and helping administrators understand what they do
What techniques or strategies would you suggest to new teacher librarians to enact technology leadership roles in their schools?	-find a way to showcase anything you are doing -blog, email, youtube -importance of marketing -get involved with School Improvement Advisory Committee -keep referring to the library and library program, help others to understand that it is all part of the teacher librarian role	-be part of CSIP (Comprehensive School Improvement Plan) -advocate for a flexible schedule -become part of committees -be visible

Table 6 demonstrates the similarities and differences which were discovered after analyzing the transcripts in answering research question number three. This table breaks down the strategies and techniques the participants discussed which are used to implement the technology leadership role. The overall theme is the importance for teacher librarians to be

visible and continue to advocate for the library. It is necessary for the teacher librarian to help others understand the teacher librarian and technology leadership role.

Table 6

Research Question Three Responses

What strategies and techniques are used to implement the technology leadership role?

Similarities	Differences	Overall Theme
<ul style="list-style-type: none"> ● Help others understand what is happening in the library ● Advocate for a flexible schedule ● Be visible, participate in different committees 		<ul style="list-style-type: none"> ● Be visible ● Advocate ● Help others understand the teacher librarian role

Advocacy

As previously noted in the literature review, uninformed school administrators can lead to cuts in school library programs (Everhart & Mardis, 2014); a lack of concern for school librarians can lead to a disappearance in jobs. Advocacy for school librarians and library programs is needed to better inform decision makers. Research question number four asked, how do teacher librarians work with administrators and teachers to advocate for technology leadership? The overall theme which emerged was the importance of meeting regularly with administrators and decision makers to advocate for what happens in the library. Although both participants felt valued by their administration they felt there was still a lack of understanding of how technology and the library program work together.

Table 7 explores responses regarding the role of advocacy for teacher librarians and technology. Both respondents discussed the importance of meeting frequently with administrators. They both meet formally with decision makers throughout the school year. They also discussed how technology has helped make teacher librarians more visible, but there is still a lack of understanding for library programs. They cited how they felt their principals valued them in their roles as technology leaders, but there is still a lack of understanding about teacher librarians and the library programs.

Table 7

Advocacy

Question	Participant A	Participant B
<p>On a scale of one to five (with five being the highest) how much do you feel your principal understands your role in technology leadership?</p> <p>Why did you give this rating?</p>	<p>-four</p> <p>-two of her three principals are not “techie”</p> <p>-they (administrators) know it needs to happen, but not sure they fully understand her leadership role</p> <p>-tries to be positive, but gets frustrated when principals don’t give enough time to explore and help others understand how to use the new technology</p>	<p>- five for all the administrators across her district</p> <p>-they understand the importance for technology in a 21st Century world</p> <p>-they (administrators) realize they cannot provide the leadership needed because they don’t fully understand how to implement it in the classrooms</p> <p>-look for other leaders to support their vision</p> <p>-one to one school district and need to be able to support that</p>
<p>How often do you work with administrators to advocate for technology</p>	<p>-all the time</p> <p>-meets formally once a</p>	<p>- feels like it is on her shoulders to provide professional development</p>

<p>leadership?</p>	<p>month for the 21st Century Skills Committee</p> <ul style="list-style-type: none"> -the committee includes the three principals, the superintendent, IT person, a tech mentor, and the teacher librarian -she sets the agenda, organizes, and leads this meeting -the superintendent has a strong commitment to technology 	<p>the teachers need</p> <ul style="list-style-type: none"> -organizes professional development with technology and wants it to be a positive experience for teachers -priority because the district believes it impacts student achievement -meets often with principals to organize and communicate the needs for professional development -meets formally twice a quarter to talk technology
<p>What aspects of your technology leadership do you feel are most valued by your administrator? By your teachers?</p>	<ul style="list-style-type: none"> -value her vision, skills, and her ability to teach others -the 21st Century Committee helps ensure they have a clear plan for how the technology will be used and managed -takes a more proactive approach to purchasing new technology 	<ul style="list-style-type: none"> -she feels she is the voice for both teachers and students -needs to be the spokesperson for technology integration -IT is the nuts and bolts and she has the ideas and work together with the IT person to help make things happen -she makes sure things get done and not just talked about -makes sure the money is well spent and the technology will be used
<p>How supportive of the library program is your administrator?</p>	<ul style="list-style-type: none"> -they (administrators) value her, but not necessarily the library program -lack of knowledge for the 	<ul style="list-style-type: none"> -they view her as one, both a teacher librarian and technology integrationist -value her and her position,

	library program -decision makers don't necessarily understand what a teacher librarian does -technology has helped open the doors for the library program, but many still don't understand the role of the teacher librarian	they (administrators) know the job will get done, and ask for her input and advice on all areas of learning -value her and the position, but not necessarily the library program
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Advocacy for the teacher librarian role was discussed in answer to research question number four. After analyzing the transcripts, the similarities and differences and overall theme were discovered and listed in Table 8. The theme which developed was the need to meet regularly with administrators and continually advocate for what it is teacher librarians do. Many administrators value the person in the teacher librarian role, but don't necessarily understand the library program.

Table 8

Research Question Four Responses

How do teacher librarians work with administrators and teachers to advocate for technology leadership?

Similarities	Differences	Overall Theme
<ul style="list-style-type: none"> Both agreed administrators understand the need for technology Both meet regularly with decision makers Not always sure the administrators 	<ul style="list-style-type: none"> Participant B felt more strongly that her administrators understood her role in technology, giving them a 5 out of 5 with 5 being the highest Participant A gave a 	<ul style="list-style-type: none"> Meet regularly and continually advocate for what they do. Although the administrators value them, they often still don't understand the

<p>understand what it is they do</p> <ul style="list-style-type: none"> ● Both feel valued in their roles, but still feel there is a lack of knowledge for the overall library program ● Both meet regularly with decision makers 	<p>4 out of 5 after much though</p>	<p>library program.</p>
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Summary

Overall, the data collected from the focus group suggests teacher librarians are most successful as technology leaders when they play an active role in teaching and learning. It is necessary to find ways to bring the library to the students using technology. For example, the idea of using technology to create book reviews came up many times throughout the focus group discussion. Both participants use a variety of digital tools to aid their students in promoting books in the library. This is possible due to collaboration with classroom teachers. Good relationships need to be established with other teachers. Both of these leaders discussed their positive relationships with teachers and how they were viewed as a resource. They also discussed the importance of being understood as a technology resource by administrators. Administrators depend on them to be up to date and have ideas of how to help teachers integrate technology into their classrooms. They stressed the need to be in contact with decision makers and meet frequently to discuss how they are using technology and helping others use technology.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study is to examine the strategies and techniques of current teacher librarians who are technology leaders in their schools to clarify teacher librarians' roles in technology integration, for administrators and newly hired professionals. In order to investigate those techniques and strategies that make teacher librarians successful technology leaders, the researcher used a qualitative approach gathering data from participants via a focus group.

The study set out to find the ways technology leaders and teacher librarians are able to successfully integrate technology in lessons, how frequently they collaborate with classroom teachers, the strategies and techniques which are used to implement the technology leadership role, and how teacher librarians work with administrators and teachers to advocate for technology leadership.

The researcher discovered successful teacher librarians and technology leaders work to find ways to bring the library and love of books to students by using technology. They make continued efforts to collaborate with classroom teachers and give them ideas and suggestions for technology integration. Strategies and techniques used in technology leadership included the implementation of a flexible schedule, becoming involved in school leadership, and making sure decision makers are aware of what is happening in the library. This means meeting frequently with administrators to advocate for teachers and students to discuss technology needs and technology integration.

Conclusions

Similar to the previously reviewed study by Ausband (2006), this study found one of the most important aspects of teacher librarians' jobs was getting technology to the students and

providing staff development. Both participants stated ways in which they try to bring the library to students and use technology to help foster a love of reading. This includes having students make podcasts about books or using green screen and iMovie to create book reviews. They also discussed ways in which they view themselves as voices for the teachers. Participant B said, “I feel like it’s on my shoulders to provide the professional development our teachers need.”

Johnston’s (2012) study found positive relationships to be a commonly occurring enabler to technology leadership. The current study also determined that good relationships with classroom teachers are necessary in implementing a technology leadership role. Both respondents indicated that they frequently give teachers ideas on how to integrate technology into lessons. They do not always have time to sit down formally and create lessons together, but they find ways to help their teachers. Participant A stated, “It’s embedded in my job to be a support person and I’m the go-to for technology. But, getting in the classroom and collaborating on ‘you bring the content and I’ll bring the technology’ probably happens three or four times a semester.”

When discussing strategies and techniques for successful teacher librarians and technology leaders, both participants stressed the need to advocate for the library and technology. It is necessary to help others understand what exactly a teacher librarian does in the library. Participant A said, “Find a way to showcase anything that you’re doing. Take a video and send it out on email.” Advocating for the library and technology also included the use of a flexible schedule. Both agreed they could not do their jobs efficiently without a flexible schedule. Finally, a strategy they felt was very important was to be visible in school leadership. This involves taking advantage of leadership opportunities such as contributing to the

Comprehensive School Improvement Plan, the School Improvement Advisory Committee, or the Technology Committee.

Everhart and Johnston (2016) found school environments which had collaborative teachers, supportive principals, and involved librarians in decision making were effective in allowing for librarians' leadership growth. This study also found this to be true. Both participants in this study are viewed as leaders in their schools. They work to help decision makers understand the need for technology. This is accomplished by participating in a variety of meetings involving technology decisions. Participant A continues to advocate for technology and the library by leading the 21st Skills Committee which meets once a month in her school district. This ensures technology is being used efficiently and determines their future needs. Being visible in meetings and committees is part of the continued advocacy work. It is important for principals and administrators to have an understanding of what is being done in the library and how the teacher librarians are aiding in student achievement. Lupton's (2016) study determined that principals felt it was the person in the teacher librarian role who made the role valuable. Both participants reinforced this idea. They felt their principals valued the work they do, but that these principals do not fully understand the library program and what teacher librarians do. Therefore, it is important for teacher librarians to continue to be visible and advocate for the library.

Overall, this study reinforced the AASL's (2009) vision for school libraries. The respondents indicated the need to be a technology leader and help the 21st century learner to utilize technology to meet learning goals, the importance of collaboration and building instructional partnerships, the need to be a leader in the school, and the necessity of advocating

for the library program. Teacher librarians are already technology integrationists whether they hold an added job title or not.

Recommendations

This study was limited to only two participants. Future studies may have a larger focus group of teacher librarians who are technology leaders. It would also be beneficial to explore the differences between school districts which only have one teacher librarian in each building.

As the role of the teacher librarian continues to evolve, it is necessary to explore how schools are redefining the role and why. This researcher believes it would be intriguing to have a focus group of principals and investigate if they view teacher librarians as technology leaders. If they do understand their roles as teacher librarians and technology leaders, it would be helpful to determine why they feel their teacher librarians are successful.

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APPENDIX A

TEACHER LIBRARIANS AND TECHNOLOGY LEADERSHIP

How long have you been a teacher librarian?

How many school buildings are you responsible for?

What level do you teach?

Do you hold a dual job title of teacher librarian and also technology integrationist or specialist? If so, does your district designate an amount of time you spend in each role?

How often do you collaborate with classroom teachers to integrate technology?__ Approximately what percent of all of your teachers is it that collaborate with you?

What are 2-3 of the best collaborations you've been involved in? And what is one that you consider an entry level collaboration activity with a teacher?

Do you think classroom teachers view you as a source of information when they have questions about technology? Why or why not?

Do you use technology in your information literacy lessons? Describe.

Are you familiar with the TPACK (Technological Pedagogical Content Knowledge) framework?

If yes, how would you say it influences your lessons?

Are you familiar with the SAMR (Substitution Augmentation Modification Redefinition) model?

If yes, how would you say you use this model?

Do you use technology for media sharing? Explain. (For example: Animoto, Canva, S'more)

Do you use technology to manage and organize? Explain. (Example: Evernote, Google Classroom).

Do you use technology for social networking and communication? Explain. (Facebook, Bookopolis)?

Do you use technology for curriculum collaboration? Explain. (Example: Wonderopolis, DK FindOut!)

Do you use technology for digital storytelling? Explain. (Example: PicLit, FlipSnack, MyStorybook)

Do you use technology for content resources? Explain. (Example: Epic, Code.org, GoNoodle)

On a scale of one to five, (with five being the highest) how much do you feel your principal understands your role in technology leadership? Why did you give this rating?

How often do you work with administrators to advocate for technology leadership?

What aspects of your technology leadership do you feel are most valued by your administrator? By your teachers?

How supportive of the library program is your administrator?

What techniques or strategies do you intentionally use to grow or sustain your technology leadership role?

What techniques or strategies would you suggest to new teacher librarians to enact technology leadership roles in their schools?