Secondary Teacher Perceptions and Openness to Change Regarding Instruction in Information Literacy Skills

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Abstract

Information literacy skills are needed to help solve real-world problems, but K–12 students lack these skills. The purpose of the study was to use Michael Fullan's (2007) Change Theory initiation phase to investigate teachers' perceptions of their own openness to change and about collaboration between a school librarian and a teacher in the context of information literacy instruction. An explanatory sequential mixed-methods study was used to analyze teacher perceptions by means of a quantitative survey and school librarians' qualitative reactions (gathered in interviews) to the results of the survey. Classroom teachers indicated a belief that teaching information literacy skills was the role of both school librarians and teachers. However, grading, assessing students' progress, and teaching content-related information were the role of the teacher. The classroom teachers and school librarians both reported collaboration by dividing the lesson instead of working together on standards, planning, and assessments. A key finding that could contribute to successful implementation of change is gathering input from individual teachers by means of surveys and discussions in department meetings and communicating educational changes through faculty and department meetings.

Introduction

Need for Information Literacy

The Association of College and Research Librarians noted that students are exposed to an overwhelming amount of information while researching and are required to determine if the information is valid and reliable before using these sources (ACRL 2000). According to Michael K. O'Sullivan and Kim B. Dallas, "Businesses and higher education leaders are looking for

students with the ability to evaluate and analyze information and to use this information to solve real-world problems" (2010, 3).

Responsibilities for Instruction

Students want to use new technology to find information because they find technology engaging. However, teachers often do not have enough time to collaborate with school librarians to learn how to effectively integrate technology into research and learning while helping students develop strong information literacy skills. As a result, a gap exists between what students want and what they get in the classroom (Branch 2006; Stubeck 2015; Varlejs, Stec, and Kwon 2014). In many schools, it is not clear who is responsible for teaching technology-centered information literacy skills: the school librarian or the classroom teacher. Classroom teachers are already tasked with creating lesson plans that are engaging, student-centered, standards-based, and differentiated for learners—before adding the task of incorporating instruction in information literacy skills, especially as the skills relate to technology use. School librarians often do not have their own classes that they teach weekly. Therefore, those school librarians rely on invitations from classroom teachers to teach these skills. Those school librarians with assigned classes have the same tasks as classroom teachers and, as a result, have less time available to collaborate with classroom teachers on information literacy instruction.

Most of the existing research examining who should teach information literacy skills has been written from the perspective of school librarians (Darrow 2009; Francis and Lance 2011; Latham and Gross 2008; Montiel-Overall and Jones 2011; Shannon 2012; Stubeck 2015). Melissa P. Johnston's dissertation (2012) noted that little evidence and limited resources exist regarding school librarians as leaders in integrating technology. Patricia Montiel-Overall and Patricia Jones expressed a similar problem when they identified a "paucity of empirical evidence specifically related to teacher and school librarian collaboration" (2011, 50). Cindy L. Kovalik, Susan D. Yutzey, and Laura L. Piazza found little research on information literacy in the K–12 grade-school setting (2012). Montiel-Overall and Jones also noted the need for future research on teachers' perspectives on who should teach information literacy skills—and how (2011).

Purpose and Research Questions

The purpose of this study was to use Michael Fullan's (2007) Change Theory, specifically the first step, initiation of change, to examine teachers' readiness to engage in changing the way information literacy skills are taught. The research also explored teachers' perceptions about who should be responsible for teaching specific information literacy skills that could be the focus of collaboration between a school librarian and a classroom teacher. In addition, the perceptions of three current school librarians about who should be responsible for information literacy instruction were integrated into the study. These perceptions were then used to analyze if a change was needed in the collaborative roles of teaching information literacy skills and how to use Fullan's (2007) Change Theory to initiate the change.

The following research questions guided the present study:

1. How do teachers' perceptions of school librarian roles regarding teaching information literacy skills vary?

2. What are teachers' levels of openness to change in the context of information literacy instruction?

3. What are school librarians' reactions to teachers' perceptions about responsibilities for teaching information literacy skills?

In a follow-up article, the data will be analyzed per demographic area with percentages, frequencies, and means of teachers who are more open to change and share certain characteristics such as degree earned.

Theoretical Framework: Fullan's Theory of Change

Fullan's (2007) Change Theory presents change as a threefold process: initiation, implementation, and institutionalization. However, only initiation was addressed in this study—though some results are applicable to implementation.

Fullan defined initiation as "the process that leads up to and includes a decision to adopt or proceed with change" (2007, 69). He noted that several factors are needed to help create changes in education. The first is a desire for new educational outcomes, such as requiring proficiency in information literacy skills for high school graduation because of the previously identified struggles of college freshmen without information literacy skills. He also identified advocacy from administrators or teachers as being another factor needed to create change. Once a group advocates for change, the school district may need to verify a need for the change and then work both top-down from the central office as well as bottom-up from the teachers (Fullan 2007).

Fullan also noted dilemmas in the initiation phase of change. Since schools have so many stakeholders with varying priorities, change can occur from different starting points. With so many voices contributing to the discussion, it can be hard to correctly determine if a change is wanted by the majority of stakeholders or simply wanted by a loud minority. Ultimately, no one model of change will fit for all schools (2007).

Literature Review

Information Literacy's Impact on Student Learning

As education evolves and critical-thinking skills increase in importance, the need for information literacy skills increases. Information literacy is "the ability to access, evaluate, and use information effectively and ethically" (Latham and Gross 2008, 1). Several studies have indicated a positive correlational relationship between student learning and the work of school librarians (Achterman 2008; Bleidt 2011; Francis and Lance 2011; Gross, Latham, and Armstrong 2012; Moreillon 2009; Scott and Plourde 2007; Smalley 2004). In addition, evidence was found to support the assertion that students with strong information literacy skills perform better in reading comprehension exams (Achterman 2008; Moreillon 2013).

Information literacy skills are important for student learning (Bomar 2010). Students prefer online resources (Julien and Barker 2009) but are faced with sorting through numerous resources online and many will stop at the first website they find to use as a resource without evaluating it (Bomar 2010). Students complete assignments necessitating information literacy skills based on what learners believe will earn them a satisfactory grade from the teacher instead of based on the authority of an author or the accuracy and reliability of a source (Julien and Barker 2009). The school librarian should help students and classroom teachers find resources and learn to evaluate them using information literacy skills (Bomar 2010; Scott and Plourde 2007). Teachers can also

help improve students' abilities by teaching students why they need these skills for real-world situations beyond the immediate goal of completing an assignment (Julien and Barker 2009).

Several studies indicated that students enter college lacking information literacy skills. Melissa Gross, Don Latham, and Bonnie Armstrong (2012) conducted a study on the impact of information literacy skills on freshmen college students. Students with low skills:

    a) were less likely to seek help on assessments,

    b) were more likely to be content with their inferior skills,

    c) could not correctly identify the expertise level of someone from whom they sought assistance,

    d) failed to know when they needed additional information on an assignment, or

    e) failed to recognize if the additional information was relevant or correct (Gross, Latham, and Armstrong 2012; O'Sullivan and Dallas 2010).

Jennifer L. Fabbi found that the incoming freshmen who had taken higher-level courses in high school tended to have stronger information literacy skills than students who had not, and were subsequently more successful in college (2015). Another study found that many students who use self-taught information literacy skills in college, such as relying on Google searches to find resources, struggled with critical-thinking skills (Kovalik, Yutzey, and Piazza 2012). Secondary educators need to help teach these skills to increase student performance and better prepare students for college (Allen 2007).

School Librarians as Leaders

The role of school librarians includes the demands of teaching information literacy. The American Association of School Librarians (AASL) has identified five roles for school librarians "…leader, instructional partner, information specialist, teacher, and program administrator" (Moreillon, Cahill, and McKee 2012, 2). AASL released new standards in 2018 that reinforced the need for school librarians to partner with classroom teachers to teach information literacy skills and develop critical thinking skills in students (AASL 2018a). The new standards focus instruction by school librarians on basic skills but also on mastery of the skills as students think, create, share, and grow using the information they have found, evaluated, and curated (AASL 2018b). A study found that many teachers did not teach research skills associated with information literacy because they believed it was covered in another course (Kovalik, Yutzey, and Piazza 2012). A school librarian can help provide an organized plan for information literacy skill instruction.

Studies of teachers' and school librarians' understanding of information literacy skills revealed that teachers had a poor understanding of effective information literacy skills (Montiel-Overall and Jones 2011; Stockham and Collins 2012). In their research, Marcia Stockham and Heather Collins found that only 16 percent of school librarians felt that teachers understood what information literacy skills are. Thirty-three percent of the teachers believed they themselves did not know what information literacy skills were (2012), yet other researchers found that 89 percent of students believed that these skills are important (Stockham and Collins 2012). Montiel-Overall and Jones found that one-third of the teachers surveyed believed they were

teaching information literacy skills in their classes even though they were unsure how to define the skills (2011).

The literature frequently mentions collaboration between the school librarian and teachers. The definition of collaboration varies significantly from source to source and appears to be largely missing for school librarians (Montiel-Overall 2005). Tom Woodward (2012) explained that collaboration should not look like the school librarian coming in to teach a skill or concept while the teacher is working on another task such as grading (2012). Collaboration should involve both the teacher and school librarian working together to create the lessons as well as co-teaching them (Woodward 2012). The most comprehensive definition found during this literature review was written by Judi Moreillon who stated that "collaboration occurs when educators co-design, co-plan, co-teach, and/or co-assess curriculum-based lessons or units of study" (2008, 2). However, two different studies reinforced the finding that teachers view collaboration in the traditional sense of dividing a lesson and assigning topics to be taught independently of each other (Gavigan and Lance 2015; Montiel-Overall and Jones 2011). According to Keith Curry Lance, Marcia J. Rodney, and Bill Schwarz, the low level of collaboration reported has a negative impact on test scores in reading and language arts (2010).

Two studies provide some understanding of why collaboration is not occurring when there is a desire for it. Jennifer L. Branch expressed the belief that some people avoid collaboration because they fear:

a) looking unintelligent in front of their colleagues,

b) giving up control,

c) it may take too much time, and

d) it may not result in completing the curriculum (2006).

Another study also showed that obstacles to collaboration included a teacher's unwillingness to give up class time and control, difficulty in finding time to meet with the school librarian, and an unwillingness to reveal the limited information literacy skills possessed by the teacher (Varlejs, Stec, and Kwan 2014).

Method

Overview

An explanatory sequential mixed-method approach was used in this study, which consisted of a quantitative survey of teachers and qualitative interviews of school librarians to determine the differences in perceptions of teachers and school librarians regarding responsibilities to teaching information literacy skills and regarding openness to change in teaching literacy skills. The quantitative survey is the primary focus of the study used to analyze the perception of teachers. This method was used because it allowed for the follow-up qualitative interviews to be flexible and focus on the results from the quantitative survey (Creswell 2007, 2014, 2015; Creswell and Plano Clark 2011). The explanatory design has the advantages of being simple to create and complete. It also includes the perceptions in reaction to the data by a secondary group (Creswell and Plano Clark 2011). This design helps overcome the limitation of not including school

librarians on the survey and the limited number of school librarians available in the population for the study from which to draw valid data (Creswell 2014, 2015).

Participants

Secondary education teachers in the Eastern Dakota Conference (EDC) of North Dakota were invited to participate in this study. The EDC Class A is comprised of the following school districts: St. John Paul II, Grand Forks, Devils Lake, Valley City, Wahpeton, Fargo, and West Fargo. St. John Paul II was excluded due to a conflict of interest as I was previously the principal of the school. The Class A schools are the largest school districts located in the eastern half of North Dakota, and all are urban schools. Of the approximately 1,200 secondary education teachers invited, 109 responded. The participants' demographic information is in table 1. Participants invited were those teaching only at EDC Class A schools in the following municipalities: Grand Forks, Devils Lake, Valley City, Wahpeton, Fargo, and West Fargo.

Table 1. Demographic information for participants who completed the survey.

Characteristics	N	%
Gender		
Female	71	74.7
Male	24	25.3
Highest Level of Education		
BA/BS	29	30.5
Specialist Degree	3	3.2
MA/MS/MEd	62	65.3
PhD/EdD	1	1.1
Major Subject Area Teaching Assignments		
Core Subject$_a$	50	45.9
Non-Core Subject$_b$	50	45.9
Years of teaching experience		
1–5	25	22.9
6–10	13	11.9
11–20	25	22.9
20+	24	22.0

Grade Level Taught$_c$

Middle School	24	22.0
High School	49	45.0
Both Middle and High	22	20.2

a: Core Subjects category includes English language arts, mathematics, science, and social studies

b: Non-Core Subjects category includes all courses not included in Core Subjects category

c. Grade Level Taught may be part of multiple grades

Quantitative Procedures

A pilot study of the survey (consisting of sixty-nine items) was conducted in spring 2017. Twenty-seven teachers were selected to test the instrument for validity, reliability, and identification of any weaknesses in the instrument, and the responses were not included in data analysis. These teachers were selected to pilot as they were unable to be included in the final survey due to my role as the administrator and evaluator in the school district. The pilot group received the survey via e-mail to avoid any unintended pressure to complete the survey from my role as administrator. All results indicated that no changes were necessary for the final survey.

For the final survey, participants were recruited in spring of 2017 through an informational e-mail sent to the principals of each school. The principals then shared the survey with their staffs through e-mail.

Qualitative Procedures

After the survey was administered and analyzed, I interviewed three school librarians from schools where survey participants taught. Each interview lasted approximately thirty to forty-five minutes. Consistent with the explanatory sequential design method, the interview questions focused on gathering responses and reactions to the survey data (Creswell 2014, 2015; Creswell and Plano Clark 2011). School librarians viewed tables 2 through 6 during the interview. I did not have a set of questions for the interview, rather I shared with the school librarians the purpose of the study and who participated in the study. I asked them to read through the results and share their reactions, thoughts, and perceptions. As researcher, I took notes on what the school librarians said.

Quantitative Survey Instrument

Overview

The quantitative survey contained sixty-nine questions designed to determine teachers' perceptions regarding their openness to change and their views on who is responsible for teaching information literacy skills. Also surveyed were respondents' preferences for ways administrators could gather input on changes being considered and communicate decisions about

changes to be made. Also included were demographic questions to gather information such as education level and gender as well as content and grade levels taught.

Openness to change and views on responsibilities were measured using four subscales: three adapted from those designed by other authors and one designed by me. I also designed the subscale relating to communication preferences. Each of the subscales used a five-point Likert scale with 1 corresponding to *strongly disagree* and 5 with *strongly agree*.

Subscale 1: Teachers' Openness to Change in General

The first subscale measured the participants' level of openness to change in general in the context of teaching. The source of the questions is Cathy Williams's dissertation "Examining Openness to Pedagogical Change among Secondary Mathematics Teachers: Developing and Testing a Structural Model" (2015). However, the questions were modified slightly to fit this survey. The original survey was math specific; this study includes all disciplines. Therefore, to be appropriate for all disciplines, where Williams's survey used the word "math," this survey used the word "subject." Two of her questions were omitted because their content made them applicable only to math teachers.

The survey included eight subscale 1 questions of which four were reverse coded. The subscale 1 responses are described in table 4 in the "Findings" section.

Subscale 2: Teachers' Openness to Change Involving Collaboration

The second subscale was designed to gather teachers' perceptions of their own openness to change involving collaboration. The original survey came from Audrey P. Church's research paper "Secondary School Principals' Perceptions of the School Librarian's Instructional Role" (2010). Her original survey was designed to determine if secondary school principals perceived collaboration to be part of the school librarian's role. Two of Church's questions were not included in this survey instrument because their focus was unrelated to the topic of this study.

Participants in this study were asked whether they perceived collaboration as the role of the school librarian and whether that same form of collaboration was part of the respondents' own job as a classroom teacher. For example, Church's survey asked if the school librarian "should collaborate with teachers to plan lessons which integrate information literacy into curriculum." The same questions were also asked with the beginning changed to "the teacher should collaborate with the library media specialists..."

The survey included eight subscale 2 questions. The subscale 2 responses are described in table 3 in the "Findings" section.

Subscale 3: Impediments to Change

The third subscale was designed to gather data on the impediments to change in the context of classroom teachers' lack of collaboration with school librarians. I created this set of questions. In understanding what prevents teachers from involving the school librarian in information literacy instruction, insight was gained into how to initiate possible changes.

The survey included eight subscale 3 questions. The subscale 3 responses are described in table 5 in the "Findings" section.

Subscale 4: Teachers' Views on Responsibilities

The fourth subscale gathered input from teachers about their views on who should teach information literacy skills: the school librarian, a classroom teacher, or a combination. The original survey came from Church's research paper "Secondary School Principals' Perceptions of the School Librarian's Instructional Role" (2010). Church's survey included twelve questions. For this study two of Church's questions were revised and split to avoid compounding the variables in this study. In the survey described here, the resulting fourteen questions were asked twice: once in the context of teachers' expectations about the school librarian's role, and a second time in the context of teachers' perceptions of their own role.

The subscale 4 responses are described in table 2 in the "Findings" section.

Subscale 5: Teachers' Preferences for Being Informed about Changes

The fifth subscale, which I designed, focused on the teachers' preferences about how changes in the school are communicated with them. Participants were asked eight questions to determine whether they prefer a certain method of communication, such as a faculty meeting or an e-mail. The questions were intended to gather data on what forms of communication may foster or inhibit an openness to change. This data guided recommendations on how to initiate change.

The subscale 5 responses are described in table 6.

Consistency

Internal consistency calculations indicated that most of the individual questions could be combined into larger constructs as Cronbach's Alpha is equal to or greater than .70.

Although the Cronbach's Alpha was only .68 for the openness to change construct for impediments, this circumstance may have been the result of this construct's being difficult to combine because the questions asked teachers to evaluate impediments from a wide variety of areas—from their own teaching schedule to the quality of the school librarian. The low Cronbach's Alpha reveals that the impediments teachers face is a complex issue explained by a variety of issues.

Quantitative Analysis

Descriptive statistics were used to explore whether specific demographic groups among the teachers surveyed had varying perceptions about school librarian roles in the context of teaching information literacy skills and varying levels of openness to change. In this study, the descriptive statistics were calculated for gender, highest education level, subject taught, years of experience, and grade(s) taught. The descriptive statistics answer the following research questions: a) How do teachers' perceptions of school librarian roles regarding teaching information literacy skills vary? and b) What are teachers' levels of openness to change?

Qualitative Analysis

Three school librarians were interviewed to help provide answers for research question three: What are school librarians' reactions to teachers' perceptions about responsibilities for teaching

information literacy skills? Each interview lasted approximately thirty to forty-five minutes. I took handwritten notes during the interviews. These interviews were consistent with explanatory sequential mixed-methods design because the interviews provided supplemental information to provide the school librarian perspective to the survey data. The interviews also served the purpose of overcoming the limitation of not surveying school librarians about their perceptions about teaching information literacy. Because only three school librarians were interviewed, most of the information about the interviewees' reactions to the results of the quantitative data gathered by means of surveying classroom teachers is presented in narrative form.

Findings

Teachers' Perceptions of Responsibilities for Information Literacy Instruction

The first area of analysis addressed was whether teachers' perceptions vary on school librarians' roles in the context of teaching information literacy skills. Analyzing the survey results for teacher expectations revealed that teachers had several common perceptions as indicated by small standard deviations. As shown in part I of table 2, over 90 percent of teachers agreed (mean scores over 4, standard deviations under .70) that school librarians should teach students how to do the following:

a) use printed materials (question 34), electronic subscription databases (question 35), and website information (question 36) for research,

b) successfully locate and evaluate printed and online materials (questions 37, 38, and 38),

c) avoid plagiarism (question 41), and

d) follow the acceptable use policy of the school (question 42).

In examining responses for the teachers' expectations about who should be responsible for teaching students various information literacy skills, some further differences were detected in the results. As shown in table 2, respondents had a high agreement (96 percent) that teachers should have access to standardized student test data (question 57), but only 56.3 percent agreed that school librarians should have this access (question 43). In addition, respondents indicated 91.3 percent agreement that teachers should be responsible for using standardized student test data to develop information literacy instruction (question 58), but only 56.3 percent responded that school librarians should enact this same role (question 44).

Regarding teachers' expectations about leading professional development in the context of information literacy, other variances emerged. As shown in table 2, participants responded with 77.6 percent agreement that school librarians should provide staff development for teachers in areas such as effective Web searching (question 45), but only 45.1 percent agreed that teachers should provide this same training (question 59). Participants also agreed (83.8 percent) that school librarians should provide staff development for teachers in areas such as effective use of electronic subscriptions (question 46), but only 43.8 percent agreed that teachers should provide this same training (question 60). In addition, 83.8 percent of responses agreed that school librarians should provide staff development for teachers in areas such as intellectual property and copyright (question 47), and 46.3 percent indicated that this should be a teacher task (question 61).

Table 2. Teachers' views on responsibilities: percentage of agreement (*strongly agree* or *agree*), mean, and standard deviation.

Question Number	Question	% of Agreement	*M*	*SD*
Part I: Teacher Expectations for School Librarian				
The school librarian should teach students to use				
q34	printed materials for research.	90.0	4.11	.60
q35	electronic subscription databases, which contain journal articles for research.	91.2	4.26	.61
q36	information found at free Websites for research.	90.0	4.25	.63
The school librarian should teach students how to				
q37	locate information contained in print sources.	91.3	4.13	.62
q38	locate information contained in electronic sources.	93.8	4.28	.62
q39	evaluate information for accuracy and reliability before using it for research.	91.3	4.28	.69
q40	take notes and how to organize information to be used in a report, paper, or project.	57.5	3.48	1.06
q41	respect intellectual property (avoid plagiarism, cite sources, respect copyright laws).	94.9	4.37	.62
q42	practice ethical behavior by following acceptable use policy guidelines in their use of information.	97.6	4.39	.54
The school librarian should				
q43	have access to standardized student test data.	56.3	3.54	.83
q44	use standardized student test data as he/she develops information literacy instruction.	56.3	3.46	.83
q45	provide staff development for teachers in areas such as effective searching on the Web.	77.6	3.84	.91
q46	provide staff development for teachers in areas such as effective use of electronic subscription databases.	83.8	3.96	.83
q47	provide staff development for teachers in areas such as intellectual property and copyright.	83.8	3.96	.80

Question Number	Question	% of Agreement	*M*	*SD*
Part II: Teacher Expectations for Themselves and Other Teachers				
The teacher should teach students to use				
q48	printed materials for research.	92.5	4.15	.62
q49	electronic subscription databases, which contain journal articles for research.	87.6	4.14	.69
q50	information found at free Websites for research.	89.9	4.14	.66
The teacher should teach students how to				
q51	locate information contained in print sources.	90.1	4.09	.70
q52	locate information contained in electronic sources.	93.7	4.16	.57
q53	evaluate information for accuracy and reliability before using it for research.	91.3	4.20	.62
q54	take notes and how to organize information to be used in a report, paper, or project.	90.1	4.21	.71
q55	respect intellectual property (avoid plagiarism, cite sources, respect copyright laws).	96.3	4.30	.54
q56	practice ethical behavior by following acceptable use policy guidelines in their use of information.	95.0	4.29	.60
The teacher should				
q57	have access to standardized student test data.	96.3	4.74	.57
q58	use standardized student test data as he/she develops information literacy instruction.	91.3	4.44	.76
q59	provide staff development for teachers in areas such as effective searching on the Web.	45.1	3.16	1.32
q60	provide staff development for teachers in areas such as effective use of electronic subscription databases.	43.8	3.14	1.32
q61	provide staff development for teachers in areas such as intellectual property and copyright.	46.3	3.18	1.29

Teachers' Perceptions Related to Collaboration in Literacy Instruction

When asked questions about collaboration, teachers responded with higher agreement that teachers should collaborate with school librarians (see part II of table 3) as opposed to school librarians collaborating with teachers (see part I of table 3). Regarding teaching information

literary skills in the context of content curriculum, examination of responses to questions 20 and 16 revealed higher agreement for teachers to collaborate with school librarians (87.2 percent) rather than having the school librarians be responsible for the collaboration (84.9 percent). Concerning planning lessons that integrate information literacy skills into the curriculum (questions 21 and 17), there was also higher agreement that teachers should collaborate with school librarians (80.3 percent) rather than having the school librarians initiate the planning (71 percent). In addition, examining the responses to questions 22 and 18 revealed high agreement that teachers should collaborate with school librarians (83.7 percent) in teaching lessons that integrate information literacy into the curriculum as opposed to school librarians (74.4 percent) collaborating with teachers. Teachers indicated 47.7 percent agreement that school librarians should collaborate with teachers to evaluate student work from lessons integrating information literacy (question 19), but 79.1 percent agreed that teachers should collaborate with school librarians (question 23), a large difference in responses.

Although from a different set of questions, as shown in table 2, when asked questions 54 and 40 teachers responded with significantly higher agreement that teachers (90.1 percent) should be responsible for teaching students how to take notes and organize their information for a paper or project as opposed to school librarians being responsible for this task (57.5 percent).

Table 3. Openness to change in the context of collaboration: percentage of agreement (*strongly agree* or *agree*), mean, and standard deviation.

Openness to Change: Collaboration by School Librarian
Part I: The school librarian should collaborate with teachers to

Question Number	Question	% of Agreement	M	SD
q16	teach students information literacy skills in the context of content curriculum.	84.9	4.01	.68
q17	plan lessons, which integrate information literacy into curriculum.	71.0	3.78	.68
q18	teach lessons that integrate information literacy into the curriculum.	74.4	3.79	.74
q19	evaluate student work from lessons which integrate information literacy into the curriculum.	47.7	3.41	.76

Openness to change: Collaboration by Teachers
Part II. The teacher should collaborate with the school librarian to

Question Number	Question	% of Agreement	M	SD
q20	teach students information literacy skills in the context of content curriculum.	87.2	4.01	.69
q21	plan lessons, which integrate information literacy into curriculum.	80.3	3.90	.70
q22	teach lessons that integrate information literacy into the curriculum.	83.7	3.94	.69
q23	evaluate student work from lessons which integrate information literacy into the curriculum.	79.1	3.83	.79

Teachers' Openness to Change

Teachers' perceptions of openness to change were also analyzed. I have included mean scores in this section to show the strength of the teacher responses to the following subscale questions. As shown in table 4, when asked questions about openness to educational changes in general, teachers responded to question 9 with 93.4 percent agreement (*M*=4.19), indicating that they were open to adapting instructional approaches to following best practices. Teachers also responded to question 11 that they were open to embrace new methods for teaching their subject (74.8 percent agreement, *M*=3.66). When asked question 8 they responded that they enjoy finding new ways to teach their subject (88.0 percent agreement, *M*=4.14). The teachers indicated that learning new information about teaching was invigorating, with 85.0 percent agreement (*M*=4.25) on question 15.

The participants also indicated low responses for the reverse-coded questions. Only 6.5 percent of the teachers agreed that they feared change (question 14), and 18.5 percent agreed that pressures to change how they teach would force them out of teaching (question 12).

It may be inferred from these results that teachers are open to learning new methods of teaching, best practices, and ways to improve their teaching, and they do not feel burdened by this learning. It is also possible that those teachers who chose to answer the survey are more open to change than teachers who did not want to participate—a possible sampling bias.

Table 4. Openness to educational change in general: percentage of agreement (*strongly agree* or *agree*), mean, and standard deviation.

Openness to Educational Change: General

Question Number	Question	% of Agreement	M	SD
q8	I prefer to teach my subject the way it was taught to me. (R)	24.2	3.39	1.10
q9	I try to adapt my instructional approaches to follow current best practices.	93.4	4.19	.67
q10	I do not want to change the way I teach my subject. (R)	8.7	3.65	.93
q11	I am quick to embrace new methods for teaching my subject.	74.8	3.66	.89
q12	Pressure to change my strategies makes me want to leave teaching. (R)	18.5	3.68	1.08
q13	I enjoy trying new ways of teaching my subject.	88.0	4.14	.76
q14	I am afraid to change the way I teach my subject. (R)	6.5	4.05	.76
q15	Gaining new knowledge about teaching my subject is invigorating.	85.0	4.25	.78

(R) = reverse coded before analysis

Teachers' Perceptions of Impediments to Collaboration

Teacher responses to impediments indicated that lack of time was the largest factor as to why they did not collaborate with school librarians. None of the questions were reverse coded as the questions were used to inform the discussion and recommendations sections on what is needed to foster collaboration. Teachers responded with 83.6 percent agreement (*M*=3.96) that spending prep periods grading and lesson planning (question 26) was the most significant factor preventing collaboration. In addition, they responded that the number of different courses they teach (question 30) with 54.7 percent agreement (*M*=3.17) and the tasks required by administration (question 27) with 51.8 percent agreement (*M*= 3.36) are also significant impediments to collaboration. However, teachers did not respond with strong agreement (less

than 14 percent agreement) that traits of the school librarian prevent them from collaboration (questions, 24, 28, 31 and 33).

Table 5. Impediments to change: percentage of agreement (*strongly agree* or *agree*), mean, and standard deviation.

Openness to change: Impediments to collaboration between teachers and school librarians
Collaboration is difficult because of

Question Number	Question	% of Agreement	M	SD
q24	the lack of a school librarian	13.0	1.96	1.02
q25	the lack of knowledge of the school librarian	16.7	2.08	1.08
q26	my prep periods are spent grading assessments and/or lesson planning.	83.6	3.96	.82
q27	the tasks required by administration.	51.8	3.36	1.02
q28	the personality of the school librarian.	13.1	1.83	1.15
q29	my course curriculum makes implementing information literacy skills difficult.	36.4	2.79	1.26
q30	the number of different courses I teach.	54.7	3.17	1.26
q31	the fear of appearing not as smart as the school librarian.	4.7	1.60	.83
q32	it takes too much time and prevents me teaching all the standards.	32.2	2.62	1.13
q33	I worry that the school librarian will not fulfill his/her role so I will have to do all the work.	9.5	1.86	1.00

Teachers' Preferences for Being Informed about Changes

Teachers responded that when administration seeks information on a change or wants to share information about a change, that it includes direct teacher input. In response to how information for a change is gathered, the top preferences were a survey sent to all teachers with 81.5 percent agreement (*M*= 3.96) and individual department meetings, with 79 percent agreement (*M*= 3.95).

Teachers preferred that information about a change be shared with faculty either in faculty meetings, 80.3 percent agreement (*M*= 3.93), or individual department meetings, 78.8 percent agreement (*M*=3.99). Teachers did not want to receive the survey results or learn about changes through their department chair meetings as a way of sharing information.

Table 6. Teachers' views on communication about changes: percentage of agreement (*strongly agree* or *agree*), mean, and standard deviation.

Openness to change: Communication

Question Number	Question	% of Agreement	M	SD
When administration wants to initiate a change, rate how you prefer they gather input.				
q62	Faculty meetings	60.5	3.46	1.24
q63	Department chair meetings	54.3	3.33	1.16
q64	Survey sent to all teachers	81.5	3.96	.94
q65	Individual department meetings	79.0	3.95	1.02
When administration wants to initiate a change, rate how you prefer they communicate their ideas with the staff.				
q66	Faculty meeting	80.3	3.93	1.08
q67	Department chair meetings	56.8	3.46	1.17
q68	Survey sent to all teachers	42.0	3.17	1.30
q69	Individual department meetings	78.8	3.99	1.04

School Librarians' Reactions to Teachers' Perceptions

The final research question was: What are school librarians' reactions to teachers' perceptions about responsibilities for teaching information literacy skills? While viewing the survey data, one school librarian was insulted that only 57.5 percent of teachers who took the survey agreed with the statement "school librarians should teach students to take notes on how to organize information to be used in a report, paper, or project" (question 40; see table 2). She believed that teaching this skill to students is part of her role. She voiced her opinion that teachers would set themselves up for failure if they took on this task because they are already responsible for teaching a considerable amount of content information. She felt that adding this task would be too much work for teachers. Another school librarian also reacted to teachers' responses to

question 40 and noted that it was interesting that the teachers' level of agreement was so low as teaching notetaking skills was included in the role of the school librarian before the digital age. This school librarian was curious why the belief had apparently changed. She also pointed out that in the digital age the school library provides access to programs such as EasyBib to help students with this skill, in addition to helping them demonstrate respect for the intellectual property of others.

A theme emerged as school librarians viewed the data on collaboration. All the school librarians were not surprised that teachers find it difficult to collaborate with school librarians because classroom teachers generally use their prep periods for other required tasks (question 26; see table 5). One school librarian noted that information literacy skills are easier to integrate into a curriculum such as social studies or English language arts than into some other subjects. Upon reading that 90 percent of teachers believed it was the school librarian's role to teach students how to use printed materials (question 34; see table 2), another school librarian wondered how she could possibly teach these skills if she is not invited into the classroom.

In viewing who should have access to and use standardized data results (questions 43, 44, 57, 58; see table 2), the school librarians had views similar to those of the teachers. The overall results for these questions revealed that teachers believed they should be the ones to view (96.3 percent) and use this data (91.3 percent) at a much higher percentage than they thought school librarians should (56.3 percent). In fact, one school librarian wondered why 100 percent of the teachers did not agree that it was the role of the teacher to view and use standardized data.

The school librarians realized that because they help the whole student body, not only five or six classes, they do not need individual results. However, the school librarians noted that they rely on the teachers to provide any information the school librarians may need to help adjust lessons to fit the needs of learners. The school librarians said that if they had access to more generalized information, that data would be useful for finding appropriate-level resources for students to use.

The school librarians shared some common thoughts regarding the data in table 4. The school librarians were encouraged that teachers' responses indicated openness to change and willingness to adapt their instructional practices.

The school librarians also reacted positively to the teachers' responses indicating that teaching information literacy skills should be a joint effort (see table 3). One school librarian wondered if teachers viewed the collaboration effort as co-teaching in which each educator is responsible for teaching part of the lesson. Her preference was that teachers would be responsible for the content, but that the school librarians would help with weaving information literacy skills into the assignment. Another school librarian wondered if teachers would be willing to give up control of teaching information literacy skills and let the school librarians teach these skills.

Another theme among the school librarians was their reaction to teachers' responses regarding which educator is responsible for evaluating student work (questions 19 and 23; see table 3). The school librarians were disappointed to observe that teachers felt this task was more the role of the teacher (79.1 percent) than of the school librarian (47.7 percent). The interviewees believed they can work with the teachers to help with grading. If responsible for teaching a lesson, one school librarian said that she offers to grade the work, thereby reducing the teacher's workload. Another school librarian expressed that she has been able to split assessment grading with her school's tenth-grade English language arts teacher. For example, the school librarian graded the content of a book study because she had read the books and created the questions for the students. In turn, the teacher graded the speech component of the assignment. The same school librarian

worked with the eleventh-grade English language arts teacher, and the teacher commented on improved research skills shown by the students because of the school librarian's lesson.

The school librarians were pleased to see that teachers' responses to questions 45 through 47 and 59 through 61 (see table 2) indicated that many teachers thought school librarians should be responsible for professional development focused on information literacy skills, not teachers. The differences in the percentages were approximately 40. The school librarians interviewed agreed that they focus on plagiarism, copyright laws, and databases when instructing students, and the librarians also want to help teachers develop competencies in these areas.

Discussion

Teachers' Perceptions of Responsibilities for Information Literacy Instruction

According to the results shown in table 2, teachers want professional development training on how to use information literacy skills when designing and teaching their lessons. Teachers indicated an openness to change in general. However, the responses for the questions about expectations of school librarians and teachers teaching information literacy skills revealed that teachers strongly believed that they should be the ones with access to standardized student test data to develop information literacy skills. Teachers responded with a high preference for school librarians to prepare professional development on topics related to information literacy skills for teachers. Teachers would then take that information to develop their own information literacy skills and lessons to help students develop these skills.

The literature review revealed that, in general, teachers have limited understanding of information literacy skills. An unclear or incomplete understanding of information literacy may have impacted the teachers' responses to the survey questions—especially those for which responses indicated that some teachers may be unwilling to collaborate with school librarians on information literacy lessons.

Teachers' Openness to Change

The literature review and survey results concur regarding teachers' lack of time to effectively collaborate. As shown in table 5, the survey results revealed that several impediments to collaboration were perceived. For example, respondents had 83.6 percent agreement for "my prep periods are spent grading assessments and/or lesson planning" (question 26) with a mean response of 3.96 (see table 5). Secondly, there was 51.8 percent agreement that "tasks required by administration make it difficult" (question 27) and a mean response of 3.36 (see table 5). Finally, there was 54.7 percent agreement for "collaboration is difficult because of the number of different courses I teach" (question 30) with a mean response of 3.17 (see table 5).

Moreillon has written that "collaboration occurs when educators co-design, co-plan, co-teach, and/or co-assess curriculum-based lessons or units of study" (2008, 2). The literature review revealed that collaboration as described by Moreillon was not happening. On the contrary, the common practice was to divide a lesson and assign topics to be taught independently of each other (Gavigan and Lance 2015; Montiel-Overall and Jones 2011). Another survey found that teachers used the school librarian to find resources instead of collaborating on learning goals and lesson planning (Montiel-Overall and Jones 2011). The survey data also revealed that teachers prefer to use the school librarian as a resource, with over 77 percent agreement that school

librarians should provide professional development on information literacy related skills (questions 45–47), versus less than 47 percent agreement that professional development is the teacher's role.

School Librarians' Reactions to Survey Results

The literature review discussed the role of the school librarian, which included the demands of teaching information literary. The school librarians echoed this view of their own role and expressed many of the same responses as the teachers. The school librarians believed it is their role to lead professional development about online resources and other technology. The school librarians believed they should be instructional partners with the teachers. They mentioned several times that they want to assist the teachers with enhancing classroom lessons and voiced a willingness to help with grading.

One school librarian worked with the eleventh-grade English language arts teacher, and the teacher commented that students had demonstrated improved research skills because of the school librarian's lesson. The school librarian used this example to highlight the strength of collaboration with a teacher. However, research by Briana Hovendick Francis and Keith Curry Lance conducted a study on the perception of school librarians teaching information literacy skills. The results indicated that school librarians rated their lessons higher than teachers rated the same lessons for the success of teaching information literacy skills. In the same study, school librarians were more likely to rank themselves as excellent when the teacher invited them into the classroom to teach or co-teach frequently or if the school librarian thought the teacher or administration liked them or viewed them as a technology solver (Francis and Lance 2011). Although the school librarian participant used one example to illustrate the impact of the collaborative assessment, additional evaluation is needed to determine the impact of the lesson.

Implementation

The literature review, survey results, and interviews provide guidance on how to implement change in a school. Fullan addressed some of the factors that impact the initiation and implementation of change. Classroom teachers, administration, and the school's central office can be advocates for guiding new initiatives (2007). Classroom teachers may seek out the administration to implement a new strategy in their class in response to their students. Similarly, the administration may review school data and initiate a change such as scheduling to meet the needs of students. Fullan noted that because change can begin in different places, a key element of a successful change is to include multiple stakeholders (2007). Therefore, administration should seek out the input and support from teachers for initiating a change. Responses to questions 62 through 65 indicated that teachers prefer that information for change is gathered in several ways, including faculty meetings, department chair meetings, surveys sent to all teachers, and individual department meetings. The two most-preferred ways were surveys sent to all teachers and individual department meetings. Teachers wish to share their opinions personally versus through their department chair or in a large faculty meeting (see table 6).

When asked questions 66 through 68, teachers responded that they prefer receiving information on change through faculty meetings and individual department meetings. These methods were preferred over survey results being distributed or department chair meetings. Teachers want to hear the information directly, just as they want to share the information directly (see table 6).

Recommendations

Given teachers' limited understanding of information literacy skills and the data showing the positive impact of students' learning these skills on academic performance shown by other researchers, the need for collaboration between teachers and school librarians on information literacy instruction is strong. I recommend that collaboration occur in which both the school librarian and teacher develop lessons beginning with setting goals and concluding with assessment. Educational leaders should provide the support and time to teachers and school librarians to accomplish these tasks. The survey results indicate that the most significant impediments to collaboration are a lack of time by the teacher. Administration needs to provide support by limiting the number of different courses taught by a teacher (question 30) and limiting the number of tasks required (question 27).

It is recommended that colleges continue to rely on Pre-K–12 to teach more information literacy skills for students to be successful in college. As secondary education institutions implement these changes, it is recommended that schools follow Fullan's (2007) Change Theory to gather teacher input throughout the process of change as well as keep them informed of these initiatives. Teachers responded in the survey that they preferred their opinions be included in proposed changes through a survey sent to all teachers (question 64) and individual department meetings (question 65). Additionally, educational leaders must share the information on change directly as teachers prefer this method.

Limitations and Future Research

The research had a few limitations. The first limitation was the sample size for the survey. The total population invited to participate in the research by taking the survey was approximately 1,200 teachers, but only 109 teachers responded. This is a total response rate of nine percent. The sample size limits generalizability to other schools located in a similarly sized urban setting. Because teachers only at large urban schools were invited to participate and because rural schools differ from urban schools in size, setting, and resources, the study is not generalizable to rural schools in the state. (The rural schools in North Dakota include co-operative education experience schools, and some traditional schools have a total K–12 population that is smaller than one grade in an urban school in the state.)

To address both small sample size and lack of inclusion of participants from rural schools, future research should include those populations. In addition, future research should address school organization as it may impact collaboration because, in my state, the middle school model favors cross-curricular teams in contrast to high schools that are typically structured into discipline-specific departments. The size of the school, whether urban or rural, may also impact educators' ability to collaborate on teaching information literacy skills.

The research did not explore the areas of information literacy classroom teachers may struggle to understand as well as what information literacy skill instruction they embed in their curriculum. It is important to know which areas of information literacy teachers are successfully including in their curriculum and which areas they need to learn more about so that professional development can be designed accordingly. Future research should include how teachers' level of understanding information literacy skills impacts collaboration with school librarians. With more information about classroom teachers' strengths and weakness in the context of information literacy instruction and in the context of collaborative teaching, school librarians could create

effective professional development for classroom teachers so that students graduate ready to take on the research challenges they will face in college and their careers. Finally, future research should also analyze how teachers view the purpose of their jobs and what impact that view of their purpose has on classroom teachers' openness to learning and teaching information literacy skills and collaboration.

Conclusion

Numerous studies have found that information literacy skills are necessary to increase student success. As a school initiates a change toward embedding information literacy skills, it needs to include direct input from multiple stakeholders. The survey results indicate teachers believe the role of offering professional development for these skills belongs to school librarians. The results reveal that teachers need more time in their day to collaborate with school librarians on information literacy embedded lessons. Administration must limit additional duties and allow multiple prep times to allow teachers this time to collaborate.

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