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Exploring Graphic Novels for Elementary Science and Mathematics

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Abstract
Prompted by the recent surge in the popularity and utilization of graphic novels in the elementary classroom as well as trends toward the publication of content-focused graphic novels, the research described in this study was designed to explore educators’ perspectives toward the medium as well as the issue of quality in graphic novels with science or math content. Qualitative results recorded through evaluation forms and focus-group sessions revealed the existence of variance in participants’ perspectives. However, these results also indicate potential benefits and perceived problems or concerns.

Introduction
Graphic novels, the longer and more serious offspring of the comic book, have received growing attention by educators. Hall (2011), preparing to teach college courses in comics, declares that “comic books and graphic novels are one of the newest fully fledged art forms, a vibrant hybrid medium birthed in American and brimming with all the wildly experimental vigor of youth” (39). Indeed, educators have argued for graphic novels in the English classroom for teaching social issues (Tabachnik 2009), for ESL students learning English (Boatright 2010), and even for science-math instruction at the elementary through middle school level (Chipman 2010). A growing number of educational publishers, like Scholastic, have begun to create graphic novels for students of all ages with a focus on a wide range of content areas. As interest and the number of published graphic novels grow, however, questions of classroom utilization and textual quality grow as well. All graphic novels are not appropriate for all teachers, nor are these appropriate in all classrooms and for all content areas. Concerns relevant to both the content and literary value are valid because, as with children’s literature across the curriculum, graphic novels across the curriculum are not all the best resources for teachers or students. Prompted by the recent surge in the popularity and utilization of graphic novels in the elementary classroom as well as trends
toward the publication of content-focused graphic novels, the research described in this pilot study was designed to explore educators’ perspectives toward the medium in general as well as their specific viewpoints relative to mathematics and science-focused graphic novels.

The tradition of using trade books, non-textbooks, in the elementary classroom is an old one. Authentic children’s literature has long had a regular place in the elementary classroom in the area of reading and language arts. Increasingly, educators also have used trade books for other content areas, and the notion of integrating children’s literature across the curriculum, whether through thematic units or other approaches, has become a standard idea (O’Callaghan 2011; Yellin, Blake, and DeVries 2000). Leitze (1997) cites the National Council of Teachers of Mathematics (NCTM) Standards as encouraging mathematics integration through children’s literature and demonstrates ways that process problem-solving and literature can be connected. Evans, Leija, and Falkner (2001) specifically address teaching the NCTM mathematics standards through children’s literature. Murphy (2000) argues that children’s books about mathematics provide opportunities for children with different learning styles. Likewise, Morrison and Young (2008) argue that scientific inquiry can be aided by science trade books. Atkinson, Matusevich, and Huber (2009) offer a rubric for teachers to use in choosing science trade books for elementary classrooms. Naturally, as graphic novels gain a presence in the classroom, teachers also will be interested in using them in science and mathematics.

Not all children’s literature is equal. A number of scholars have examined the issue of quality in children’s literature, in particular trade books for science and mathematics. Is the content accurate? Does the story engage students? Are pictures informative? Such questions must be asked. Rice (2002) maintains that trade books can help the science curriculum if teachers are careful in their selections. Hellwig, Monroe, and Jacobs (2000) provide a framework for evaluating picture books related to mathematics. Whitin and Whitin (2001) declare that beautiful language also is an aspect of quality literature that relates to mathematics. Nesmith and Cooper (2010) investigate the use of a mathematics trade book evaluation instrument because beneficial children’s literature must be high quality. Likewise, not all graphic novels are equal, and as they become more frequently used in the classroom, quality becomes a vital question. Most of the research on graphic novels in the classroom has taken place at the secondary-college level (Carter 2007; Frey and Fisher 2008; Tabachnik 2009). Even in the area of college business, Short and Reeves (2009) explore the use of graphic novels for communicating content.

Understandably, most graphic novels have been written for adolescent and adult audiences. However, graphic novels are beginning to appear in the professional literature for the elementary classroom. Librarians have been at the forefront advocating and recommending certain graphic novels (Gorman 2008; Teale, Kim, and Boerman-Cornell 2008). Although publications like Booklist offer short reviews, and Guiterrez (2009) describes the wealth of good new graphic novels for K–4 in School Library Journal, a need remains for study of quality in graphic novels. When this need is examined alongside the recent emergence of elementary-focused, content-specific graphic novels, it becomes important for educators, from classroom teachers to librarians, to have access to valid review sources or (in the absence of suitable reviews) that they are afforded a means for self-reviewing graphic novels. As Schwarz (2009) argues, graphic novels can be published that are worthless but might sell well: “Not all graphic novels are thoughtful or even necessary” (10).
In an effort to learn more about educators’ perspectives toward graphic novels and their utilization in elementary mathematics and science classrooms, the following study was organized. Two questions provided guidance for the study:

1. What are the educators’ perspectives on the utilization of graphic novels in the elementary classroom?
2. What are educators’ perspectives on utilizing mathematics- and science-content-focused graphic novels in the elementary classroom?

Participants

Because we were interested in exploring educators’ perspectives toward the utilization of graphic novels in the elementary classroom while also examining these educators’ perspectives toward mathematics- and science-content-focused graphic novels, we elected to invite elementary classroom educators as well as elementary teacher educators to participate in the study. Seeking to incorporate as much participant variance as possible while still maintaining study manageability, a determination was made to include 11 participants. Seven participants were currently teaching in elementary classrooms within local school districts, and four of the participants held faculty positions within the university’s department of curriculum and instruction. Faculty members were purposefully chosen and included the director of the Learning Resource Center (a librarian), an elementary literacy educator, an elementary science educator, and a middle-level mathematics educator. Purposeful sampling also was utilized in choosing classroom teacher participants. All classroom teachers were chosen on the basis of their experiences as elementary educators as well as their expertise in elementary literacy, mathematics, and science. These determinations were made on the basis of the participants’ years in the classroom and by their previous interactions with the researchers. It is important to note that while in the midst of the research, the middle-level mathematics teacher educator asked to be removed from the study because of personal reasons, and all subsequent data reflects information garnered from the 10 remaining participants.

Trade Book Determinations

Trade books were selected for the study with determinations made on the basis of simple current availability (what has been published) and a desire to have a diverse sampling of textual structures and formats as well as an equal number of mathematics- and science-content-focused texts. Wanting to incorporate as many trade books as possible with as much variance as possible while still maintaining study manageability, it was determined that six trade books would be incorporated in the study. The three chosen mathematics graphic novels included *The Mystery of Nine* (Law and Way 2010), *The Math Game I* (Jung, Chung, and Spoor 2005), and *Math Mysteries—The Secret Ghost* (Thielbar and Ota 2010). The three chosen science graphic novels included *A Journey into the Human Body* (Oh 2005), *Einstein* (Special Academic Manga/Ykids 2007), and *The Shocking World of Electricity* (O’Donnell et al. 2007).

Developing a Guide for Review
As noted previously, a lack of resources designed to guide educators’ recognition of quality graphic novels exists, specifically graphic novels that are focused on mathematics and science content. Recognizing this lack, while also desiring to explore educators’ perspectives toward mathematics- and science-focused graphic novels, a determination was made by the researchers to create a guide for participants to use when reviewing the graphic novels chosen for the study.

Numerous criteria and formats have been created and utilized for the examination of children’s literature. When the literature is content-focused, the development of a guide for reviewing the literature takes on additional depth and complexity because of the necessity in determining those elements that constitute quality content. In designing a guide for reviewing mathematics- and science-content-focused graphic novels, quality criteria associated with mathematics content, science content, literary content, and graphic novel content were each considered separately. Schiro (1997) constructed an evaluation instrument for the evaluation of mathematics-focused literature, and this instrument was later revised by Hunsader (2004). While Schiro’s instrument consisted of 11 mathematics criteria and 11 literary criteria, Hunsader’s adaptations reduced this to 6 mathematics criteria and 6 literary criteria. Hunsader’s mathematics-evaluation criteria include (1) content accuracy; (2) content visibility; (3) developmental appropriateness of content for the book’s stated audience; (4) facilitation of the reader’s involvement in, use of, and transfer of the content; (5) complement between the story and the mathematics in the story; and (6) resources required for the reader to obtain the maximum benefits of the literature. Specific literary criteria within the Hunsader instrument include (1) plot/character development, (2) vivid and interesting writing style, (3) relevancy and appeal of illustrations, (4) developmental appropriateness of readability and interest level for the book’s stated audience, (5) complement between the book’s plot, style, and illustrations, and (6) presentation of positive ethical and cultural values. Subsequently, the design of Hunsader’s revised instrument as well as much of the instrument’s mathematics and literary criteria were used in formulating the mathematics and science graphic novel review guide designed specifically for this study. Additionally, and again because of the distinct nature of this study, elements specific to graphic novels were integrated within Hunsader’s literary criteria and include the following: To criteria 1 was added “are the characters (if any) believable and well developed?” and to criteria 3 and 5 the term “graphics” was added. However, it is noted that the qualities that constitute quality in a graphic novel remain fairly vague in the literature. Critics share their opinions, and many agree on the complexity of the graphic novel (Crutcher 2011). Perhaps artist Eddie Campbell (2007) says it best when he describes graphic novels as “an emerging new literature of our times in which word, picture, and typography interact meaningfully and which is in tune with the complexity of modern life with its babble of signs and symbols and stimuli” (13). Certainly, developed plot and character, engaging writing style, engaging pictures, developmental appropriateness, and the ways style and pictures work together are good standards to begin with when exploring the quality of graphic novels.

Development of the science criteria utilized in the review guide involved the examination and compilation of numerous researchers’ suggestions of criteria to be used when evaluating children’s books for science instruction. Based on the work of Mayer (1995), Rice (2002), Owens (2003), and Halsey and Elliott (2007), a determination was made to include the following science standards in the study’s graphic novel review guide: (1) content is accurate and current, (2) content is visible and effectively presented, (3) content is intellectually and developmentally appropriate for the intended audience, (4) text facilitates reader’s involvement, understanding, or
transfer of science content, (5) theories and facts are easily distinguished and discernable from fiction or fantasy, and (6) text promotes a positive attitude toward science and technology.

Subsequently, the resultant mathematics and science graphic novel review guide contains six mathematics standards, six science standards, and six literary standards for graphic novels (see Appendix A). Although the study’s mathematics and science graphic novel review guide (as well as most of the previously cited content-specific literature evaluation tools) contains a five-point Likert scale for each of the listed criteria, participants’ criterion ratings were utilized to guide and inform participants’ subsequent participation in the study’s focus group discussion.

Conducting the Study

To accommodate the needs of the participants, two group sessions were conducted. Participants were allowed to choose their session, and, subsequently, the sessions consisted of a mixture of classroom teachers and university teacher educators with six participants in one session and four participants in the other session. Both sessions occurred on the university campus, and all three researchers were present for the sessions. Reviewers were given the set of the six trade books, six corresponding review guides, and a brief overview of the intent of the study. Participants were encouraged to include as many comments as possible to provide rationale for the criterion ratings provided on their individual review forms. After sufficient time was provided for the completion of all six review guides, the participants were asked to contribute their perspectives, beliefs, and evaluative thoughts during a focus group session facilitated by the researchers. The same protocol was utilized for both focus group sessions, and the sessions were audio and video recorded to capture the details of the discussion (see Appendix B). The completed review guides were collected and organized, and the audio/video recordings of the focus group sessions were transcribed for analysis.

Data Analysis

The qualitative data analysis method of Miles and Huberman (1994) was used to analyze the transcribed focus group sessions and the written comments from participants’ completed review guides. This narrative data set was first analyzed individually by the researchers to identify common patterns and themes using the research questions as a reference. The researchers then verified the coding structure through discussion and categorization of the data set, with theme designations made on the basis of the identification of at least two out of three researchers. The next level of analysis involved the organization of statements from the data set into the identified themes and each was verified by all three researchers.

Three major areas of ideas emerged from the two focus groups and from participants’ comments on the mathematics and science graphic novel review guide. Generally, the teachers were hesitant but curious about the medium of the graphic novel: they recognized a number of potential benefits, and they perceived possible problems and concerns associated with using mathematics- and science-focused graphic novels in the elementary classroom. Although one teacher explained that graphic novels were “just not what I prefer to read,” she and the rest of the teachers expressed varying degrees of interest in this medium. They acknowledged that many students are attracted by graphic novels, although one mentioned that he wanted to
know more about what ―kids think.‖ They struggled with defining just what graphic novels are (―like a comic book or video game‖), how they connect to anime, TV serials, and other media, and if they can include nonfiction. Most important was the question ―is it real literature?‖ Like any medium new to the classroom, the graphic novel will understandably face resistance and hesitation even as a few ―early adopters‖ embrace the medium. Teachers will apparently ask if a new medium, especially one associated with out-of-school entertainment, is worthy of classroom use.

Nevertheless, the teachers also recognized a number of potential benefits to using graphic novels as an option in school. While no one suggested replacing traditional textbooks and related materials with graphic novels, the teachers did see the graphic novels as a ―wonderful additional resource.‖ They seemed to perceive graphic novels in content areas as a ―faster and less dense‖ means for connecting with more students. Following is a list from the focus groups and evaluation forms of the potential benefits of using graphic novels to engage all students:

- Boys will enjoy the medium.
- Gifted and talented students would like them.
- They meet the needs of a wide range of readers.
- They are good for ESL.
- They integrate multiple ethnicities.
- The writing style is student-like and readers could easily relate.

Several scholars have already advocated graphic novels for opening up the curriculum, especially for secondary students. Krashen (2005) suggests the medium can help reluctant readers, especially children of poverty who have little access to books. Schwarz (2005) argues that graphic novels promote diversity, and Cary (2004) presents research and teaching ideas for using the graphic novel with ELL (English Language Learners) as well as foreign language learners. These educators also discussed the notion that graphic novels may help teachers reach more students.

Educator participants also acknowledged that graphic novels, a medium that combines print and image, could help accomplish other goals, such as promoting ―higher order thinking‖ and offering ―realistic connections and examples‖ and ―some real world activities.‖ They mentioned that this medium could promote content knowledge, ―could introduce or reinforce concepts,‖ and could ―provide good visuals which support the content.‖ Although participants are unsure of the impact and quality of graphic novels, particularly in elementary mathematics and science, the teachers are open to possibilities that several scholars have proposed. Khordoc (2001), for example, theorizes that although comics and graphic novels are often dismissed as a low art form, ―its important to point out that its various strategies are complex and sophisticated, and require skillful decoding by readers, and as such, should be studied and analyzed as they are in other forms of literature and art‖ (159). One person mentioned that graphic novels are, in addition, already ―big with Scholastic,‖ the educational publisher so many educators trust.

Comments on the evaluation forms also revealed participants’ positive views about the evaluated books and included such ideas as ―it’s great that they explain some of the higher level ideas or unknown vocabulary,‖ ―diagrams gave a good view of the digestive system," and ―great that more info is provided at the back of the book."
On the other hand, participants also shared concerns and potential problems, many of which relate to the quality of the graphic novels used. Following is a list of characteristics teacher participants mentioned in the focus groups and in their specific graphic novel evaluations that speak to the overall questionable quality of the graphic novels examined:

- Contrived plot, unclear plot, mathematics/science content unrelated to the plot
- Dumb characters
- Heavy vocabulary
- Too babyish
- Some difficult readability
- Moves back and forth between past and present tense

Participants further indicated that graphic novels with subject-matter content that are created and published to catch the wave of graphic novel popularity still need to offer sensible stories and be accessible and developmentally appropriate.

In addition, participants expressed concerns over weak mathematics or science content in the graphic novels they evaluated. Comments included their concern about “weak content, not much content,” stories that contained “fallacies/incorrect conceptions” (e.g., of how the digestive track works), “confusion between fact and fantasy,” “too few examples,” “not much active involvement of the reader,” “doesn’t encourage the reader to ask more about the content,” and that finally, the graphic novels are “not sufficient in themselves” and “require extensions to develop content.” Participants indicated that good science or mathematics content was not necessarily included in these graphic novels. Additionally, although weak stories and plot development were revealed as part of the problem, the participants indicated that graphic novels that aspire to support elementary mathematics and science also might need to include additional features: good glossaries (or at least ways to explain terms), possible lab experiments, an engaging source of resources for further study, discussion questions, possible projects, and more of the kinds of content that may be available in textbooks. The bottom line, as the participants articulated, is that the graphic novel that supports mathematics or science content must include a good, sensible story and must have useful, accessible, interesting, worthwhile science or mathematics content.

Finally, the educators expressed concern about possible negative reactions from parents, the need to teach students how to read graphic novels, and anxiety about whether graphic novels were actually good choices for struggling readers. The last may refer to the question of academic worth expressed earlier. Are graphic novels just a cop out, or can they really be both good literature and rich in content, serving the needs of all students?

**Implications**

Despite numerous references and research studies specific to literature integration in the content areas, there is a noticeable absence of studies that explore elementary educators’ views toward graphic novels in general, toward the utilization of the genre in the elementary classroom, or toward graphic novels that are focused on mathematics and science content. Because this absence is occurring while the number of graphic novels targeting the younger child is increasing, the findings of this study are worthy of discussion as they have implications for future developments in the area of graphic novels in the elementary classroom.
The research questions focused on educators’ personal perspectives toward graphic novels, the utilization of graphic novels in the elementary classroom, and how those perspectives are informed by a mathematics- or science-content focus. The two-stage research design employed in the study allowed for data to be gathered that was relevant to and informed both research questions during both stages. First, utilizing a review guide designed expressly for this study that incorporated specific mathematics, science, and graphic-novel literary elements, participants were provided the opportunity to reflect on and provide explicit feedback on six mathematics- and science-focused graphic novels. Immediately following the completion of their individual trade book review forms (while personal feelings and perspectives were fresh and focused), participants joined in a group focus session where personal perspectives toward mathematics- and science-focused graphic novels and the utilization of graphic novels in the elementary classrooms could be explored and discussed. Qualitative results recorded through graphic novel review forms and focus group sessions indicated that the review guide informed both personal and professional perspectives and revealed a variance in participants’ perspectives. What one participant reflected on positively, another participant could view negatively. When providing feedback of the text *A Journey into the Human Body*, one participant indicated that the science content was “easy to follow from start to finish” while another participant stated that the science content of the text was “hard to follow.” Similarly, during the focus group session, one participant indicated, “I don’t like fiction. I’m a nonfiction person and I felt like I had to dig for what I wanted to get out of it [the graphic novel] because there was too much fluff going on,” while another participated stated, “Well, it’s totally opposite with me. I liked it more because I could get to that stuff in not just a nonfiction sort of way.”

Moreover, results revealed that individual participants’ understanding of what constituted a graphic novel and what constituted appropriate ways in which graphic novels could be incorporated in the elementary classroom varied. These findings are indicative of the fact that study participants are first and foremost individuals whose perspectives are shaped by their life experiences. As graphic novels are a relatively new genre (especially content-specific texts designed for the young child), participants presented variance in their prior experiences with the genre and, subsequently, these experiential variances were revealed through participants’ personal and educational perspectives.

Based on these study results, in which participants offered both diverse and shared opinions, some recommendations might provide guidance for classroom teachers and librarians considering graphic novels for their classrooms and schools.

- Media literacy refers to competencies that enable individuals to create, analyze, and evaluate messages in a variety of forms and genres. Graphic novels are a relatively new genre, and as study participants presented variance in their recognition and understanding of this genre, there may be a need to prepare and offer media literacy professional development opportunities at both the in-service and pre-service teacher levels.

- Parents need to be included in educationally relevant, classroom-focused discussions specific to media literacy and graphic novels. Just as educators expressed variance in their understanding of the genre, it stands to reason that parents also would express variance. Subsequently, parents need access to information specific to media literacy and graphic novels so they can actively and knowledgeably assist their children in choosing texts and support educators who use these texts.

- Librarians are responsible for providing materials that are appropriate for the individuals they serve. When those individuals are young children, this responsibility takes on added significance because of the detrimental effects of providing inappropriate materials. Additionally, teachers look to librarians for information and advice relative to the suitability of both print and nonprint
materials for classroom use. Graphic novels represent a new medium for young children, and librarians have taken the lead in providing information and recommendations regarding the genre. Yet with the rapid influx of graphic novels aimed at the young child, and with many of these texts being content-specific, it is essential that librarians remain vigilant to the task of advocating and recommending appropriate graphic novels across the curriculum. Moreover, all might benefit if teachers and librarians together would discuss what makes for good graphic novels for students.

- When reviewing and utilizing curriculum materials that suggests graphic novels, it is important for educators to inquire about how text lists were formulated. A review guide or evaluation instrument should be located and a review process should be incorporated if educators cannot determine the origin of these lists. Educators need reliable recommendations on new materials.

- Harris (2008) indicated that graphic novel literature has recently experienced "a bit of a publishing storm" with an increase in sales of the works due, in part, to the fact that the genre is no longer viewed as "an underground art form" (426). Numerous publishers have jumped on the graphic novel bandwagon; as a result, graphic novels in general (and content-focused graphic novels specifically) are becoming more prevalent in the classroom. However, there is a great void in the area of research regarding the utilization and impact of the genre on teachers and children, and that void must be filled in addition to the study of what makes quality literature.

- "The graphic novel now offers just as many fine creative talents... as any literary genre ever has done" (Tabachnick 2007, 11). When the recognition of this talent is juxtaposed with the fact that graphic novels have experienced a "publishing storm," the need for publishers to seek and utilize all available talents to assure that the necessity and desire for quality graphic novel literature is not washed away by this storm is both exposed and highlighted. Additionally, regarding content-specific graphic novels, publishers must involve experts within the content areas to guarantee that quality designations extend to the integrity of the content.

Conclusion

New media have great potential in the classroom, and graphic novels, already popular outside of school, may support instruction in elementary science and mathematics as well as other areas. However, all materials published are not school worthy. A small study of local educators, using a specifically designed mathematics and science graphic novel review guide followed by focus group discussions, indicates that just because a graphic novel may seem useful in science or mathematics instruction, it may not be. Educators can, of course, evaluate these materials themselves, but it also might be helpful if librarians and professional organizations like NCTM or the National Council of Teachers of English (NCTE) used such instruments to evaluate and review graphic novels for teachers. Furthermore, as with all new content or methods, teachers need training to help them understand and use new media like graphic novels, and they need to be working with parents and administrators as they implement new curricula. Much future study is needed as teachers actually use graphic novels to support teaching across the curriculum.

Works Cited


**Cite This Article**

<www.alala.org/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume14/cooper>.

**Appendixes**

**Appendix A. Mathematics and Science Graphic Novel Review Form**

*Adapted from form created by Patricia D. Hunsader (2004)*

| Reviewer: ___________________________ | Date: ___________________________ |

| **Book name:** | |
| **Author:** | |
| **Publisher and date:** | |
| **Mathematics/Science content of book:** | **Target audience (circle all appropriate):** preschool K 1 2 3 4 5 6 7 8 9 |
## Mathematics Standards

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<th>NA</th>
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<td>Is the book’s mathematics content (text, computation, scale, vocabulary, and graphics) correct and accurate?</td>
<td>correct</td>
<td>partially</td>
<td>incorrect</td>
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<td>Is the mathematics content visible and effectively presented?</td>
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<td>partially</td>
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<td>Is the book’s mathematics content intellectually and developmentally appropriate for its audience?</td>
<td>optimally</td>
<td>partially</td>
<td>unsuited</td>
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<td>Does the book facilitate the reader’s involvement in, understanding of, and use/transfer of its mathematics?</td>
<td>optimally</td>
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<td>Do the book’s mathematics and story complement each other?</td>
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<td>How great are the resources needed to help readers benefit from the book’s mathematics?</td>
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<td>Is the book’s science content (text, scale, vocabulary, passage of time, and graphics) accurate and current?</td>
<td>5 4 3 2 1 NA</td>
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<td>Is the science content visible and effectively presented?</td>
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<td>Is the book’s science content intellectually and developmentally appropriate for its intended audience?</td>
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<td>Does the book facilitate the reader’s involvement in, understanding of, and use/transfer of its science content?</td>
<td>5 4 3 2 1</td>
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<td>Are the text’s theories and facts easily distinguished and/or are theories and facts discernable from fiction or fantasy?</td>
<td>5</td>
<td>optimally</td>
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<td>To what degree does the text promote a positive attitude toward science and technology?</td>
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<td><strong>Literary Standards for Graphic Novels</strong></td>
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<td>Does the plot exhibit good development, imagination, and continuity?</td>
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<td>excellent</td>
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<td>Are the characters (if any) believable and well developed?</td>
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<td>Does the book contain a vivid and interesting writing style that actively involves the child?</td>
<td>5</td>
<td>excellent</td>
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<tr>
<td>Are the book’s illustrations and graphics text-relevant, appealing, and representative of a child’s perspective?</td>
<td>5</td>
<td>excellent</td>
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<td>poor</td>
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</table>
Are the book’s readability and interest level developmentally appropriate for the intended audience?

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<td></td>
<td>excellent</td>
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Comments:

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Do the book’s plot, style, and graphics/illustrations complement one another?

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<td></td>
<td>excellent</td>
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Comments:

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Does the book respect the reader by presenting positive race, gender, ethical, and/or cultural values?

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<td></td>
<td>correct</td>
<td>partially</td>
<td>incorrect</td>
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Comments:

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**Appendix B. Focus Group Protocol**

- Have you ever read a graphic novel before? What was it and what did you think about it?
- What do you think a graphic novel is?
- Graphic novels are increasingly popular among educators. Why do you think? What would be the advantages of using graphic novels in school?
- Based on your study of the graphic novels we supplied—which are math- and/or science-related—do you think you would use a graphic novel in your classroom? Why/why not?
- Would you like to learn more about graphic novels? Explain.
- Do you see any potential problems with using graphic novels in the classroom?
- Anything else we should ask about that we have not yet asked?
School Library Research (ISSN: 2165-1019) is an official journal of the American Association of School Librarians. It is the successor to School Library Media Quarterly Online and School Library Media Research. The purpose of School Library Research is to promote and publish high quality original research concerning the management, implementation, and evaluation of school library media programs. The journal will also emphasize research on instructional theory, teaching methods, and critical issues relevant to school library media. Visit the SLR website for more information.

The mission of the American Association of School Librarians is to advocate excellence, facilitate change, and develop leaders in the school library field. Visit the AASL website for more information.
Exploring the Experiences of Upper Elementary School Children Who Are Intrinsically Motivated to Seek Information

Sherry R. Crow, Assistant Professor of School Library Science, University of Nebraska Kearney

Abstract
This article describes research conducted to understand the experiences of children in order to inform school librarians’ practice in fostering intrinsic motivation for information seeking. An inductive naturalistic approach was used to explore the following question: “What are the experiences in the lives of upper–elementary school children that foster an intrinsic motivation to seek information?” The conceptual framework was composed of Taxonomy of Tasks (Bilal 2002) and A Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell 2006a, 2006b). Self-Determination Theory (Deci and Ryan 1985) provided the theoretical framework. Participants were survey-selected fifth graders from three diverse schools. Data was collected through interviews and drawings. Students described various family situations and school experiences, and exhibited different communication styles. They exhibited affinity for play, tendency toward creativity, and the disposition of noncompetitiveness. Informants indicated a variety of information-seeking styles and interests, engaged in information seeking to facilitate maturation into adolescence, and recounted diverse information-seeking episodes. All experienced a “point of passion,” and “anchor” relationships helped foster their intrinsic motivation for information seeking. Topic interest and relevance, group work, task choice, creating a final product, and fewer time constraints were all components of the students’ intrinsically motivating information-seeking episodes. Recommendations for practitioners are included.

Introduction
An accepted goal of school librarians is to help students become lifelong learners (AASL 2009; AASL and AECT 1998). School librarians are commissioned to enable students to use skills and resources so that they may “share knowledge and participate ethically and productively as members of our democratic society” as well as “pursue personal and aesthetic growth” (AASL 2007, 3). AASL emphasizes that “students must gain not only the skills but also the disposition to use those skills” in order “to become independent learners” (2). Similarly, Dunlap and Grabinger (2003) describe the lifelong learner as having the capacity for self-direction, metacognitive awareness, and disposition toward lifelong learning” (7). These descriptions of lifelong learning accentuate the importance of the learner’s motivation. In fact, it is considered to be the
key attribute because the other attributes are insufficient if learners are not disposed to engage in lifelong learning” (Dunlap and Grabinger, 9).

Background
Most children experience a decline in academic intrinsic motivation over their years in school. However, research has shown that some children maintain their excitement and a disposition toward intrinsic motivation for learning throughout their elementary years (Lepper, Corpus, and Iyenger 2005). Within a school context, looking at the “starting block,” the initial moment and place where students begin seeking information on a particular topic, the point at which they begin to manifest the desire to “know something more,” does not tell the story of why some students have a disposition toward intrinsic motivation to seek information and others do not. These individual starting block experiences are virtually invisible, mostly based on what Taylor (1968) termed a cognitive level of visceral need.” What will lead to a discovery, then, of what is different about these children who maintain the disposition toward intrinsic motivation to seek information?

Purpose and Research Question
The research for this study sought to understand the experiences of children in order to inform school librarians’ practice in fostering the development of intrinsic motivation for information seeking in young patrons. Research was conducted using an inductive naturalistic approach to address the following question: “What are the experiences in the lives of upper elementary school children that foster an intrinsic motivation to seek information?”

Literature Review
The research question encompasses the issues of youth information seeking in context as well as motivation and youth in library and information science (LIS) research.

Youth Information Seeking in Context
The recent trend in information seeking in youth has been about context. While it may seem that information-literacy instruction and system designs are based on a generic user in a decontextualized context, those who work with young people know that such a creature simply does not exist” (Chelton and Thomas 1999, 8). Two areas to be reviewed in the study of context are task definition and everyday-life information seeking.

Several researchers have explored the importance of task definition to information-seeking behavior. Findings indicate that children are more successful at finding information for completing ill-defined, open-ended tasks than for well-defined, specific tasks (Schacter, Chung, and Dorr 1998) and that they enjoy and are more successful at the self-initiated task that holds personal interest (Branch 2003; Farmer 2007; Hirsh 1999; Shenton 2007). Bilal’s Taxonomy of Tasks (2002) shows the variety and relationship of task type, task nature, and task administration. Her conclusions point to the fully self-generated task as the type with which children are most likely to experience success and found that this conclusion applied to more than one culture (Bilal and Bachir 2006).

In a study with a different perspective, Gross (1995), the originator of the Imposed-Query Model, found that children will voluntarily engage in and have a positive experience with an
imposed query if they accept the question as their own and feel that their response to the research will be accepted. She concluded that the child’s understanding of the context of the task, whether imposed or self-generated, “is fundamental to question development as well as to understanding, transferring, negotiating, and determining the relevance of answers,” and that this understanding becomes more important as the question becomes more abstract and open-ended (Gross 1999, 518).

Researching the information-seeking behaviors of youth in the broader context of daily life has brought about the study of everyday-life information seeking (ELIS) in youth. Research in youth ELIS has resulted in varied and mixed conclusions. Oliver and Oliver (1997) found that when students participated in information-seeking tasks that were linked to purpose, context and practical need, they retained more. Shenton (2004) reported that magazine use by teens (especially boys) was overwhelmingly for information about hobbies and consumer interest, but that the Internet was their source of choice for these topics. Fisher et al. (2004) found that “tweens” (children aged nine to thirteen) thought information seeking was a healthy activity, but did not think that their personal and social information needs are easily met. Julien (1999) found that many teens looking for career information did not know where to look, felt overwhelmed by the choices, and did not know what questions to ask.

Several studies have examined the perceived effectiveness of the library by teens, and concluded that secondary-aged students do not believe that school and public libraries contain the information they need for everyday-life concerns, such as drug use, coming-out experiences, and sexual and reproductive health. In addition, the organization of libraries might not facilitate adolescents locating the information they need (Mehra and Braquet 2006; Poston-Anderson and Edwards 1993). Todd’s findings were similar, though less bleak, indicating that when teens actually do participate in the information-seeking process on topics of concern to their everyday lives, they are active creators of meaning (Todd 1999a; Todd 1999b).

Based on their study of urban teen ELIS, Agosto and Hughes-Hassell (2006a, 2006b) developed a theoretical model illustrating the concept that teens seek information in everyday life to “facilitate the teen-to-adulthood maturation process” (1394).

A key assumption in the research to date of youth ELIS is that the school and public library can be powerful catalysts in the lives of youth, “providing both an environment and access to sources of information that can shape choices and decisions about life and lifestyle matters” (Todd 2003, 39). The studies indicate, however, that libraries have not always been effective in this role.

**Motivation and Youth in LIS**

While much of the research on information seeking and youth touches on issues of motivation (such as the importance of context and task definition to the information seeker), there is a body of LIS research that more directly addresses motivation and youth. This literature focuses on student motivation and frustration in using technology, the use of Accelerated Reader (AR) as a motivational tool, the school librarian’s use of motivational strategies, and the motivation of the student during the information-searching process.

**Student Motivation and Frustration in Using Technology**

Studies conducted to examine student motivation and frustration in using technology during the search process have yielded varied results. Findings have shown a high level
of frustration during students’ use of the Internet and the online public access catalog, particularly regarding sorting through the abundance of materials available (Borgman et al. 1995; Broch 2000; Solomon 1993). Silverstein (2005) conversely found that students using digital reference services to answer self-initiated questions were highly motivated to do so, especially in elementary and middle school. Bilal (2005) also found a high level of motivation of students to use the Internet. Her study indicates that children are motivated because of an increased level of self-confidence once they learn to use it, and because they enjoyed the challenge of searching and discovering new information. Convenience of use also was a factor.

The Use of Accelerated Reader as a Motivational Tool
Many studies have examined the motivational aspects of AR (e.g., Krashen 2003; McLoyd 1979; Robbins and Thompson 1991; Schmidt 2008), a computer-generated reading program that claims to help educators “build a lifelong love of reading and learning in every student” (Renaissance Learning 2008, page heading). Everhart (2005) found that “motivational style interacts with gender in relation to the competitive and social aspects of the AR program” (12), that the level of implementation in the schools did not correlate with the extent of student reading, and that the management aspects of the program were not being effectively utilized. Her recommendations are that school librarians in schools already implementing AR should take a leadership role, “particularly in the area of book selection, reading guidance and motivation, organization of materials, and teacher professional development” (12). For school librarians in non-AR schools, she recommends that they use her study to help “collaborate with teachers to set individual reading goals for students and develop a responsive collection” (13) without implementing the AR program. Instead of AR, Crow (2004, 2010) suggests using children’s choice book award programs because of their intrinsically motivating aspects.

The School Librarian’s Use of Motivational Strategies
Ruth V. Small explored how K–8 school librarians used motivational strategies in library skills instruction and the resulting effects on their students’ on- and off-task behaviors. Small (1998) found that the school librarians used a significant number of motivational strategies during lessons (an average of 24 strategies per 30-minute lesson) and that middle school librarians used more motivational strategies than elementary school librarians. She also reported that of the motivational strategies used, only 2 percent stimulated intrinsic motivation (Small 1999). More recently, Small, Snyder, and Park (2009) found that elementary school librarians use “significantly more motivational strategies than either secondary or K–12 SLMSs” (8).

The Motivation of the Student during the Information-Searching Process
There have been a few studies on the motivation of the student during the information-seeking process. Kuhlthau (2004), in her research into the Information Search Process, acknowledges the effects of uncertainty on the intrinsic motivation of the seeker. She theorizes that, with the mediation of school librarians and teachers, students can overcome the natural anxiety caused by the searching process and develop a personal interest in the topic being explored.

Building on Kuhlthau’s Information Search Process, Burdick (1996) explored differences by gender in the information-seeking experiences of high school students. In her study,
she developed an Information Search Styles Matrix based on the focus and involvement of the learner. She found that there were some gender differences, but that both genders were equally represented in the two most academically successful styles. Heinström’s (2006) study also affirmed the motivational aspects of interest to students who used deep, as opposed to surface, information-seeking strategies.

In a study founded on human developmental theory, Fourie and Kruger (1995) used the works of Eriksen (1950), Havighurst (1972), Piaget (1981), Bruner (1973), and Kohlberg (1958) to indentify the psychosocial, cognitive, and affective needs fueling the information-seeking behavior of teens. They posited that fulfilling these needs motivated students’ book and media choices.

Theoretical and Conceptual Frameworks

The theoretical framework for the study defined and conceptualized the social contexts that either foster or hinder the individual’s intrinsic motivation to seek information. Deci and Ryan’s (1985) Self-Determination Theory (SDT), rooted in theory and research concerning intrinsic motivation and children, provided the basis for the theoretical framework. SDT is an organismic motivational theory that stratifies three types of motivation: amotivation, extrinsic motivation, and intrinsic motivation. The factors that make SDT an appropriate theoretical framework for a study of experiences that foster intrinsic motivation are the epistemological, ontological, and axiological assumptions of the theory relative to the research question; its distinct treatment of the construct of intrinsic motivation; SDT’s specific frameworks for examining social contexts that facilitate or undermine intrinsic motivation; and its compatibility with accepted principles and practices of human development and learning. Of particular importance to the current study is SDT’s Cognitive Evaluation Theory, a subtheory that proposes that social conditions that produce a sense of autonomy and feelings of competence catalyze one’s inherent tendency toward intrinsic motivation. Additionally, the subtheory posits that relatedness also has been found to be a significant factor (Ryan and Deci 2000).

The conceptual framework was composed of two information-seeking models: the Taxonomy of Tasks (Bilal 2002) and the Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell 2006a, 2006b). The Taxonomy of Tasks addresses the context (with reference to task definition) of the particular questions students ask. For the current research, it directed the collection and organization of questions being asked by the students under study. Its use helped in understanding the task definition of students’ questions and the reasons behind their success or failure, as well as their preferences, in answering these questions. The current study also used the Theoretical Model of Urban Teen Development to classify and sort the topics of interest generated by the intrinsically motivated students. The seven independent variables in the Agosto/Hughes-Hassell model—the emotional self, the reflective self, the physical self, the creative self, the cognitive self, the sexual self, and the social self—are based on personal and cultural situations and settings. Use of the model illuminated the sociocultural, as well as developmental, reasons behind the information-seeking behaviors of the student participants.

Methodology

Participants were selected from a pool of fifth graders from three diverse schools within a single community in Colorado Springs, Colorado. Initially, the children were chosen on the basis of
results of a survey, the Information Seeking Self-Regulation Questionnaire (SRQ-IS), especially developed by the author with the aid of Dr. Ruth Small and the advice of Dr. Edward Deci and Dr. Richard Ryan for the study (Crow 2009). It was adapted from the Academic Self-Regulation Questionnaire (SRQ-A), a similar instrument used with children to identify motivational regulation in academics (Ryan and Connell 1989).

The questionnaire asks respondents why they exhibit a certain behavior (or category of behavior), then provides several answers that represent different styles of motivation or regulation. Students are asked to circle the words (ranging from “very true” to “not at all true”) that best explain their responses to the answers. The questionnaire contains five questions with eight answers each. The questions are:

A. Why do I look for information for a project or assignment?
B. When I look for information about a new topic it is usually…
C. Why do I look for information in books?
D. Why do I look for information in magazines?
E. Why do I look for information on the Internet?

Examples of the answers are (explanations in the parenthesis were not included on the survey):

- Because I’ll get in trouble if I don’t (external regulation)
- Because I’ll be ashamed of myself if it didn’t get done (introjected regulation)
- Because it’s important to me to [look for information in books] (identified regulation)
- Because it’s fun (intrinsic regulation)

For all five questions, there are two answers representing each of the four regulatory styles—external, introjected, identified, and intrinsic—for a total of eight answers to each question (see Crow 2009, 109–12 for complete survey).

Interviews and a drawing activity were used with the nine informants to collect data that served as the basis for analysis.

Interviews
The interviews were semistructured and open-ended, beginning with broad questions (e.g., “What makes a good day for you?”) and narrowing in on the experiences that illuminate the phenomenon of interest—basic motivation and information seeking (Creswell 1998, 121). The informant and researcher collaborated to construct meaning from the student’s experiences. The information sought in these interviews was (a) the factors in the students’ life experiences that have contributed to their dispositions toward seeking information generally, and (b) the factors surrounding their information-seeking experiences, especially the types of questions they ask. The protocol for the second line of questioning (information seeking experiences) was developed by Shenton and Dixon (2003) for a study of the information-seeking behavior and needs of young people, and was based on a similar study by Dervin et al. (1976).

The researcher assumed a role somewhere between a friend and a leader (Fine and Sandstrom 1988), and maintained flexibility on the basis of the informants’ reactions and contributions. Since the informants were children, special consideration was given to the issues of ability (McDonald and Willett 1990; Waterman, Blades, and Spencer 2001), power (Hood, Kelley, and Mayall 1996; Punch 2002), and ethics (Greene and Hogan 2005). While most of the information
was gathered primarily from the informants; some information also was gleaned through informal conversations with parents and teachers.

**Drawing Activities**
Using a procedure established by Amabile (1982b), students were given paper and a variety of drawing instruments and were asked to illustrate two topics. The two topics were “what makes a good day for me,” and “a time when I sought information.” The researcher’s observations of the drawings were not based on specialized art skills, but on the perspective as a researcher of the students’ lived experiences. In addition, the input and interpretations of certified elementary art teachers provided a means of analysis and a means to check reliability. Drawing exercises were conducted at the selected school sites.

**Limitations**
The methodological limitations to the current study include the use of a sample that is purposive (Miles and Huberman 1994) and not random, the gathering of informants from one geographical area, and the limitation of using the SRQ-IS with children who are able to understand and respond to the questionnaire. The informants were chosen (through results of the SRQ-IS) from three, preselected sites in an attempt to gather information about children from socioeconomic and culturally diverse backgrounds. All of the schools are in Colorado Springs, Colorado, because of access issues; that is, the author had better access to the schools because they are located in Colorado Springs, the author’s home at the time of the study. One student, who was limited by his communication, social, and problem solving skills, was not able to participate in the questionnaire, though attempts were made to include him (such as using an instructional aide to help him take the questionnaire). Because of these limitations, the results of the study cannot be generalized to all students in all situations.

**Findings**
Findings were based on the data gleaned from the survey, interviews, and the drawing activity.

**The Survey**
One hundred surveys were completed by the fifth graders in eight classes from the three selected schools. The dominant motivational style for the pool of fifth graders was identified (36 percent), followed by intrinsic (21 percent), introjected (17 percent), and extrinsic (12 percent). Fourteen percent of the students had no dominant motivation style (see Figure 1).

Twenty-one students (21 percent) were found to have a dominant intrinsic motivation style. These students were then sorted high to low by their composite subscale for intrinsic motivation. Because of the need to clarify and emphasize the salient aspect of the intrinsic motivation style, a differential of at least .3 points between the intrinsic motivation composite subscore and the next highest motivation style subscore for each student was used as a measure to determine informants. Of the 21 students with a dominant intrinsic motivational style, 9 were identified with scores that met this criterion. The results yielded a pool of 9 informants (9 percent).
A Cronbach’s alpha, perhaps the most popular measure of internal consistency, was calculated to test the reliability of the survey response items that propose to capture the student’s motivation style for information seeking along four dimensions: intrinsic, identified, introjected, and external. It is conventional to accept an alpha of 0.7 or greater as indicating a reliable set of responses (Hinton 2004, 302–3). All findings were above that standard, indicating that each group of survey responses for each of the motivation styles displayed an internal consistency across all subjects (see Table 1).

Table 1. The Cronbach’s Alpha Score for Each of the SRQ-IS Response Items for Motivation Styles

<table>
<thead>
<tr>
<th>Motivation Style</th>
<th>Alpha Score</th>
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<tr>
<td>External</td>
<td>.89</td>
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<tr>
<td>Introjected</td>
<td>.77</td>
</tr>
<tr>
<td>Identified</td>
<td>.80</td>
</tr>
<tr>
<td>Intrinsic</td>
<td>.87</td>
</tr>
</tbody>
</table>

The nine students identified as informants chose aliases: Alexandra, Bailey, Bob, Carl, Michael, Mickey, Melissa, Nicole, and Victoria. I referred to them by these aliases.
throughout the rest of the data-collection process and will use these same aliases when referring to individual students throughout this article.

The Interviews
Analysis of the data indicates that students came from various family situations and socioeconomic backgrounds, exhibited different communication styles, and described varied school experiences. They exhibited an affinity for play, a tendency toward creativity, and the disposition of noncompetitiveness. With regard to their information-seeking behavior, informants indicated a variety of information-seeking styles and interests, engaged in information seeking to facilitate maturation into their next developmental stage (adolescence), and recounted diverse and successful information-seeking episodes. A point of passion experience occurred in the lives of all of the informants (most at the age of four), and the presence of anchor relationships helped in fostering their intrinsic motivation for information seeking.

Home and Family Life
While several students came from typical small city homes, there was variation in the informants’ homes and family situations (see Table 2).

Table 2. Data Based on Informants’ Descriptions of Home and Family Life

<table>
<thead>
<tr>
<th>Student</th>
<th>Home/Bedrooms</th>
<th>No. of T.V.s</th>
<th>No. of Computers</th>
<th>Parents at Home</th>
<th>Siblings</th>
<th>Special Relationships with Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandra</td>
<td>Single Fam./5</td>
<td>2</td>
<td>3</td>
<td>Mom and Dad</td>
<td>Youngest sibling at home</td>
<td></td>
</tr>
<tr>
<td>Bailey</td>
<td>Single Fam./3</td>
<td>3</td>
<td>0</td>
<td>Mom and Dad</td>
<td>Oldest sibling at home</td>
<td>Close to Mom</td>
</tr>
<tr>
<td>Bob</td>
<td>Single Fam./3</td>
<td>3</td>
<td>2</td>
<td>Mom and Dad</td>
<td>Only child living at home</td>
<td>Close to both Mom &amp; Dad</td>
</tr>
<tr>
<td>Carl</td>
<td>Single Fam./4</td>
<td>5</td>
<td>2</td>
<td>Mom and Dad</td>
<td>Youngest sibling at home</td>
<td></td>
</tr>
<tr>
<td>Melissa</td>
<td>Single Fam. Foster/2</td>
<td>Not described</td>
<td>Not described</td>
<td>Neither</td>
<td>Oldest sibling at home Close to Grandma Not allowed to see Mom Dad is active in life</td>
<td></td>
</tr>
<tr>
<td>Michael</td>
<td>Single Fam./4</td>
<td>5</td>
<td>1</td>
<td>Mom and Dad</td>
<td>Oldest sibling at home</td>
<td></td>
</tr>
</tbody>
</table>


Students were asked to describe their homes. Most lived in single-family houses, but there were exceptions. Victoria lived in a two-bedroom apartment. Melissa was in foster care and indicated that her current home had two bedrooms, but preferred not to talk about it but instead to describe her father’s home. Children described their relationships with their families mostly positively and described their family lives primarily in tranquil terms, but there were some major family problems discussed in the interviews. For example, Victoria described the difficult housing situation since “my mom got divorced by one of her husbands and he took most of our money and then he moved to Texas.”

The students’ styles of communication also varied. Alexandra, Nicole, Michael, and Victoria spoke with clarity and poise, and used adult vocabulary. Bailey and Carl were shy and hesitant about speaking, using mostly short answers. Bob, Mickey, and Melissa were exuberant and expressive.

The data gathered indicated varied experiences for the informants in school as well. Three students (Alexandra, Mickey, and Victoria) mentioned they were in the “Gifted and Talented” class. In contrast, Bailey’s teacher informed me of the special services she needs for both speech and her low reading ability.

All the children commented on at least one area of their lives in which they felt competent, including nonacademic areas (e.g., drawing, music, soccer, camping, video gaming, imagination, talking, dancing, football). Perceived competence in school varied, with eight of nine informants (all but Melissa) discussing their own competence in at least one academic area (see Figure 2).
Figure 2. Informants’ Perceived Competence in School Areas

Eight informants (all but Melissa) discussed their own competence in at least one academic area.

Play
The informants recounted a variety of play experiences. They described them mostly in social terms, and many with a variety of age groups, family members, and some with pets. Students discussed engaging in a variety of outdoor activities. The children described biking, hiking, and camping. “Yeah, behind my house, there’s all kinds of trails and stuff and me and my friends will go up and ride” (Michael). Sports were mentioned as play, primarily neighborhood football (interviews took place in the fall). Children described engaging in outdoor activities mostly in pairs and groups, and often with siblings and other relatives. A couple of students described pretend games and activities that use the imagination. Some students talked about playing on the computer. They described playing video and Internet games, both with friends and alone. “I like to play video games and hang out with my friends” (Bob).

Students discussed information-seeking activities they do for fun. “kind of just like to go on the Internet and type in anything just randomly, like I can type in dinosaur or birds” (Victoria). “like to observe—I like to catch bugs and observe them. . . . I do it in my spare time” (Carl). With regard to play, the comments of these children indicated that they viewed information seeking as fun and as a regular part of their leisure time.

An essential quality exhibited by informants during the interviews was that they viewed play time as important (as evidenced by how many times it was mentioned and the long and enthusiastic descriptions they gave), and that they do what they can to protect it. Related to the informants’ sense of play was their sense of humor. Students repeatedly gave “because they are funny” as a reason why they liked their friends and other people with whom they had relationships, as well as why they used Internet sites, read books, and watched movies.
Creativity
A characteristic that was portrayed prominently by the informants was creativity. All but one child (Bailey) described some creative experience during the conversations, and most mentioned several (see Table 3).

Three children described books they are currently writing (Michael, Bob, and Nicole), and three drew pictures or diagrams to explain a point or just doodled during the interview process (Melissa, Alexandra, and Bob).

Some students mentioned their creative activities as something they engage in for the pleasure of doing them, but several mentioned the activities as a way to express their interests, or as an information-seeking behavior. For example, both Nicole and Victoria described the information-seeking experience of taking photographs of wildlife and nature in order to draw and study them.

Table 3. Types of Creative Activities Engaged in by Informants

<table>
<thead>
<tr>
<th>Student</th>
<th>Drawing</th>
<th>Writing</th>
<th>Music</th>
<th>Building</th>
<th>Dancing</th>
<th>Photography</th>
<th>Technology Creations</th>
<th>Imaginative Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandra</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bailey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Carl</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melissa</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Michael</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Mickey</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Nicole</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Victoria</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Noncompetitiveness
Another characteristic exhibited by the student informants was a lack of competitiveness. This quality was revealed not so much by what the children said, but by what they did not say. Many of the students were involved in competitive activities such as sports, but rarely did they say anything about competition or winning. Even when pressed on the issue, students did not seem to have a consciousness of competition. For example, Bailey discussed her activities in cross-country running, and when asked she could explain that there was some kind of award given for placements. However, she was not sure what her placements had been. When I asked her why she participated, she said she liked running and it made her happy.

A poignant example of participating in competitive activities but not being “mindful” of competition was Michael’s passion for football, specifically the Dallas Cowboys. Michael was his alias, and it was taken from his favorite player, Michael Irvin. He described a book he was writing about this player and mentioned specifically how impressed he was with Irvin’s humble beginnings. Michael expressed both through his
words and actions a strong affiliation with the sport and the Dallas team. However, in all of our conversations about football, the Dallas Cowboys, and Michael Irwin, Michael did not mention scoring, winning, or a score of a game. According to the descriptions Michael gave of his experiences with football, his interest was based on affiliation and identity, perceived competence, relationships, and the joy of playing, but not on winning and competition.

Another example of “what the students did not say” was a lack of comments about Accelerated Reader (AR), a computer-generated reading program that claims to help educators “build a lifelong love of reading and learning in every student” (Renaissance Learning 2008, page heading). AR has been in use in one of the survey-site schools for many years; however, only two students from that school made a comment about the program (though several students did mention enjoyment of reading and other reading activities). Bailey discussed that to go to the school library “we wait until we finish a book and take an AR test and then we go turn them in.” She was under the impression that she was not allowed to go to the library unless she had passed the AR test for the book she had checked out. Bailey indicated a passion for books, almost to the point of fearing a time when she could be without. She mentioned a few times in her interview about going to the public library and bookstores so she would not be without a book to read. After consulting with the school librarian, the author discovered that Bailey’s impression of library AR policy was faulty information and that the students could visit the library for other reasons. Bailey did know that she had three points for AR, and was happy with that total. Apparently the AR program was not all that motivating to her, but it did not keep her from getting the books she craved, either. The other student who mentioned AR was Mickey, who commented that she had gotten the idea for questions that she used for a self-generated exploratory research project from taking AR quizzes.

**Information-Seeking Behavior**

The author gathered data about information-seeking behavior from the students in two ways: through the initial questions about the students’ lives, and through a specific set of questions about their information-seeking experiences. As mentioned before, the children voluntarily included information seeking in their answers to the initial questions about their lives:

> Whenever I’m like wandering in my mind when I have to ask information about nature and stuff...like [what would] a regular spruce tree do in the summertime? Would it change colors? What kind of pine cones will it have? (Victoria)

I like learning, but I mean it gets kind of boring sometimes, but researching stuff is like the best, doing projects. Holy cow, that’s really fun. (Bob)

These types of answers indicated that information seeking is a part of these children’s lives, a behavior they look forward to and, in Bob’s case, do not even think of as learning. It is one of the things on their lists that they consider fun.

Along with general statements about information seeking, students also described specific information-seeking experiences that occurred in the courses of their lives. These experiences, along with the second line of questioning about information-seeking
informants, formed the data for this section of the research results. The results of the information-seeking behavior data collection fell into three categories: the children’s information-seeking styles, their interests and passions, and their described information-seeking experiences.

Informants’ Information-Seeking Styles
Students described engaging in a variety of information-seeking styles based on the type of media they used (see Table 4). They used computers, books, and magazines, watched movies and television, and observed naturally occurring events. They also asked other people. The informants used media to find information and also as a means of entertainment, though it was often hard to differentiate between the two because they seek information for fun and enjoyment.

Table 4. Information-Seeking Styles by Media Types as Described by Informants

<table>
<thead>
<tr>
<th>Student</th>
<th>Readers and Book Users</th>
<th>Computer Users</th>
<th>TV and Movie Watchers</th>
<th>Observers</th>
<th>People Askers</th>
<th>Magazine Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandra</td>
<td>X*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bailey</td>
<td>X*</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob</td>
<td>X</td>
<td>X*</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carl</td>
<td>X</td>
<td>X</td>
<td>X*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melissa</td>
<td>X</td>
<td></td>
<td>X*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Mickey</td>
<td>X*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicole</td>
<td>X*</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Victoria</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

*indicates primary information seeking style

The book readers in the group (Alexandra, Bailey, Mickey, Nicole, and Victoria) brought up the terms reading, reader, books, and read often during their interviews, and indicated that they read books both for leisure and for information seeking. These children know what they are currently reading, what books they have read, and the personal reading styles and title selections of their family members. They liked both fiction (usually about their area of interest, such as dog stories) and nonfiction, and one indicated an affinity for the dictionary (Victoria). Two other students (Michael and Bob) described being book users, but there was no indication that they were avid readers, and their interview comments indicated other primary information-seeking styles. These students, along with the other five, indicated that they regularly used books to find information.

All nine informants described using technology for information seeking. They used the computer for entertainment, creating (drawing, writing, making a website, etc.), and used the online catalog to look up books. However, only one child (Bob) indicated that the Internet was his primary information source. Eight of the informants tended to begin with another source and then followed up with the Internet for additional information. An
example of this is Melissa’s episode with worms. She recounted that every time she goes to her grandma’s house she looks under her bricks to see what she can find. One day she found worms, so she put the worms in a container along with the dirt they were in, and used the Internet to find what they needed to survive. “I was happy, cause then I didn’t have to go buy anything from the store for them, it’s right in there where they’re living, cause they’re living in their food.” Computer users mentioned using Google, Ask.com, Yahoo!, and Wikipedia.

The watchers of television (Carl, Michael, and Mickey) and movies (Alexandra, Bob, Michael, Mickey, Nicole, and Victoria) watched mostly for entertainment, but they were also spurred on by their individual interests. Students tended to use television viewing as a way to “graze” on information, choosing to view shows that focused on their interests. None of the interviews indicated that television or movie watching was a primary information-seeking behavior for the students; however, it is interesting to note that two children could trace their points of passion (the informants’ first remembered experience regarding an interest or fascination they have since pursued) to a particular movie they watched, and one student mentioned that a movie was the inspiration for a book she was writing.

Four children (Carl, Melissa, Nicole, and Victoria) were observers, falling into two types: opportunistic and intentional. Opportunistic observers looked at artifacts or objects when they presented themselves. They usually stumbled across objects, mostly crawling creatures such as insects, and took them inside to observe them. Carl and Melissa were opportunistic observers, typically observing and then checking other sources for more information on their observations. Nicole and Victoria were more intentional in their observing, such as planning excursions to take pictures of wildlife.

Three students mentioned asking people for information. Two—Bob and Victoria—described asking their parents information on a regular basis. Victoria knew what kinds of questions she should ask her mom and which to ask her dad. Bailey discussed asking the public librarian for help.

Two children (Michael and Nicole) discussed using magazines. They mentioned one episode each, both for assignments. Only one (Nicole) indicated success using magazines.

Informants indicated that they used libraries for information seeking and for finding books for leisure reading. Five (Alexandra, Bailey, Michael, Mickey, and Victoria) told of experiences regarding finding both fiction and nonfiction at either the school or public library, while Michael only described incidents of finding nonfiction for specific information requests at the public library (and did so on a regular basis). One student (Melissa) discussed wanting to volunteer in the school library, primarily for the purpose of building a continuing relationship with the library clerk.

**Informants’ Interests and Passions**

Students expressed a variety of interests and information-seeking behaviors related to those interests. The informants usually expressed interest in more than one topic and discussed self-initiated information-seeking experiences in academic, physical activity,
reflective, fiction interest, and creative activity topics. Of the information-seeking interest topics, more children showed interest in academic topics than any other. Within academics, science was the predominant interest, and within science, animals was the favorite topic. Six of the nine informants indicated an interest in animals (Alexandra, Bailey, Bob, Mickey, Nicole, and Victoria), three in bugs and crawling things (Carl, Melissa, and Victoria), and three in astronomy/space (Bailey, Bob, and Victoria); see Table 5.

Table 5. Typology of Interests as Described by Informants

1. Academics
   1.1. Science*
      1.1.1. Animals*
      1.1.2. Bugs and other crawling things*
      1.1.3. Nature other than animals/bugs*
      1.1.4. Astronomy and space*
      1.1.5. Dinosaurs*
      1.1.6. Human body*
      1.1.7. Plants*
   1.2. Social studies
      1.2.1. History*
      1.2.2. Geography*
   1.3. Math

2. Physical activities
   2.1. Sports
      2.1.1. Soccer
      2.1.2. Football*
      2.1.3. Swimming
      2.1.5. Hockey*
      2.1.6. Cross-country running
   2.2. Other physical activities
      2.2.1. Jumping rope
      2.2.2. Trampoline jumping
      2.2.3. Bike riding
      2.2.4. Cheerleading
      2.2.5. Tumbling
      2.2.6. Skating
      2.2.7. Camping
      2.2.8. Hiking**

3. Reflective topics
   3.1. Careers
      3.1.1 Teacher*
      3.1.2. Veterinarian*
      3.1.3. Naturalist*
      3.1.4. Animal trainer*
      3.1.5. Career in the NFL*
3.2. Family history and culture*

4. Fiction interests
   4.1. Humor*
   4.2. Social life*
   4.3. Animal fiction*
   4.4. Historical fiction*
   4.5. Fantasy*
   4.6. Mystery*
   4.7. Adventure*

5. Video and Internet gaming*

6. Creative activities
   6.1. Imaginative play**
   6.2. Building*
   6.3. Dancing
   6.4. Drawing***
   6.5. Technology creation
      6.5.1. Website**
      6.5.2. Stencil drawing***
   6.6. Music*
   6.7. Photography**
   6.8. Writing
      6.8.1. Fiction**
      6.8.2. Nonfiction**
      6.8.3. Poetry***

*Indicates interest includes information-seeking and grazing experiences (or an expressed desire or need for information seeking).

** Indicates use as an expression of another interest.

As previously discussed, the current study used the Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell 2006a, 2006b) to classify and sort the topics of interest generated by the intrinsically motivated students. The model was evaluated for age-appropriateness by comparing Havighurst’s (1972) Developmental Tasks of Middle Childhood with the independent variables from the Agosto Hughes-Hassell model (they had used the 11 Developmental Tasks of Adolescence). Five of the seven variables from the Agosto and Hughes-Hassell model could be supported by Havighurst’s Developmental Tasks of Middle Childhood.

Of the two variables in the Agosto and Hughes-Hassell (2006a, 2006b) model not depicted by Havighurst’s (1972) Developmental Tasks for Middle Childhood, the first is the sexual self, which in the original model is based on the developmental tasks for teens, “learning to manage his or her sexuality” and “learning to recognize and accept his or her sexuality” (Agosto and Hughes-Hassell 2006b, 1424). Certainly, beginning fifth grade students (interviews were conducted in September) are starting to be concerned with
sexuality as a few may be entering puberty, but Havighurst views this concern more as a social entity rather than a focus on the sexual self that is defined in the tasks for teens as listed above. Feldman (1999) seems to concur with this change in focus from childhood to the teen years when he defined adolescence as the “bridge between the asexual child and the sexual adult” (as paraphrased in Santrock 2006, 369). Additionally, students in the study did not mention topics on the sexual self. One of the reasons for this could be that they did not feel comfortable discussing such topics with an interviewer they had just met, but another reason could be that Havighurst is correct in thinking that developmental tasks concerning sexuality (outside of masculine and feminine social roles) are not a major concern for children until they reach approximately twelve years of age.

The second variable not addressed by Havighurst for this age group is the same one not addressed in the model for teens—the creative self. I found it was necessary to add this variable to cover all the information-seeking questions of the students in this study, as did Agosto and Hughes-Hassell (2006a, 2006b) in theirs.

Students’ statements and pictures that depicted their interests were collected, categorized, and stratified into a typology (see Table 5). Then those interests for which students indicated they had had self-initiated information seeking episodes were sorted into the variables in the adapted model. All of the self-initiated information-seeking interests could be classified into this model, and all of the variables from the adapted model contained at least one information-seeking interest (see Figure 3).

Figure 3. Adaptation of a Theoretical Model of Urban Teen Development
Adaptation of A Theoretical Model of Urban Teen Development* used in exploring the information seeking interests of upper elementary school children who are intrinsically motivated to seek information. All of the self-initiated information seeking interests as discussed by the students were classified into this model, and all of the variables from the model contain at least one information seeking interest (if more than one the number is indicated in parenthesis).


Described Information-Seeking Experiences
In the second phase of the interviews, the specific question asked of informants about information-seeking episodes was the following:

Think of a time recently when you wanted or needed to find out information or learn something either for school or for your own interest. It might have been at home, at school or anywhere else. Could you tell me about what you remember of that time? (adapted from Shenton and Dixon 2003)

The question given if students did not respond to the first question was “Do you go anywhere or do anything to look up information? Where and what about?” After these initial questions, students were asked if they could think of another time that was different from the first. In this way, an attempt was made to capture at least two information-seeking experiences from each informant. Eight of the nine informants’ responses to the first information-seeking question was immediate, and sometimes students offered more than one experience without the follow-up questions. There was only one student (Melissa) who hesitated, and the author believes it was because she began discussing her family situation. Once the clarifying questions were asked, she was then able to focus quickly on other information-seeking experiences. Again, the immediate and clear responses to this line of questioning were an indication of a mindset of information seeking as well as an abundance of experiences from which to choose.

Student responses to the second line of questioning were classified according to the categories in Bilal’s Taxonomy of Tasks (2002). Those categories are task type (open-ended versus closed), task nature (complex versus simple), and task administration (fully assigned, semi-assigned, or fully self-generated). In addition, the author added another dimension to the categorization: task relationship, or whether or not the episode was experienced with a group (more than one) or as an individual (see Figure 4 for an example of the use of the adapted taxonomy). The students’ determination of the success level of the experience also was recorded, as well as their preference between the two experiences they had shared. Since this study focuses on intrinsic motivation, those experiences for which the students expressed a preference were analyzed. Though the pool of experiences was quite varied in structure and purpose, six of the nine students preferred school research assignments.
Students’ preferences included both open and closed questions, both simple and complex experiences, and included both questions that were semi-assigned and some that were fully self-generated. None of the preferred information-seeking experiences was fully assigned. Five students preferred group experiences while four preferred individual.

Figure 4. Pattern #1 Representing Preferred Assignment #1, Colorado Cities, and Preferred Assignment #2, Colorado Regions, as Classified into the Adapted Taxonomy of Tasks*


The reasons students gave for preferring one experience over the other were relevance or interest in topic (5), working in a group (3), the experience of the information seeking itself (2), creating the final product (2), choice of aspect within topic (1), and no time limit (1). Some children gave more than one reason.
The author observed an experience in one of the early interviews that was to be common to all nine of the informants; in fact, after finding this experience to be true for three informants in succession the author went back to the other informants to inquire as to whether they also had experienced it. The experience, termed point of passion, is the informant’s first remembered experience regarding an interest or fascination they have since pursued. Not only were all of the informants able to remember a single interest-igniting experience, but six of them described having this experience at the age of four or five. The other three informants had the experience between the ages of seven and nine (see Table 6).

Most of the children’s point of passion experiences occurred at home, but four students (Bob, Carl, Nicole, and Victoria) described incidents at school. One child (Bailey) described an experience at a bookstore. Six informants described involvement by a parent, parents, or a grandparent in the incident. One described involvement by a teacher, and two described involvement by friends. Six students discussed follow-up activities by the adults in their lives. They described experiences of support from parents, teachers, friends, and grandparents. Some of the support was elaborate, some just simple help in giving students what they needed to further their passions.

Table 6. Point of Passion Experiences as Described by Informants

<table>
<thead>
<tr>
<th>Student</th>
<th>Point of Passion</th>
<th>Age</th>
<th>Others’ Involvement</th>
<th>Others’ Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandra</td>
<td>Got a dog as a personal pet.</td>
<td>7 years</td>
<td>No discussion</td>
<td>No discussion</td>
</tr>
<tr>
<td>Bailey</td>
<td>Noticed book about Saturn at the bookstore.</td>
<td>9 years</td>
<td>Accompanied by mother.</td>
<td>Mother purchased this book and encouraged purchase of another.</td>
</tr>
<tr>
<td>Bob</td>
<td>Teacher showed movie about the ice age and the people from the time.</td>
<td>9 years</td>
<td>Teacher led discussions/lessons about the unit.</td>
<td>Parents took him to New Mexico and Washington DC. Allowed purchase of memorabilia.</td>
</tr>
<tr>
<td>Carl</td>
<td>Caught bugs (Box Elder) at recess in preschool.</td>
<td>4 years</td>
<td>Was with friends.</td>
<td>No discussion</td>
</tr>
<tr>
<td>Melissa1</td>
<td>Began playing teacher with brother as student.</td>
<td>5 years</td>
<td>Parents and grandma told her she was good at it.</td>
<td>Grandma provided an office for Melissa.</td>
</tr>
<tr>
<td>Melissa2</td>
<td>Noticed lots of ladybugs in yard. caught many and put in container</td>
<td>5 years</td>
<td>Parents also observed ladybugs and expressed excitement.</td>
<td>Parents and grandma allowed more creature hunts.</td>
</tr>
<tr>
<td>Michael</td>
<td>Watched movie of</td>
<td>4 years</td>
<td>Dad suggested he</td>
<td>Dad also involved in</td>
</tr>
</tbody>
</table>
The Drawing Activity

Most of the data was collected from the interviews; however, the drawing activity also provided some valuable information. The activity consisted of giving the students two topics to draw: "what makes a good day for me," and "a time when I sought information." The art-evaluation process was adapted from a procedure established by Amabile (1982b) to evaluate creativity in authentic art. This procedure has been used in other studies concerned with children’s art and creativity (Amabile 1979, 1982a; Amabile, DeJong, and Lepper 1976; Koestner et al. 1984). Following guidelines recommended by Amabile, the art tasks for the current study required students to draw and did not depend on specialized skills, were based on open-ended questions that allowed for flexible responses, and led to a product that could be evaluated. The judges were three art teachers from a neighboring school district. They were all experienced in teaching art to this age group as well as having received education themselves in the domain.

The evaluation forms prepared for the judges contained a scale for each of nine art dimensions. The scale range was very poor, poor, average, good, and very good. The dimensions were for creativity (novel idea, effort evident, detail, complexity, variation in shapes, and novel use of materials) and for technical goodness (organization, neatness, and expression of meaning). These dimensions were among those listed in the artistic clusters of creativity and technical goodness evaluated in other creativity-in-art studies (Amabile 1979, 1982a; Amabile, DeJong, and Lepper 1976; Koestner et al. 1984). They were chosen for this study based on their appropriateness for the age group and the particular art activity. Judges were given the particulars regarding the administration of the art activity both in writing and verbally, but they were not given specific information on the purpose of the activity nor of the study. On the forms and in the verbal instructions, the directions stated, "According to your professional judgment, please evaluate each student’s work as it would compare with the average fifth grade student in the same situation." Judges were informed that the students would not see the evaluations. The results of
the art activity are here presented in two categories: the author’s observations of the drawings, and the art evaluations from the professional judges.

**The Author’s Observations**

The author’s observations of the drawings were not based on specialized art skills, but on the author’s perspective as a researcher of the students’ lived experiences. The drawings were examined to see if and how these experiences were depicted. The students’ interests and information-seeking styles as indicated in their interviews were depicted in their drawings. The pictures tended to illustrate the students’ primary information-seeking styles, though this was not always the case. In addition, the children’s pictures depicted many play and leisure activity scenes, and none of the pictures illustrated competitive or winning/losing situations. While the pictures varied in style, the scenes were consistent with information retrieved from the interviews for each student.

**Art Evaluations from the Professional Judges**

The evaluation forms from the three art evaluators were collected and values assigned to the scale scores, using 1 for very poor to 5 for very good. The dimensions were grouped by creativity and technical goodness, and the mean scores calculated for each of the student’s “best work.” The “best work” was determined as the picture receiving the highest total score from all three judges for each student. Using the score of 3.00 as average, eight out of the nine informants scored above average in both creativity and technical goodness based on the composite mean scores for the students’ “best work.” The range for the eight students’ above-average composite scores was 3.11–4.61 in creativity and 3.22–4.44 in technical goodness. Bob was the only student who scored below average on either of the composite mean scores for creativity and technical goodness, and he scored below average for both creativity (2.72) and technical goodness (2.33).

A Cronbach’s alpha was calculated to test the reliability of the judges’ scores for each of the artistic dimensions in the art evaluation. Internal consistency was measured for all three judges’ evaluation scores for each of the two drawings produced by the students. The conventional score of alpha 0.7 or greater, indicating a reliable set of responses (Hinton 2004, 302–3), was found for all but the “novel idea” dimension for picture A, and for all the dimensions for picture B. The findings indicate that for all but one set of evaluations on one dimension for picture A, the evaluation scores for the artistic dimensions displayed an internal consistency across all three judges (see Table 7).

**Table 7. The Cronbach’s Alpha Score for the Judges’ Evaluations of the Artistic Dimensions for Pictures A and B**

<table>
<thead>
<tr>
<th>Artistic Dimension</th>
<th>Alpha Score for Picture A*</th>
<th>Alpha Score for Picture B**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creativity Cluster</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novel idea</td>
<td>.47</td>
<td>.90</td>
</tr>
<tr>
<td>Effort evident</td>
<td>.79</td>
<td>.90</td>
</tr>
<tr>
<td>Detail</td>
<td>.85</td>
<td>.90</td>
</tr>
<tr>
<td>Complexity</td>
<td>.84</td>
<td>.83</td>
</tr>
</tbody>
</table>
Conclusions and Discussion

While it is important to keep in mind that the observations drawn from this exercise are applicable only to the study’s pool of informants, the following conclusions may shed light on issues surrounding the general topic of intrinsic motivation within the framework of information seeking.

Diversity

Students in the study who were identified as intrinsically motivated to seek information came from many family situations and backgrounds.

Not Necessarily “Advantaged”

The typical assumption is that these children fit an “advantaged” profile—white, rich, high achievers with doting parents who provide them with every asset needed for success. However, the fact is that while some of the children in the study tended toward the “advantaged” profile, most did not.

Informants’ family configurations and situations varied (though most were living with both their mother and father), but all described anchor relationships, people who supported their interests and information-seeking behavior. The importance of anchor relationships in the informants’ information seeking supports the research that relatedness plays an important role in intrinsic motivation; in fact, it is one of the three major psychological needs posited in Self-Determination Theory (SDT), in the subtheory Cognitive Evaluation Theory, as the basis for intrinsic motivation (Ryan and Deci 2000). While autonomy and competence are considered essential, a secure relational base appears to provide a needed backdrop—a distal support—for intrinsic motivation, a sense of security that makes the expression of this innate growth tendency more likely and more robust (Deci and Ryan 2000, 235).

The conclusion is that anchor relationships foster intrinsic motivation for information seeking, and though these relationships are usually adult relatives, they need not be. Others can and have stepped into the anchor relationship role.

Success in School

Informants perceived themselves as competent in a wide variety of nonacademic and academic areas, including describing success and competence in information seeking
itself. Students were not all competent in reading, as one might expect of those students who are intrinsically motivated information seekers. Such a link has been suggested between perceived reading competence and information skills (Arnone, Reynolds, and Marshall 2008). SDT research also shows that it is perceived competence (Vallerand and Reid 1984) that fosters intrinsic motivation, and this study suggests that perhaps it is this sense of competence, rather than the area of competence, that has influenced the informants’ intrinsic motivation for information seeking.

Although all of the children perceived themselves as competent in at least one area, these were not necessarily competencies that would help them succeed in school. Couple this with the varying communication styles of the students, and it leads to the conclusion that educators may not easily recognize children who are intrinsically motivated for information seeking in their classrooms and libraries. While it is common in some schools to reduce, limit, or eliminate information-seeking experiences such as research projects and even library sessions in order to provide time for students to receive special services (e.g., remedial reading, help for learning disabilities, and gifted instruction), as well as to neglect those who do not seem competent or do not communicate their information needs well, these “special” students can and do benefit from school-related information-seeking experiences, as do students who fit the “normal” profile. The indication is that research and library-related experiences contribute to intrinsic motivation for information seeking for many types of students, both within and outside of what might be considered the norm.

**Similarity: Commonalities of Student Experiences**

Students in the study who were identified as intrinsically motivated for information seeking exhibited an affinity for play, a tendency toward creativity, and the disposition of noncompetitiveness.

**Affinity for Play**

Research indicates that play is an important component in the development of healthy individuals. It increases affiliation with peers, releases tension, advances cognitive development, increases exploration, and provides a safe haven in which to engage in potentially dangerous behavior. (Santrock 2006, 281)

Interestingly, aspects of play can also be associated with intrinsic motivation. For example, Berlyne (1960) described play as a way to satisfy curiosity and the need to explore, considering both to be at the root of intrinsic motivation.

The play experiences the informants described were indicated to contribute to the fulfillment of students’ needs for competence, autonomy, and relatedness, all principles espoused by SDT (Deci and Ryan 1985) to foster intrinsic motivation. While it may or may not be true that most students—intrinsically motivated for information seeking or not—enjoy and thrive on play, based on the author’s experiences working with children, the students in the study seemed to have a particular affinity for it. In fact, not only did they discuss play often and enthusiastically, students also connected play with information seeking. Informants described incidents of play that involved information seeking, and information seeking was indicated as play for many of the students.
These findings suggest that the play life of children is an important contributor to their intrinsic motivation for information seeking. However, further study is required to determine if the affinity for play is more poignant for students who are intrinsically motivated for information seeking than it is for other children.

Creativity
Students in the study exhibited a tendency toward creativity, which was indicated by statements in their interviews as well as by the evaluations of the art teachers. They described creativity as an outlet in itself, a way to express interest, and as an object for information seeking. The data suggest that creativity both contributed to and manifested itself in intrinsic motivation for information seeking in the lives of the informants. The assumption is that students who engage in information-seeking experiences that include the use of creativity are more likely to be intrinsically motivated for both the information seeking and the creative aspects of the activity, and that the inclusion of each enhances the intrinsically motivating aspects of the other.

According to the National Association for Gifted Children (2008), creativity is “the process of developing new, uncommon, or unique ideas” (para. 15). Csikszentmihalyi (1997) posited that creative people experience a state of “flow,” which he believed can be achieved by anyone under the right conditions. Creativity is by definition intrinsic, or emanating from the self. Research has shown that people who are intrinsically motivated for an artistic task exhibit higher levels of creativity than those who are not (Amabile 1979) and that external conditions such as evaluations, competition, and behavior limits reduce intrinsic motivation for the artistic task (Amabile 1979, 1982a, 1982b; Koestner et al. 1984).

Sheldon (1995) took this concept a step further when he posited that not only is intrinsic motivation associated with creativity on the task level, it also is connected on the trait level. He proposed that the measures of self-determination, as defined in SDT (Deci and Ryan 2985), and creativity be linked. The significant psychological aspect is autonomy. “A long tradition of empirical research has established that personal autonomy is a core characteristic of the creative personality” (Sheldon 1995, 25). The assumption is that creative, self-determined people are better able to resist the controlling situational and intrapersonal forces that can undermine creativity and are also better able to establish and maintain contact with intrinsic interests” (25). Csikszentmihalyi (1997) echoed this sentiment when he suggested that the first step in maintaining creativity is to cultivate one’s curiosity and interests.

Noncompetitiveness
Informants in the current study exhibited a disposition of noncompetitiveness. They rarely mentioned winning, losing, or competition in any domain. The reasons they gave for engaging in competitive activities was for the joy of participation and because they were competent or were striving for competence—both intrinsic reasons. The data suggest that the effect of the extrinsic motivator—competition—to diminish intrinsic motivation is decreased through a focus on the intrinsic reasons for participation in an activity as well as on the functional feedback of personal performance. Since research indicates that extrinsic motivators have a tendency to decrease intrinsic motivation (Deci et al. 1981), it would be logical to conclude that students who focus on participating in
competitive activities for intrinsic reasons are less likely to be affected negatively with regard to intrinsic motivation, particularly in the domain of information seeking, as is the case in the current study.

**Information-Seeking Behavior**
The informants indicated having a variety of information-seeking styles and interests, and recounted diverse and successful information-seeking episodes.

**Information-Seeking Styles**
All of the students recounted experiences using computer technology for information seeking. However, only one student gravitated to computer technology as the primary information seeking medium, compared with four who did so for books. This finding might be considered surprising in this age of increasingly abundant technology. Notwithstanding, studies have shown that children are not as successful nor as motivated by computer use as the conventional wisdom would suggest when one considers the popularity of computer games in contemporary society and assumptions drawn about youth and technology (Bilal 1999; Bilal 2000; Bilal and Kirby 2002; Spavold 1990). At the same time, one must remember that this group of children was identified as intrinsically motivated for information seeking and as such may not represent patterns from the general population. The data did not indicate that they were unsuccessful nor that they disliked using the computer; it simply indicated that they had chosen other media as their primary information seeking sources, media for which they had more access, or presumably with which they felt more comfortable.

The styles they did choose more often—using books and observing—could indicate inclination toward their own particular learning styles (Gardner 1999). It also is important to consider that two students could not be pinned down to specific information-seeking styles because they tended to focus on their interests and sought information regarding those interests using any medium they could find. In fact, all of the students indicated using at least two media types for information seeking, and eight of the students indicated using at least three.

The students use of their primary information-seeking sources, and their versatility in using secondary sources suggests that students who are intrinsically motivated to seek information (1) begin with the media for which they have more access, for which they are best suited, and/or with which they are most comfortable; (2) then they develop more questions from that experience; and then (3) expand the focus to other sources as the need or desire for more information arises. It would be logical to conclude that students who are exposed to various media types and who are allowed/encouraged to use them at will would be more intrinsically motivated to seek information, and possibly more successful as well.

**The Point of Passion Experience**
All of the students in the study described a *point of passion* experience, a particular event they remember that ignited an interest they have since pursued. Most of the students (6 of 9) described having this experience at the age of four or five. In the same vein, a majority of the students also indicated support from others, generally an adult relative, for pursuing the interest. While the research on the long-lasting effects of interests cultivated in
childhood is inconclusive (Hidi and McLaren 1990), anecdotal evidence points to the possibility that point of passion experiences fostered by others may last until adulthood and, in fact, may affect a child’s decisions for life (B. Birney, personal communication, Oct. 26, 2008; Fulton 1993). Combine this with the universal presence of the anchor relationship (who may or may not have been the person who supported them after the point of passion experience) in the lives of the informants, and the data point to the importance of an influential person(s) who fosters intrinsic motivation for information seeking in the life of each child.

**Developmental Basis for Information Seeking**

Students in the study shared their many different interests during the interviews and depicted them in their drawings. During the analysis of the data, these interests were sorted into a typology, then classified into an adapted model based on the Theoretical Model of Urban Teen Development (Agosto and Hughes-Hassell 2006a, 2006b). It is important to note that a difference between the Agosto and Hughes-Hassell’s research and the current study is the type of information gathered from the informants. Agosto and Hughes-Hassell examined the information-seeking needs and behavior of teens, and the current study investigated the information-seeking interests and behaviors of upper elementary students. Even so, the interests of the younger students, though not asking specific questions about their everyday living needs (such as the teens’ questions regarding how to make reservations at Red Lobster, and what to wear on prom night), may reflect a primal survival instinct (or need) to explore and conquer their surroundings (Ryan, Kuhl, and Deci 1997).

Agosto and Hughes-Hassell (2006a, 2006b) explain that everyday-life information seeking is “self-exploration and world exploration that helps teens understand themselves and the social and physical worlds in which they live” (1394). They conclude that the teens in their study are facilitating “the teen-to-adulthood maturation process” through their everyday life information seeking. The classification of the current informants’ self-initiated information-seeking interests into variables based on Havighurst’s Developmental Tasks of Middle Childhood (1972) would also suggest that the fifth grade students in the current study are enacting maturational processes as they advance into their next developmental stage, adolescence, through their information-seeking behavior. More study is required to confirm if upper-elementary students outside of the profile of the informants in the study also seek information for the same developmental reasons.

**The Task Definition of Favorite Information-Seeking Episodes**

Students were asked about their favorite information-seeking episodes. These were recorded and stratified into an adapted Taxonomy of Tasks (Bilal 2002). While the three task patterns representing students’ favorite information-seeking episodes included both open and closed task types, simple and complex task natures, semi-assigned and fully self-generated task administration, and both group and individual task relationships, the salient feature of the episodes was that none of them included tasks that were fully assigned. Since the favorites were the most intrinsically motivating episodes of students identified as intrinsically motivated for information seeking, the assumption is that fully assigned tasks are least likely to be intrinsically motivating to students. Similarly, when students were asked why they chose their favorite episodes, one of their responses was choice of aspect in information seeking. This element in the information-seeking episodes
aligns with the SDT (Deci and Ryan 1985) principle that autonomy is an essential component for intrinsic motivation.

Other reasons students gave for choosing their favorite information-seeking episodes also coincide with SDT principles. They are (given in order of frequency) relevance of/interest in topic (interest as the basis of intrinsic motivation, e.g., Csikszentmihalyi 1975), working in a group (relatedness, e.g., Deci and Ryan 1985), the experience of information seeking itself (indication of intrinsic motivation for information seeking), creating the final product (creativity, e.g., Amabile 1982b), and no time limit (extrinsic motivators decrease intrinsic motivation, e.g., Deci et al. 1981). The data suggest that students who participate in information seeking tasks that incorporate principles of intrinsic motivation (e.g., as outlined by SDT) in their design, are more likely to be intrinsically motivated by those experiences, and will hopefully be more likely to engage in information seeking on their own.

Implications and Recommendations

Constructivism is the belief that — phenomena in the world can be fruitfully understood many different ways and the knowledge is what the person has made of the world” (Littlejohn 2002, 27). The characteristics of constructivist learning environments are (1) “they are student-centered and instructor-facilitated,” and (2) “they provide meaningful, authentic learning tasks” (Small 2005, 23). Within constructivist learning environments, authentic learning tasks require use of higher-order thinking skills, provide for collaboration, and “foster responsibility for learning” (23). The constructivist approach not only fosters intrinsic motivation for information seeking, it also works well with information-literacy skills instruction by promoting individual, lifelong learning strategies (Robins 2005).

Types of teaching methodologies that promote constructivist and SDT principles of intrinsic motivation are problem-based learning (Barrows and Tamblyn 1980), intentional learning environments (Resnick 1989), and cognitive apprenticeships (Collins, Brown, and Newman 1989). All of these instructional methods incorporate authentic learning tasks, lending relevance to the learning situation. They also include elements of collaboration, which serves to meet the need of relatedness for students. Another approach to learning that fosters intrinsic motivation is inquiry, a method that has been widely accepted in the school library field (e.g., Kuhlthau 2001; Kuhlthau, Maniotes, and Caspari 2007; Robins 2005). Inquiry-based learning “takes advantage of information-rich environments by promoting a student’s natural inquisitiveness” (Robins 2005, 9). The inquiry approach encourages students to ask questions, investigate, explore, search, quest, and study. It can be used as a strategy for individuals, or it can be implemented as a collaborative strategy (Kuhlthau, Maniotes, and Caspari 2007). The option of implementing inquiry strategies in individual or group settings enables accommodation of the individual needs of autonomy or relatedness, which are influenced by an individual’s culture (e.g., Chirkov and Ryanan 2001). Giving students choice in this matter helps to differentiate according to their individual needs.

A caveat to this discussion of instructional design is the important consideration of the use of extrinsic motivators. Seeking information on topics of interest is usually a natural, pleasant experience for children (Ryan, Kuhl, and Deci 1997), a phenomenon this study supports. However, research shows that placing extrinsic motivators on intrinsically motivating
experiences reduces intrinsic motivation for those activities (Amabile, DeJong, and Lepper 1976; Deci and Cascio 1972; Lepper and Greene 1975; Deci and Ryan 1985). Many of the activities we ask children to attempt in school may be of some initial intrinsic interest to at least some of the children, [however,] the effect of presenting these activities in the context of a system of extrinsic incentives and adult surveillance may [serve] to undermine that intrinsic interest in those activities (Lepper and Greene 1975, 484).

The bottom line is to give students choice and as much control as is feasible and age-appropriate in their information-seeking projects, then keep feedback on the functional rather than on the controlling level. This means emphasizing better ways to accomplish learning goals rather than emphasizing grades, competition, and rewards.

Particular strategic recommendations for practitioners based on the data gleaned from this study include use of playful and creative teaching strategies, providing a broad variety of material formats (especially realia and primary sources) for children, conducting fun and stimulating research activities with young children, arranging for adult mentors for children based on common interests, and educating parents in the role of fostering their children’s natural interests.

By using strategies and techniques that stimulate and build on the innate interests of students, school librarians can move beyond teaching static skills and rote processes. Instead they become educators who take an active role in fostering in their young patrons a disposition for learning that may last a lifetime.

**Works Cited**


Heinström, J. 2006. Fast surfing for availability or deep diving into quality: Motivation and


**Cite This Article**

National Board Certified School Librarians’ Leadership in Technology Integration: Results of a National Survey

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Abstract

In an effort to address the lack of empirical knowledge about the school librarians’ role in technology, the Institute for Museum and Library Services funded Project Leadership-in-Action (LIA) to study leadership practices of school librarians. This current grant project includes a survey of the technology integration practices of school librarians with National Board Certification. Survey results revealed that the 295 respondents work in well-resourced libraries with personnel assistance as well as numerous computers and devices. Respondents reported that they led school technology integration in many areas but also had areas in which to improve, such as providing services to special needs learners, building digital collections, participating in student assessment, and transferring their leadership success to professional and local communities.
Introduction

Technology integration is an increasingly crucial element of teaching and learning that requires school-based leadership to be consistent, relevant, and a connector of various aspects of students’ learning experiences. Many theorists and researchers have argued that school librarians are well positioned to assume a leadership role in technology integration (e.g., Everhart and Dresang 2006; Hughes-Hassell and Hanson-Baldauf 2008; McCracken 2001; Shannon 2002; Vansickle 2000). School librarians have been continually directed to assume leadership roles in their schools in the professional guidelines of state, national, and international organizations, although research-based strategies to successfully exercise technology integration leadership have yet to be developed.

A starting point to defining these strategies is to determine the current technology leadership through today’s school libraries. The study presented here provides this initial attempt to characterize school librarians’ technology integration activities in the contexts of what school librarians know, what they do, and how they grow as professionals. This study reports the results of a survey of National Board Certified (NBC) school librarians who have already been deemed leaders in their schools and profession.

Literature Review

The changing and technology rich environment of twenty-first-century schools significantly is affecting and redefining the role of the school librarian. Whereas school libraries once were seen as repositories of information, the ubiquity of digital resources demands that learners master the ability to locate, use, and create information through multiple media and communicate their knowledge in multiple modes. These developments present school librarians with an imperative to assume leadership roles within their schools through their support for and promotion of technology integration (Asselin 2005; Hanson-Baldauf and Hughes-Hassell 2009; Hughes-Hassell and Hanson-Baldauf 2008). Yet researchers have suggested that school librarians have difficulty enacting a technology leadership role (McCracken 2001).

Technology Integration and School Librarian Leadership

The U.S. Department of Education’s National Center for Education Statistics (NCES) has defined technology integration as “the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools... It is important that integration be routine, seamless, and both efficient and effective in supporting school goals and purposes” (Forum on Education Statistics 2002, para. 3). The key to technology integration in education is understanding that technology should be used to enhance the learning experience and develop learners’ thinking skills—not as an add-on or afterthought (Hew and Brush 2007).

Classroom Teachers Benefit from Technology Integration Support

Teachers, even in schools and districts committed to technology integration, still struggle with effectively integrating technology and teaching practice remains largely unchanged (Consortium for School Networking 2004; Cuban, Kirkpatrick, and Peck 2001). School librarians can lead through modeling and collaborating with teachers to guide instructional design and offer expertise on the integration of emergent technologies to create engaging and relevant learning experiences for students (AASL 2009a; Asselin 2005). The changing information landscape of the twenty-first century, which includes
interactive technologies and a participatory culture, requires that the school librarian must evolve as a leader to address the needs of this new generation of learners. Despite the calls for school librarians to embrace technology leadership roles in an age of digital information resources (Asselin 2005), a lack of research-based strategies to help school librarians enact this role remains.

**Student Achievement is Enhanced by School Librarian Technology Leadership**

A compilation of recent state studies’ results examined the school librarian and the impact on student achievement. It identifies two roles of the school librarian that influence student achievement: leader and technology facilitator (Scholastic 2008). In those studies, school librarians who exhibited technology leadership were more likely to plan cooperatively with teachers, teach cooperatively with teachers, provide training for teachers, and exhibit initiative with technology integration (e.g., Lance, Rodney, and Hamilton-Pennell 2000; Rodney, Lance, and Hamilton-Pennell 2002).

School libraries provide opportunities for students to access and utilize a variety of information resources. School librarians now have an imperative to prepare students for their future and “develop information skills that will enable them to use technology as an important tool for learning, both now and in the future” (AASL 2007, 2). Information literacy, or “the ability to find, evaluate, analyze, and synthesize information” (Smolin and Lawless 2003, 571), has expanded into new literacies that go beyond simply knowing how to use technology tools to include understanding how to apply them in learning (Asselin 2005; Smolin and Lawless 2003; Greenhow, Robelia, and Hughes 2009; Kuiper et al. 2005) and to create and communicate new learning (AASL 2007; Partnership for 21st Century Skills 2009). Students require skills to create, invent, design, and expand their world by actively participating in digital culture, but they also need new literacies to guide them in ethical, legal, and safe participation (Greenhow, Robelia, and Hughes 2009; Livingstone 2008; Nelson, Christopher, and Mims 2009; Todd 2008).

New literacies are vital for academic and career success and are due to the “interdisciplinary, collaborative, and information-rich nature of school librarianship, [school] librarians are in a prime position to make significant and meaningful contributions toward the integration of 21st century literacy skills” (Hanson-Baldauf and Hughes-Hassell 2009, 4). This important outcome requires active recognition of and support for the roles of all community stakeholders, including the technology leadership role of the school librarian.

**School Administrators and School Librarian Technology Leadership**

Researchers have reported that school administrators’ opinions about technology planning, faculty leadership, professional development, curriculum alignment, technology use, and perceptions of technology’s effect on learning is the primary influence on the way these activities occur in a school (Anderson and Dexter 2005; Kowch 2009; Owen and Demb 2004).

The principal’s influence over the school librarian’s opportunity to assume leadership roles is especially critical in the area of technology integration, yet in numerous studies (Scholastic 2008) researchers observed that teachers and principals rarely recognized the school librarian’s importance; an extremely limited number of principals reported that school librarians should take on a leadership role (Hartzell 2002; Oberg, Hay, and Henri 2000; Smith 2006).
Despite authors who have suggested the need for, and the importance of, the school librarian to be a proactive leader in schools (Asselin 2005; Everhart and Dresang 2006; Shannon 2008), researchers have not empirically explored the extent to which school-based influences affect school librarians’ technology leadership or rigorously defined circumstances in administrators, teachers, and school librarians have effectively realized shared leadership.

**Professional Standards and Technology Leadership**

Although reports of school librarians’ technology leadership are scant and inconclusive, the profession of school librarianship has codified leadership. Professional associations, standards, and guidelines not only define and benchmark practice, they also reflect the evolving demands of school librarian preparation and work. For example, the primary goal of the American Association of School Librarians (AASL) Strategic Plan (2009b) was for school librarians to achieve universal recognition as indispensable educational leaders. Similarly, AASL’s national guidelines for professional practice, *Information Power* (1998), emphasized greater professional recognition through school librarian leadership.

*Information Power* also emphasized technology integration as an important function of an effective school library media program. Reflecting this value, in 2007 AASL released the *Standards for the 21st Century Learner*, one of the nine foundational “common” beliefs of which is that “technology skills are crucial for future employment needs. Today’s students need to develop information skills that will enable them to use technology as an important tool for learning, both now and in the future” (AASL 2007, 2). These standards were incorporated into *Empowering Learners*, AASL’s 2009 guidelines for school library programs and school librarian practice. The authors of *Empowering Learners* reiterate the belief that the school librarian should act as a leader within the school community and ensure that learners are equipped with the skills and knowledge they need to succeed in the twenty-first century. School librarians are required “to play a leading role in weaving such skills throughout the curriculum so that all members of the school community are effective users of ideas and information” (AASL 2009a, 49).

Especially in the area of technology integration, when defining the responsibilities of the school librarian, each of the guidelines from AASL (2009) also reflect principles expressed in the National Council of Accreditation of Teacher Education (NCATE) professional preparation standards (2003), and the National Board for Professional Teaching Standards (NBPTS) NBC standards (2001) mentions the role of leadership. The importance of the leadership role of the school librarian also is emphasized by several other national organizations, including the International Society for Technology in Education (ISTE), the Association for Education Communications and Technology (AECT), and numerous state-level school librarian professional organizations.

Weaving technology into teaching and learning, driven by sound pedagogical principles, interdisciplinary perspective on curriculum, and thoughtful and fluent information use, seems to be an obvious area in which school librarians should assume leadership (Asselin 2005; Vansickle 2000). However, the research detailed in this section suggests that barriers, such as difficulties in establishing collaborative relationships with teachers and a
lack of leadership recognition from administrators, can thwart some school librarians’ technology leadership.

Despite the numerous mentions of technology leadership in professional preparation and performance standards, some researchers have suggested that few school librarians seem to have been prepared to understand or accept the leadership role (Asselin 2005; Everhart and Dresang 2006; Shannon 2002, 2008; Vansickle 2000). However, empirical research is lacking about the extent to which school librarians perceive and enact technology leadership activities.

Method
Research on technology integration in schools and the roles of school librarians provides an impetus to study the leadership role of school librarians in technology integration. This research is framed by a particular leadership perspective, as described in this section.

Theoretical Framework
Formative Leadership Theory was used for framing the research problem and research questions, the development of the survey instrument, and the analysis of results. Developed by Ash and Pearsall (2004), Formative Leadership Theory is based on the belief that there are numerous leadership possibilities and many leaders within the school. Leadership is not role-specific, reserved only for administrators; rather the job of the school leader is to facilitate learning opportunities for the faculty and staff so that they might develop into productive leaders. This theory of leadership supports the view of the school librarian as leader. It is grounded in the belief that educators should enhance not only student learning but also the learning of the adults within the school.

The formative leader must possess a high level of facilitation skills because team inquiry and learning and collaborative problem solving are essential ingredients of this leadership approach. Imagining future possibilities; examining shared beliefs; asking questions; collecting, analyzing, and interpreting data; and engaging the faculty in meaningful conversation about teaching and learning are all formative leadership behaviors. To determine the leadership role of school librarians in technology integration, this theory guided the research presented here. In light of the research problem identified in the literature review and the possibilities for leadership outlined in Formative Leadership Theory, this study sought to answer the research question “What is the leadership role of the school librarian in technology integration?”

Procedure
A research team consisting of two professors, two doctoral students, and a statistical consultant developed, administered, and analyzed a nationwide survey that characterized the dominant technology integration activities of school librarian leaders.

Description of the Sample
Participants in this study are NBC school librarians. NBC is the highest credential in the teaching profession and less than 2 percent of school librarians in the United States are NBC. This sample was chosen for two reasons. First, documented accomplishments in technology integration and leadership form the basis of two of the four required portfolio entries for the rigorous NBC credential in library media. Second, a vast body of research
exists concerning how NBC develops leaders (NBPTS 2010) but this research is exclusively based on teachers. Hence, this sample is uniquely positioned to both define and differentiate leadership roles in technology integration for school librarians.

After obtaining appropriate institutional review board approval, the authors solicited respondents by sending invitations to NBC school librarians whose e-mail addresses were available on the NBPTS website. This is approximately 35 percent of the population of 2,100 NBC school librarians in the United States. Participants also were obtained via postings on the following e-mail lists: Yahoo! Groups/Library Media (for school librarians seeking National Board Certification), LM_NET, AASL Forum, and many state school librarian e-mail lists.

From these respondents, a stratified random sample of 295 cases representing elementary, middle, and high schools was constructed. While respondent names were not included in the results, respondents’ U.S. Department of Education–assigned school identification codes were used as unique identifiers to ensure unique cases.

Data Collection
A lack of recognition of the school librarian as a leader in technology integration means that no satisfactory data instruments existed that could define and measure this role. Members of the research team developed a survey instrument for this purpose based on national standards that included:

1. AASL’s Empowering Learners: Guidelines for School Library Media Programs (2009a)
2. The International Society for Technology in Education’s (ISTE) National Educational Technology Standards (NETS•T) and Performance Indicators for Teachers (2008)
3. NBPTS’s Library Media standards (2001)
4. AASL and NCATE’s Standards for Initial Preparation Programs: School library Media Specialists (2003)

To ensure that the survey accurately and rigorously reflected the phenomenon being studied, it was pretested with both an advisory board composed of experts in the field of library media and technology and a group of NBC school librarians. Several revisions were incorporated based on these results. The final version of the survey consisted of three sections:

1. thirty demographic questions covering areas such as staffing levels, education and experience of the school librarian, and Internet access;
2. sixty statements related to levels of technology-integration activities; and
3. free-response questions that asked respondents to discuss barriers, enablers, and other factors that influenced their leadership practices.

In this paper, we report the first two sections of the survey. Table 1 details the sections in which the 60 statements related to technology integration activities were organized. These headings reflect the sections of the NBPTS standards (2001).
Table 1. National Board for Professional Teaching Standards in Library Media used as a Foundation for Survey Categories

<table>
<thead>
<tr>
<th>What Library Media Specialists Know</th>
<th>What Library Media Specialists Do</th>
<th>How Library Media Specialists Grow as Professionals</th>
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<tbody>
<tr>
<td>I. Knowledge of Learners</td>
<td>IV. Integrating Instruction</td>
<td>VII. Reflective Practice</td>
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<tr>
<td>II. Knowledge of Teaching and Learning</td>
<td>V. Leading Innovation through the Library Media Program</td>
<td>VIII. Professional Growth</td>
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<tr>
<td>III. Knowledge of Library and Information Studies</td>
<td>VI. Administering the Library Media Program</td>
<td>IX. Ethics, Equity, and Diversity</td>
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<td></td>
<td></td>
<td>X. Leadership, Advocacy, and Community Partnerships</td>
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Response choices for statements related to technology-integration activities reflected respondents’ degree of leadership regarding the particular integration activity. A Likert scale was used: 0 = Not my job; 1 = Rarely involved; 2 = Partially involved; 3 = Substantially involved; 4 = Fully involved. Each of these response choices was fully explicated in the context of the survey instrument.

A consulting group managed the web-based survey distribution. Subjects also were mailed a paper copy to assure contact to account for any e-mails that may have been blocked by their school’s network firewalls. As an incentive, survey participants were given the opportunity to enter a drawing for a $100 gift certificate to Amazon.com.

Data Analysis
Survey data was analyzed to determine the most prevalent leadership roles of school librarians in technology integration. The Statistical Package for the Social Sciences (SPSS) was used for quantitative analysis, including the frequencies presented here. Preliminary results of the survey were reviewed with the aforementioned national advisory board. This research report includes frequency analyses of demographic data and statements relating to technology integration activity; it does not include results of the open-ended questions pertaining to barriers, enablers, and additional feedback.

Limitations
This research has limitations. First, since not all NBC school librarians could be contacted directly, it may not be possible to assume that the sample is truly random or truly stratified. Second, by definition, NBC school librarians represent a small minority (about 2 percent) of all school librarians in the United States. Because the process of NBC is very rigorous, it is expected that this group would perform at a higher level than the norm and reflect a higher level of leadership.
Results
The initial survey questions prompted participants to provide information about themselves, their professional preparation, prior experience, and their work and technology environments.

Respondent demographics mirror the general population of school librarians (Kenney 2009). On average, the participants were Caucasian middle-aged women about fifty years old. Seventy-one percent (n = 210) were formerly classroom teachers. The majority of those who once taught in elementary schools (n = 80) worked in the upper grades (n = 45). For those who had been teachers in middle and high schools (n = 131), 14 percent taught language arts (n = 41), 8 percent taught history (n = 22), and 5 percent taught reading (n = 15).

Varying state certification requirements can make it difficult for school librarians to change jobs from state to state, but 16.9 percent (n = 50) of the respondents worked in a different state from where they received NBC. This high percentage suggests the NBPTS nationally recognized teaching credential allows for portability, which, for some, is a motivating factor to achieve the certification.

These NBC school librarians have above average work environments when compared to recent statistics collected by the U.S. Department of Education (Goldring 2009). Almost all (n = 291 or 98.7 percent) worked full-time in one school and nearly 75 percent (n = 221) had full-time paid support staff. Only 13 percent (n = 39) had a fixed schedule.

With very few participants reporting full-time (n = 123 or 42 percent) or part-time (n = 45 or 15 percent) technology support staff, the technology available in these school libraries was above national averages (Goldring 2009). The mean number of desktop computers was 165, and the mean number of laptop computers was 52. Almost all (n = 290 or 98 percent) of the Internet access in the school library is through filtered broadband. Only 7 percent (n = 21) of the school librarians in this study disabled filters for students, and about twice as many were as willing (n = 38 or 13 percent) to disable filters for teachers despite federal mandates that enable filter disabling for legitimate educational applications (Willard 2003).

Survey Section 1. What Library Media Specialists Know: Knowledge of Learners
[Note: The term library media specialist will be used in the following sections to remain consistent with the National Board standards.]

Questions in this section captured participants’ “knowledge of learning styles and of human growth and development” (NBPTS 2001, 7). It also captured participants’ use of that knowledge to meet a range of learners’ needs.

Respondents overwhelmingly answered that they were fully or substantially involved in providing (n = 241 or 82 percent), instructing (n = 235 or 80 percent), and affecting (n = 210 or 71 percent) learning activities. The final example in the section, “I provide assistive and adaptive technologies for learners,” had the lowest number of survey respondents fully or substantially participating in this activity (n = 103 or 35 percent), as illustrated in Figure 1.
Section 2. What Library Media Specialists Know: Knowledge of Teaching and Learning

Questions in this survey section focused on “the principles of teaching and learning that contribute to an active learning environment” (NBPTS 2001, 11). They also asked respondents to rate the extent to which they applied their knowledge of learning theory and instructional design and development as well as their abilities to establish an active and positive learning environment, develop group-management strategies, and strengthen and supporting school, district, and state curricula.

Respondents reported that they fully or substantially used technology to pique learners’ interest (n = 281 or 95 percent), align to professional and technology standards (n = 273 or 93 percent), differentiate instruction (n = 255 or 87 percent), and model the use of technology (n = 233 or 79 percent). Most respondents also were substantially or fully involved in teaching learners to identify the appropriate technology for their needs (n = 243 or 82 percent).

Section 3. What Library Media Specialists Know: Knowledge of Library and Information Studies

This survey section included questions pertaining to “the principles of library and information studies needed to create effective, integrated library media programs” (NBPTS 2001, 15). Questions reflected knowledge of the principles of the profession; ethical and legal tenets; effective organization and practice; children’s, teen, and professional literature; information-processing strategies; and technology for creating and managing information.

A large majority of respondents reported being fully or substantially involved in collaborating with teachers to use technology in their instruction (n = 219 or 74 percent), providing teachers with access to technology that enhances their instruction (n = 235 or 80 percent), promoting learning activities that connect technology to content standards (n = 227 or 77 percent), and
advocating for the use of technology for alternative demonstrations of student learning (n = 219 or 73 percent). Most respondents also were fully or substantially involved in helping learners create products using various technology (n = 215 or 72 percent) and facilitating learners’ use of technology to express new ideas (n = 207 or 70 percent).

However, few respondents were fully or substantially involved in the initial process of setting learning objectives and promoting the integration of technology in classroom instruction (n = 122 or 41 percent) and, as Figure 2 depicts, many fewer respondents fully or substantially provided teachers with technological alternatives for assessing student learning (n = 113 or 38 percent).

Figure 2. Participants’ Responses to “I provide teachers with a range of technological alternatives for assessing students’ learning” (n = 293)

Section 4. What Library Media Specialists Do: Integrating Instruction
The NBPTS standards (2001) state that “accomplished library media specialists integrate information literacy through collaboration, planning, implementation, and assessment of learning.” This section contained questions pertaining to collaboration in planning learning, implementing instructional activities, and assessing learning and instruction.

The majority of respondents were fully or substantially involved in fostering an information-rich environment in which learners can explore their personal interests (n = 269 or 91 percent), employing effective collection-management practices for digital resources (n = 224 or 76 percent); and ensuring connections to a wide variety of digital resources within and beyond school walls (n = 213 or 72 percent).

Respondents were much less often fully or substantially involved in applying evaluative criteria to the selection of digital resources (n = 189 or 64 percent), collaborating with the school community to assess the needs for digital resources (n = 187 or 63 percent), and, as Figure 3
shows, following a consistent procedure for assessing the effectiveness of digital resources (n = 164 or 56 percent).

Figure 3. Survey Participants’ Responses to “I follow a consistent procedure to assess the effectiveness of digital resources” (n = 295)

Section 5. What Library Media Specialists Do: Leading Innovation through the Library Media Program

This standard calls for school librarians to “lead in providing equitable access to and effective use of technologies and innovations” (NBPTS 2001, 23). Questions in this survey section pertained to providing access to technology information systems, teaching effective use of technology and other resources, engaging learners with technology, and enhancing learning.

The majority of respondents were fully or substantially involved in many areas measured by the questions in this section. Respondents possessed the knowledge and confidence to act as technology leaders (n = 253 or 86 percent), maximized access to technology for the learning community (n = 249 or 84 percent), strived to reduce barriers to the constructive use of digital resources (n = 228 or 77 percent), contributed to committees that raised awareness of technology (n = 223 or 76 percent), led the delivery of information beyond school walls (n = 213 or 72 percent), and managed school library websites (n = 209 or 71 percent).

However, fewer respondents were fully or substantially involved in providing technology training integral to the school’s professional development plan (n = 158 or 54 percent), seeking funding for technology or digital resources (n = 152 or 53 percent), participating in the technology decision-making process in the school district (n = 114 or 38 percent), and, as Figure 4 shows, forging partnerships in the community to increase technology and digital resource offerings (n = 84 or 29 percent).

Figure 4. Survey Participants’ Responses to “I make partnerships throughout the community to increase digital resources and technologies offered to learners” (n = 291)
Section 6. What Library Media Specialists Do: Administering the Library Media Program

In this section, questions focused on participants’ abilities to “plan, develop, implement, manage, and evaluate library media programs to ensure that students and staff use ideas and information effectively” (NBPTS 2001, p. 27).

Most survey respondents were fully or substantially involved in using the reporting options of library management systems (n = 282 or 96 percent) and ensuring that the school library’s mission evolved in step with technological change (n = 281 or 95 percent). Far fewer survey participants were fully or substantially involved in organizing special programs and events related to technology (n = 180 or 61 percent) and maintaining technological equipment (n = 166 or 56 percent).

Section 7. How Library Media Specialists Grow as Professionals: Reflective Practice

In this section, questions solicited the extent to which school librarians were able to “engage in reflective practice to increase their effectiveness” (NBPTS 2001, 31) through questions that pertained to both self-reflection and reflecting on the library media program. Many respondents fully or substantially participated in the reflective process by reflecting on student assessments to modify instruction (n = 228 or 77 percent) and by soliciting feedback from teachers (n = 207 or 70 percent) and students (n = 203 or 66 percent) about the use of technology in the school library.

Section 8. How Library Media Specialists Grow as Professionals: Professional Growth

According to the NBPTS (2001), accomplished school librarians “model a strong commitment to lifelong learning and to their profession” (35). To measure this commitment, questions in this section focused on furthering professional education and networking opportunities.
This section captured the many ways in which school librarians ensured their continued growth by staying abreast of innovations. These include reading professional materials (n = 240 or 81 percent), belonging to professional organizations (n = 235 or 80 percent), and engaging in face-to-face and online professional development (n = 233 or 79 percent). However, as **Figure 5** shows, school librarian leaders are much less likely to be fully or substantially involved in sharing their technology knowledge in the learning community (n = 163 or 55 percent) or by presenting at conferences (n = 114 or 39 percent).

**Figure 5. Survey Participants’ Responses to “I present technology-related professional development activities at conferences” (n = 292)**

![Bar chart showing responses to presentation of technology-related professional development activities at conferences.]

**Section 9. How Library Media Specialists Grow as Professionals: Ethics, Equity, and Diversity**

This section focused on the abilities of the school librarian to “uphold professional ethics and promote equity and diversity” (39) through questions about the ethical use of information and promoting equity and diversity.

The majority of respondents were fully or substantially aware of technology and digital resource use policies (n = 273 or 94 percent), though many fewer gave considerable input into those policies (n = 167 or 57 percent). Many were highly involved in instructing students (n = 263 or 89 percent) and teachers (n = 230 or 78 percent) on the content of these policies despite the fact that an overwhelming majority of survey participants (n = 289 or 98 percent) modeled adherence to the policies including cultivating an understanding of Creative Commons and fair use (n = 225 or 76 percent).

Most school librarians fully or substantially empowered learners from diverse backgrounds with technology (n = 261 or 89 percent), ensured that their digital collections reflected cultural diversity (n = 237 or 80 percent), and were informed about cloud-based and open-source software options to promote economic equity (n = 208 or 71 percent).
Section 10. How Library Media Specialists Grow as Professionals: Leadership, Advocacy, and Community Partnerships
The final NBPTS standard calls for school librarians to “advocate for the library media program, involving the greater community” (43). To reflect this standard, the survey contained questions about leadership, advocacy, and community partnerships.

This section reflected many fewer school librarians achieving full or substantial involvement in disseminating information about technology use in the school (n = 181 or 61 percent) and about advances in technology (n = 159 or 53 percent) to the community and few were fully or substantially involved in advocating for the use of technology in schools (n = 106 or 35 percent), as Figure 6 shows.

Also, to a lesser extent, school librarians were fully or substantially involved in developing strategies and in using technology to inspire students to make a contribution to the community at large (n = 132 or 44 percent) and were aware of information about advances in technology and digital resources (n = 160 or 54 percent).

Figure 6. Survey Participants’ Responses to “I advocate on local, state, and/or national levels for the implementation of technology in education” (n = 295)

Conclusions and Implications

National Board Certified School Librarians
This survey represented the perspectives of experienced school librarian leaders and educators working in technology-rich environments in which they balanced the demands of a flexible schedule with often sole responsibility for a large number of desktop and laptop computers, professional development, and promotion of the use of a range of resources in teaching and learning. They had achieved National Board Certification, the highest credential in the teaching profession, whereby they had successfully demonstrated their ability to integrate technology into
instruction and document accomplishments in working with various communities—school, professional, and external.

Due to the high level of materials and other support in these schools, the question arises as to whether well resourced schools attract NBC school librarians or do well-resourced schools have a higher percentage of school librarians who can be successful in the NBC process? In some instances, school librarians in low performing schools have been successful in achieving NBC (Everhart and Pearce-Webb 2004) and made differences in these schools. Economic conditions have restricted some of the bonuses for NBC teachers in various parts of the country and now award them only to those who are working in low performing schools. While it was initially believed that this would attract more NBCs to these schools, it has not been the case. However, it is anticipated that teachers already in these schools may now attempt NBC (Simpkins 2011).

Leadership in Technology Integration

Prior research on technology integration and leadership activities of school librarians has demonstrated that while professional guidelines and theory promote these roles as possible and preferable, they are not often realized because of a number of personal, school-based, and external factors. The survey results presented in this paper suggest that school librarians felt strong commitments to and experienced success with technology leadership with students to a great extent and with teachers to a lesser, but not insignificant, extent. However, when school librarians were asked to report their technology leadership outside of their school buildings, they reported much lower levels of involvement in district-wide policymaking and information-sharing activities as well as in dissemination to peers at conferences and community members.

Despite their strong self-identities as professionals capable of leading technology integration, these survey findings are consistent with Formative Leadership Theory in that school librarians experience the greatest leadership potential in their school environments, but are can often be unsuccessful in their transfer of technology leadership activities to their professional or local communities. Johnston’s (2011) further analysis of the enablers and barriers to technology integration leadership of this group found they had in place the following enablers to be technology leaders in their schools: support from professional associations, support from district administrators, serving in a dual role as a school librarian technology specialist, technology expertise, flexible scheduling, funding for technology and digital collections, and up-to-date functioning technology equipment. Barriers included competitive relationships with the instructional technologist, lack of support from a district library administrator, lack of technology expertise, fixed scheduling, and limited funding and equipment. These barriers are significant ones that would hinder community involvement.

There are three key areas in which school librarians seem to have unrealized leadership potential:

- Participating in technology-based assessment and services to enhance opportunities for all learners, especially those with special needs
- Developing processes to systematically collect, manage, and assess the effectiveness of digital resources
- Sharing their knowledge and advocating for technology to with the profession and in the community

These findings support the anecdotal evidence found at the library media Yahoo! group’s discussion list whereby school librarians who are planning to apply for NBC frequently express...
concerns about the portfolio entry “Documented Accomplishments” and how to demonstrate involvement in the school-wide and local communities, which is a requirement for this entry. Beyond this sample of NBC school librarians, all school librarians should be involved beyond their own four walls—particularly in these difficult economic times. This is an area where there is potential for enhanced professional development and further research to explore the interplay between technology leadership in the school building, and advocacy for technology and school libraries in the community could reveal positive effects on student learning.

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Values-Oriented Factors Leading to Retention of School Librarian Positions: A School District Case Study

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Abstract
The number of U.S. school librarians has greatly diminished despite advocacy efforts on the local and national level. This case study investigated the factors that led governing board members in a mid-size urban high school district to retain certified school librarian positions despite a major economic crisis. Data were collected through school district documents and interviews with the district superintendent, a governing board member, the director of finance, a school administrator, and a librarian. Using an organizational decision-making framework, the researcher constructed the following values-oriented themes contributing to the retention of librarians: employee involvement, transparency in communication, trust between district leadership and the governing board, a commitment to the district’s core values, and the value placed on the school library program by the district’s stakeholders. Findings indicated that practitioners can advocate on the basis of organizational factors that contribute to school librarian retention. Future research should investigate additional school districts’ decision-making processes in the retention of school librarian positions. All locations and names used in this study are pseudonyms.

Introduction
This study investigates the factors that led governing board members in a mid-size urban high school district to retain certified school librarians despite the major economic crisis of 2009. In the past several years, the number of school librarians has greatly diminished. Currently, only 60 percent of K–12 public schools in the United States employ a state certified school librarian (American Libraries 2007). In Arizona, the location of the study, only 38 percent of public schools are staffed with a certified school librarian (Kossan 2008).

The Brookdale Union High School District, a mid-size urban district with 15,000 students in grades 9–12, stands out from other Arizona school districts. Brookdale retained certified school librarians in its nine high schools despite a major economic crisis in which led to a cut in approximately 10 percent of its operating expenses. To fulfill mandated budget reductions, other Arizona districts either eliminated or reduced certified school librarian positions. Some districts replaced certified school librarians with paraprofessionals. Other districts eliminated library personnel completely, relying on teachers and volunteers to manage library spaces in schools.
The case study of Brookdale provides a window into the decision-making process used to retain school librarian positions, sheds light on possible future decision-making in the district, and offers implications for future research.

Literature Review
Advocacy for public school library media programs in the United States has gained attention in recent years because of drastic eliminations in school librarian positions and funding reductions in schools and school districts. Recent eliminations of librarians prompted the American Library Association (ALA) to appoint a special Task Force on the Status of School Libraries (ALA 2005). Since the adoption of its report in 2006, ALA launched several initiatives to advocate for a state-certified librarian in every U.S. public school. Resolutions on various aspects of school libraries were adopted by the ALA’s policy-making council, and responses to position and funding elimination were developed. In addition, the American Association of School librarians (AASL) created an Advocacy Toolkit that provided resources for library supporters when faced with possible position eliminations. ALA and AASL’s most ambitious school library advocacy activity to date is the improvement of school library activities under the Elementary and Secondary Education Act. These improvements include maintaining dedicated funding for the Improving Literacy through School Libraries program, establishing state goals of having a school library staffed by a state-licensed school librarian in each public school and allowing state and local professional development funds to be used for recruiting and training school librarians (AASL 2010).

Despite the above initiatives, school district decision-makers across the nation continue to eliminate school librarian positions as part of cost-saving measures. Advocacy campaigns do not always influence board members to retain school librarians. For example, despite well-organized advocacy campaigns in Medina, Washington (Whelan 2009), and Mesa, Arizona (Whelan 2008), these districts still chose to eliminate librarians. The unevenness of decisions to retain or eliminate is perplexing; little is understood about why some school districts choose to retain school librarian positions while others do not.

The literature on school library advocacy consists of strategies and techniques for advocacy (e.g., Bush 2007; Hainer 2005; Leverett 2001; Schuckett 2005; Williams 2006) using evidence-based practice as an advocacy tool (Asselin 2002; Braxton 2003; Loertscher and Todd 2003; Logan 2006; Todd 2003, 2006, 2008a, 2008b) and reports of successful advocacy initiatives (e.g., Burris 2006; Giambra 1998; Kenney 2008; Russell 2004). A search of the literature revealed no empirical studies specifically describing why or how school district decision-makers choose to retain or eliminate school librarian positions. Therefore the study of Brookdale Union High School District’s decision-making process in retaining school librarians addresses a gap in the literature in school library advocacy.

Method
The researcher used a descriptive case study approach (Yin 2008). This approach is ideal for uncovering the complex factors that led the Brookdale Union High School District to retain school librarian positions in an economic crisis. Yin describes four applications of a descriptive case study. First, the meth can explain complex causal links in real-life decisions. Second, a case study can describe the real-life context in which the decision occurred. Third, it can describe the
decision itself. Finally, descriptive case studies can explore those situations in which the decision being evaluated has no clear set of outcomes.

The descriptive case study method was appropriate for examining the multiple perspectives of the board, district personnel, and school librarians from the district observed in this study. The method also was appropriate for examining Brookdale in context. While the outcomes of reducing the budget and retaining school librarians were clear, the circumstances surrounding these decisions were complex and involved multiple stakeholders, thus affirming the appropriateness of the case study method.

To ensure construct validity (Yin 2008) and data source triangulation (Denzin 1984), multiple sources of evidence were collected and analyzed. These sources included financial reports, governing board minutes, and district documents, including the district’s core values statement and an explanation of the district’s Learning System. Additionally, using a semistructured format, the researcher interviewed a governing board member and four school district employees: the superintendent, the administrator of finance, an assistant principal, and a school librarian. Participants were recommended by the superintendent and invited by the researcher. The interviews were conducted individually, with the exception of the assistant principal and librarian, who were interviewed together. Participants were given copies of the interview questions. These questions guided the interviews, but interviews were not limited to the written questions. Interviews were audio recorded and transcribed. The researcher read through the entire data set and then analyzed the interview transcripts against each other and the other data sources. Codes were assigned to excerpts from the interviews, board meeting minutes, and other documents. The codes were then grouped into categories. The researcher then read through the entire data set looking for disconfirming evidence or contradictions. Themes were then constructed through the lens of organizational decision-making (Zey 2007).

Context
Brookdale Union High School District is a mid-sized urban school district in Arizona. The 97 year-old district serves 15,000 students through nine high schools and two alternative programs. One Brookdale high school is consistently recognized as one of the country’s top 100 high schools in *U.S. News and World Report*. In late 2008, the Arizona economy began to take a turn for the worse. Unemployment rose, and new housing, which is the cornerstone of the Arizona economy, came to a screeching halt. Because of the economic turndown, Brookdale Union High School District administrators expected deep reductions in state funding, as did all Arizona public education decision-makers. Approximately 48 percent of the Arizona state budget supports K–12 education (Arizona Joint Legislative Budget Council 2010). As the state’s economy faltered, Brookdale leaders knew that at some point the district’s budget would be affected. They began planning in anticipation of being asked to return money to the state to resolve a mid-year deficit.

In January 2009, the district was asked to return $2 million to the state from its original allotment, which amounted to 3–4 percent of the total district budget. However, at that time, 85 percent of the district budget was encumbered in contractual salaries, so the cuts came from the remaining 15 percent of the budget, which consisted of operating expenses such as utilities, transportation, supplies, and soft capital such as carpet replacement, library books, and vehicles.
To determine and prioritize potential mid-year reductions, the leadership reached out to stakeholders. Each member of the district leadership team, to whom Superintendent Dr. Jane Jones refers as "the cabinet," visited a school and spoke with the staff there. These district leaders explained the reality of the situation to the school staff and warned that the coming fiscal year would be even worse. At the school sites, staff brainstormed ways to reduce operating expenses. Ultimately the district returned the $2 million to the state through cuts to operating expenses and soft capital and did not eliminate any noncontractual personnel. One of the largest savings came from reduction of energy consumption at the school sites. The district achieved this through eliminating small appliances in areas other than staff lounges and halting the use of televisions as classroom clocks, among other measures. However, the 2008–9 budget reductions were only the tip of the iceberg. Like all school districts in Arizona, Brookdale expected an even smaller budget allocation in 2009–10. In a communication to district residents in March 2009, Superintendent Jones outlined the potential consequences of current and future budget reductions. She stated:

*Like many of our neighboring districts in the [area], we have diligently worked to continue to provide a quality education to every student while maximizing the use of our resources. The district continues to manage its finances with great care. We have not filled positions, purchased equipment or supplies that were not essential and we have conserved energy at every point possible on a daily basis. As we look to the future, we share the most serious concern of all school districts related to what the state legislature may propose as cuts to next year’s budget. These cuts, which could exceed $13 million for our district, will significantly increase class size, potentially cut programs like band, athletics, and the arts and cause the district to reduce its staff, including teachers.*

The district leadership knew that the anticipated budget reduction, possibly $13 million in the forthcoming fiscal year, would force the district to eliminate positions. Superintendent Jones stated, "If 85% of [the budget is] tied up, and you’ve got to cut $13 million, and you can’t not provide transportation, and you can’t not pay your electric bill, and you can’t not provide some school supplies…it doesn’t take long to figure out that you can’t get to $13 million without touching personnel costs."

Once again, in early 2009, district leadership reached out to stakeholders to determine how and in what order to reduce costs for the upcoming fiscal year. Superintendent Jones and her leadership cabinet held meetings at each of the district’s nine schools, outlining the potential budget scenario and asking for input from staff. Superintendent Jones explained the mechanism for gathering stakeholder input:

*Based on the philosophy that people who are affected by a decision should have some input into the decision, we went back out to the schools and worked with every staff member, and I do mean every staff member: the maintenance department; the clerical staff; instructional aides; teachers; administrators. Everybody on the campus had the opportunity to meet in groups, to learn more about what was happening with the budget, and then to provide input into what should we do...We gave out this list that said, “Here’s what we spend money on. Here [are] your choices. Look at this list, and see if you can’t develop a list of $13 million worth of cuts,” which was simultaneously enlightening and empowering to our staff.*
While conducting information sessions with staff, district leadership provided a caveat for input about potential budget reductions. Leadership would do everything in its power to protect the Learning System. The district’s Learning System is a continuous cycle of curriculum, instruction, and assessment.

A district presentation (Mesquita 2010) provides the context and importance of the Learning System:

Just like the pieces of a puzzle, the Learning System will not give a complete picture of success when looked at separately. ... One component of the Learning System is no more important than the other. They are all aligned to the state and national academic standards and are all used to help us strive to make continuous improvements year after year. We are always in a constant effort to improve each aspect of the Learning System so that we can provide the best education possible to all students.

The Learning System, developed and refined over the last forty years (Mesquita 2010), represents a very important focal point in the district. Each person interviewed for this study mentioned the Learning System as a framework for how the district addressed and prioritized eliminations. Superintendent Jones noted that the district would attempt to make cuts as far away from the classroom as possible to protect the Learning System. After the schools met in small groups to determine possible budget reductions, the suggestions were forwarded to the cabinet for analysis. Superintendent Jones estimated that the cabinet spent more than 200 hours collectively analyzing, prioritizing, and adjusting potential budget reductions, which was referred to as “the list.” (The researcher was unable to obtain a copy of the prioritized list of budget reductions.) Simultaneously, the cabinet began a series of conversations with the governing board about the items on the list. The list amounted to a total of $13 million in reductions, anticipating that this number was the maximum that the district would be required to cut. However, even in theory, the development of the list was difficult and could not be prioritized in a way that spared all positions. Superintendent Jones explained:

We prayed every day that we weren’t going to actually have to get to $13 million. The things at the top of the list…we figured we could cut $1 million and it wouldn’t be too bad. About halfway through the list, it was not possible not to cut positions. Then you have to think, “Okay, if you have to do it, which positions can you cut?”

In addition to the prioritized list, district leaders attempted to preserve resources by moving expenses into other budget allocation areas. For example, they identified items that could be paid for from federal funds, such as Title I (which provides monies to improve academic achievement of the economically disadvantaged), rather than state allocation. When the state budget was passed on the eve of the new fiscal year, Brookdale Union High School District was directed to eliminate $8.5 million from its total operating budget for 2009–10. The reductions were made using the prioritized list that was developed over the previous year.

To fulfill the reductions, the district eliminated 120 positions, primarily classified (nonteaching) staff. Included in the classified staff reduction were the library media center aides, leaving the libraries staffed with one certified school librarian and no paraprofessional assistance. The library’s book and electronic resource budget also was reduced at each school. There were a number of certified teachers, retired from the district and employed by a lease-back company,
who also lost positions. The remaining budget reductions came from soft capital, normal employee attrition, and retirements. While the library programs were affected, the certified librarian positions remained. The rationale for retaining the certified librarian positions was described by Superintendent Jones:

We began to hear news from other districts that they were eliminating [certified librarian] positions ... there were schools across the state that made the decision to eliminate the certified position and keep the support-staff position. It didn’t take us long to really come to the decision that we could probably live without the support-staff position, but that keeping the certified position was important to us. It was important for a variety of reasons. ... So we knew we had to keep somebody in [the library], and ... it didn’t really take us very long to figure out that the certified position was the one position with the level of expertise that we really needed to have.

In summary, while the school district was faced with significant budget reductions, a well-crafted prioritization process with a focus on the core values and mission of the school district allowed the governing board to make informed choices while maintaining instructional integrity. The following discussion provides insight on the themes constructed through the analysis of stakeholder interviews and district documents.

**Findings**

Using organizational decision-making as a framework, the researcher constructed several values-oriented themes that influenced the decision to retain certified school librarians at each school. Simon’s (1955) administrative model of organizational decision-making is applicable to consequential organizational decisions such as budget reductions. What Simon calls —non-programmed” decisions applies in this case. Non-programmed decisions are complex and non-routine. For example, the norms of school district decision making are influenced by the complex relationship of the district’s values and organizational structure (Hinings and Greenwood 1987). Nevertheless, educational organizations share many common cultural practices and tacit decision-making patterns (Greenwood and Hinings 1993; Patterson et al. 2006). These practices and patterns served as a lens through which the following themes were constructed: employee involvement; transparency in communication; trust between district leadership and the governing board; a commitment to the district’s core values, including the Learning System; and the value placed on the school library program by the district’s employees and decision-makers. Each theme is discussed in the following sections.

**Employee Involvement**

A cornerstone of the district’s decision to retain school librarians was employee involvement in the decision-making process. While the budget reductions were the ultimate responsibility of the governing board in consultation with the district administration, a carefully crafted process that included multiple employees at various levels was carried out. Governing Board Member Pat Reed described the process in this exchange:

Researcher: So what I’m hearing is that the community was involved, that it just wasn’t made at [the administrative] level. You got feedback and input.
Reed: Yes. It was principals, and it was teachers, and the [teachers’ association] had a big say as well.

Administrator of Finance Jerry Hinter also discussed employee involvement in the process. Additionally, he noted that there was agreement on the priority order of the eliminations:

We did get input from everybody, and ideas. It was interesting, when you go around and talk to that many people, how similar a lot of the items lined up. There really weren’t huge differences...generally everybody was of the same sense in terms of protecting classrooms and the integrity of the [learning] system.

Furthermore, Superintendent Jones described the employee involvement process as unusual for a school district:

There are other superintendents who would tell you that I was crazy to go out and ask every employee for their input. It’s not standard...I didn’t hear any other superintendent talk about going out for that level of input. But the fact that the custodian had the chance to weigh in on the school budget—and that we would be that transparent with what things cost—is pretty unusual.

All participants agreed that the process for gathering input for making decisions about budget reductions involved employees at multiple levels. However, no participants reported that parents or students were involved in the process. An examination of governing board meeting minutes, where community members would normally give input, revealed little to no parent or student participation in the process. However, the district informed parents and students about the process through website announcements, newsletters, and e-mail communication.

An absence of parent and student involvement in budget decisions is not out of the ordinary. Cotton and Wikeland (1989) found that school administrators were reluctant to involve parents in matters of governance and budget. Fielding (2001) described student involvement as a phenomenon where educators and parents speak too readily on behalf of students without their consultation. Although parent and student involvement was not reported by the participants, the decision-making process in Brookdale can still be characterized with a high degree of employee involvement.

Transparency in Communication

Interviewees consistently characterized the budget reduction process as transparent. Lauren Doss, librarian, and Sandi Andrews, assistant principal, both felt that the process was transparent:

Lauren: Yes. I think communication was very important and involvement, just in that buy-in of “we’re not sending this down to you. And we want you to be a part of this process...”

Sandi: Well, everybody’s opinion counts. “We want to hear what you have to say, we might not be able to use it all, but we’re going to listen.” I think everybody was allowed an opportunity to speak if chosen to do so.
Administrator of Finance Hinter also characterized the process as transparent:
It was very transparent. I don’t know how it could be more transparent than the people being able to see what was going on, because it was their time, their investment that was leading to the results … my opinion is that everybody felt they had opportunity to be heard, and were heard.

However, Superintendent Jones noted that while the transparent process was not without risks, it also has the potential to create an environment where stakeholders discuss value and priorities:

*The risk is that it begins in a sort of fearful environment. It potentially pits employees against each other. “Let’s see. I think my job is really important, but I don’t think that job’s important, and, oh my God, we pay that much for that?” So it really begins to provoke some conversations about value.*

Transparency is an important value in that organizations talk increasingly about the necessity of communicating with stakeholders and the community (van Riel 2000). A trend in organizational outreach to constituents is to —make important information about their practices available to external audiences” (Christensen 2002, 166). One can argue that during internal shared decision-making processes the same principle applies.

**Trust between District Leadership and the Governing Board**
Another theme was the level of trust between the governing board and the district’s leadership. The interviews revealed a significant level of trust between the superintendent, district staff, and the governing board. Governing Board Member Reed described a high level of trust with district leadership:

*The fortunate thing about our school board is we’re not trying to say, “Oh, we’re school board, so we say—and we’re [going to] do this.” . . . We want recommendations from the expert. So if you ask all these experts, “What’s your advice? Give us your expert advice.” Then we listen, and we weigh what we think and what we know with what they’re telling us, and that’s how decisions really get made. … I’m just really impressed with the staff at this district, as far as the cabinet. They’re very, very intelligent and knowledgeable. ... Thank God, because that’s what you want.*

Superintendent Jones also noted the high level of trust in district leadership, particularly in the administrator of finance, Jerry Hinter. She stated, —You will find, if you talk to governing board members, they will also compliment Jerry’s [ability]—just the idea that we had somebody competent in that area, that we knew we could trust his advice and his analysis.”

The relationship between the school board and school district personnel can affect decision-making. There is a significant body of literature that indicates that the relationship between the district superintendent and the school board significantly affects the quality of education and student academic success (Peterson and Williams 2005). In terms of superintendent-recommended action items, favorable board voting is related to the level of trust between the superintendent and the board president (Petersen and Short 2001). The interviews of Superintendent Jones, Administrator of Finance Hinter, and Governing Board Member Reed indicated a significant level of trust between the district leadership and the governing board.
Commitment to District’s Core Values

In each interview, participants noted that the district’s core values, especially its Learning System, were integral to the process of prioritizing reductions. Superintendent Jones noted:

*The district’s Learning System is who we are. The quickest way for me to lose my job would be to lose my focus on the Learning System, as the superintendent. If the governing board ever lost faith that I understood the importance of that Learning System, they’d be looking for a new superintendent.*

Mr. Hinter, administrator of finance, also noted the central focus on the Learning System:

*I always go back to the Learning System; okay, what’s the impact on the Learning System if we don’t have that position versus the other position. And that becomes an important … variable in trying to decide what [we are] going to cut.*

*Governing Board Member Reed saw the importance of the Learning System in determining priorities and reductions. She also explained the relationship between the Learning System and the decision to retain school librarians when she stated, “I think because we have our Learning System [and] our core values running across the curriculum, [libraries are] a priority in our district.”*

Assistant Principal Sandi Andrews also commented on the Learning System as integral to the budget process. She stated, “I think that there’s no doubt that [the Learning System] influences budget … our district for lack of a better word, lives and dies by that and how they all effect each other.” Finally, librarian Lauren Doss noted how the Learning System provides a framework in which to focus on students. She explained, “I would say [the Learning System] has to [be a priority] because that is what we hear, what we live. I just always think that students are the priority. That is what I think and what I hear so frequently, “What’s going to be the best for the kids?”

The district’s Learning System is an indication of the development of shared values over a period of time. Each participant indicated the central place that the Learning System has in driving the mission and vision of the district. The development of the Learning System as a set of core values is an example of purposing, defined as “that continuous stream of actions by an organization’s formal leadership which has the effect of inducing clarity, consensus and commitment regarding the organization’s basic purposes” (Vaill 1984, 91). The district leadership, over time, successfully purposed the Learning System as a focal set of core values for district stakeholders.

Value of the School Library Program

Each participant noted the value of the school library program as it relates to the core mission of the school district as a reason for retaining certified school librarians during the time of determining budget reductions. Administrator of Finance Hinter acknowledged the role of the librarian as an expert guide in using technology for research and promoting critical thinking. He stated, “When students do research, there is so much information out there for them to access. They’re into a lot more critical thinking than they used to have to do to try to arrive at a conclusion or to draw up their paper. [Librarians are] a big contributor to the schools.”
Superintendent Jane Jones noted the librarian’s role in schoolwide curriculum integration and literacy promotion. She also commented on the librarian as teacher:

> They bring a unique expertise to providing services to students ... if we want to make sure that literacy is seen as everyone’s responsibility, then the media center’s director plays a unique role in doing that because ... they work with teachers from across the curriculum. They have a unique perspective on what people are doing. ... They deliver instruction in unique ways. ... The decision was focused on doing everything we could to make sure that we held onto those positions. ... That’s just a priority that we had.

Speaking for the governing board’s perspective, Governing Board Member Reed noted:

> We see that ... the library is integral to just about every single area on campus, every concept, every core subject, including electives. ... The [library] is integral to every area, and that’s that. So how can you cut the librarians?

The participants indicated an understanding of the multiple roles of the school librarian in the school. As described in Information Power: Building Partnerships for Learning (ALA and AECT 1998), and reaffirmed in the Standards for the 21st Century Learner (ALA 2007) and Empowering Learners: Guidelines for School Library Programs (ALA 2009), the four roles of the school librarian (teacher, instructional partner, information specialist, and program manager) appear to be understood by stakeholders at all levels of the school district.

This understanding is uncommon. Levitov (2010) states most administrators have little understanding about the roles the school librarian can play in the school academic program. Attempts at educating school administrators and decision-makers about the role of the school librarian are abundant in the literature (Brisco 2003; Hartzell 2007; Howard 2009; McGhee and Jansen 2006; Nutt 2003), which underscores the importance of Brookdale district stakeholders’ understanding of the school librarians’ role. While this study does not attempt to demonstrate causation between understanding of school librarians’ role and the retention of school librarians during an economic crisis, this theme is especially important to note.

**Conclusion**

This case study was an attempt to uncover the decision-making and rationale behind one school district’s decision to retain school librarians during a time of fiscal crisis. Themes based on the values and priorities of the school district were constructed through interviews and examination of documents. Additional investigation should focus on whether the values and priorities found in this case study are evident in other school districts that have chosen to retain school librarians. Additionally, future research should focus on employee and stakeholder understanding of the role of the school librarian and its impact on retention of school librarian positions. Through active participation in the culture of the school district in which they work, librarians can help build a culture that ultimately supports their retention.

While school librarian positions in the district observed for this study were not eliminated in the latest round of cuts, it is clear that, given the state’s economic problems, these positions might not be salvaged in the future. Brookdale Union High School District has always staffed its library media centers with certified, full-time school librarians, but administrators and the governing
board know of the bleak economic picture in their state. The district anticipates even deeper cuts in upcoming years. When asked about the possibility of eliminating school librarians in the future, Superintendent Jones stated,

> It wouldn’t be honest of me to say [school librarian positions] would never be on the table. We still think [school librarians] provide unique, valuable services that, in their absence [pauses]. ... I don’t know what staffing at a high school looks like without a librarian in the building.

The Brookdale Union High School District’s clear strategic focus and commitment to its core values are an encouraging signal for the school library program. Only time will tell whether librarians in Brookdale will become a beacon of the future or a relic of the past.

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Cite This Article

Year 7 Students, Information Literacy, and Transfer: A Grounded Theory

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Abstract
This study examined the views of year 7 students, teacher librarians, and teachers in three state secondary schools in rural New South Wales, Australia, on information literacy and transfer. The aims of the study included the development of a grounded theory in relation to information literacy and transfer in these schools. The study’s perspective was sociocultural, and grounded theory was adopted as the method. This paper presents a critical evaluation of the advantages and limitations of grounded theory. The key findings of the study are outlined and discussed. The findings are related to the extent to which students valued information literacy practices and the factors involved in determining whether students were likely to transfer information literacy practices across time and school subjects. The study identified three groups of students: (1) a minority, who were engaged in their own learning, valued information literacy practices, and were likely to transfer these practices; (2) a majority, who could potentially be engaged in their own learning and who valued information literacy practices in principle, but were unlikely to transfer these practices without intervention by a teacher or teacher librarian; and (3) a very small minority, who failed to grasp the concepts of learning or information literacy practices and could not transfer such practices. The study also found that the lack of a culture of transfer in the schools was a significant hindrance in developing students as transferrers. The findings are discussed and a grounded theory of information literacy and transfer is presented.

Introduction
Despite a substantial growth in both research and professional literature on the topic of information literacy, the question of whether school students transfer information literacy practices has not been considered in any depth within this literature. In the field of school library media, studies of information literacy teaching, information literacy models, and students’ attitudes to information literacy appear to have assumed that students will transfer information literacy practices. Evidence of transfer or lack of transfer in schools is largely anecdotal, and there is clearly a gap in information literacy research. This author sought to fill that gap. This article presents the aims of the study and its key findings, including the development of theoretical categories, which were tested using theoretical sampling (Charmaz 2006). The findings are discussed, providing an interpretion of the data gathered and a comparison with the findings of this study with existing literature on information literacy and transfer in schools. The grounded theory is then presented.
The term information literacy practices is favored here over the more limited term information literacy skills. Lloyd (2007, 2010) argues that information literacy can be viewed as a practice as opposed to a set of skills. The term practice, in the school context, implies that students engage in a range of information-related learning activities, with a focus on students gaining new knowledge, and that students are reflective practitioners. That is, students are not merely using a set of skills (e.g., information retrieval or information evaluation) mechanically, and students do not view these skills in the same way as they might view computer skills.

**Aims**

This study examined a range of complex issues relating to information literacy practices and transfer, with the focus being on year 7 students in three state secondary schools in rural New South Wales, Australia. The aims of the study were to

- Examine and interpret these students’ views on and use of a range of information literacy practices;
- Examine and interpret these students’ views on the extent to which they transferred information literacy practices across time and across subjects;
- Examine and interpret the views of teacher librarians and teachers in these schools on information literacy practices and transfer; and
- Develop a grounded theory relating to the above.

**Literature Review**

**Library Skills to Information Skills to Information Literacy in Schools—A Historical Review**

From a review of the literature, it would appear that the term information skills was not used until the 1980s; library skills appears to be the most common term used before then, although study skills was used from the late 1960s. In relation to teaching skills and developing positive attributes among students as library users, the term library instruction was most often used before the 1970s.

While the emphasis on the use of the library and its resources was most common before the 1970s, many authors referenced more than basic library skills and discussed aspects such as information evaluation and note taking (Fargo 1939; Douglas 1949; Grimshaw 1952; Gardiner 1954). The 1960s saw more emphasis on students’ use of more cognitive skills, such as book content evaluation, but still the predominant view was that students needed to be taught library skills (Leyland 1961; Rossof 1961; Brown 1963; Cheshire 1966; Delaney 1968). An exception in the 1960s is Henne (1960), who argued that, while library skills were important, students should be able to evaluate what they read. The literature of the 1960s evidenced a growing realization that students may need more than locational skills to be effective library users (Cheshire 1966; Freund 1966; Cleary 1966; Davies 1969). In 1969, the American Library Association and the National Education Association published Standards for School Media Programs, which was viewed as a major step in developing information skills in school libraries. In the 1970s, the trend toward including a wider range of skills than basic library skills continued (Polette 1973;
Herring 1978). In the United Kingdom, Beswick’s (1977) influential work placed what he termed library research skills in the context of resource-based learning.

In the 1980s, the term information skills became the accepted term and a key influence in this acceptance was Marland’s 1981 report, which identified nine key questions students should ask, and linked these to skills students would use. It is interesting to note here that two highly quoted researchers, Stripling and Pitts (1988) preferred the term research skills, although this term included many of the cognitive elements of information skills, such as identifying purpose, posing questions, and evaluating information resources.

The 1980s also saw publications by two key authors, Irving and Kuhlthau. In the United Kingdom, Irving stated that “study skills are those which are associated with the acquisition and use of information in the pursuit of knowledge. Most of the skills are related to ways of thinking” (1983, 3). Kuhlthau (1987) argued that information literacy, a combination of information skills and computer literacy, should be a key element of any school library media program. In the schools’ context, this is one of the first uses of the term information literacy.

Thus it can be seen that by the 1990s the wider concept of information literacy had been introduced, although the use of the term information skills was very prevalent in the school-related literature (e.g., Eisenberg and Berkowitz 1990; Herring 1996; Small 1998). Key publications relating to information literacy in schools in the 1990s included Doyle’s (1994) overview of information literacy in society; Kuhlthau’s (1993) influential Seeking Meaning; the American Association of School Librarians and Association for Educational Communications and Technology’s (1998) Information Power, which declared that information literacy should be a central plank in the mission of any school library; and the Australian School Library Association’s (1993) Learning for the Future, which identified information literacy as a key concern for teacher librarians in Australia. Information literacy was therefore accepted as the term to be used in schools by the 1990s.

In the past twenty years, the term information literacy has been much debated, and the twenty-first century has seen the development of terms such as computer literacy, digital literacy, and media literacy. These terms have often been accompanied by the word skills. As stated above, this author prefers the term practices and takes the view that the other literacies may be viewed as a subset of the encompassing term information literacy.

Definitions of Information Literacy
The professional literature lacks one accepted definition of information literacy in schools, which reveals evidence of some contradictory understandings of what constitutes information literacy or what attributes the information-literate student might have.

Langford stated “Is it [information literacy] a concept or a process?” (1998, 59). Doyle’s definition was “defined as the attributes of one who is information literate,” and defined a person who is information literate as someone who “recognises that accurate and complete information is the basis for intelligent decision making; [and] recognises the need for information” (1994, 2–3). While Doyle’s often-quoted definition is a starting place in defining information literacy in the school context, it can be seen as limited. For example, while a student might recognize the need for information," this need would have to be defined in terms of a clear purpose if recognition is to be of value.
The AASL and AECT’s (1998) definition of information literacy is comprehensive when taken with the standards and the indicators, but it can be viewed as being too all-encompassing. It can be argued that a person can be information literate but have little appreciation of literature. The standards’ definition also can be seen as culturally biased because it assumes that information-literate people will favor democracy, and this is a questionable assumption. The 1998 standards were updated by the AASL; the new standards (AASL 2007) also focus on information literacy, but they attempt to define an information-literate person.

Abilock also took a wide view of information literacy, arguing that “information literacy is a transformational process in which the learner needs to find, understand, evaluate, and use information in various forms to create for personal, social or global purposes” (2004, 1). Herring and Tarter (2007) introduced the notion of transfer, which is not found in other definitions. Williams (2001) was critical of definitions of information literacy because they did not focus on student learning. Limberg urged educators in schools to change their attitude toward information literacy teaching and argued that information literacy teaching in schools should be aimed at “students developing a repertoire of understandings of information seeking and use” and not merely at students learning a process (2005, 47).

It is clear that no one definition of information literacy will encompass all aspects of this complex concept. For this researcher, information literacy is a critical and reflective ability to exploit the current information environment and to adapt to new information environments. It also is a practice. It can be seen as a critical ability in that, before students can effectively use information literacy practices in their current information environment, they must have the ability to think critically about why they might use the practices, how they might use the practices, and whether they might use these practices in the future. It can be seen as a reflective ability in that students also need to think about information literacy practices in relation to their own learning style, that is, take a metacognitive view. Information literacy as a practice can be viewed in the students’ application of information literacy in the context of their own information environments.

**Information Literacy Research**

While the literature on information literacy in schools is large and growing, much of the writing on information literacy, while informative and of use in context, is not based on empirical research. This section seeks to review key studies in information literacy research, which informed the present study, by critically reviewing existing research’s findings and methods.

**Kuhlthau’s Research**

In the school context, the work of Kuhlthau (2004) has been the most influential and is the most quoted. Kuhlthau outlined a number of research projects carried out from the 1980s onwards. Kuhlthau’s studies broke new ground in information literacy research in the school context by examining not only how students went about finding relevant information for an assignment, with a focus on the task the students faced, but also on “thoughts, feelings, actions, strategies and mood” (37). A criticism of Kuhlthau’s work is that there is little focus on the transfer of information literacy practices.
Students’ Information Seeking

As was noted above, the term information search process referred to by authors such as Kuhlthau (2004) is often used to mean a wider process than using resources to find relevant information. Studies of information seeking by students in schools have examined students’ strategies when using print or digital resources. Alexandersson and Limberg (2003), who take a sociocultural perspective, found that students’ information seeking often focussed on gathering facts rather than on deep learning. Limberg et al. (2008) argued for focusing more on learning goals and meaningful learning for students rather than the more common information-skills approach. Branch (2001), Chelton and Cool (2004), and Gross (2004) have all indicated that many students were not effective information seekers.

Bilal (2004) and Bilal, Sarangthem, and Bachir (2008) examined information seeking in digital libraries, and their conclusions reflected Kuhlthau’s (2004) findings on uncertainty and satisfaction in relation to information seeking. Chung and Neuman (2007) studied high school students’ approaches to information retrieval and concluded that eleventh-grade students’ understanding of topics increased during information seeking. Myers, Nathan, and Saxton (2006) examined barriers to information seeking in school libraries, and these barriers included insufficient collaboration between students and a lack of focus by students on their previous information-seeking activities.

Although they focus on different areas of research, the above studies on information seeking, taken as a whole, demonstrate the difficulties faced by students in seeking relevant information.

Other Information Literacy Research

In relation to information literacy models, Wolf (2003) conducted a case study of the use of the Big Six information skills model (Eisenberg and Berkowitz 1990) and examined the model as a potential metacognitive tool. Wolf found that students who used the Big Six model had a higher level of engagement with not only the content of their learning, but also with the process of completing the assignment.

Empirical studies of the use of the PLUS model (Herring 1996, 2004, 2011) have been conducted by Herring, Tarter, and Naylor (2000, 2002) and Herring (2006). These studies demonstrated that students favored the use of the model because it helped them in identifying existing knowledge, searching for information, forming questions, and being organized in their approach to completing an assignment. A minority of students, Herring et al. (2000) stated, preferred to use their own approach to completing the assignment task because the PLUS model did not suit their learning style. The key findings of Herring’s 2006 study were that a majority of students viewed the PLUS model as a beneficial tool, and that it enabled some students to take a metacognitive view of their understanding and application of information skills. Herring (2006) noted that the study did not examine what factors might have influenced students’ views on using information resources. The views of teachers in Herring’s 2006 study indicated that they saw benefits in students’ use of a scaffold such as the PLUS model, and the teachers indicated that they saw evidence of students transferring information skills across levels in the school, although the evidence was anecdotal.

More recently, research by Bomar (2010) noted students’ reliance on unstructured web searching and argued for an emphasis on lifelong learning as the basis for teaching information literacy. Donham (2010) argued that self-assessment by students should be encouraged in relation to
students’ information seeking and should influence the teaching of information literacy in schools. Hamilton (2009) focused on the use of new media and Web 2.0 tools to enhance the teaching of information literacy in schools. McGregor (2011) argued that teaching students how to synthesize would improve their information literacy practices and make them less prone to plagiarism.

In the school context, a wide range of topics can be explored by researchers in information literacy. Research on "new" literacies such as digital and media literacy (e.g., Jones-Kavalier and Flannigan 2008) add value to the debate but still need to be viewed in the wider information literacy context. There has been a distinct lack of research of information literacy and transfer schools, the exceptions being studies by Herring and Hurst (2006), Herring (2010), and Herring and Bush (2011).

**Transfer**
Transfer has been studied in the educational context for more than a century. There is no single agreed definition of transfer. Traditional definitions tend to stress repetition (Detterman 1993). Royer, Mestre, and Dufresne (2005, 83) define transfer as "a term that describes a situation where information learned at one point in time influences performance on information encountered at a later point in time," emphasising prior learning more than repetition. The most common types of transfer are near transfer, involving similar situations, and far transfer involving dissimilar situations (Haskell 2001). Haskell (2001); Fogarty and Pete (2004); and Royer, Mestre, and Dufresne (2005) argued that environmental, cognitive, and sociocultural perspectives on transfer need to be taken into account. These authors claimed that transfer was complex and influenced by many factors. A sociocultural perspective on transfer was emphasised by Volet (1999), and Royer, Mestre, and Dufresne (2005) took a similar view, identifying the need for transfer studies to account for the influence of the wider environment (e.g., places and people). Thus, in the school context, if students are to transfer knowledge and practices, they will need to be supported by the school environment, including school staff and fellow students. Haskell (2001) argued that unless a culture of transfer existed in an educational context, transfer was unlikely to happen.

This review of the literature has attempted to highlight key issues relating to information literacy and transfer in schools and to identify some of the challenges teacher librarians and teachers still face in improving their students’ information literacy practices.

**Method**
This critical review of the method used in the study explores the sociocultural perspective adopted by the author; constructivist grounded theory; data collection; and data analysis and interpretation.

**Theoretical Perspective**
The theoretical perspective of this study is a sociocultural one. Adopting this perspective implies that the researcher views learning and knowledge acquisition as being influenced by social and cultural factors. Limberg (2010) argued that researchers adopting a sociocultural perspective of learning have highlighted social aspects and the need to focus on the situatedness of information literacy, with the research interest directed at the interaction between humans and tools for studying, teaching and learning information literacy.
This study therefore sought to take into account the environment, culture, and social interactions between staff and students in the three schools in which the study took place.

Constructivist Grounded Theory

The researcher took a constructivist grounded theory approach (Charmaz 2006). Constructivists take the view that knowledge is constructed by individuals (e.g., school students) in a social context and that researchers do not merely report research findings, but interpret the research participants’ construction of reality (Pidgeon and Henwood 2004).

Grounded theory was first proposed by Glaser and Strauss in 1967. There have been several revisions of the theory since, including Strauss and Corbin (1998). Constructivist grounded theory was developed more recently, and its leading advocate is Charmaz (2006). Key aspects of constructivist grounded theory, which distinguish it from other objectivist versions (e.g., Bryant 2003), are that constructivist grounded theorists view the researcher as an interpreter of data, not a completely objective analyst of data; and that grounded theory does not emerge from the data, uninfluenced by the researcher, rather it is constructed by the researcher who interprets the data, which is gathered through active interactions with research participants. One common element of grounded theory is that there is no research hypothesis. The researcher seeks to gather data around a topic, interpret the findings as objectively as possible, and develop a theory.

In this study, the researcher followed the steps in constructivist grounded theory as recommended by Charmaz (2006). The researcher was involved in data gathering and coding at several stages. The techniques for data gathering (staff interviews and student diaries, questionnaires, and interviews) and analysis are discussed below. One feature of constructivist grounded theory that Charmaz (2006) urged researchers to adopt is memo writing. The value of memo writing lies in the opportunity it gives the researcher to constantly reflect on what has been done in the study and to consider possible areas that may need more research.

Coding is a significant feature of grounded theory. Pidgeon and Henwood (2004) note that grounded theorists adopt a range of coding methods, but the authors comment that coding in constructivist grounded theory research is used to interpret the statements of participants, not merely to report these statements. Coding is therefore not used to identify common keywords that link the participants’ views, but to interpret, according to Charmaz (2006), what is happening in the data. In the present study, initial coding was done by examining the data line-by-line for each episode of data gathering. This was followed by focused coding, in which the researcher re-examined both the data and the initial codes and identified significant codes. The following is an example of initial coding from this study:

**Student Diary Entry on Brainstorming**

<table>
<thead>
<tr>
<th>Student Diary Entry on Brainstorming</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking about tyrants. Helping them to get information. Sharing information to find out how evil the ruler.</td>
<td>Valuing brainstorming as a means of sharing information and ideas.</td>
</tr>
</tbody>
</table>

The word valuing is the researcher’s interpretation of what is happening in the data.
These codes, developed from initial and focused coding, help form the basis of categories developed by the researcher. Theoretical coding, which helps move your analytical story in a theoretical direction, is the final step before category formulation" (Charmaz 2006, 63). Examples of categories from this study were thinking and making connections, being engaged, using information literacy practices, and awareness of the information environment. The process of coding and recoding and further testing of coding, is referred to as constant comparison (Pidgeon and Henwood 2004), and the researcher seeks to reach a saturation point where no other codes or categories can be identified from the data. This element of grounded theory has been criticised by authors such as Dey (2004), who argue that it is difficult to decide when constant comparison should stop.

Theoretical sampling (Bryant and Charmaz 2010) is used to test the categories the researcher has developed in that hope that they will form the basis of a grounded theory. One form of theoretical sampling, which was used in the present study, is to return to the research participants (in this case school staff and students) and ask them to comment on the categories. Given no substantial difference between the views of the researcher and the participants, the categories can be viewed as sound.

The final stage of grounded theory is for the researcher to develop theory out of the relationship between the categories identified. Charmaz (2006) identified key differences between objectivist and constructivist theory development, and argued that, while objectivists sought to develop theory to test hypotheses or to make predictions from generalized findings, constructivists sought to develop theory that is interpretive in nature. The aim of constructivist grounded theory in the present study was to develop theory that focused not merely on explaining what happened in a studied environment, but on understanding what was happening in the participants’ world. This choice of method is suitable given the researcher’s sociocultural perspective, as the use of grounded theory allowed the researcher to consider a range of aspects of the participants’ world (such as the influence of the school environment and mores) on the attitudes and beliefs of students and school staff.

Selection of Schools and Sampling
The author used convenience sampling (Patton 2002) to select schools, and the only criteria applied were that schools were secondary and high schools and that they were state schools (i.e., publicly as opposed to privately funded). This criterion was applied as much previous research on information literacy has been done in private and independent schools. Three schools agreed to take part in the study. All three schools had teacher librarians who had both teaching and librarianship qualifications. The three schools are situated in rural New South Wales, Australia. Details of the schools’ student and staff population can be seen in Appendix A.

In each school, one year 7 class was selected for the study. Year 7 is the first year in secondary school, and students were aged 11–12. These classes were selected using convenience sampling, that is, classes were selected because their teachers were available and willing to participate. As with the selection of schools, there was no intention to select classes on a representative basis, for example, by subject. The criterion applied was that all classes should be year 7 students of mixed ability.

Convenience sampling also was used to identify groups of students to interview. The factors that determined which students were included in the group interviews included students’ willingness
to participate and students’ availability when the researcher was in the school. Students’ availability was affected not only by their attendance or absence, but by short-term school rearrangement of sport, music, and drama rehearsals.

Given that convenience sampling (Burns 2000 and Patton 2002) was used in the study, there are limitations to the sample of classes and students chosen. For example, different result may have emerged if different classes had been selected or if different teachers had been willing or available to participate in the study. However, a grounded theory approach does not seek to generalize the findings of the study, and the use of classes in three schools allows for triangulation of results. Pidgeon and Henwood (2004) define triangulation as the use of multiple data collection methods so that the researcher can evaluate how consistent the findings might be.

**Data Collection**

In each school, students in the study completed one assignment in term 2 and another assignment in term 2. The assignments were research-based tasks in which students were expected to select an individual topic for research and use a range of information resources to find information, ideas, and concepts relating to their topic. Appendix A shows the class numbers and assignments.

In the study, four data-collection techniques were used:

- **Nonparticipant observation** (Powell and Connaway 2004). The researcher attended each school on three occasions to observe students both in the classroom and in the school library.
- **Student diaries** (Scott and Morrison 2006). In term 2, students in all three schools completed diary when completing their history assignment. Appendix B shows the structure of the diary for school A.
- **Student questionnaires** (Scott and Morrison 2006). After completing their term 3 assignment, students in all three schools completed a questionnaire. Appendix C shows the questionnaire for school A.
- **Interviews with school staff and students** (Johnson and Christensen 2007). One teacher and one teacher librarian were interviewed in each school at the beginning of term 3. One teacher was interviewed in each school at the beginning of term 4. Near the end of term 4, a group of three teachers and one teacher librarian was interviewed in each school. Also near the end of term 4, two groups of four students and four individual students were interviewed in each school. Interview schedules for staff and students can be found in appendices D, E, and F. Theoretical sampling interviews were conducted with one group of three teachers and the teacher librarian, and one group of students, in each school. The questions asked in the theoretical sampling interviews can be seen in Appendixes G and H.

**Data Analysis**

All data were coded, using line-by-line and focused coding. As each category of data (observation, questionnaire, diary, and interview) was gathered, data were analysed and interpreted, and each stage influenced the subsequent data collection. Thus analysis of diary data...
influenced the content of the student questionnaires, and re-analysis of the diary and questionnaire data influenced the questions asked in the student interviews. The researcher then developed categories to be tested via theoretical sampling interviews. The categories were analyzed through constant comparison, and the number of categories was reduced through re-analysis. While the process of coding, recoding, and testing of categories may appear to be laborious and complicated, it provides a much more in-depth analysis of data compared to other data-analysis methods and provides the researcher with a firm foundation for developing a grounded theory.

Findings and Discussion
Figures 1, 2, and 3 show the major categories and subcategories formed by the researcher, and these categories reflect the key findings of the study.

Figure 1. Major Category 1: Valuing Information Literacy Practices—Categories 1–4

1. Thinking and Making Connections
Facets include:
- Defining need
- Reflecting on existing knowledge
- valuing the links between mind mapping/questions formulation with later stages
- Linking mind map to decisions on inclusion/rejection
- Thinking about the task holistically

2. Being Engaged
Facets include:
- Influenced by their independence of thought
- Influenced by motivation
- Influenced by understanding or ability
- Influenced by prior knowledge
- Influenced by gaining information and confidence
- Influenced by effective use of their information environment

3. Using Information Literacy Practices and Techniques
Facets include:
- Thinking about information need
- Developing a search strategy
- Evaluating information sources
- Evaluating information within sources
- Note taking—being selective and avoiding plagiarism
- Selecting/rejecting information and ideas for the written assignment
- Reflecting on recommended strategies
- Reflecting on individual strategies

Facets include awareness of (cited by students):
- Prior knowledge or learning
- Memory, e.g., mental maps (self-created)
- Information retrieval tools, e.g., OPAC, search engine
- Teachers and TLs;
- Other students—books and web
- Mind maps and questions—self created
- Student notes—self created
- Teacher’s specification

**Figure 2. Major Category 1: Valuing Information Literacy Practices—Categories 5 and 6**

5. Aspects of Information Literacy Demonstrated by Students
Facets include:
- Engaging actively and positively in brainstorming
- Thinking about the value and use of a mind map and questions
- Teachers acknowledging the need to teach information retrieval and evaluation
- Thinking about the value of effective searching
- Reflecting on one’s own individual model of being information literate

6. Not Valuing/Not Understanding Information Literacy Practices
Facets include:
- Not valuing brainstorming as an information literacy tool
- Not using information literacy tools unless told to do so
- Not understanding the potential use of a mind map
- Not valuing question formulation as a precursor to information retrieval
- Not valuing information retrieval or information evaluation
- Not understanding the reasons for information evaluation
- Lacking the ability to effectively judge criteria for inclusion in the written assignment

**Figure 3. Major Category 2: Culture of Transfer**

1. Students’ Beliefs about Transfer
Facets include:
- Motivation to transfer
- Predicting transfer
- Valuing transfer
- Not valuing transfer
- Not understanding the concept of transfer
- Attitudes to other students re transfer
- Advising other students re transfer
- Teachers and transfer—remind or enforce

2. Evidence of Transfer—Students
Facets include:
- Thinking about transfer as a concept
Mind map transfer
Question formulation transfer
Searching/information retrieval transfer
Note taking transfer
Selection/rejection of information/ideas transfer
Writing: structure/organization transfer
Lack of transfer

3. Teachers’ views of transfer
Facets include:
- Transfer as a difficult concept for year seven
- Transfer assumptions, e.g., from primary school
- Need for reinforcement
- Transfer expectations to upper school
- Other teachers and transfer—lack of knowledge
- Lack of emphasis on transfer in the school

Valuing/Not Valuing Information Literacy Practices
The analysis of the data from staff interviews and student diaries, questionnaires, interviews showed that the great majority of students (95 percent) valued information literacy practices. Students’ interpretation of value can be seen in their statements on these practices. For example, in the questionnaires, students were asked what they would encourage the following year 7 students to put into practice regarding information literacy. Almost all the students recommended that the new students adopt information literacy practices (e.g., question formulation) and transfer these practices across subjects. While the majority of students valued information literacy practices, only a minority (10–15 percent) were likely to transfer these practices. Students who valued the practices did so not only because it would help them—the utilitarian approach referred to by Limberg (2005)—but that it engaged them in thinking about the value of the practices as a whole. This can be seen as students engaging in higher-order thinking (Fitzgerald 1999; Moore 2002). These students were engaged in reflecting on their own learning, and they were able to make connections, for example, using their concept maps to structure their assignments. This minority of students can be viewed as active practitioners who took a metacognitive view of their learning. Research studies by Kuhlthau (2004), Barranoik (2004), Ryan and Hudson (2003), Wolf (2003), and Herring (2006) discussed aspects of metacognition, although the present study took a more focused view. In the wider schools-related literature, issues relating to metacognition in the school context were discussed by Zimmerman (1990); Keene and Zimmerman (1997); Eva-Wood (2008); and Michalsky, Mevarech, and Haibi (2009).

The majority of students valued information literacy practices and stated their belief in practices such as reading for information and evaluating information and ideas found in information sources. However, these students were reluctant to actively engage in these practices unless prompted. For example, in the interviews with these students, the researcher asked what some students meant when they had stated in their questionnaires that they did not need to formulate questions. The students stated that they had not been told to formulate questions, and therefore did not need to. This group of students took a received practice view of information literacy practices, that is, they were reluctant (but potential) practitioners. While these students were often engaged in their learning, they were not engaged in a metacognitive way as the active practitioners were. These students did make connections between information literacy practices,
but in a much more limited way. For example, students could see connections between concept mapping and information retrieval, but they were much less likely to connect concept mapping and assignment structuring.

A very small minority (c3–5 percent) of students did not value information literacy practices because they did not understand the concepts involved in information literacy. For example, in the questionnaires, this group of students, when asked to comment on retrieving and interpreting information and ideas, often commented that they did not understand what they were being asked to comment on. These students also were very reluctant to be interviewed. It was clear that, while these students had been taught about aspects such as question formulation, information evaluation and note taking, they had not understood what they were being taught. While this finding was accepted by the teacher librarians and teachers in interviews, no strategy for dealing with these students was acknowledged.

This concept of students valuing (or not valuing) information literacy practices appears to be missing from much of the literature on information literacy in schools. Kuhlthau (2004) focused on information seeking, and while there is an emphasis on the affective aspects of students’ actions, this is concentrated on the information-seeking process itself, not on whether students valued information literacy practices. Studies by Harada (2002), Barranoik (2001 and 2004), and Ryan and Hudson (2003) explored aspects of students’ information literacy practices, but the extent to which students valued these practices in the same way as some students in the present study did is not considered in these studies.

Transferring/Not Transferring Information Literacy Practices
The key elements that emerged related to students’ and staff’s beliefs about transfer. Three groups of students were identified. These three groups paralleled the groups identified above in relation to valuing information literacy practices. A minority of students—the actual transferrers—believed in the value of transfer and put this into practice. In the interviews with these students, there was evidence of how students had transferred practices, such as effective information retrieval, across subjects and time. The majority of students—identified by the researcher as the propositional transferrers—believed in transfer in principle, (i.e., as a proposition) and urged future students to transfer practices. Despite this, they appeared to be reluctant to transfer these practices, unless they were encouraged to do so by teachers or teacher librarians. In interviews with this group of students, the students clearly saw the responsibility being with teachers. For example, some students pointed out that teachers actively encouraged the transfer of knowledge or techniques in subjects such as maths or science but did not actively encourage the transfer of information literacy practices. A very small minority of students were identified as nontransferrers (those who lacked an understanding of the value of transfer), and this was because of their lack of understanding of the potential value of information literacy practices. In the transfer literature, Haskell (2001) and Royer, Mestre, and Dufresne (2005) argued that transfer is unlikely to take place in most learning situations unless learners receive very specific instructions, and Haskell (2001) stressed the need for a culture of transfer. The present study supports both these views.

The teachers and teacher librarians appeared to take a similar view as the propositional transferor students: they saw transfer as having value in principle, but that they did not take steps to ensure that transfer might take place. The expectations and assumptions of teachers and teacher librarians about transfer appear to be based not on practice, but on a view that transfer is an
inevitable consequence of teaching. This study did not investigate the reasons teachers and teacher librarians had these views on transfer, but Hakel and Halpern (2005) implied that teaching styles in school may lead teachers to assumptions and expectations about transfer, and that teachers needed to re-examine approaches to teaching if transfer was to happen.

**Culture of Transfer**

In examining the concept of a culture of transfer in relation to information literacy practices, the present study was seen through a sociocultural lens (Volet 1999; Haskell 2001). This view implies that teachers, teacher librarians’ and students’ understanding of transfer is important, but it is not in itself enough to ensure that transfer will take place. The sociocultural view in this study takes into account the whole learning, teaching, and social contexts of the school and how each of these contexts has a bearing on the likelihood of students transferring or not transferring information literacy practices. This author argues that a culture of transfer, in relation to information literacy practices, will exist in schools with both formal and informal discussion of the issue of transfer. That is, a culture of transfer will exist where there is not only a school-wide policy on transfer, but where there is a belief among students, teachers, and teacher librarians that transfer is important.

It was clear that these three schools lacked a culture of transfer in relation to information literacy practices. Further, both staff and students viewed a culture of transfer as not only desirable, but necessary, if transfer were to become a more widespread practice among students. It also was clear that the establishment of a culture of transfer in relation to information literacy practices would require changes in both the attitudes and the practices of staff and students in these schools. This absence of a culture of transfer was acknowledged by both staff and students. This lack of status appears to be caused by the absence of any formal recognition of transfer and a lack of policy on transfer. Thus a restricting factor on the development of transfer in these schools is a lack of a whole-school policy on transfer. Eisner and Day (2004) identified a need for a policy on teaching specifically for transfer in arts subjects, but no such policies existed in the schools in the present study.

From the findings of the study and the categories developed by the researcher, which were tested using theoretical sampling, a grounded theory was constructed.

**The Grounded Theory**

The grounded theory was developed by the researcher’s constructivist interpretation of the major and sub categories, which were formed from the data analysis and the theoretical sampling. The grounded theory developed from the whole study is presented below.

**Theoretical Statement 1**

Some students value information literacy practices in terms of personal benefits and in relation to their own learning, as well as seeing a utilitarian value in these practices. These students value information literacy practices as they reflect on, make connection between, and use these practices effectively. Such students are engaged not only with subject learning, but with the value they see in using information literacy practices. These students are keenly aware of their information environment, which is not limited to digital and print resources.
Theoretical Statement 2
Some students take a metacognitive view of their use of information literacy practices and are capable of making connections between a range of practices. These students are proactive and take a more personal and reflective approach. Other students take a more received practice and passive approach and, while they make short-term connections between practices, they are unlikely to be reflective without prompting from the teacher or teacher librarian. A small minority of students do not understand the concepts behind information literacy practices, do not make connections, and make little use of information literacy practices.

Theoretical Statement 3
A minority of highly motivated students have the facility to become engaged with their own learning, with assignment topics, and with information literacy practices. The majority of students lack this motivation but have the potential to become engaged with their own learning, with assignment topics and with information literacy practices. Where teachers and teacher librarians take a more student-centred approach to assignments, students are likely to become more engaged, and this engagement will be enhanced when these students are not only taught information literacy practices but also the rationale for using such practices. A very small minority of students lack an understanding of engagement with their own learning and with information literacy practices; these students are likely to need individual attention.

Theoretical Statement 4
Teachers and teacher librarians cannot assume that all students will value and understand information literacy practices. A minority of students may act as unengaged nonparticipants in that their failure to understand the potential benefits of information literacy practices will mean that they will not apply such practices, even when prompted or told to by the teacher or teacher librarian.

Theoretical Statement 5
Extensive transfer of information literacy practices among year 7 students in the three schools in the present study is unlikely to happen unless a culture of transfer can be established. A culture of transfer is only likely to be created by changes in the overall school culture, which includes staff and student attitudes to transfer as a concept and as a practice.

Theoretical Statement 6
Students’ beliefs about transfer are important because these beliefs are one factor in determining whether students will transfer information literacy practices. If students value transfer and are encouraged to value transfer by teachers and teacher librarians, they are more likely to transfer. Most students will need to be prompted to transfer practices, and a very small minority of students will not transfer because they lack understanding of transfer as a concept.

Theoretical Statement 7
The manner in which teachers and teacher librarians view transfer will affect the development of transfer in a school. The lack of school policy on transfer and the subsequent lack of status of transfer in a school will have a detrimental effect on teacher,
teacher librarian, and student attitudes to transfer. Developing a culture of transfer in a school may provide a solution to these problematical issues.

**Conclusion**

The key conclusion drawn from this study is a need for discussion between teachers, teacher librarians, and school management about the teaching of information literacy practices. This discussion should review the assumptions held by staff and students about information literacy and the extent to which students transfer information literacy practices across subjects and across school years. This study and anecdotal evidence from schools in Australia, the United States, Canada, the United Kingdom, and other countries suggests that these assumptions (e.g., that students will transfer information literacy practices) are often erroneous. The creation of a culture of transfer in relation to information literacy, and possibly other aspects of the curriculum, is viewed by this author as a prerequisite to the development of students who are active information literacy practitioners and transferrers. Research into the development of a culture of transfer in schools would be a valuable addition to knowledge in teacher librarianship.

**Works Cited**


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Appendixes

Appendix A. Selected Classes and Assignment Tasks

<table>
<thead>
<tr>
<th>School</th>
<th>Student Participants</th>
<th>Term 3 Subject</th>
<th>Term 3 Task</th>
<th>Term 4 Subject</th>
<th>Term 4 Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>280 students and 27 teaching staff. Mixed socioeconomic group</td>
<td>27</td>
<td>History</td>
<td>Students were asked to write a diary of a selected character from a medieval village and demonstrate aspects of the character’s life.</td>
<td>Science</td>
</tr>
<tr>
<td>School B</td>
<td>500 students and 47 teaching staff. Mixed socioeconomic group</td>
<td>25</td>
<td>History</td>
<td>Students were asked to identify a dictator who was, in the students’ opinion, the cruelest of all dictators. Students were asked to justify their choice of this dictator.</td>
<td>Modern languages (Japanese)</td>
</tr>
<tr>
<td>School C</td>
<td>615 students and 70 teaching staff. Low socioeconomic group</td>
<td>23</td>
<td>History</td>
<td>Students were asked to draw up a profile of an Egyptian god and to present this profile visually as</td>
<td>English</td>
</tr>
</tbody>
</table>
Appendix B. Student Diary (condensed version)

<Any INSERT NAME> High School

Medieval Research Assignment—Student Diary
Please fill in your diary pages in the classroom or school library during lesson time. Please fill in your diary as directed by Mrs. A or Ms. B.

This diary belongs to:

Name: ______________________________________
Class: _______________________________________

When you are writing your diary, please make sure that you write at least THREE sentences for each entry. Your sentences should not be too short. Try to write about what you think you’ve learned or how you’ve gone about each part of the assignment. You will receive a mark for your diary as part of your overall assignment mark and the dairy will be worth 10 marks out of 50. You should try to write neatly and in good English. Mrs. A and Ms. B will give you some practice in writing a diary.

Medieval Research Assignment—Student Diary Page 1
Brainstorming and Doing a Mind Map
Please write some notes on:
  - What you liked about brainstorming with your group
  - What you did not like about brainstorming with your group
  - How you think brainstorming will help you with your medieval research assignment
  - How you think having a mind map will help you with your medieval research assignment

Medieval Research Assignment—Student Diary Page 2
Writing Your Questions
Please write some notes on:
  - How easy or difficult you found it to write out your assignment questions
  - How you think writing questions for your assignment might help you when you look for information for your assignment
  - How you feel about doing the rest of the assignment now

Medieval Research Assignment—Student Diary Page 3
Review of Possible Sources (books, websites, etc.)
Please write some notes on:
  - How you went about finding the right information sources (books, CD-ROMs, websites) for your assignment
  - How you decided whether the book or website would give you the right information for your assignment
  - What you talked to other students about finding information for your assignment
Medieval Research Assignment—Student Diary Page 4
Revised Mind Map
Please write some notes on:
- What changes you made to your initial mind map and why you made these changes
- How confident you think you are that you can now do a good assignment

Medieval Research Assignment—Student Diary Page 5
Finding and Evaluating Sources and Note Taking
Please write some notes on:
- How you went about finding the right information for your assignment
- How you evaluated the sources (e.g., books or websites) and the information in them to make sure you had the right information for your assignment
- How you took notes (e.g., wrote notes in your notebook or cut and paste) and what your notes look like (e.g., a list of sentences with headings or a mind map with keywords or something different)

Medieval Research Assignment—Student Diary Page 6
Writing Your Assignment
Please write some notes on:
- How you organize your notes before you start to write your assignment
- How you decide what you are going to write in your assignment
- How you feel about your assignment now that you’ve written it

Medieval Research Assignment—Student Diary Page 7
Looking Back on Doing Your Assignment
Please write some notes on:
- How well you think you went about finding the right information for your medieval research assignment
- How well you think you used your questions in doing your medieval research assignment
- How good you think your assignment is and how you could have improved it

Appendix C. Student Questionnaire

Questionnaire for students at <INSERT NAME> High School (condensed version)
Please fill in the questionnaire as best you can. In some cases, you will be asked to circle a letter (e.g., a, b, or c.) or to write a sentence or two on what you did during your science assignment. You are asked to put your name on the questionnaire but the results of the questionnaire will be anonymous and your name will not be used in any publications relating to this research.

Name: _________________________________ Class: ______________

1. In your medieval society assignment, you did brainstorming but not for your science assignment. Do you think that brainstorming for the science assignment would have:
   (Please circle all that you agree with)
- Helped you to find out information
- Helped you to get new ideas
- Helped you to share information with others
- Helped you to think about what you already knew about the solar system
- Helped you with your assignment work later on

2. Would you have liked to have done brainstorming for the science assignment? (Please circle) Yes No
   If Yes, why would you have liked to do brainstorming?
   If No, why would you not liked to have done brainstorming?

3. Did you write out a mind map for your science assignment? (Please circle) Yes No
   If No, please explain why you did not write out a mind map

4. Do you think that you had a mental mind map (i.e. one in your head)? (Please circle) Yes No
   If Yes, do you think the mental mind map: (Please circle all that you agree with)
   - Helped you to find information better
   - Made your assignment easier to do
   - Helped you make up questions to answer for your assignment
   - Helped you with your assignment work later on
   - Other (please explain)

5. When you do assignments in the future, do you think that it would be a good idea to write your mind map on paper? (Please circle) Yes No
   If Yes, why do you think it would be a good idea?
   If No, why do you think that it would not be a good idea?

6. Did you write out questions for your science assignment? (Please circle) Yes No
   If No, please explain why you did not write out your questions

7. Do you think that you had mental questions (i.e., in your head)? (Please circle) Yes No
   If Yes, do you think your mental questions:
   - Helped you to find information better
   - Made your assignment easier to do
   - Helped you identify what you needed to do
   - Helped you with your assignment work later on
   - Other (please explain)

8. How did you find the right information for your science assignment? (Please circle all that you agree with)
   - I used the catalog (computer) in the library
   - I found a book that covered my topic
   - I searched the web using the keywords from my topic
   - I talked to other students and found better information
   - Other (please explain)
9. How did you decide whether a book would give you the right information for your science assignment? (Please circle all that you agree with)
   - I looked at the title of the book
   - I used the contents page or the index in the book
   - I browsed through the book
   - I used my keywords to look for the right information
   - I looked at my mind map or my questions
   - I ignored information that wasn’t to do with my topic
   - Other (please explain)

10. How did you decide whether a website would give you the right information for your science assignment? (Please circle all that you agree with)
    - I looked at the title of the website
    - I looked at the pictures on the website
    - I used my keywords to look for the right information
    - I browsed through the website
    - I looked at my mind map or my questions
    - I ignored information that wasn’t to do with my topic
    - Other (please explain)

11. How did you take notes for your science assignment? (Please circle all that you agree with)
    - I wrote words or phrases on paper or in my notebook
    - I wrote sentences on paper or in my notebook
    - I wrote my notes in Word
    - I cut and pasted from websites
    - I did a mind map
    - Other (please explain)

12. How did you decide what you were going to write in your science assignment? (Please circle all that you agree with)
    - I looked at the notes which the teacher gave me
    - I used my questions
    - I used my mind map
    - I put my notes in order of importance
    - I selected the most important information from my notes
    - Other (please explain)

13. How well do you think you worked for your science assignment? (Please circle ONE)
    - Very well
    - Pretty well
    - OK but I could have worked harder
    - Not very well—I should have done more
    - Other (please explain)
14. When you did your medieval assignment last term, you learned about doing a mind map, writing out questions, finding information in books and websites and recording where you had found information. Do you think that you used what you had learned last term for your science assignment this term? (Please circle) Yes No
   If Yes, what aspects of what you learned did you use?
   If No, why did you not use what you had learned?

15. If you were talking to next year’s Year Seven at your school, what advice would you give them on doing a project like your medieval project or your science project, so that they could get a good mark? (Please circle all that you agree with)
   • I would tell them to write out a mind map to get keywords for their topic
   • I would tell them to write out their questions
   • I would tell them to search the catalog in the library
   • I would tell them to use their keywords when using books
   • I would tell them to use their keywords when searching the web (e.g., using Google)
   • I would tell them to use their keywords when looking at a website
   • I would tell them to write out notes on paper
   • I would tell them to cut and paste information
   • I would tell them to look at their questions and mind map before writing their assignment

16. Please write down in your own words ONE more thing that you’d tell next year’s Year 7 about doing assignments, so that they could get a good mark.

Thank you very much for completing this questionnaire.

Appendix D. Teacher interviews (terms 3 and 4)—List of Questions

1. What are the students being assessed on?

2. What skills can you assume that the students have before they do their assignment—planning searching writing etc?

3. To what extent would you expect these students to bring information literacy practices from primary school?

4. How does the range of reading abilities in your year 7 class affect students when they are finding and using resources such as books and websites?

5. How much feedback do you give your students?

6. When you assess students, what credit do you give for students’ use of information literacy practices, e.g., mind mapping, finding information etc?
7. To what extent do you think students will transfer their information skills to other history assignments or to other subjects?

8. Is transfer a difficult concept for the students?

Appendix E. Teacher Librarian Interviews (term 3)—List of Questions

1. What range of information literacy practices do you think this class brought from primary school?

2. What information literacy practices had the students been taught before their history assignment?

3. To what extent was mind mapping and writing questions new to this group of students?

4. How good are students at writing questions?

5. How effectively would you expect the students to be able to search books for an assignment?

6. When students search on Google, what would you expect them to be able to do?

7. Have you discussed the teaching of information literacy practices with other teachers?

8. Do you expect the students to transfer their information literacy practices to other assignments?

9. Students further up the school—are they transferring?

Appendix F. Student Interviews (term 4)

1. Sharing information
Tell me about how you think students share information and ideas when they do brainstorming.

2. Reflecting on prior knowledge
Tell me about whether you think students in brainstorming get to think about what they already know about their topic.

3. Having an overview
Tell me about whether you think brainstorming and having a mind map will help students in doing the rest of their assignment.

4. Thinking about questions
Tell me about the questions you write down or think about when you’re about to look for information for your assignment in books or websites.
5. Feeling confident
Tell me about how you feel when you have to do research for an assignment, e.g., are you always confident or are you unsure sometimes?

6. Finding the best information
Tell me about what you do when you are looking for information or ideas in books and websites, e.g., how you know whether what you’re reading is what you need.

7. Talking to other students
Tell me about the kinds of things you talk to other students about when you’re doing your research, e.g., in the library—things to do with your assignment.

8. Taking notes
Tell me about how you take notes and why you like taking notes in this way.

9. Accepting and rejecting
Tell me about how you decide what to include in your assignment before you hand it in, e.g., what you put in and what you leave out.

10. Conceptualising transfer
Tell me about whether you think you’ll use what you learned about doing research for your assignments next year, when you’re in year 8, e.g., will you use a mind map if the teacher doesn’t ask you to?

11. Independent thinking or conformity
Tell me whether teachers need to remind you (or other students) of how to do your assignments well every time you do an assignment.

12. Thinking about their needs
Tell me about what you think year seven students need to be taught by teachers or the teacher librarian about using books and websites. E.g., what do year seven students need to know about this?

Appendix G. Theoretical Sampling Interviews: Students
(term 2 of following year)

1. Do you think that students in your class make connections (e.g., using the mind map when starting to write the assignment) when they are doing a research assignment?

2. Do students in your class think about the best way to find and use information for their assignments or do they just get on and do the assignment?

3. What makes students in your class interested in using their information or research skills when doing an assignment?

4. Where do students in your class get information from when they’re doing an assignment?
5. Do students in your class create their own information?

6. Some students in your class don’t appear to value what they’re taught about things like exploring their topic, thinking about how to select the right information, or organising their assignment well. Why do you think this happens?

7. Do you think that students in your class learn more about their subjects—like history or science—if they use things like a mind map or having questions?

8. Do you think that students in your class have transferred some of the skills learned in year seven into year eight?

9. How do you think teachers could get students to transfer skills from one year to another?

Appendix H. Theoretical Sampling Interviews: Teacher Librarians and Teachers (term 2 of following year)

Preliminary question: How would you define information literacy in the school context?

1. To what extent do you think your year 7 students make connections when using information literacy practices/techniques, e.g., linking question formulation to writing the assignment?

2. To what extent do you think your year 7 students are capable of reflecting upon their use of information literacy practices and techniques?

3. What influences the extent to which your year 7 students are engaged with the information literacy/research/assignment process?

4. Tell me about what information literacy practices/techniques you think your year 7 students use.

5. To what extent do you think your year 7 students are able to think about their information environment and how to make effective use of it?

6. My research shows that some students do not value the information literacy concepts, skills and techniques because they (a) do not understand the concepts or (b) lack motivation or (c) view techniques, e.g., mind mapping as a waste of time. To what extent do you agree with these findings?

7. To what extent do you think that teaching year 7 students information literacy concepts, skills, and techniques will enhance students’ subject knowledge or make them more independent learners?

8. What do you understand by the concept of transfer in the school context?
9. Do you think that there is a culture of transfer in this school in relation to information literacy development?

10. What would be the best way of ensuring that a culture of transfer did develop in the school?
Bridging the Gaps: Measuring Cultural Competence among Future School Library and Youth Services Library Professionals

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School library and youth services professionals must develop and display a strong sense of cultural competence to effectively serve their patrons. Cultural competence is defined here as one’s ability to understand the needs of populations different from their own. This paper reports on the perceptions of school library and youth services students about how well their library and information sciences (LIS) coursework has prepared them to become culturally competent library practitioners.

An electronic survey was used to collect data from matriculating LIS students. The survey contained a Likert scale measuring three areas of cultural competence: self-awareness, education, and interaction. A gap-analysis technique was employed to detect discrepancies between students’ prior knowledge and actual learning relative to cultural competence. By focusing on the responses from students enrolled in school library and youth services concentrations, this study may help both school library and youth services educators and practitioners consider implementing culturally sensitive curriculum and pedagogical reforms.

Introduction

How might cultural competence education and training impact the work of future school library and youth services professionals? Moreover, how well do school library and youth services students feel their courses prepare them to become culturally competent practitioners who can understand and serve the needs of culturally diverse youth in library settings? These are two questions addressed in this paper, which reports the results of a study that collected data from matriculating library and information science (LIS) students about the level to which their LIS coursework has prepared them to become culturally competent library practitioners.
Background and Research Questions

Initial research efforts collected data from students enrolled in all concentrations within LIS programs at Wayne State University and Syracuse University (Kumasi and Hill 2011). This paper reports the results of the respondents who indicated that they were preparing for careers in school librarianship or youth services. The main question guiding this current research report is this: How well do students enrolled in school library and youth services concentrations feel their courses prepare them to become culturally competent practitioners? A related sub-question under examination is this: Do any gaps exist between how students rate their knowledge level about a particular aspect of cultural competence prior to and after entering their program of study? The discussion that follows is intended to highlight the necessity for school librarians and youth service professionals to acquire strong knowledge, dispositions, and abilities in the area of cultural competence.

Literature Review

Developing a strong sense of cultural competence is crucial to the work of school library and youth services professionals. Yet, while definitions of cultural competence abound in the literature, there is a paucity of research linking cultural competence discourse to school library and youth services scholarship and practice. This literature review aims to help bring these seemingly disparate areas of scholarship together. Implications for reforming the LIS curricula on the basis of this body of literature and the findings of this study are discussed in the conclusion.

Cultural Competence Defined

The term cultural competence describes the ability of professionals to understand the needs of diverse populations” (Overall 2009, 176). Cultural competence has not been largely examined in school library settings but has been applied with great frequency in the health sciences (e.g., Cross et al. 1989; Jeffreys 2006; Sue, Arredondo, and McDavis 1992). Overall (2009) provided a detailed conceptual description of cultural competence in the general LIS context. Extrapolating from this work, a culturally competent school librarian can be described as an individual with the ability to understand and respect [students’] cultural differences and to address issues of disparity among diverse populations competently” (176).

Overall suggests three concepts that characterize cultural competence. These include self-awareness, education, and interaction. Self-awareness involves recognizing the significance of culture in one’s own life and in the lives of others. Education relates to an individual’s ability to fully integrate members of diverse groups into services, work, and institutions in such a way that the lives of the individuals being served and those of the people delivering service are enhanced. Interaction concerns understanding and respecting cultural backgrounds other than one’s own by through engaging with individuals from diverse ethnic, linguistic, and socioeconomic strata.

Diversity in Context: School Library and Youth Services Education Programs

The word diversity encompasses racial, ethnic, and cultural characteristics that make up the whole of a population. Some have described the term diversity as simply the differences among us. The reference used to describe the composition of the United States as a “salad bowl” or "cultural mosaic" continues to be an appropriate one in light of statistics that indicate that the number and percentage of people from underrepresented racial and ethnic groups grows each
year (Jaeger and Franklin 2007; Chao and Moon, 2005). U.S. public K–12 schools reflect the nation’s increasing diversity with a reported 40 percent of enrolled students hailing from racial and ethnic minority groups (Marcoux 2009). Additionally, the number of multilingual communities continues to grow (Lance 2005), as does the percentage of American youth who identify as members of the lesbian, gay, bisexual, or transgendered community. Both LIS researchers and ALA accreditation standards have acknowledged that an ideal method for effectively serving an increasingly diverse user population would be to prepare more librarians from diverse backgrounds (ALA 2008; Jaeger and Franklin 2007; Kim and Sin 2006; Winston and Walstad 2006). In addition, the AASL Position Statement on Diversity in the Organization affirms the commitment to increasing diversity among its members in leadership positions (ALA 2011). However, the majority of the individuals enrolled in school library and youth services programs continue to be a relatively homogeneous group: white and female (Kumasi and Hill 2011; Wallace and Naidoo 2010). It is essential for these future library professionals to received cultural competence training in their graduate programs to understand the varied backgrounds of their K–12 patrons to effectively serve their information wants and needs.

Cultural Competence as a Twenty-First-Century Literacy Skill

One of the main roles school and youth services librarians have assumed is helping young people acquire the skills they need to successfully navigate the complex terrain of information available to them and to ultimately become productive citizens. What are often left out of the conversation of twenty-first-century literacies are cultural competencies. Yet, while the AASL Standards for the 21st Century Learner do not explicitly address cultural competence, they do address some of the skills and dispositions necessary for cultural competence. Below are examples of the Standards that speak to the development of cultural competence:

- Standard 1.1.5: Evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context.
- Standard 1.3.2: Seek divergent perspectives during information gathering and assessment.
- Standard 2.3.2: Consider diverse and global perspectives in drawing conclusions.
- Standard 3.1.5: Connect learning to community issues.
- Standard 3.3.1: Solicit and respect diverse perspectives while searching for information, collaborating with others, and participating as a member of the community.
- Standard 4.2.3: Maintain openness to new ideas by considering divergent opinions, changing opinions or conclusions when evidence supports the change, and seeking information about new ideas encountered through academic or personal experiences (AASL 2009).

These particular standards embrace the importance of young people developing a sense of cultural competence as a core component of the twenty-first-century competency toolkit. Today’s youth need to be more than just information literate. They also need to understand the world from a global perspective. They need to know the people of the world, their backgrounds, and current social and political conditions. Ultimately, as youth become more globally connected with other people and cultures via technology and other media, the roles of school library and youth services professionals must expand to accommodate these global shifts. At the core of both school librarianship and youth services is a service mission to provide services and programming to all who are in need of them. School librarianship, in particular, has experienced shifting roles in the school (Mardis 2009; Valenza 2011). For example, school
librarians are no longer solely seen as resource providers or collection managers, but now take on primary roles as instructional partners and curriculum leaders (Callison 2006; Stripling 1996). Through such activities as “collaboration with teachers,” “supporting student learning in the classroom,” and “development of children’s leisure and academic interests” (Mardis 2009, 2), school librarians contribute to the overall excellence of the schools at which they serve. Because school librarians are not constrained by being assigned to a particular classroom, they have the potential to be learning leaders with the ability to make connections with every student in the school environment (Loertscher 2006). Likewise, youth services professionals are expected to move beyond the basic reference interaction with youth but also need to coordinate after school programs, collaborate with school librarians and teachers, and develop culturally responsive programs to engage youth in the library (Kumasi 2010).

In general, LIS has made steady progress toward understanding and embracing differing information needs with respect to cultural diversity. Because school librarians and youth services professionals specifically are in positions that affect literacy development of the youngest patrons, it is important that they are exposed to a curriculum that prepares them to implement strategies that increase their cultural confidence and competence.

**Methods**

**Participants**

During the fall 2010 semester, the researchers issued calls for participation (CFP) to all students enrolled at their respective ALA-accredited institutions who had earned at least 15 credit hours. The credit-hour criterion was incorporated to ensure that students would have completed at least one semester of classes and be able to adequately evaluate their learning experiences in their program. Included in the CFP was a link to the survey questionnaire. While the questionnaire was accessed by students enrolled in all LIS concentrations who met the criteria above, this current report discusses only the responses collected from students enrolled in school library and youth services concentrations.

**Instrumentation**

The researchers developed an electronic survey instrument that collected information about the extent to which students enrolled in LIS programs at Syracuse University and Wayne State University felt that their programs prepared them to effectively serve library patrons from a variety of cultural backgrounds. The study was conducted in October 2010; the current paper reports the results of only the respondents whose educational focus was school librarianship and youth services. The data collection instrument was modeled after LibQUAL+, which is an instrument designed to measure library service quality and calculate the gaps between perceived versus actual service adequacy. A Detailed description of LibQUAL+ appears on its website (www.libqual.org/home). The instrument designed for the current study included 16 items grouped across three areas: (1) self-awareness, (2) education, and (3) interaction. Data were generated through the use of a side-by-side matrix design that allowed respondents to rate the following:

- Their level of **prior knowledge** about a particular aspect of cultural competence.
- Their determination of the **importance of learning** a particular aspect of cultural competence in LIS courses.
• Their level of knowledge/experience gained regarding a particular aspect of cultural competence through their LIS courses (Kumasi and Hill 2011).

Data Analysis

Determining the Gaps
The gap scores for the study were computed using a formula that calculated the difference between each respondent’s ranking of their prior knowledge and the knowledge/experience gained resulting in what we have termed knowledge gaps.

A knowledge gap is an indicator of the extent to which students perceive their coursework to have prepared them in such a way that they come away with more knowledge than they already had about a given aspect of cultural competence. A knowledge gap is calculated by subtracting the prior knowledge score from the knowledge gained score on any given item for each respondent. A negative knowledge gap score indicates that students perceive that the amount of knowledge they’ve gained is below their prior knowledge on a given aspect of cultural competence. By contrast, a positive knowledge gap score indicates that students perceive that their LIS coursework resulted in them having either the same level or an increased amount of knowledge than they had upon entering the program.

Study participants were instructed to rate their responses using a 7-point Likert scale, in which 1 indicates no or low prior or gained knowledge; 4 indicates moderate level of knowledge; and 7 indicated high level of prior or gained knowledge about a particular aspect of cultural competence. Knowledge gaps were calculated using the mode, or highest frequency, of a Likert scale number reported for each item by the largest number of students. This approach gave us the opportunity to look at overarching trends across the students’ responses as opposed to attempting to interpret individual scores for each item. Consequently, we used the highest frequency of students who indicated the same Likert score (e.g., 7) to calculate the knowledge gaps. Because we decided to use frequency counts (or modes) to calculate the gaps in some instances, we had to take into account multiple modes. That is, we had to factor into our findings the occurrence of equal numbers of rankings across items. For example, if 10 students ranked item 2 at level 1 and 10 students ranked the same item 2 at level 2, then both numbers were factored into the analysis.

Findings and Discussion

School Library and Youth Services Student Demographics
A total of 672 students at both institutions were determined eligible to participate in the initial survey. All were sent links to the online questionnaire; 151 students submitted completed questionnaires, 29 of which were enrolled in school library or youth services concentrations. Twenty-six of this subset of respondents were white females. One respondent was a white male, one respondent was an African American female, and one respondent preferred not to reveal his or her gender or ethnicity. Twenty-seven respondents enrolled in school library or youth services tracks submitted responses to all items.

Summary of Responses
The education section of the questionnaire contains items that present students with a range of
concepts related to the provision of culturally responsive library service to which they may have been exposed in their LIS programs. We focus our analysis exclusively on this section of the questionnaire because doing so highlights areas of opportunities for LIS programs to infuse increased cultural competence instruction into their curriculum to effect educational reform.

**Knowledge Gaps**
Knowledge gaps measure respondents’ perceptions of what they knew about specific cultural competence concepts related to education before entering their LIS program and their knowledge level after having been exposed to multiple semesters of coursework. Scores of 0 to 7 indicate that knowledge level remained the same or increased. Scores of -1 to -7 indicate that a student’s prior knowledge or experience exceeded what they actually learned in their coursework (Kumasi and Hill 2011). Table 1 illustrates the knowledge gaps for the education section.

**Table 1. School and Youth Services Respondent Knowledge Gap Scores for Cultural Competence: Education Area**

<table>
<thead>
<tr>
<th>Item no./Topic</th>
<th>Knowledge Gained (KG) Level Chosen Most Frequently</th>
<th>Prior Knowledge (PK) Level Chosen Most Frequently</th>
<th>Gap = KG-PK</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 1. Understanding of the term “literacy” including cognitive and sociocultural perspectives.</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Item 2. Knowledge of the cultural differences between U.S. ethnic populations</td>
<td>3</td>
<td>4</td>
<td>-1</td>
</tr>
<tr>
<td>Item 3.* Familiarity with the history of library service to individuals from various cultures.</td>
<td>4/5</td>
<td>1</td>
<td>3/4</td>
</tr>
<tr>
<td>Item 4.* Recognition of how individuals from various cultures access information.</td>
<td>4</td>
<td>1/2/3</td>
<td>3/2/1</td>
</tr>
<tr>
<td>Item 5.* Recognition of barriers to information access and use that may exist for individuals from various cultures.</td>
<td>4</td>
<td>3/4</td>
<td>1/0</td>
</tr>
<tr>
<td>Item 6. Collection development strategies that reflect the information wants and needs of individuals from various cultures.</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Item 7. Recognition of the role libraries play in providing outreach and specialized services to various U.S. cultural groups.</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Item 8.* Considering the impact that recruiting library professionals from various cultural backgrounds has on library service.</td>
<td>6</td>
<td>1/2/3/4</td>
<td>5/4/3/2</td>
</tr>
</tbody>
</table>

* Indicates items that resulted in a mode of more than one number.
This section of the survey includes eight statements, which students rated according to their prior knowledge, the importance of learning the concept presented, and the knowledge they gained about the concept through their courses. The knowledge gaps in education had a range of variance.

Students rated their prior knowledge of the concepts in the education section between low (e.g., a score of 1) to moderate (e.g., a score of 4). We posit that because all of the respondents were currently matriculating LIS students, it is not unusual that none of them rated their prior knowledge as above average or superior. Rather, one might accurately presume that the student respondents had enrolled in master’s programs to become more knowledgeable about issues related to providing effective library service. Below is an analysis of scores for each item in the education section.

**Negative Gap Scores**

Only one item (statement 2) resulted in the majority of respondents rating their prior knowledge as superior to what they were taught. The statement in this item instructed participants to consider their “knowledge of the cultural differences among ethnic populations in the U.S.”

Eight students reported that their knowledge before entering an LIS program was moderate (a score of 4); nine rated what they learned in their courses as slightly below moderate (a score of 3) resulting in a gap score of -1. In this instance, the majority of students surveyed did not report having exposure to this particular concept to the extent that it increased their knowledge level. Perhaps because this statement was not specifically related to libraries and is basic in its wording about “knowledge of the cultural differences,” the respondents felt more comfortable assigning themselves a moderate level of prior knowledge. In contrast, the burden of proof for reporting what was learned in the context of the LIS coursework is perhaps higher and students are therefore less likely to report having learned something that was not covered in class.

**Neutral Gap Scores**

The items with statements for which the majority of respondents indicated that they had the same amount of knowledge before and after entering an LIS programs were items 1 and 7:

- Understanding of the term literacy, including cognitive and sociocultural perspectives.
- Recognizing the role libraries play in providing outreach and specialized services to various cultural groups in the United States.

For both items, the majority of students \((n = 8)\) rated themselves as having moderate prior knowledge (a score of 4) and also determined that they had exactly the same level of knowledge following coursework completion at the time they participated in the survey, resulting in a neutral gap score of 0. These scores perhaps indicate that the concepts introduced in each of these statements (literacy and outreach) are general enough for students to feel comfortable having some level of understanding, but perhaps they were not explored with enough depth in their LIS coursework to qualify as increasing their knowledge beyond their existing level. Again, the more general the question, the more willing students seem to be to assign themselves higher levels of prior knowledge and knowledge gained.

**Knowledge Increase**

For several items respondents reported having gained knowledge in a particular area of cultural competence as a result of their LIS coursework. However, there were variances in the levels of
knowledge increase that were reported, with several questionnaire items (3, 4, 5, and 8) yielding multiple modes. It is important to note that although there were multiple modes, most respondents reported relatively low levels of prior knowledge (scores of 1, 2, 3, or 4). In contrast, survey respondents rated their perceived level of prior knowledge as moderate or slightly higher (e.g., Likert scale 4 or 5). This means that for almost all items in this section of the questionnaire, the majority of respondents experienced only moderate knowledge increases as a result of their coursework.

Two items (items 3 and 6) resulted in reports of slightly higher than moderate knowledge increases. The one exception is item 8, where the mode was 6, which is almost the highest rating possible. In item 8, respondents were asked to consider the impact that recruiting library professionals from various cultural backgrounds has on library service.

The results for item 8 are encouraging given the attention and material resources (e.g., ALA Spectrum Scholarships) that the LIS field has given to recruit library students and professionals from diverse cultural backgrounds. Data collected in this section of the questionnaire likely reflect the progress that has been made in diversity recruitment efforts. Hence it is not surprising that the respondents would indicate that their LIS coursework addressed the importance and impact of recruiting culturally diverse professionals to the field.

As mentioned previously, items 3, 4, and 5 also had multiple modes that resulted in positive knowledge gaps. (Item 5 actually generated both positive and neutral gap scores, but we chose to group this item with knowledge increase for sake of clarity.) In these items, respondents were asked to rate their:

- Familiarity with the history of library service to individuals from various cultures;
- Recognition of how individuals from various cultures access information; and
- Recognition of barriers to information access and use that may exist for individuals from various cultures.

Students most frequently rated their prior knowledge level for item 3 as low (a score of 1) and the knowledge they gained as moderate (a score of 4) resulting in gap scores of 3, or slightly less than moderate.

The fact that there were multiple frequency counts (or modes) for certain statements in this section of the questionnaire helps bolster the findings already derived from the data. In other words, although an equal number of students may have ranked an item as low as did those who ranked it slightly less than moderate (or 3), this represents a general trend in the data where students rank their prior knowledge on the lower rather than higher spectrum of the Likert scale. To contextualize the picture presented by the scores discussed above, it is important to note that the majority of the study participants rated each of the items in the education section as highly important to learn (a score of 7). Thus it is troubling that the majority of respondents reported only a moderate knowledge gain, which indicates that in many instances students’ coursework and class interactions did not help them to learn more or was less than what they already had been exposed to.

**Conclusion and Implications**

Educational reform should be driven by evidence-based research grounded in practical issues of teaching and learning. This study provides some preliminary evidence for helping LIS faculty
understand how school and youth services librarians perceive their preparation in the area of cultural competence. With this knowledge, LIS faculty, particularly those who teach in the areas of school library and youth services, can begin to consider what types of curricular restructuring they might institute in their programs to achieve greater cultural competence education. Moreover, cultural competence education is important to the work that school and youth services practitioners do because these individuals will potentially impact the literate lives of twenty-first-century learners from numerous cultural and linguistic backgrounds. The results of this study suggest a need for LIS curriculum to be more strategically imbued with the concepts and principles of cultural competence. In general, the respondents reported having low to moderate knowledge gains in cultural competence education. This means that there is room for the LIS curriculum to be more directly infused with cultural competence concepts. This type of educational reform will benefit not only school and youth services students, but the entire LIS student population who will eventually go on to serve diverse patrons in various library settings.

Works Cited


**Cite This Article**

<www.al.org/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume14/hillkumasi>
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“Consider with Whom You are Working”: Discourse Models of School Librarianship in Collaboration

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Abstract
The question of why school librarians still struggle to fully enact the roles defined in Information Power and Empowering Learners may be viewed as a struggle to gain recognition from others that this is what a “real school librarian” does. Discourse Analysis offers school library research a new theoretical and analytical tool to explore how these roles or identities are created or contested in interactions with others by examining the moment-to-moment talk for the presence of larger meanings, or “discourses.” Applying a discourse analysis to an exchange that occurred near the end of an ethnographic study of collaborative discourse between a school librarian and a team of second-grade teachers, this study uncovered the presence of several alternative meanings of “school librarian” in the talk, or “discourse,” of the participants, including the stereotypical “shhhh librarian” or “story lady.” Discourse analysis foregrounds the ongoing struggle by school librarians to implement new roles and new standards.

Introduction
“I’m sure it will be wonderful, but you’ve got to consider with whom you are working. I don’t want to come in here and have to fuss and just...”

With those words, Dianna, an experienced second-grade teacher, opted out of a library lesson that her two teammates had enthusiastically developed in collaboration with the school librarian to have their students research endangered species in the library. Coming at the end of a school year that had included several collaboratively planned and successful lessons and units, Dianna’s decision not to participate was puzzling and might have been viewed as the failure of the school librarian to broker, with this particular teacher, the inclusion of the school library in instruction for this unit. Taken out of context, Dianna’s comment raises several questions: to whom or what do the pronouns “it,” “you’ve,” and “with whom” refer? And where was the “in here” with which Dianna felt she would have to fuss? This exchange occurred near the end of the school year and near the end of an ethnographic study of collaborative discourse, which included recording eight planning meetings with this grade level over the course of a school year. Thus this exchange provided an opportunity to consider the meaning of these words in some depth as...
well as how they were situated in discourse across the school year. In fact, the passage that
contained this comment illuminated the presence of several alternative meanings of school
librarian in the talk, or discourse, of the participants, including a stereotypical —shhh librarian‖
or —story lady.‖ While this meaning of school librarian is not particularly surprising to those of
us in the profession, a discourse analysis helped explain how this meaning and others are
accomplished, reproduced, and negotiated in moment-to-moment interactions with others. The
purpose of this paper is to explore discourse analysis as a new theoretical and analytical tool to
explore the various roles or identities of a school librarian as they shape and are shaped in
collaboration with teachers, including the exchange with Dianna above.

Theoretical and Research Perspectives

Collaboration: A Black Box

Meaningful collaboration is difficult to attain for many practicing school librarians (Todd 2008),
and numerous barriers have been identified, including lack of principal understanding or support
for collaboration, time limitations, and rigid library scheduling (Brown 2004). While much has
been written about the need for collaboration (e.g., Kuhlthau 2003), how to get started (e.g.,
Buddy 2007; Dickinson 2006; Harvey 2008), and the products of collaboration (e.g., Bacon
2008; Markley and Johnson 2008), the content of the collaboration itself remains what some
discourse analysts call a —black box‖ (Sawyer and Berson 2004, 405). There have been few to no
studies illuminating the actual work of collaboration or how language is used on site to enact
collaboration between school librarians and teachers. Instead, much of the literature takes for
granted that collaboration occurred if two or more people met and subsequently conducted an
activity. Since collaboration entails conversation, discourse analysis seemed to offer an
appropriate tool to examine the actual, on-the-spot work of collaboration. In fact, it seems
surprising that a profession so obsessed with collaboration has yet to examine the microprocesses
of the talk used for collaboration.

There are precedents in other fields for using discourse analysis to study collaboration. John-
Steiner, Weber, and Minnis (1998) suggested that in a study of collaboration, —As language was
the primary data in this study, discourse analytic techniques if used, could have provided further
specificity‖ (778). Carlone and Webb (2006) used a discourse analysis to understand the
observations and videotape to study the collaborative interactions between a teacher and a gifted
and talented teacher. Scribner et al. (2007) used a discourse analysis to understand the
collaboration of teacher teams. Their choice of discourse analysis allowed them to present a critical perspective,
including —collaboration does not necessarily equate with workers becoming creative and
innovative. In fact the opposite can occur‖ (Scribner et al. 2007, 95). Davison (2006) also used
discourse analysis in a study based on observations and interviews with content and ESL
teachers. Davison’s discussion highlighted the different cultural and belief systems of ESL and
content-area teachers. The focus, —How do we know when we are doing it right?‖ led to the
development of a stage model for collaboration. The final stage is conceptualized as —creative
co-construction where co-teaching is highly intuitive and creative and the parameters of the
partnership very fluid‖ (Davison 2006, 466). Each of these studies suggests the value of
discourse analysis in understanding the complexity of successful, as well as unsuccessful,
collaborations.
Roles of the School Librarian
While the call for collaboration has been prominent in the school library standards (AASL and AECT 1988; AASL and AECT 1998; AASL 2009), each new issue of standards has somewhat shifted the roles related to collaboration. Information Power (AASL and AECT 1988) delineated the roles as teacher, instructional consultant, and information specialist. The second Information Power (AASL and AECT 1998) added the role of program manager and changed “instructional consultant” to “instructional partner.” Empowering Learners (AASL 2009) has retained the four roles from the second Information Power and added the role of leader. Empowering Learners reports on a survey regarding the changing roles of the school librarian that found a shift toward those of instructional partner and information specialist (AASL 2009, 16) despite the continuing evidence that we are not yet able to achieve these roles from the first two Information Powers. Several studies have employed surveys to measure perceptions of the roles of a school librarian as set out in the Information Power standards, concluding, “They reveal overall low levels of actual collaboration in instruction between teachers and library media specialists and reflect that school professionals do not agree on what the roles should be” (O’Neal 2004, 292).

McCracken (2001) employed a national survey to determine if practicing school librarians felt they were able to implement the 1988 and 1998 Information Power standards. Respondents perceived the role of “information specialist” to be more important than the more collaborative roles of “instructional partner” or “consultant.” Church (2008; 2010) found support from principals for the role of school librarian as instructional partner and found that most principals’ understanding of this role came from experience with school library professionals rather than principal training. Church (2008) also received some negative impressions of school librarians from principals who felt their librarians were too traditional and uninterested in working with teachers. McCracken (2001) identified the need for more qualitative research and in particular research regarding “how some library media specialists are able to implement more roles than others.”

Identity
Another way to talk about roles is to talk about identity. According to Gee (2000–2001), “Being recognized as a certain ‘kind of person’ in a given context, is what I mean here by ‘identity’” (99). He delineates several kinds of identity, including “institutional” and “discursive” identities. The position of school librarian in a school is an institutional identity that may be defined in part by written job descriptions or performance-evaluation tools. Budget lines also may sanction and create these institutional identities. But a large part of this identity is negotiated through discourse, for example, during the interview and hiring process, but particularly in the daily interactions with teachers, students, librarians, and others in the school community. An identity as a “kind of librarian” is negotiated throughout these interactions. In a job interview, for example, a discussion with the principal about the expectations for the job are a negotiation about what “kind of librarian” the school is looking for. These negotiated identities are “discursive” identities that require interaction through talk or discourse as well as recognition. A person hired to be a school librarian must gain recognition from others through talking, acting, using tools, even dressing like a school librarian, or what Gee (2000–2001) would call a “collection” or a Discourse with a capital D. Another way to think of Discourses is as a toolkit, or all the things one uses to gain recognition for a particular identity. For school librarians, this would include the space we work in and the way we use that space (as opposed to the way our patrons use the space).
If the school librarian strays too far from the prevailing Discourse of school librarianship, he or she risks not being recognized as a “real school librarian.” But at the same time, because Discourses are constantly re-created through talk, there is the possibility and likelihood that new meanings of “school librarian” and “school librarianship” can be forged. Indeed, when following someone else in a role, a person has the experience of encountering various meanings or identities that were created by the predecessor and of engaging in creating a new identity for the role. In fact, a school librarian will experience this work of creating an identity anew every time a new teacher joins the staff, the administration changes, or new families enter the school. When a new role is defined in documents, such as that of “leader” in Empowering Learners (AASL 2009), school librarians must struggle not only to enact that role in practice but also to gain recognition of that identity in their interactions with others. In this sense, the question of why school librarians still struggle to fully enact the roles as defined in Information Power and Empowering Learners could be seen as a struggle to gain recognition from others that this is what a “real school librarian” does. In addition to Institutional Discourses of a school librarian there may be historical Discourses, those identities that continue in individual and institutional memories through media portrayals or past associations with other “kinds of school librarians.” Identities may compete with each other. For example, the struggle for school librarians to achieve a flexible schedule is in part a struggle between two identities of school librarian: one promoted by the profession and one needed to maintain elementary school schedules that provide release time for teachers.

Each of these identities has a discursive component: they must be accomplished through our moment-to-moment talk, or “discourse,” allowing the researcher to look at a passage such as the excerpt above from Dianna and ask what identities are being enacted, challenged, or transformed in the discourse? What meanings of school librarian, teacher, student, or planning might be relevant to understanding the decision of Dianna to opt out of a collaboratively planned lesson, and how can we see these meanings in the talk that accomplished this? A discourse analysis, as outlined below (Gee 2005; Gee and Green 1998) was thus chosen as the method for this study.

Method

Setting, Participants, and Data Collection
Dianna’s comment occurred near the end of an ethnographic study of a year of planning between a school librarian and a team of three second-grade teachers in Obama Elementary School (Kimmel 2010). The principal researcher for this study served in a dual participant/observer role in the year of the study and had been the school librarian at Obama Elementary School for the five years it had been open. Flexible scheduling and collaborative planning were established practices at this school. Obama was a small (fewer than 300 students), urban school serving a population affected by poverty. More than 90 percent of the students were African American and on free or reduced lunch. The three teachers on the second-grade team represented a unique configuration. Only one teacher, Dianna, had returned to second grade from the previous year. Areynanna had previously taught only first grade at this school and “looped,” or moved up, with her students for this year and Brittany was a first-year teacher. Both Dianna and Areynanna had taught for sixteen years. The principal, Sally Hall, and the curriculum coordinator, Jean Maple, each attended irregularly. (Pseudonyms have been used for the school and all participants except the school librarian/principal researcher.)
During the year of this study, every grade level was given monthly block planning time; their classes were covered by assistants. This block planning occurred in the library on Wednesdays and Thursdays beginning at one o’clock and lasting for approximately two hours. For this study, each of the eight monthly planning meetings held in September through April with the second-grade team were recorded using a microphone-equipped iPod. Each meeting was transcribed in its entirety, resulting in 13.7 hours of audio or 296 pages of transcript. These meetings and their transcripts served as the primary data source for the larger ethnographic study from which the thirteen-minute passage including Dianna’s remarks was selected for a more detailed discourse analysis.

**Discourse Analysis**

Discourse analysis is a major area of study representing a variety of theoretical and methodological perspectives. For this study, the works of Gee (2005) and Gee and Green (1998) were selected because of their focus on language as related to social activities, identities, and groups and institutions. Each work provided tools and strategies but also included the advice to apply these flexibly and to adapt them to one’s own domain (Gee 2005, 6–7). From a theoretical stance, a discourse analysis assumes that people use language to get things done, to privilege some things and not others, and to enact particular identities. Gee and Green (1998) identify four types of building activities that are accomplished in discourse—identity, activity, connection, and world building—and suggest that any utterance can be analyzed for each. These four building tasks became an important heuristic used in analyzing the discourse across the school year.

A discourse analysis involves not only multiple listenings to a piece of audio-recorded talk but also a careful transcription of the text that includes attention to linguistic details that speakers and listeners use to create meaning through their talk, including pauses, interruptions, and stress or emphasis on particular words or syllables. Participants in a dialogue signal each other about the meaning of their text through context and other clues that are then also available to the researcher. Gee (2005) suggests “we shuttle back and forth between the structure (form, design) of a piece of language and the situated meanings it is attempting to build about the world, identities and relationships in a specific context” (118). A discourse analysis assumes that our smallest day-to-day discursive interactions are situated in local contexts and attached to larger historical, social, and institutional meanings (Fairclough 1989; Gee 2005), and therefore a researcher may examine these small interactions for evidence of larger meanings. This study, concerned with the cultural and historical roles of a school librarian, looked for these roles in a thirteen-minute passage but also drew on other data collected across the school year to interpret and confirm possible conclusions. The thirteen-minute passage was selected after considerable ethnographic analyses had been completed of the entire transcripts.

A fuller understanding of the situated meanings represented by a particular piece of text was accomplished by situating the selection and analysis of the passage that included Dianna’s statement in a larger analysis that looked for patterns across the discourse from the entire school year. Listening to the recordings and creating the transcripts followed a three-step process using Spradley’s (1980) ethnographic sequence of collecting data: first, making broad descriptive observations; second, making more focused observations; and third, making selective observations. In this case, the “observations” were of the discourse. Each level of analysis required listening to and transcribing the talk. The broad descriptive and focused observations involved a basic transcription of all of the planning meetings and provided the first level of
analysis, which looked at patterns of activities and meanings across the 13.7 hours of planning from the school year and 269 pages of transcript. The more selective observation involved a more detailed transcription requiring a deeper level of listening and analyses of selected passages. Conventions for the basic and detailed transcriptions are included (see Table 1). Field notes, a researcher journal, any e-mail, and other documents related to the planning meetings also were retained. A summary of the descriptive and focused observations are included below in the “Analysis and Findings” section, in which the justification for the selected passage also is included.

Table 1. Transcription Conventions

<table>
<thead>
<tr>
<th>Basic Transcription</th>
<th>Selective Transcription</th>
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<tbody>
<tr>
<td>- self interruption</td>
<td>// or \ indicates ↗ rising // or falling \ pitch of the voice that sounds ‘final’ as if a piece of information is ‘closed off’ and ‘finished’” (Gee 2005, 107).</td>
</tr>
<tr>
<td>( ) unclear, difficult to interpret</td>
<td>: elongated vowel sound</td>
</tr>
<tr>
<td>( ( ) ) laugh, cough, etc</td>
<td>underline emphatic—said with extra stress</td>
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</tbody>
</table>

Interviews
The three participating teachers were interviewed in the middle and at the end of the year of data collection. Questions in the interviews dealt with meanings of planning, planning as professional learning, and meanings of planning with the school librarian. Answers to particular questions about these meanings were analyzed relative to emerging categories and meanings identified across the planning transcripts and were used to refine the analysis of the planning discourse. Interviews captured the understandings of participants and offered a form of triangulation. Additionally, a member check was conducted with the three teachers a year after the data collection and after all data had been analyzed. Selected quotations from the interviews are included in the “Discussion” section to confirm or illuminate the interpretation.

Validity
Validity in a discourse analysis concerns convergence, agreement, and coverage (Gee and Green 1998, 159). Convergence refers to how different analyses of the same data yield similar results. In this study, the data were subject to ongoing analytic and field notes, numerous listenings and fine-grained transcriptions, a domain analysis of the entire set of transcripts, and a more fine-grained analysis of smaller portions of the text. Agreement refers to how much native speakers and analysts agree on the interpretation. In this study, the participants were interviewed in the middle and the end of data collection and participated in a final member-checking. Additionally, a peer review by an experienced school librarian was conducted. Coverage deals with situating the analysis within a larger context of what happened before and after the passage. This was accomplished through the larger ethnographic study across the school year. My inclusion as a participant in the research site for an extended length of time also supported this type of validity (Creswell 2005). This study had a very particular and unique context and makes no claims to generalizability.
Limitations
A clear limitation of the study was the dual role I played: I also was the school librarian in this study. Yet one could argue that this dual role also was a potential strength of this interpretive study. In any discourse there is the potential for misunderstanding, and one could argue the same for any type of research. The analyst must always ask: What might this mean? What else might this mean? What other interpretations are possible? How might I be wrong? (Maxwell 2005). As a participant, I had access to my own understandings at the time of what was meant in the discourse captured through field notes and reflective memos. Later, as I listened to the passage numerous times and considered it in larger contexts, I began to consider other meanings of the text. So the phrase that opened this paper, “consider with whom you are working,” began to take on other possible meanings, which are discussed in the findings below.

Analysis and Findings

Descriptive Observations
The first level of analysis involved naming parts of the text for what kinds of activities were being accomplished in the talk. While Gee and Green’s (1998) building activities (world, identity, activity, and connection) provided a useful heuristic for thinking about the data, eventually Wenger’s (1998) modes of belonging (imagination, engagement, and alignment) in various combinations allowed an analysis of how these building activities were accomplished. Engagement is active participation in negotiating meaning, imagination is about seeing connections across time and space, and alignment is coordinating efforts to contribute to a broader purpose (Wenger 1998, 173–74). Analysis required constant comparison (Creswell 2005, 406); I compared incidents in the data and field notes to established codes and codes to codes, developing and refining the codes with each subsequent data source. Analysis involved several pass-throughs of the transcripts as activities were named and codes were collapsed and refined. These named activities or codes were grouped semantically using Inspiration software to create cover terms in a domain analysis (Spradley 1980). For example, “scheduling” was an original term, but teachers generally took schedules for granted unless they had to align them to facilitate sharing students or resources. This activity was renamed “coordinating” and also included the work of aligning their planning with curriculum pacing guides. Five activities were eventually identified: orienting, coordinating, drifting, making sense, and making connections. These are summarized in Table 2.

Table 2. Kinds of Activities that Comprise Planning

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orienting</td>
<td>Setting agendas, making decisions, checking in, getting back to topic</td>
<td>“So, we’re stopping here?” (Brittany, Sept.)</td>
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<tr>
<td></td>
<td></td>
<td>“Can I jump in?” (Jean, Nov.)</td>
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<tr>
<td></td>
<td></td>
<td>“Okay, girls.” (Dianna, Jan.)</td>
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<tr>
<td></td>
<td></td>
<td>“Where do we want to start?” (Sue, Feb.)</td>
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<td></td>
<td></td>
<td>“We’re done with social studies. Do you want to do science” (Sue, Apr.)</td>
</tr>
<tr>
<td>Coordinating</td>
<td>Aligning schedules to share resources,</td>
<td>“Are you following the pacing guide?” (Jean, Sept)</td>
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<tr>
<td></td>
<td></td>
<td>“Finish lesson two tomorrow and do lesson three on Monday and lesson four on Tuesday.” (Areyanna, Sept).</td>
</tr>
<tr>
<td>Activity</td>
<td>Description</td>
<td>Examples</td>
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<tr>
<td>----------</td>
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<tr>
<td>students, or activities</td>
<td>How many days in November—30 or 31?” (Brittany, Oct.)&lt;br&gt;You know how it is with books, because we all do it at the same time.” (Brittany, Jan.)&lt;br&gt;Can you do it after lunch so that’s about twelve-thirty when you get here?” (Sue, Feb.)</td>
<td></td>
</tr>
<tr>
<td>Making Connections</td>
<td>Connecting curriculum to resources, other curricula, or past experiences</td>
<td>Your math goals fit perfectly with your weather goals.” (Sue, Sept.)&lt;br&gt;But you know we could definitely get a school board member to come to talk to your classes.” (Sue, Oct.)&lt;br&gt;Do we have a book to go with that?” (Areyanna, Feb.)&lt;br&gt;I have this little transparency of who provides goods, who provides services from our old social studies unit or book.” (Dianna, Apr.)</td>
</tr>
<tr>
<td>Making Sense</td>
<td>Understanding curriculum, teaching, resources, or student learning</td>
<td>Alright, are we doing anything with the anemometer or are they just looking at it in the book?” (Areyanna, Sept.)&lt;br&gt;Now do you have some kind of sheet that they are going to have while they do their listening walk, or are they just going to listen and come back and write something down?” (Brittany, Nov.)&lt;br&gt;This may make more sense to them after we make the model.” (Areyanna, Dec.)&lt;br&gt;What are we doing with this book?” (Areyanna, Jan.)&lt;br&gt;Is it like moving for a job? What is it? What are they trying to get at?” (Sue, Apr.)</td>
</tr>
<tr>
<td>Drifting</td>
<td>Any “other” talk that led away from the planning agenda</td>
<td>I get really depressed in January.” (Dianna, Dec.).&lt;br&gt;I’m trying to do Malcolm’s eyes. Get him into resource or something.” (Areyanna, Jan.)&lt;br&gt;Yes, Lord Jesus help you because they need a break from me and I need a break from them.” (Dianna, Jan.)&lt;br&gt;The blue kisses have coconut in them and the eggs are just chocolate.” (Sue, Mar.)</td>
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</tbody>
</table>

**Focused Observations**

Once the five activities that occurred in the planning had been identified, each occurrence of an activity became a unit of analysis. This stage of analysis returned to the research focus on the role of the school librarian in collaborative planning with teachers and drew from Wenger’s Community of Practice theory, which assumes that learning is ubiquitous and “meaning is ultimately what learning is to produce” (Wenger 1998, 4). For this reason, the focused observations analyzed each occurrence of an activity for what meanings were being produced about teaching, curriculum, the school librarian, students, and planning. These focused observations involved looking at the segments of talk coded for each activity and asking about each passage: how was the talk about what teachers were learning, how was the talk about what students had learned or would learn, and what was the role of the librarian? In this process, several solid categories began to emerge, and these became codes for the meanings created in planning: curriculum, membership, planning, librarian, students, teacher, teaching, and school. Once the codes for meanings had been finalized, it was possible to review the transcripts one more time to code each occurrence of an activity for the primary meaning that was present.
These meanings and examples of included subheadings are summarized in Table 3.

<table>
<thead>
<tr>
<th>Meanings of</th>
<th>Subheading</th>
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<tbody>
<tr>
<td>Curriculum</td>
<td>Sequence</td>
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<td></td>
<td>Concepts &amp; vocabulary</td>
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<tr>
<td></td>
<td>Interdisciplinary</td>
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<td></td>
<td>Science taught in reading block</td>
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<td></td>
<td>Textbook</td>
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<tr>
<td>Membership</td>
<td>Relationships</td>
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<td></td>
<td>Outside relationships</td>
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<td></td>
<td>Sharing</td>
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<td></td>
<td>Role of Assistant</td>
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<tr>
<td>Planning</td>
<td>Sharing decisions</td>
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<td></td>
<td>Aligning calendars</td>
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<td></td>
<td>Sequencing lessons</td>
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<td></td>
<td>Identifying essential questions</td>
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<tr>
<td></td>
<td>Covering objectives</td>
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<tr>
<td></td>
<td>Chocolate</td>
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<tr>
<td>Librarian</td>
<td>Identifying resources</td>
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<tr>
<td></td>
<td>Managing resources</td>
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<tr>
<td></td>
<td>Member of other „Communities of Practice“</td>
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<tr>
<td></td>
<td>Collaboration</td>
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<tr>
<td>Students</td>
<td>Labeled</td>
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<tr>
<td></td>
<td>Struggling</td>
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<tr>
<td></td>
<td>Imaginative</td>
</tr>
<tr>
<td></td>
<td>Bored when we are</td>
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<td></td>
<td>Understandings</td>
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<tr>
<td></td>
<td>Producers</td>
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<tr>
<td></td>
<td>Free lunch</td>
</tr>
<tr>
<td>Teacher</td>
<td>Supervisor of students</td>
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<tr>
<td></td>
<td>Manager</td>
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<tr>
<td></td>
<td>Liaison with parents</td>
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<td></td>
<td>Counselor</td>
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<tr>
<td>Teaching</td>
<td>Procedures</td>
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<td></td>
<td>Interventions</td>
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<td></td>
<td>Instructional strategies</td>
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<td></td>
<td>Pacing</td>
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<tr>
<td></td>
<td>Covering curriculum</td>
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<tr>
<td></td>
<td>Building prior knowledge</td>
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<tr>
<td></td>
<td>Assessments</td>
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<tr>
<td>School</td>
<td>Building</td>
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<td></td>
<td>School district</td>
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<td></td>
<td>State and national</td>
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</table>
Selected Observation

The remarks from Dianna that opened this article came from a passage that was selected from the transcripts because it allowed a more detailed look at a chain of activities leading to the creation of a new lesson: Endangered Species. Early in the analysis, an attempt was made to name an activity "creating" to capture when a new lesson emerged, but this became problematic because planning a new lesson or unit was not a simple activity, and in fact always involved some combination of the other activities: orienting, coordinating, making connections, and making sense. The Endangered Species passage was selected because it included each of these activities and also was coded in several places for "meanings of librarian." Additionally, the Endangered Species selection was relatively compact and had all participants present, but it had some features that made it distinct from other planning meetings. At this point the team and I had been working together throughout the school year. Brittany was nearing the end of her first year of teaching. In this meeting, an idea of Brittany's, inspired by a book on the table, grew into a library lesson in which the students researched endangered animals. While every planning meeting included plans for some new lesson or lessons, in this segment everything happened "on stage," and it's possible to follow the lesson from the expression of need through the idea phase to concrete plans for implementation that include the library. The path was not smooth; it involved several shifts in plans, and each participant seemed to take up the lesson differently. Given the interest of this study in the role of the school librarian, this segment allowed for an analysis both of the role the school librarian played in forming the lesson and of the different ways the other participants seemed to position the librarian. This segment lasted about thirteen minutes and took place about thirty-five minutes into the planning meeting. The following sections offer an analysis of how the Endangered Species lesson emerged and was built to include a library lesson, as well as why Dianna decided not to participate. The analysis of this selected passage is provided in chronological detail to provide both context and transparency regarding my interpretive analysis.

Additionally, I decided to use the present tense and first person to reflexively re-create the experience and my engagement in it as participant.

Emergence of the Lesson Idea

The Endangered Species lesson grew out of a social studies unit on natural resources. Throughout the year, the teachers had been using a new textbook closely aligned with the curriculum to plan social studies using library materials to augment the lessons in the textbook. Areyanna asks if there are library materials for the natural resources unit.

Areyanna: Are there what, three lessons in this unit?

Dianna: I think so.

Areyanna: Do you have books to go with this Sue?

Sue: I have books about recycling and I have some books about especially about water conservation. Umm there's a book—it's sort of about cutting down the woods to build, so I have a few things.

Dianna: Let's see what they have.
Dianna’s “they” refers back to the textbook. As we move on, Areyanna states, —We can use resources. I don’t like this lesson 3,” an expression of discontent with the social studies textbook. A few minutes then pass in which there are several pauses and I get up and return to the table with books that they might use in addition to the textbook. Then Areyanna and I engage in a conversation about one book while Brittany and Dianna are talking about another book. The two conversations converge as we all tune in to listen to Brittany describe the book *Will We Miss Them?* (Wright 1991) and her idea for a lesson.

**Brittany:** Because each page is a different animal so you don’t have to do all of them. I was thinking about even trying to do something, umm, maybe with a partner, like giving each partner groups an animal and letting them talk about how can we make sure this animal is protected or whatnot. I don’t know. It’s too long to be a read aloud.

I offer to support Brittany’s idea by finding books about the individual animals —because there probably are specific books about the different animals.” Areyanna asks, —We’re going to, say, have them partner and write about how they can help protect the animal?” Her use of the plural, —we,” suggested that at least two were going to do it. Brittany outlines her idea one more time—And then if sometime during that day I’m just going to let them present their information”—followed by a relatively long pause and then this exchange as three of us come to the same realization:

**Brittany:** I don’t think it can all be done in one day though.

**Areyanna:** No.

**Sue:** I know, that’s what I was just thinking [laugh].

Up until this point, my contributions, as the school librarian, have been to bring materials, including the book *Will We Miss Them?* to the table for examination, to probe and encourage Brittany’s ideas for using the book, and to suggest that I could locate other books about the animals in the book for her students. But as this conversation continues, I am pulled into the lesson in a different way.

**Building a Collaborative Lesson**

As Areyanna begins to imagine what this lesson might look like in her classroom, she tells Brittany —your kids might be able to handle it with just you” but that —my kids are a little bit more needy” and —would need more guidance.” My response, —Well I mean I could help with it,” indicates that I immediately interpreted this to be a meaning of the librarian as another pair of hands to provide —guidance.” I follow with the questions —Are you just thinking about giving them like a class period really to look at a little bit of stuff about their animal? I mean, how much do you want them to know?” The next utterance from Areyanna was, —That sounds like a library lesson.” We then work to coordinate how we want to schedule the library. Would it be for the whole class with —the two of us doing it”? At this point, Brittany is not planning to bring her students to the library for the lesson. As the conversation progresses, Areyanna and I continue to discuss what should be included on the graphic organizer, with Brittany chiming in:
Areyanna: Maybe. What does the animal…

Sue: Where does it…Maybe about its habitat

Areyanna: Yeah.

Brittany: Habitat, yeah.

Sue: Cause that’s what it’s in danger of.

Areyanna: Yeah habitat. Maybe how can we protect it?

Sue: Habitat, why is it endangered? How can we protect it? What does it eat? Where does it live? This is why I feel like we’re getting to the animal unit. [laugh] That’s why I kind of thought this would go there.

Areyanna: Umm hmm.

Choosing to Opt Out of a Lesson (Or Not)

In the above passage, we practically complete each other’s sentences about what we want the students to learn about their animal. My comments about the animal unit apparently cause Dianna to remember a lesson we developed in the past for the animal unit:

Dianna: Are you still going to do something with insects like we have done in the past?

Sue: Well that’s what I wanted to talk about. What we want to do for the life cycle. If we wanted to do insect research or…are we looking at that for the last three weeks because I have the book fair in the middle of that. [laugh] And EOGs are going to take.

Areyanna: This really won’t be about insects. I think if they can get familiar this is something they could do to draw back on when they get to the insect unit. It will be all more familiar.

Areyanna’s comment focused on the process as one that will build a foundation for later library research. What followed this exchange was a somewhat puzzling reaction from Dianna, which I present below to show some of the linguistic detail. Lines are shown to represent —spurts— of talk (Gee 2005) containing —one salient piece of new information” (124).

Dianna: Well, you know how they are, when they come to you// (high pitch) So.

Sue: Well, if we’re both working with them that makes a difference too.

Dianna: Well.
Sue: So if we’re both working with them that helps. With a partner or a small group.

Areyanna: It works for me. Um I think with the two of us doing it.

I had originally felt the comment “you know how they are when they come to you” perhaps indicated a meaning of librarian as a person who did not have control over students. The way Dianna drags out the “you” with a raised pitch contributed to this feeling. I have since decided that it also represented a struggle between at least two meanings of school librarian: the school librarian as specialist and the school librarian as co-teacher. Dianna’s use of the third person “they” in the phrase “when they come to you” suggests that her students come to the library without her. My statements with the emphasis on the word “both” suggested that I was trying to make a point about her presence. I actually repeat “we’re both working with them” twice, and Areyanna echoes with “the two of us.”

As the discussion proceeds, Brittany decides to make the library a part of her lesson with the use of an inclusive “we” and “in here,” referring to the library.

Sue: So just have them leave here with that graphic organizer filled out and then you can do something in your classroom with that drawing a picture or - sharing it. How are you thinking of them sharing it?

Brittany: We do Author’s Chair in my room, so they would just do that.

Sue: Just sit there and talk about what they learned.

Brittany: We are going to do the first day in here.

I’m not sure what caused Brittany to change her mind about doing the first part of this lesson in the library. Perhaps when Areyanna suggested early on that her students could handle doing it with just her, Brittany decided she could do it that way. She made that remark before we began to talk in more detail about having a graphic organizer, what we wanted students to look for, and how students would share what they learned. I think the lesson became more complex than she had first proposed:

Brittany: Umm hmmm, so instead of me reading the book aloud I’m just going to let them look through their books, find out about the animal, where the animal lives, where they live, how they can save it.

Sue: Want me to pick the animals that are in that book? Oh, she’s got it.

Brittany: Yeah, and then sometime during that day I’m just going to let them present their information.

Brittany may have realized from the discussion that it wasn’t going to be so easy to just have them look through books and present their information later that day. It may be that following the exchange with Dianna she decided it would make a difference to have both
of us working with her students. I scheduled times for both Brittany and Areyanna to come to the library, and I checked in one more time with Dianna and got the response that opened this paper, “I’m sure it will be wonderful, but you’ve got to consider with whom you are working. I don’t want to come in here and have to fuss.”

Several discourse models or storylines about the role of the school librarian are present in the above segment: the specialist who provides release time for teachers; the school librarian as helper, resource provider, and instructional designer; and a stereotypical “shhhhh librarian” who is the “story lady.” I address each in turn in the discussion below and provide supporting or elaborating evidence from other data sources.

Discussion

The Specialist

In elementary schools, a prevailing discourse model or storyline about the school library has been to include the library as one of the “specialists,” meaning that students come to the library without their teacher once a week, often alternating with art, music, physical education, and sometimes a foreign language, to provide teachers with release time. This model is known as a “fixed schedule.” The site for this study, Obama Elementary School, was in the minority of elementary school libraries in the school system and in the state because the school library was not utilized in this fashion. Instead Obama had a flexible schedule where the teachers and librarian collaborated to decide how and when the library would be utilized for instruction. However, the model of a fixed schedule was so prevalent that teachers and the school librarian often fell back on it when scheduling whole classes to come at a regularly agreed-upon time, and it was easy for teachers to assume they could leave their students during this time. Dianna’s use of the third-person “they” in the phrase “when they come to you” suggested that she thought of her students as coming to the library without her. The fact that the Endangered Species lesson was at the end of the school year and I still felt that I had to insist on the teacher being present was indicative of a continuing struggle. My statements and Areyanna’s that followed Dianna’s comment in planning about “how they are when they come to you” suggested that we both interpreted what she has said to mean when they come to you without the teacher. I actually repeat “we’re both working with them” twice, and Areyanna echoes with “the two of us.” At the same time, I found myself complicit in reproducing the fixed model as I worked to schedule classes. I ask Brittany what time she wants to come (after lunch?), and the ease with which we find a day and time when the whole class could come to the library indicated that we had identified a “regular” time. In January’s planning transcript, Brittany says, “I always come to you at twelve.”

Resource Provider

A library as shelves and shelves of books and other print and nonprint resources is one of the strongest “storylines” in our culture about libraries. In the Endangered Species segment, the role of the school librarian as the person who pulls “the stuff” is immediately apparent when Areyanna turns to me at the beginning to ask if there are other materials to support the unit, and I get up from the table several times to gather materials from the collection. In fact, one of those books, Will We Miss Them? becomes the spark for the collaborative lesson as Brittany reads aloud from the text. My first contribution toward planning that lesson is to offer to pull books about the individual animals mentioned in the book.
Librarians in this storyline also may be gatekeepers responsible for cataloging and tracking the location of these items. A huge meaning promoted by me and clearly recognized by the teachers in this segment and throughout the planning transcripts and the interviews was as the person with “the stuff.” In the interviews, teachers always mentioned providing physical access to resources as a valued contribution of the school librarian. Areyanna describes the librarian as someone who “goes through and pulls books for us and actually looks for materials that we can use in the classroom and brings them to us in a wagon. Tons of stuff - more than enough.” The wagon refers to a red wagon used by the library to deliver materials to classrooms. As the person responsible for cataloging and tracking materials, one shade of this meaning is as the gatekeeper. While this was not a meaning promoted by me, it was still apparent in the following passage from September in the comment by Jean, the curriculum facilitator:

Sue: Oh good the red wagon’s back. We’re going to need it. I checked these out by the way to Ms. Robertson.

Jean: So don’t lose them.

**Instructional Designer**

While the teachers all recognized the value of the librarian in providing resources, they always qualified this as value-added. Brittany sums it up in a February 2009 interview:

Brittany: Right well I feel like definitely you are a key part in our planning because you are able to get those resources for us, but also you always come with ideas as well. And helping us realize our objective - what needs to happen when we are teaching this objective and maybe some things that we can do and you can do with the kids or we can do in the classroom with kids, so you are very helpful with giving ideas and getting our resources together.

Helping teachers realize their objectives generally involves positing ideas and asking questions to provoke conversation about designing instruction. The Endangered Species passage represented 13 minutes from this planning meeting and consisted of 1,239 words. From these 1,239 words, 458 (37 percent) were questions or expressions of uncertainty; 337 (almost 75 percent) of those words were my questions, including:

- “Do you want me to pick the animals that are in that book?”
- “Mean, how much do you want them to know?”
- “Do we want a graphic organizer that they fill out?”
- “How are you thinking of them sharing it?”
- “Pairs, pairs or would you rather have small groups?”

These questions and others served to provoke further discussion of what we wanted students to know, how we would teach it, and how we would know they had learned it. These questions may have led Brittany to realize that she was not going to be able to accomplish the lesson in the time she had first envisioned, and they may have helped her realize the value of scheduling part of the lesson with the school librarian.
Helper/Co-Teacher

Just as interesting as Dianna’s opting out of the lesson is the way Brittany first plans to teach the lesson alone in her classroom. While she clearly recognizes the value of the school librarian in providing resources and advice on instructional design, she doesn’t recognize the potential role of the school librarian as a co-teacher. This failure may be indicative of the prevailing discourse of librarianship as a service profession as well as the specialist identity prevalent in elementary schools. Again and again, the voluntary nature of the relationship is promoted in my talk as exemplified by the questions above—most are hedged, starting with “would you rather,” “do you want,” and “how are you thinking.” Teachers valued this quality, as indicated in Areyanna’s response to the question in her February 2009 interview about what the school librarian brought to planning:

Areyanna: Focus, direction, resources, um, good advice, um, looking for a word…You don’t necessarily push it on us… suggestions suggestions.

In the Endangered Species lesson I use the phrase “an extra pair of hands” when Areyanna says her students might need more guidance. I offer, “Well, I mean I could help with it,” and throughout that interchange the pronouns we choose are more “you” and “me” than “we.” I also must observe that my use of the verb “working” rather than “teaching,” along with Areyanna’s observation that she doesn’t think she can do this lesson alone, suggested that while we were working side by side, we had not quite adopted a language of co-teaching. Librarianship is a service profession, but the language of “helper” or “extra pair of hands” dilutes our image as co-teacher or instructional partner.

The “Shhhh” librarian reading stories

When Dianna chose to opt out of the lesson, I wondered about her meaning of “you got to consider with whom you are working.” At the time, I took “with whom” to mean her students, but she may have been talking about herself. The next phrase is about her and her fussing rather than her student’s behaviors. Dianna may be drawing on the library as a place where order and quiet are expected. Earlier in the year (September) there was this particular exchange between Areyanna and Dianna about reading aloud to students:

Areyanna: You know everybody’s going to have to have their little say about what they know. [laugh]

Dianna: Put your hand down and listen. Just hush. That’s what I say.
Perhaps one of the meanings of school librarian that Dianna would recognize is the person with the finger on her lips shushing the children. While the image of a librarian with glasses and a bun demanding quiet is almost a laughable stereotype, it is one of the meanings widely available to us along with the children’s librarian asking listeners to “just hush” while she reads aloud. While the “Shhhh” storytelling model was not apparent in my discourse with the teachers or in our planning together, Areyanna references this model in one of the interviews:

“I’ve never seen another school that has a librarian like you that gets involved and helps us with planning and actually teaches lessons with our classes and not just, you know, reads stories to them, but actually gets involved with the actual curriculum.”
Areyanna’s reference to this model emphasizes its prevalence in our discourse about school librarianship and thus how readily available it is as a reference for a “real school librarian.”

Conclusion
This discourse analysis foregrounds the ongoing struggle engaged in by school librarians to implement new roles and new standards. While the model of a school librarian who “gets involved and helps us with planning and actually teaches lessons with our classes… and actually gets involved with the actual curriculum” is one promoted in the discourse of Empowering Learners (AASL 2009), Areyanna’s comments suggest that it is not one recognized by teachers as a “real school librarian.” In fact, Areyanna suggests in the same interview that the library program is “your creation.” These prevailing meanings of a school librarian as a helper, a story lady whispering “shhhh,” and a specialist providing release time for teachers are held in place by our own everyday discursive practices. The work of gaining wide recognition for the identity and roles of a school librarian that are promoted in our professional standards remains an ongoing struggle played out moment-by-moment in the language of our interactions. Teachers like Dianna, who think of the library as a quiet place where they need to “fuss” at their students to be quiet; Brittany, who recognizes the librarian as helper but not quite co-teacher; and Areyanna, who says she has never “seen another school that has a librarian like you,” remain among those “with whom you are working.”

This discourse analysis uncovered how these identities continue to be exercised not only in the ways others see us but also in the ways we talk about and promote ourselves. While the provision of resources, a flexible schedule, and a service orientation are all highly valued and recognized aspects of our jobs, they are not sufficient and may even hinder the creation of new identities beyond gatekeepers, specialists, and helpers. We have much more work to do (and more noise to make) to gain recognition for “real school librarians” as defined in Empowering Learners as co-teachers who are leaders with a particular knowledge of curriculum and instructional design, not story ladies whispering “shhhhh” and covering classes to provide teachers release time.

This work will inevitably involve struggle as we work to overcome existing discourses of “real” school librarianship held by teachers, administrators, and others with whom we work, including other school librarians. Gee’s (2000–2001) theory of a discursive identity—as one that must be negotiated in interactions with others—provides for the possibility of negotiating new identities. And, as Gee reminds us, we must bid for recognition of these identities in our own talk and actions. While Areyanna perceived the role of a school librarian as someone engaged with curriculum and instruction as my “creation,” she also stated that it was one she looked for in other schools: “Yeah, how’s your librarian involved? Is your librarian with you in planning? How does she work with your class?”

As Church (2008, 2010) and others have found, school principals base their ideas about the identity or roles of a school librarian on their personal experiences with school librarians. While we should certainly seek ways to reach pre-service teachers and principals through their coursework, and practitioners through their journals and conferences, we also should remember the work that is ongoing, moment-to-moment, and one-to-one in our daily interactions. We always should consider “with whom you are working” and the many discourses each person carries of “real school librarians.” This particular study is limited by its very particular and subjective context and by the limited amount of text that can be subjected to a fine-grained
discourse analysis. Further study, and in particular further application of discourse analysis to the identity work of practicing school librarians, are needed to verify and refine these findings. While there exists research regarding the roles of school librarians delineated in Information Power (McCracken 2001; O’Neal 2004), a need exists for exploring the new focus in Empowering Learners on the role of leader and the shift toward the roles of instructional partner and information specialist. The discourse models or storylines uncovered here are a small part of the ongoing story of school librarianship, and they begin, but do not conclude, the need for more theoretical and empirical work regarding the identity of school librarian.

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Perceptions of Self and the "Other": An Analysis of Challenges to And Tango Makes Three

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Abstract
Understanding what motivates people to challenge books and how community members react to these challenges can help librarians find better ways to work with challengers to come to equitable solutions. This study focused on the motives behind challenges to the acclaimed children's book And Tango Makes Three and the reasoning given by those who opposed these challenges. Qualitative content analysis was done on newspaper and library journal articles that discussed challenges to the book. Analysis revealed five major themes: third-person effect, parental rights, scarcity, First Amendment rights, and diversity.

Introduction
The purpose of this study was to better understand the motives for and arguments against book challenges. Between 2001 and 2010 the American Library Association’s (ALA) Office of Intellectual Freedom (OIF) recorded 4,659 book challenges (ALA 2011a). A great many of these challenges occur at schools and libraries. By studying the discourse of a community during book challenges, librarians can better understand what motivates people to challenge books and find effective ways to work with challengers to achieve acceptable solutions. This study focused on the motives behind challenges to the acclaimed children’s book And Tango Makes Three and the reasoning given by those in the community who opposed these challenges.

Literature Review
Because motives for censorship have been studied across disciplines, censorship attitudes have been defined and researched in various ways. Past studies have viewed censorship attitudes from both an individual level as well as part of the larger construct of political tolerance (Lambe 2002). This study focused on censorship attitudes as they related to a specific controversy. The concepts of third-person effect, scarcity, and First Amendment rights were used to help focus the research to better understand the attitudes and motives behind those who challenge controversial books and those to fight censorship.
Third-Person Effect

Third-person effect is a framework for studying censorship attitudes (Lambe 2002). Coined by Davison (1983), third-person effect hypothesizes that when exposed to a controversial media message, a person will overestimate the amount of influence that message will have over other people. While not limited to the study of mass communication, third-person effect has been used to study various types of media content. Past research topics include Internet pornography (Byoungkwan and Tamborini 2005), political attack ads (Ran and Ven-Hwei 2007), public service announcements (White and Dillon 2000), rap lyrics (McLeod and Eveland 1997), and violence on television (Hoffner and Buchanan 2002). These studies, and the hundreds of others that have been written in the past 25 years, used experimental research and survey methods in an attempt to further understand third-person effect and its broader implications for media perception and influence.

One factor that can influence the level of third-person effect is media content. For example, while many studies have found that people believe they are less influenced by negative media messages than others, White and Dillon’s (2000) study of public service announcements found that people also think they are more likely to be persuaded by a positive media message than others. Therefore the desirability of a message has an impact on both the way people view their own level of persuasion and the way people view the level of persuasion the message has over others.

In relation to censorship, media content can affect the severity of restrictions given to various types of media content. This could be attributed to several factors, including reasons for the censorship (political vs. moral), content source (news vs. entertainment), and the type of media (books vs. television) (McLeod, Lambe, and Paek 2005). All of these factors can influence access restrictions based on age (Internet filter devices), location (in the library stacks vs. behind the counter), and time of day (mature programming after 9 p.m.).

Another factor that can influence the level of third-person effect is the characteristics of “other.” A deeper definition of third-person effect reveals that when one is evaluating the effects of a message the impact will not be on _me_ or _you_, but on _them_—the third person” (Davison 1983, 3). In fact, the third person is perceived to be even more influenced by a message the more a person’s characteristics differ from those of the self (Lambe and McLeod 2005). Characteristics include age, gender, education, income, media use, and ideology (McLeod, Lambe, and Paek 2005). A difference in age could explain why children are especially prone to the category of “other.” For example, a parent might explain that while their child is not influenced by a specific type of media because of the parent’s censoring of material to the child, other children whose parents either didn’t censor the material or aren’t aware of it will be negatively influenced.

Scarcity

Another dimension of challenged and censored books is the lure of scarcity. In economics, scarcity is a condition of demand exceeding supply. However, while an economist is interested in the monetary value of an object, for censorship, scarcity affects its social value. Sellers of limited-edition coins, limited-time offers, and “while supplies last” deals have long understood that the allure of an object increases as perceived availability decreases.
The censorship of books can also produce the effects of scarcity. Salomon Rushdie’s *Satanic Versus* and Mian Mian’s *Candy* saw a boom in sales after the books were banned in certain countries (Pratkinis and Aronson 2001). Some of the most loved and popular books of all time have been challenged or banned, including *Anne Frank: The Diary of a Young Girl*, *Catch-22*, *Gone with the Wind*, *James and the Giant Peach*, and *To Kill a Mockingbird* (Sova 1998). A classic like *The Adventures of Huckleberry Finn* is as much known for its controversies as it is for its plotline.

The appeal of scarcity is not limited to readers. Toni Morrison, author of *The Bluest Eye* and *Beloved*, two of the most frequently banned books in the United States, once said in an article that, “There are so many great books on the banned lists, I’d be almost embarrassed if mine weren’t on them!” (Chen 2007, 262). Pat Conroy, author of *Beach Music* and *The Prince of Tides*, which were both banned from two West Virginia high school classrooms, wrote a letter to *The Charleston Gazette* telling the censors that “because you banned my books, every kid in that county will read them, every single one of them. Because book banners are invariably idiots, they don’t know how the world works—but writers and English teachers do” (Conroy 2007, A5). This is most certainly not the effect censors hope for when they challenge books.

Scarcity also has appeal because of its ability to help define the self. It allows the owner to believe that having something scarce makes one unique and special by acquiring something not everyone is able to obtain (Pratkinis and Aronson 2001). For children, reading censored material could be done to prove they have grown up or that they are different than the older generation. For example, reading J. D. Salinger’s *Catcher in the Rye* may be a rite of passage for American youth not only because of the content in the book but also because the controversy surrounding the book gives young readers a sense of breaking the rules and rebelling against the status quo.

**First Amendment**

The First Amendment right to “freedom of speech, or of the press” is often used by those on the anti-censorship side of book banning controversies (Lambe 2002). The First Amendment itself is not without its own controversies. Countless court cases throughout U.S. history have dealt with the rights one has under the First Amendment (Cornell University Law School 2010). And while many Americans believe in the right to free speech and press, few would argue that these rights are absolute. Dangerous speech, such as speech that purposely incites a riot, and defamatory speech, such as speech that is knowingly harmful and untrue, are examples of speech that may not be protected under the First Amendment.

Organizations such as the American Civil Liberties Union, the ALA, the National Coalition Against Censorship, and the Free Expression Policy Project make it their mission to protect the First Amendment rights of the American people. Librarians also have a duty to protect a corollary freedom of the First Amendment: the right to read. The ALA’s *Library Bill of Rights* clearly states that “libraries should challenge censorship in the fulfillment of their responsibility to provide information and enlightenment” (OIF 2006, 55). Issues of free speech and the right to read overrun the library from the books on the shelves and the filters on the computers to the use of library meeting rooms and display areas (Minow and Lipinski 2003). In fact the OIF is one of the premier organizational watchdogs for books and media censorship.

Defending the First Amendment rights of their patrons has become one of the defining factors of being a librarian. Celebrating the OIF’s Banned Book Week through the showcasing and reading
of banned books allows librarians to define themselves as defenders of intellectual freedom. The commitment to defend freedom of expression overrides the content of a book even when a person might object to it on a personal level (McLeod, Lambe, and Paek 2005). This is the opposite of those on the other side of the banning who, while they may believe in freedom of speech, view it as having limitations when that speech is perceived to be harmful.

**Purpose and Research Question**

The purpose of this study was to better understand the motives for and arguments against challenges to the acclaimed children’s book *And Tango Makes Three*. Newspaper and library journal articles that discuss the controversy surrounding *And Tango Makes Three* were analyzed for this study. These articles included news stories and commentary. While in most third-person-effect research the material subjects read or watch is selected by the researcher, this study focused on a book that already had an existing controversy. The purpose here was to understand these three phenomena in an environment where they naturally take place. There is also the added benefit of reading texts written by or quoted from those who act on their third-person or scarcity perceptions.

Research Question: What reasoning was given by both those who challenged the controversial children’s book *And Tango Makes Three* and those who opposed the challenges?

**Method**

This study focused specifically on the book *And Tango Makes Three*, which is a children’s picture book that was published in 2005 by Simon & Schuster. The book is based on the true story of two Central Park Zoo penguins, Roy and Silo, who formed a couple. After watching them create a nest and try to hatch a rock that resembled an egg, their keeper gave the two penguins a real penguin egg that had been abandoned. Roy and Silo successfully hatched the egg and raised the female baby penguin named Tango. Written by Justin Richardson and Peter Parnell and illustrated by Henry Cole, *And Tango Makes Three* has received many awards, including being an ALA Notable Children’s Book Nominee, the ASPCA Henry Bergh Book Award Winner, one of the Bank Street Best Books of the Year, and a Lambda Literary Award Finalist (Simon & Schuster 2011).

*And Tango Makes Three* also was the most challenged book of 2006, 2007, 2008, and 2010 and the second most challenged book of 2009 (after Lauren Myracle’s *ttyl, ttfn*, and *l8r, g8r*) (ALA 2011a, 2011b). OIF defines a challenge as “a formal, written complaint, filed with a library or school requesting that materials be removed because of content or appropriateness” (ALA 2011a). Reasons for such challenges include the book being about homosexuality, appearing anti-family, and being unsuited to its age group. (The publisher-suggested age range for Tango is ages 4–8.)

Articles published between 2005 and 2007 were analyzed to investigate the beginning of this phenomenon. Eleven newspapers and four library journals were selected for the study. This stratified sampling strategy was used to better understand the reasoning of those most likely to be concerned about the book and its various challenges. Stratified sampling allows for the study of distinct subpopulations. Preselection of specific newspapers and journals makes available those voices that are imperative to the research question (Krippendorff 2004). Selected newspapers
included three local and eight national newspapers. The national newspapers included the Chicago Tribune, Denver Post, Houston Chronicle, Los Angeles Times, New York Daily News, New York Times, Philadelphia Inquirer, and USA Today. These newspapers were chosen because of their high circulation rates and their varied locations throughout the United States. The newspapers were chosen ahead of time, therefore some had several articles on And Tango Makes Three challenges while others had no articles. Of the articles that did mention the book, the only ones used were those that discussed the controversies surrounding the book. Articles such as book reviews or news stories about the real-life penguins the book is based on were not used for this study. Articles were found using the databases LexisNexis Academic and ProQuest Newspapers. When a publication could not be found in these databases, articles were retrieved from either microfiche or a physical copy of the newspaper.

Three local papers were selected because of their proximity to schools and libraries where Tango had been challenged. Most stories covered in local papers centered on local challenges to the book. The St. Louis Post covered parental challenges to the book being part of the Shiloh Elementary School library in Illinois. The St. Joseph News centered on the relocation of the book in two Rolling Hills libraries from the children’s nonfiction section to the less-popular fiction section after two parents complained. The Charlotte Observer covered the story of four Charlotte-Mecklenburg elementary school libraries that pulled the book—without following school policies—after several parents complained.

Four library journals were selected and included: American Libraries, Library Journal, School Library Journal, and Newsletter on Intellectual Freedom. These four selections were chosen because as a whole they reflect a variety of library types and library-science issues.

Qualitative content analysis was done on articles about challenges to Tango. The concepts of third-person effect, scarcity, and First Amendment rights were used to help focus the interpretation of texts. Content analysis has different definitions depending on the text to be analyzed, the research question that is put forth, and the ideological framework of the researcher (White and Marsh 2006). Qualitative content analysis is a research technique for making valid “inferences from text to the contexts of their use” (Krippendorff 2004, 18). It is important to point out that this type of analysis is inductive and that instead of generalizability there is transferability (White and Marsh 2006). This type of research method is a step away from traditional methods for studying censorship, third-person effect, and scarcity; past research in this area has mainly been quantitative and employed experimental and survey methods.

Findings

Of the 15 resources used for this study, 31 relevant articles were found. These articles consisted of 24 new stories, 4 opinion pieces, and an informational article. While the news stories were dispersed among the local newspapers, national newspapers, and library journals, all of the opinion pieces came from the national newspapers. All opinion pieces were written by staff writers with the exception of a letter to the editor from a reader responding to an earlier opinion piece about the book.

By analyzing the articles, paying close attention to examples of third-person effect, scarcity, and First Amendment rights, several major themes emerged. Five categories were created to reflect these themes: third-person effect, parental rights, scarcity, First Amendment rights, and diversity.
After these five categories were created, the articles were again analyzed for instances of these themes within each article. Articles and passages with similar themes were grouped together and relevant quotes were pulled out that would help illustrate each category and its relation to the situation being studied.

**Third-Person Effect**

I don’t have a problem with the book being at the library, but it is not appropriate material for children in that [one-to-three-year-old] age group. I'd feel the same way if the penguins were murderers or rapists. Don't sugarcoat that type of material by making it pertain to cute penguins, or dogs or kittens or whatever. It's not appropriate material for a three-year-old to see and hear. (OIF 2007b, para. 4)

This quote came from the mother of a 17-month-old who became upset when she noticed her friend had checked out *And Tango Makes Three* for her three-year-old from the local public library. It is from one of the seven articles that were found to have instances of the perceived effects the book could have on children. These instances pertained to the age inappropriateness of the book’s homosexual content. All third-person effects that were found related to the book’s potential influence on children. This is understandable as the intended audience for the book is young children. However, the effects were not limited to only “other” people’s children. The parents worried about the perceived effects of the book’s homosexual content on their own children as well.

Perceived third-person effects were not limited to parents. In conservative talk radio show host and movie critic Michael Medved wrote in his *USA Today* of his disapproval over *Tango* and the animated movie *Happy Feet* being promoted as entertainment for children even though they discuss controversial issues such as homosexuality and global warming. “In the earliest stages of life, however, it makes sense to keep them protected from such conflicts and to avoid using preschoolers—and penguins—as the pawns of propaganda” (Medved 2006, A13). His description of children as “pawns of propaganda” and his call to “spare” them from controversy portrays children as an impressionable “other” that should be sheltered from certain topics.

**Parental Rights**

*Please allow us to know when our child is ready for certain introductions. Each of us knows our child best.* (Leventis 2006, C2)

Parental rights were expressed by both those that believed the book should be censored and those that believed the book should be left in libraries. These rights centered on the belief that parents should choose when and how controversial issues are introduced to their children. One board member for a library with complaints about the book stated that it was “not the library’s interest to censor material or suggest to parents what is appropriate for their children” (OIF 2007b, 2). Arguments for parental rights were found in 13 of the 31 articles analyzed for this study. The right of parents to decide what their children have access to was such a strong argument for both sides of the controversy that more articles mentioned parental rights than any other theme analyzed.

Parents and library board members were not the only people who voiced their opinion about the rights of parents. Along with Medved’s comments for *USA Today*, Randy Thomasson, president of the California-based Campaign for Children and Families, also used parental rights as reasoning for challenging *And Tango Makes Three*. In fact, Thomasson went so far as to attack
libraries, telling parents that they can no longer trust libraries to protect their children’s innocence or uphold appropriate standards. Voters should demand that books with harmful content be removed from school and city libraries” (Swanson 2007, A20).

**Scarcity**

Miller noted that the flap spurred interest in the book, which tells about two male penguins in New York’s Central Park Zoo who paired up and hatched an adopted egg. “Everybody wants to read that book,” Miller said. “It’s a wonderful way to get students and parents reading.” (OIF 2007a, para.11)

Gloria Miller was a library director at one of the schools where the book was challenged. In her defense of keeping *And Tango Makes Three* in the library, she noted that the book seemed to be more popular once there had been talk of its removal. However, Miller’s comment was unusual. Articles that mentioned the effects of scarcity were surprisingly limited, with only 3 of the 31 articles including it.

This might have happened for several reasons. First, most of the news articles tended to focus on the complaints of those parents challenging the book or those defending the book and the library. There was little written about the effect the controversy was having on the broader community in which the challenges were taking place. Also, only the four Charlotte-Mecklenburg elementary schools took the book off the shelves, and even then, it was only for a few days. The book remained available to patrons during and after the other challenges that were studied. The intended audience for the book (children) may also be a reason why the effects of scarcity were not found. The elementary children that were affected by these challenges might not have even known the book was being challenged because they are less likely to read the local paper or watch the local news as compared to adults or teenagers.

Because there was little about scarcity in the text of the articles, the dates and content of the articles were studied to find the effects of scarcity. In doing database searches for *And Tango Makes Three*, it was found that the majority of articles on the book were not book reviews but were instead about book challenges. Forty-two of the 59 articles in the databases Library and Information Science Abstracts and ProQuest Newspapers deal with controversies surrounding the book. The majority of the articles (47 of 59) were written well after the book’s June 1, 2005, publication date. These articles also tend to be written around the time the book was challenged or when the ALA named it the most challenged book of a given year. This clearly shows the extra level of attention a book can potentially receive when it is challenged.

**First Amendment Rights**

*The freedom to read is continuously under attack from private groups, and sometimes from parents and school administrators.* (Harmon 2007, 27)

The rise in media coverage for a challenged book also reveals how strongly many American organizations and citizens support the First Amendment. Nine of the 31 analyzed articles had anti-censorship language that alluded to the freedom to read. Most came from people in the library field or who worked for the ALA. The newspaper articles that discussed *And Tango Makes Three* as well as Banned Book Week and the ALA’s “10 Most Challenged Books of 2006” were particularly rich in examples of First Amendment rights language. The above quote came from Hofstra University library administrator Sarah McCleskey in a *New York Daily News*
article about her university’s participation in ALA’s Banned Books Week. During this annual event, libraries across the country read banned books and hold lectures and discussions about book banning and intellectual freedom in order to inform the public and to show support for the freedom to read.

Events like Banned Books Week, as well as quotes from the texts analyzed, show how librarians find professional identity in their fight to protect the freedom to read. “The consequences of banning material can have major cultural implications and it’s something librarians fight constantly” was the response of Barbara Read, director of Rolling Hills Consolidated Library when asked about her decision to keep *Tango* in her library after it had been challenged (Children’s Book Moved 2006, para.16). From the articles analyzed, the freedom to read was viewed as a professional principle as well as a major reason for keeping the book in the library where children could have access to it.

**Diversity**

*Libraries are one place in the community where everyone is represented on the shelves. That’s one of our roles.* (Swanson 2007, A20)

This quote came from Judith Krug, former director of the OIF, and is an example of the most prevalent theme found in the anti-censorship language analyzed. Many library professionals and parents used the need for diversity of ideas as a reason to keep *And Tango Makes Three* in the library. Eleven of the 31 articles had quotes about diversity and its role in library collection development. Some anti-censorship advocates thought that taking the book out of the library would “discriminate” (Leventis 2006, C2) and is a way to “reinforce a culture’s stereotype” (Cooperberg 2006, A19).

Judith Krug’s quote also shows, again, how much a librarian’s identity centers around this idea of freedom to read and the notion that there should be resources available for all types of people in the community. Providing access to materials on a diverse set of issues and viewpoints was found to be one of the major roles a library plays in a community. Librarians were quoted saying that a library “should represent different aspects of our society” (Leventis 2006, C2) and “is there for the public and there are all types of different viewpoints” (Children’s Book Moved 2006, para. 15).

**Discussion**

Five major themes were found in this analysis of challenges to the children’s book *And Tango Makes Three*: third-person effect, parental rights, scarcity, First Amendment rights, and diversity. Third-person effect and parental rights were the two most often employed by those who challenged the book. Anti-censorship advocates also voiced the need for parental rights as well as using the freedom to read and the need for diversity of ideas as reasons to keep *Tango* in the library. Scarcity was, on a small scale, found to be an effect of book challenges. Once the book was challenged there was a rise in the number of articles that were written about it, and a few librarians noticed an increase in demand for the book.

Perceptions of third-person effects came from parents and commentators who believed the homosexual undertones of the book were too mature for children. These parents worried about the perceived effects not only on other people’s children, but on their own children as well. This
is a shift in the third-person effect model. Here the “other” is not other people’s children, but all children. Taking part of Davison’s (1983) initial hypothesis for the third-person effect relationship, in instances of censorship the relationship would be this: the impact will not be on me (the parent who challenges a book) or you (the librarian, parent, or school board member), but on them (all children who have access to the book)—the third person. This may be because of the modern, Western view of children as “human becomings rather than human beings” (Holloway and Valentine 2003, 5). Differences in age have an influence over perceptions of third-person effects here because “children” is not only a biological term but also a socially constructed one. Defining children as incomplete adults could explain why they are especially prone to the category of “other” in the third-person effect hypothesis and are used as reasoning for censorship of books, art, and media.

The perceived effects of the book’s homosexual content on children lead to a second theme being used by those who challenged the book. Parental rights were used by both parents and commentators who did not want children to have access to the book. They voiced the desire for parents, not the government or libraries, to decide what access children have to controversial material. This reasoning was not very strong because anti-censorship advocates also used parental rights in their defense of the book. In their argument, children should have access to the book so that parents could decide whether it was appropriate for their child. Parental rights were a logical argument from both perspectives that loses impact because of its duality.

First Amendment rights were a popular anti-censorship argument used by those in the library field. And while freedom of speech and the right to read are powerful anti-censorship tools, this argument is made less strong because this censorship dealt with young children. While under the guardianship of their parents, children do not have the same legal rights as adults. This could be a reason why it was not the most popular theme found in the study. This might also have happened because many of the parents didn’t want to ban the book completely but instead wanted restricted access for young children (OIF 2007b). It is expected that there would be even more mentions of First Amendment rights in censorship cases that deal with adults and in cases where a book is completely banned from a library’s shelves.

Diversity was the major theme used by anti-censorship advocates. This aligns with the nature of modern library collection development policies, which try to meet the needs of an increasingly diverse population. Diversity might also have been a popular argument because the content of the book portrayed a different type of family unit and dealt with a topic that is not traditionally discussed in children’s literature.

First Amendment and diversity arguments also showed how much the library and the librarian are defined by those two beliefs. The mission of the library and the role of the librarian were brought into the debate over banned and challenged books. These challenges banded like-minded librarians together in their advocacy for the First Amendment rights of their patrons.

**Future Research**

Book challenges continue to occur in schools and libraries. Such challenges reside under the Constitutional provision of freedom of speech. Such opportunities to engage in dialogue are part of the democratic way of life. The majority of book challenges involve books aimed at children and young adults (Swanson 2007), such as the book used for this study. *And Tango Makes Three*
was the most banned book for several years and therefore had a rich set of data from which to pull. Future research might focus on a different type of book or even a set of controversial books, such as the Harry Potter series. Another possibility would be a study on challenges to a variety of controversial books on different topics and for different age groups.

This study focused on the analysis of the quotes from parents and library professionals that were found in the news articles from around the United States. Because articles were used, perceptions about the challenges were viewed through a journalistic lens. Future research could include a case study on a specific library dealing with a book challenge. The five themes found in this study (third-person effects, parental rights, scarcity, First Amendment rights, and diversity) could be used as a theoretical framework. These themes can help guide future studies to get an even deeper understanding of the motives and attitudes that surround book challenges and censorship.

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Generating Knowledge and Avoiding Plagiarism: Smart Information Use by High School Students

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Abstract
The article reports phase 2 of a two-year study, dubbed the Smart Information Use project, the focus of which was appropriate seeking and use of information by students at various stages of their high school education, along with the avoidance of plagiarism. In four Australian high schools, teacher librarians and classroom teachers developed and trialed strategies to teach students how to avoid plagiarism. Each school used action research and one of two pedagogical approaches, referred to as “instructional practice” and “inquiry learning.” University researchers undertook evaluation using an interpretivist/constructivist framework. Students, teachers, and teacher librarians were interviewed, mostly in focus groups. The strategies used in both approaches are described, along with the findings of the evaluation. Both approaches were found to help students to avoid plagiarism. The discussion section includes student and teacher predictions about changes in future practice, the importance of student engagement with topics, and assessment issues. The conclusion discusses the lessons learned, focusing particularly on the need for a whole-school policy if plagiarism is to be counteracted. Good collaboration between teachers and teacher librarians is crucial. The two pedagogical approaches, taken together, provide a powerful repertoire of ideas that can be implemented over time in any secondary school anywhere.

Introduction
Plagiarism is a much discussed problem, especially at the college level, with a new book on the subject (Blum 2009) providing recent in-depth exploration of the problem in relation to college culture. The issue has received some consideration at the high school level, especially in relation to the contribution of the Internet. As early as 1998, Todd (2008) showed the extent to which the electronic environment played a part in the problem of plagiarism at the high school level (28).
In 2007 an article appeared in *School Library Media Research*, documenting the first phase of a three-phase Australian project (Williamson et al. 2007), called the Smart Information Use project, which aimed to help students learn to avoid plagiarism. The idea for the study originated with previous research (McGregor 1993; McGregor and Streitenberger 1998) where plagiarism was discovered but finding solutions was not an objective of the research. The project was supported by Australian Research Council Linkage funding and, as well as university researchers, involved four high schools as collaborating organizations. The plan for the study was, in the first phase, to benchmark students’ information use from the perspective of “good practice,” one criterion of which concerns avoidance of plagiarism. This first phase also explored understandings of what plagiarism is, from the perspectives of students, teachers, and teacher librarians. It involved a large qualitative sample of students at various stages of their high school education from the four Australian high schools involved (Williamson et al. 2007). It is worth noting that in Australia, high school includes years (grades) 7 to 12.

The present article reports the second phase of the Smart Information Use project, in which, based on the findings of the first, benchmarking phase, teacher librarians and selected classroom teachers in the four schools developed teaching strategies designed to assist students to avoid plagiarism and to generate their own knowledge. The project researchers evaluated the outcomes of this developmental stage. The aim of the third phase of the project (not reported here) was to develop an innovative electronic resources kit based on the outcomes of the project, with the intention of disseminating the findings of the project both nationally and internationally.

Given that the focus of much discussion about plagiarism has been on methods of detection rather than on how to assist students in avoiding it, the literature review that follows is somewhat limited. It is followed by descriptions of the underpinning philosophy of the research and the method; the main teaching strategies, developed and tried by the participating schools; the evaluation of those strategies by the research team, presented from the perspectives of students, teachers, and teacher librarians; and the researchers’ conclusions.

**Literature Review**

As will be discussed later, theories concerning the development of students’ higher order cognitive processes, which could be seen as one way to foster the avoidance of plagiarism, have existed for some time. Otherwise, there appears to be no well-developed theory about how to help students avoid plagiarism. Approaches, some of which are considered to be effective, have tended to be not only varied but, in some ways, ad hoc. This review begins with a discussion of those approaches.

**Varied Approaches to Assisting Students in Avoiding Plagiarism**

Approaches include raising awareness of the problem of plagiarism and increasing students’ ability to recognize it; teaching students to synthesize information, including through note taking and paraphrasing; and teaching attribution of sources of information (citation and referencing methods) in all contexts (for quotations, paraphrases, and acknowledgement of ideas).

**Raising Awareness**

Writers who believe that the problem of plagiarism can be ameliorated through raising awareness include Walden and Peacock (2006), who suggested that it is better to lessen the emphasis on detection of plagiarism and rather engage with the causes and attempt to
make students aware of them. Authors such as Sterling (1992), Auer and Kripner (2001), McCollum (2002), Taylor (2003), and Thomas (2007) have noted the need to raise students’ awareness of the nature of plagiarism to increase their ability to recognize plagiarism in its various forms and to understand the ramifications if they are discovered resorting to the use of unattributed information.

**Synthesis of Information**

Researchers who have focused on the teaching of synthesis of information as a way of assisting students to avoid plagiarism have tended to link the problem with the lack of deep understanding of content being taught and learned. They have observed the difficulties students have with the processes of information use, including synthesis. Studies in the 1980s and 1990s that indicated this include Kuhlthau (1989, 1993), McGregor (1993), McGregor and Streitenberger (1998), and Pitts (1994). Teacher focus seems to have been on the notion that the lack of deep understanding of topic content results in difficulties for students in synthesizing information and expressing it in their own words without blatantly or inadvertently copying the original. Most of the relevant articles seem to have been produced by classroom teachers reporting on their attempts to equip students with practical skills, for example, Lambert and Nowacek (2006). One suggested way to help students express information from their own perspective and in their own words is through teaching effective note taking and the synthesis of information by paraphrasing. Suggested methods of doing this tend to share common features, such as the identification of key information, the systematic recording of notes (rather than copied text), and the use of this summarized material in final assignments. Examples include those provided by Maas (2002), McCullen (2003), and Guinee and Eagleton (2006). The effectiveness of such strategies to foster deep understanding and good synthesis was reported by Kirschner, Sweller, and Clark (2006). The need to teach accurate attribution of sources in relation to this also has been noted, as discussed below.

Recently, the now frequent retrieval of information from the Internet has led to another set of concerns that could exacerbate problems of information processing and synthesis. These concerns focus on the nonlinear ways web information is often structured, which, as research is indicating, presents an impediment to good comprehension and understanding of topic content. For example, Cohen (2006) pointed out that the typically nonlinear, interactive and multimedia formats of the web present a range of challenges for the reader that may require new comprehension strategies for deriving meaning” (174). Lorinc (2007), drawing on research about information overload and multitasking, pointed out that the human brain is “ill-equipped to function effectively in an information-saturated digital environment characterized by constant interruptions” (n.p.). Thus the multitasking often undertaken on the web may not result in good information processing because “the science of interruptions suggest our brains aren’t nearly that plastic” (n.p.).

Thus the problems with information processing, shown to exist among students in pre–Internet days, may now be of even greater magnitude. Different strategies may now be required to teach students to synthesize information from various sources rather than employ the now-easy “copy and paste” function available to them.
Attribution of Sources
Studies in the 1990s in Alberta and Texas (McGregor 1993; McGregor and Streitenberger 1998) compared the submitted assignments of two groups of eleventh-grade students with the original sources of their information. The results indicated that the Texas group, who had been instructed about the need to acknowledge sources of information, had lower levels of outright plagiarism than the Alberta group who did not receive this instruction.

The need to teach the conventions of attribution for paraphrases, quotations, citations, and bibliographies has been discussed by a range of authors, for example, Silvester (2004), McCollum (2002) and Fryxell (1996). Chanock (2008) explored the practices of attribution learned by students before arriving at university, revealing that 34 percent of surveyed students in an Australian study claimed that in year 12 they had not been required to provide references when they quoted directly, and another 25 percent believed they only needed to include the reference in the bibliography. The number of students who claimed they were not expected to reference sources they had discussed in their own words was even higher: 66 percent said not at all and 19 percent said only in their bibliographies (6). Clearly there is confusion in students regarding appropriate attribution of the words and ideas of others.

The Development of Higher-Order Cognitive Processes
Another possible way of teaching students to avoid plagiarism is through the development of higher-order cognitive processes and the fostering of creativity. Examples come from constructivist and collaborative pedagogical theories about teaching students to think creatively and to learn how to learn, such as those endorsed by Harring-Smith (2006) in what seems to be a thorough review of the literature on creativity research. One approach is based on the principles of “understanding by design,” outlined by Wiggins and McTighe (2001), which promotes — the design of curriculums to engage students in exploring and deepening their understanding of important ideas and the design of assessments to reveal the extent of their understandings” (3). Other contributors, Ron Ritchhart and David Perkins in Project Zero (Harvard Graduate School of Education 2009) have undertaken extensive work on the development of “thinking.”

Ritchhart’s (2002) major work, on intellectual character, outlined his pedagogical approach to developing a classroom where thinking is identified in relation to the learning tasks and where a culture of thinking is developed (145). He placed emphasis on student attributes, referring to them as thinking dispositions. They included scepticism, open mindedness, curiosity, and truth seeking. In Ritchhart’s view the classroom needs to become a place where thinking and exploration of thinking is made explicit and where a culture of mindfulness is established. In the proposed classroom, questions are explored from many perspectives, hypotheses are tested, and assumptions are surfaced for deeper examination.

The strategies that the four schools developed and tried in phase 2 were selected independently, resulting in them choosing one or more of those outlined above in the literature review, with only one school overtly choosing to underpin their work with an attempt to develop thinking processes amongst their students.

Research Philosophy and Design
The Smart Information Use project involved a cross-section of four Australian high schools: a country coeducational government school, a girls’ Catholic school, and two other
nongovernment, independent schools—one for boys only, the other coeducational. As mentioned above, there are three major components to the research approach of the project, with the second phase only being the focus of the present article.

The philosophical underpinnings of the project emerged from the interpretivist tradition of research, and the study design was based on the constructivist paradigm. This fits well with the constructivist philosophical approach to learning, espoused for some time by leading educators (e.g., Dewey 1944; Bruner 1973; Jonassen 1999) who posit that constructivist principles (i.e., that learners are active constructors of knowledge) should underpin teaching and learning. In research, constructivists emphasize natural settings and seek to gain deep understanding of the meanings of the actors involved in the social phenomenon under study (Glesne 1999; Williamson 2002). One school of constructivists believe that reality for each individual is determined by each individual’s perceptions (Lincoln and Guba 1985) and each individual’s perceptions of what is real may differ from that of others (Hammersley 1995). This is appropriate for a project in which the researchers are concerned about understanding the viewpoints, or meanings, of a range of different students and staff regarding information use and strategies for avoiding plagiarism in different school settings. The parallels to the constructivist approach to learning are evident.

The research design for phase 2 of the project included:

- some action research, used by teachers and teacher librarians in developing and testing the chosen strategies and models to assist students in avoiding plagiarism; and
- evaluation by the researchers to gauge the extent to which the new teaching strategies or models influenced students’ understandings and avoidance of plagiarism.

The latter was underpinned by the interpretivist/constructivist philosophy described above.

Two major pedagogical approaches emerged in the kinds of strategies teachers and teacher librarians developed to try with students. The first approach was associated with those discussed in the earlier sections of the literature review, the second with the development of higher-order cognitive processes. Although both strands share common features, and although there was some degree of overlap within the schools (e.g., the school focusing on the development of higher-order cognitive processes also modeled appropriate information use practices), they are different enough to be treated separately. They are referred to throughout this article as — instructional practice” (IP) and “inquiry learning” (IL). In the IP approach, teachers in three of the schools provided direct instruction and modeling of skills; in the IL approach and the remaining school, teachers implemented a constructivist and collaborative model of learning by inquiry. These two approaches are described in detail below.

The Action Research

The plan was for teacher librarians and teachers in the four schools to develop the strategies and models together, using the action research approach of the practitioner as researcher. There were to be two action research cycles of planning, implementing change, observing the results of changes, reflecting on outcomes, and considering further modification. Teacher librarians and teachers were to meet with researchers to discuss outcomes of the first cycle and changes and modifications to be made before the second cycle. Time defeated this goal. The schools all used elements of action research, with one school developing, evaluating (with students, teachers, and
teacher librarians), and modifying their unit of work three times, although this occurred intuitively rather than being planned. The school that adopted the IL approach undertook formal action research using three cycles and their own timeframe. Reflection occurred throughout, and a moderation meeting of staff evaluated each cycle as it was concluded, discussing the changes and modifications to be made before the next cycle took place. At the request of the staff of the school, the university researchers did two rounds of evaluation at this school. All schools used assignments as part of their teaching. The final evaluation by the researchers occurred at the end.

**Evaluation**
The technique commonly used in interpretivist/constructivist frameworks, the interview, was used for the evaluations to explore the experiences, perceptions, and meanings of participants involved in the trials of the strategies. All student interviews took place in focus groups (eleven in total, each consisting of eight to twelve students).

**Samples**
*Table 1* provides an overview of the year levels of students and the subjects and topics involved in phase 2 of the project.

As can be seen from *Table 1*, year 7 was the most popular year level chosen by staff for phase 2. Nevertheless, all levels except year 12 (the final year of high school in Australia) were included. Subjects and topics were varied.

**Table 1. Sample Description**

<table>
<thead>
<tr>
<th>School</th>
<th>Year Levels</th>
<th>No. of Focus Groups</th>
<th>Subject</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Years 7 and 9</td>
<td>2 (1 for each year level)</td>
<td>English</td>
<td>Year 7 English: Response to text</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Novel—Parvana; Year 9 English: Response to text</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Film—<em>Bend It Like Beckham</em></td>
</tr>
<tr>
<td>2</td>
<td>Year 7</td>
<td>2 (2 iterations with different students were evaluated at this school)</td>
<td>Humanities: History Inquiry Project</td>
<td>The causes of the breakup of the Roman Empire</td>
</tr>
<tr>
<td>3</td>
<td>Year 8 (aged about 14)</td>
<td>1</td>
<td>(1) Year 8 Science</td>
<td>(1) Water Conservation</td>
</tr>
<tr>
<td></td>
<td>Year 9 (aged about 15)</td>
<td>1</td>
<td>(2) Year 9 History</td>
<td>(2) Gallipoli—how accurate a portrayal is the film?</td>
</tr>
<tr>
<td></td>
<td>Year 10 (aged about 16)</td>
<td>1</td>
<td>(3) Year 10 Design Technology</td>
<td>Product Design</td>
</tr>
<tr>
<td></td>
<td>Year 11 (aged about 17)</td>
<td>1</td>
<td>(4) Year 11 English</td>
<td>War Poetry</td>
</tr>
<tr>
<td>4</td>
<td>Year 7</td>
<td>3</td>
<td>History</td>
<td>Famous person</td>
</tr>
</tbody>
</table>
The teachers and the teacher librarians involved in the second phase of the project were all interviewed. Numbers varied from school to school and ranged from one teacher and one teacher librarian in the smallest school to five teachers and four teacher librarians in the largest school. The teachers and teacher librarians in a particular school were interviewed together (in small focus groups), except in one of the larger schools; that school had separate focus groups of teachers and teacher librarians. At the school where there were two iterations of evaluation, there was a combined focus group the first time and a separate interview with the two additional teachers who had become part of the project for the second iteration. Decisions regarding the organization of the focus groups of teachers and teacher librarians were made on the basis of what was possible in each school because of scheduling and timetables.

**Data Collection**

In the three schools using IP approaches, the data collection for the evaluation took place from April to August 2007. In the school taking the IL approach, the first iteration took place within the same timeframe as for the other schools, the second one in November 2007. In this phase, the degree of plagiarism was not sought and quantified as it had been in phase 1 (Williamson et al. 2007) because of the sheer number of students and student papers involved and the change of emphasis from detection to development in student thinking.

The interview questions asked were similar across the schools using the IP approach, although the specific assignments involved had to be taken into account. They focused on what students thought they had learned about plagiarism: their opinions of how useful particular strategies were to them, and whether they thought students, including themselves, would plagiarize in the future after having been taught about it. In the IL school, the questions focused on the differences in this approach compared with those used in the past, particularly concerning the learning that took place with the new approach; the extent to which they felt that they had contributed their own thinking, and were involved and engaged; and whether they thought that they had learned anything about plagiarism through the assignment.

Questions asked of teachers and teacher librarians included how teaching their topic was different for this project; the extent to which teachers and teacher librarians shared the same focus; what they thought worked well and what did not; whether students gained any metacognitive awareness of the processes they used; and whether they and their students would change their practices as a result of the study.

**Data Analysis**

After the audiotapes of the interviews were transcribed by an experienced transcription typist, two researchers were involved in the analysis of each of the resulting transcripts. The analysis initially involved detailed categorization and coding of the data with key themes emerging during that process (Morse 2008). To link themes and categories to quotations that might be used to illustrate the findings, a “voice sheet” was prepared for each theme. This is so named because it includes the quotations (voices) of participants. As each voice sheet was completed an overview or summary of the data in that voice sheet was written.

One theme in common for all the IP schools concerned what students thought that they had learned about plagiarism. An example of part of the voice sheet for one of the schools for this
theme (without the summary and with just of few of the quotations included) is displayed in Table 2.

Table 2. Learning about Plagiarism: Voice Sheet

<table>
<thead>
<tr>
<th>Category</th>
<th>Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No prior knowledge about plagiarism</td>
<td>I didn’t know nothing about it until [the teacher] and that told me about it.</td>
</tr>
<tr>
<td>Prior learning about plagiarism</td>
<td>I wrote [on the card designed to show prior knowledge] that plagiarism is copying someone else’s work without giving the original owner credit.</td>
</tr>
<tr>
<td>New learning about plagiarism</td>
<td>[I learned that] You could do it with pictures as well. It’s when you don’t learn anything, because you’re just copying it</td>
</tr>
</tbody>
</table>

Description and Evaluation of the Main Teaching Strategies
The teaching strategies used in each of the two approaches, IP and IL, are here presented separately. For each there is a description of the teaching strategies developed, followed by the evaluation findings. It should be emphasized that staff in each school worked independently in phase 2. Although there was some communication between the schools, the details of each school’s strategies were not fully disclosed until the trials and evaluations were completed.

Instructional Practice: Description of Teaching Strategies
Teachers and teacher librarians in each of the three schools that employed this pedagogy collaborated within their own schools to create a series of lessons on awareness of plagiarism and ways to avoid it, which occurred in tandem with assignments that students were undertaking as a regular part of the curriculum in their particular year levels. In these lessons, students were made aware that there was an explicit focus on avoiding plagiarism in addition to the content of the topics they were exploring.

The main teaching strategies included raising student awareness of the problem of plagiarism and the ability to define and recognize instances of plagiarism; the development of skills for the synthesis of information including note taking, paraphrasing, and generating their own ideas; aspects of acknowledgement, including paraphrases, quotations, citations, and bibliographies. These strategies are discussed here without specific reference to particular schools.

Raising Awareness
The teachers in the three schools implementing an IP approach used a variety of strategies to engage students in discussion about the nature and problem of plagiarism, including group and classroom discussions and explicit instruction, such as a Microsoft PowerPoint slide show. Strategies, used to develop recognition of plagiarism in its various guises, included document comparisons, evaluation of a variety of hypothetical scenarios, and color-coded visualization in which examples of plagiarized passages were highlighted from unidentifiable student essays.

All teachers and teacher librarians in these three schools, regardless of variations in the specifics of their methods, aimed to raise the level of students’ awareness of the moral, legal, and ethical implications of plagiarism and to develop in students an empathetic
identification with people whose work had been plagiarized. From these discussions, students extended their understanding of plagiarism beyond a simple concept of verbatim copying or copying and pasting from the Internet.

**Developing Information-Handling Skills**

The features of effective practice in note taking, discussed in the literature review, were common to the strategies enlisted by teachers in the three schools. They considered good practice in note taking to include the following elements: identifying main facts and ideas, retaining essential information only; recording main points in bullet point form using the students’ own words; identifying and clarifying unfamiliar words and phrases to ensure understanding; and the relationship between points (and ideas) in the higher levels.

The teachers taught by modeling and demonstration of skills; students then attempted to emulate these skills. Despite variation in individual designs between schools, there was commonality in the use of note-taking worksheet templates that provided students with a scaffold for the note-taking process. The teaching team in one school devised a three-step strategy for note taking. The format of the worksheet contained three boxes. In the first box, students were required to make preliminary notes of “some important ideas.” In a second, significantly smaller box, these notes were to be reduced to summary notes of “the most important ideas.” Finally, students were required to write a brief summary of the article in their own words, referring only to their own summary notes. In another school, the note-taking tool was a single-page template, with one page only to be used per source. Each page provided space for recording bibliographical details, bullet point summary notes, and unfamiliar words and phrases. An overhead transparency of the template was used by the students to rehearse the skills they needed to learn. In another school, the teaching team engaged students in a whole-class exercise in effective note taking by working an example with the students using an interactive whiteboard. Students in this school also were taught to color code their own notes to obtain the visually distinguishing effect of the difference between their verbatim use of information, paraphrasing, and the generation of their own opinions or ideas.

The skill of transforming information through thoughtful paraphrasing requires students to understand the information they have read and on which they have taken notes, then to bring together ideas from various sources and express this critical act of synthesis in their own words to create something new. Teachers fostered the development of this difficult skill by emphasizing the need to avoid simply changing a few words or moving the component parts of a sentence, and by requiring students to refer to and work only from their own notes, as in the instance reported above, rather than returning to the original sources of their information. Finally, students were required to hand in their notes to provide evidence of the construction of their own work.

**Teaching about Attribution**

A well-synthesized essay or assignment requires more effort from the writer than just cobbled together chunks of information from a variety of sources. It also requires the development of an argument or set of viewpoints using a variety of sources for background or support, together with accurate attribution of those sources, an essential aspect of the responsible use of information. Students were taught that attribution of the
source is required for all directly quoted material and for the use of ideas in paraphrased information, although teachers did not introduce the method of in-text author-date citation at the year 7 level. Teachers modeled these skills for students, providing them with a pattern to follow. The main strategy for teaching the compilation of a bibliography was the provision of a pro forma for keeping a systematic record of source details. In two schools, students used one sheet per source for making their bullet point notes to keep their notes coherent and attached to the source. All schools taught students to keep a progressive record of the bibliographical details of each source they consulted. In one school, the teacher librarian had devised a bibliography game by typing all the component parts of real bibliographical details onto large cards, cutting them up and laminating them. Students then reassembled the cards into their correct order.

**Instructional Practice: Evaluation**

The emphasis of the evaluation was on the impact on students of the strategies trialed in the classrooms, mainly drawn from students’ responses in focus groups, although observations and comments of the teachers and teacher librarians also have been incorporated. For the schools using the IP approach, the discussion focuses on how student learning is affected by the trialed strategies in terms of student awareness and recognition of plagiarism, ability to synthesize information, generate their own ideas, and acknowledge sources of information.

**Developing Awareness**

Apart from about half the year 7 students in one school, all the other students had some prior knowledge of plagiarism. After specific teaching, all students demonstrated an increased awareness of the nature and seriousness of the problem. Where previously their understandings tended to equate plagiarism with verbatim copying, or copying and pasting from the Internet, all had progressed in their awareness that ideas could be plagiarized and that the sources of all information, including graphic material, should be acknowledged. As one year 7 student noted, he had learned that “you could do it with pictures as well.” A year 8 student probably spoke for many when he acknowledged that “I think I did it a lot more than I realized. Like, I plagiarized a lot with writing I did and now I know not to.” The most junior and senior students in the study (those in years 7 and 11) indicated the strongest internalization of the ethical issues associated with plagiarizing, indicating that they were developing intrinsic personal motivation to avoid plagiarizing. Year 7 students demonstrated a lively awareness of legal and moral implications. In middle school levels, students were somewhat more inclined to refer to a desire to avoid detection and the consequent penalty of loss of marks on the assessment rubric, indicating that their motivation tended to be more extrinsic. Student ability to recognize instances of plagiarism also showed a marked development. In the school that presented students with a series of hypothetical scenarios, one year 9 student reported that the exercise “helped because it showed you what you can do and what you can’t, and how much [acknowledgement] you need to put in.”

**Teaching Information-Handling Skills**

Students were asked if they were more aware of how they were doing their assignments. Younger students who did not have established note-taking habits seemed to be the most responsive to trying to adopt the note-taking techniques they had been taught. In the other year levels, most students agreed that the strategies were helpful and had dutifully completed them as pre-assignment exercises. Not many students seemed to make an
explicit connection to the transfer value of these practices to their later work. Most considered them to be time consuming, and there was a marked tendency to revert to preferred personal habits in note taking when writing their assignments. A student in year 11 conceded that “you think about it when you’re doing [the exercise] but then . . . it’s a long process to do, so you might try and cut corners, maybe not do the whole three-step stage.” Only a minority of students considered that the methods could ultimately save time and assist them to paraphrase more effectively. An example is a year 8 student who acknowledged that the three-step strategy he had been taught “was a little bit longer, but in the long run it’s a lot shorter, because you had the information in front of you to just go to when you needed it.” As in phase 1 of the project, all students claimed to use their own words when writing information in their assignments anyway, and so, to that extent, they did not consider they were doing anything very differently.

Few students were consciously aware of value adding by way of creatively generating new ideas when using information. One year 11 student declared that “it’s very hard to do that.”

However, most were able to recognize that they had been required to offer their own opinions at some points. The most engaged and astute students at either end of the age spectrum, who were in the minority (at least in their ability to articulate the issue), perceived that paraphrasing and synthesizing information effectively led to an increased depth of understanding, learning, and retention of the topic. For example, one year 7 student realized that plagiarizing means that “you don’t learn anything, because you’re just copying it . . . because you might not read through it and you don’t do as much work.” A student in year 11 recognized that when you’re given work it’s supposed to be your ideas and opinions, not someone else’s, and the teacher’s looking for what you know and understand, and if you’re plagiarizing, just taking off what different authors, different people’s ideas [are] then it’s not your work and there’s no point in writing it.

Teaching about Attribution
Students across all year levels reported a vastly increased awareness of the need to acknowledge the sources of their information and focused on taking care with the mechanics of acknowledging direct quotations, in-text citations, and the formatting of bibliographies. A year 9 student said, “I took notice about including like all my references, which maybe I wouldn’t have done if I didn’t know the seriousness of plagiarism.” A student in year 8 realized that keeping a progressive record of source details made it “very easy when you go to do your bibliography.” However, in predictions of future behavior, described in a later section, many students admitted that they found this level of attention to detail tedious and were tempted to avoid it. Some students conceded that they had taken particular care with referencing in this assignment because avoiding plagiarism was a major focus of the unit of work and they did not want to risk losing marks for noncompliance. In-text citation was not generally taught at the year 7 level.

Impact of the Instructional Practice Approach
One year 11 student seemed to sum up much of the impact of the strategies that had been trialed with the aim of teaching students how to avoid plagiarism and use information effectively:
Well I can say we learnt a lot about how not to plagiarize in work, how to take notes on things and not to just place the author’s work into your work. You have to use your own words in rewriting work and including a bibliography to cite all the sources you used.

While students made many positive statements about their learning, we cannot know the extent to which this learning will be applied in future written work.

**Inquiry Learning: Description of Strategies**

As indicated above, one school designed their year 7 unit of work according to the principles of IL, particularly attempting to develop improved thinking and cognition among students. A learning objective of avoiding plagiarism was not particularly emphasized by the teaching staff, but “intellectual and academic honesty” (International Baccalaureate Organization 2006), one of the tenets of the International Baccalaureate program in which they participated, underpinned their method. The main aim was to develop in students the confidence to generate their own understandings of the topic and express their ideas in their own words. The students undertook an inquiry-based history research assignment with the research conducted in a collaborative manner.

Teachers and teacher librarians emphasized that students’ ideas were valued and that there were no absolutes in terms of right or wrong answers. Information kits compiled by the teacher librarians deliberately limited student information searching, especially with regard to obtaining information from the Internet, although this was not forbidden. The decision to do this was influenced by the kind of research discussed above (e.g., Cohen 2006). A high premium was placed on the engagement of students with the topic as a way of promoting students’ ability to synthesize information, think for themselves, and generate new (their own) ideas. In other words, “student voice” was encouraged from the beginning.

The students were arranged into groups, with each group researching one aspect of the topic. They were required to generate a hypothesis as a focus for their research. Each group then delivered an oral presentation to their peers and distributed a written report to each individual student. As part of the report, the group was required to nominate the three sources that had been most valuable to them rather than being required to compile a carefully structured bibliography of all sources. The final assessment of each student was through an individual essay written about a week after the unit of work was finished. The essay was conducted under test conditions, being time limited and undertaken individually in silence. The only materials the students were permitted to take into this assessment period were the six group reports produced by their peers. Staff placed a high value on students’ authentic voices being evident in the final essays. They had placed verbal emphasis and reassurance on this point throughout their teaching.

**Inquiry Learning: Evaluation**

The impact of the trialed strategies on student learning, in terms of engagement with the topic, ability to synthesize information, ability to generate their own ideas, and ability to acknowledge sources of information, is discussed and evaluated.

**Stimulating Engagement with the Topic**

Findings from the pilot study led the researchers to explore the degree to which students were engaged with their topic. The pilot study found that students who were less engaged tended to show higher levels of plagiarism; were less able to recognize examples of
plagiarism; demonstrated less interest in learning, seeking meaning, or understanding; and could remember less content a month later (McGregor and Williamson 2005). While the current students exhibited a range of levels of engagement with the assignment, those who were most engaged valued the richness of the results produced within their collaborative groups as well as those produced by learning across the groups. They exhibited a higher degree of mindfulness (Ritchart 2002) as they appropriately incorporated their peers’ ideas into their own final essays. One student reflected, “Not in any other projects have I understood the other topics just as much as we did when we were writing…a report about it. We had to incorporate everything in it and…I really got involved with all of the topics.” Most students felt their original work was valued by their teachers because they were encouraged to develop their own voices. They felt rewarded for doing the kind of thinking that resulted from “really putting in the effort to make sure that you have proof, to make sure that you have all these things to make it a really good kind of argument.” As one student put it, “You knew they were going [to], like, respect what you were saying and acknowledge it.”

**Developing Information-Handling Skills**

Even though direct teaching about note taking was not part of this unit, all students reported making notes in bulletpoint form. They all reported writing their essays in their own words, claiming this to be standard practice, albeit better accomplished in this project than in previous assignments. Most of them believed they would remember better what they had learned, and to a greater depth, possibly because of a higher level of processing and synthesizing the information than they typically experienced. One declared that “I think we’ll all remember it and now we’ve got a better understanding of how things work.” Students felt that they would be more likely to remember historical issues learned in this manner than facts and dates. Because of the learning design of the assignment, they also began to develop a sense of the interactive role of information presented by others (in this case their peers but potentially transferable to unfamiliar experts and authors) in forming their own interpretations: “I think I definitely learnt more in this topic because…when we had to read about other people’s reports…I also learnt a lot about…their topics as well.”

**Encouraging the Generation of Ideas**

Many students were quick to agree that they had been encouraged to think for themselves and were able to recognize the value of creative thinking as a potent way of avoiding plagiarism. One student noted that “we had to be more creative about our thinking…get information and put it together and then be more creative and try and work out what we thought” (first iteration), and another realized that “the whole assignment was about your opinion, so it wasn’t about trying to find out the most information” (second iteration). They were aware of thinking for themselves, at least in the sense of forming their own opinions, if not always quite being able to articulate the concept of creatively generating new knowledge based on their own ideas. Indeed, the assignment was generally regarded by students and teachers alike as achieving its main aim of promoting original thinking, indicating that students did manage to perform this higher-order cognitive task effectively.
Teaching about Attribution
The mechanics of acknowledging and citing references were taught to this group of students but not greatly emphasized, and they had difficulty linking the technicalities of this task with the inquiry process. Students had been provided with a prescribed format for progressively recording the details of sources as they used them, which they agreed was helpful but admitted to not always using effectively, having a marked tendency to forget to fill it in. One student confessed, “We all kept forgetting to write in our references.” Interestingly, though, some students demonstrated spontaneous attribution of the reports of other groups, possibly because they knew that the source of their ideas would be obvious, but also perhaps because they could identify with the relevance of acknowledging the creative output of their peers. They tended to cite their acknowledgement by color (saying, e.g., “as the yellow group said”) or by the subtopic of the group they were citing. Thus, on their own initiative, some students employed one of the main strategies for avoiding plagiarism. All groups reported having compiled bibliographies for their group reports.

Impact of the Inquiry Learning Approach on Promoting Avoidance of Plagiarism
The organization of the class into groups, the collaborative thinking and writing, and the style of the final assessment were designed in such a way that teachers hoped that opportunities for synthesis would be created, plagiarizing would be limited and temptations to plagiarize would be minimized. Memorably, one student declared that in the project, it was “actually quite hard to pursue plagiarism . . . because . . . there wasn’t actually written information about what you were meant to write about, so there wasn’t anything to copy or do plagiarism [from].”

Discussion
Other issues emerging from the study included student and teacher predictions of future behavior after direct teaching to avoid plagiarism, the need for continual reinforcement of good practice in the development and maintenance of student skills, the importance of engaging students’ interest, issues involved in the assessment of student work, and the importance of teacher and teacher librarian collaboration.

With regard to student predictions about future behavior, the responses of students in the school using the approach of IL were not sought because the avoidance of plagiarism had not been an overt objective of their unit of work. In the schools where the strategies were based on IP, and avoiding plagiarism was a conscious goal for students, their responses provide further insight into the impact of the teaching on their potential future behavior.

Future Behavior: Student and Teacher Predictions about Changes in Practice
Students in the IP schools were asked if they thought they would use information in the future without plagiarizing, even if the teacher did not emphasize it. It was made clear to students that this was a personal question: honesty was urged and confidentiality assured. On the whole, students were far less likely to admit that they, personally, would plagiarize in the future than they were to assume that others would. Some adopted a strong stance on the matter, suggesting the internalization of intrinsic motivation, including a strongly expressed commitment to intellectual honesty and the satisfaction and pride to be gained from the consciousness of having
done one’s own work. Another single group of students, notable for perceiving themselves as being least likely to plagiarize, were those in year 11, who invoked the seriousness of their studies in the last two years of their school career and the gravity of penalties imposed upon detection, as well as ethical issues in general. However, some students were prepared to admit that they might plagiarize if they thought they would get away with it. Such students seemed to require extrinsic motivation, such as teacher emphasis, fear of detection and enforcement of penalties, or the reward of marks allocated specifically for compliance as part of the assessment criteria.

Teacher and teacher librarian expectation of change varied across the schools. Some thought the students would fall right back into old habits because of time pressures, while others thought the students would be more likely to acknowledge other people’s words. One teacher suggested that continued practice was what they needed, an idea that ties in with the whole-school approach recommended by many. Another teacher believed that if students realized their opinions and voices were valued, they would be more likely to change their practice: “There’s a trust that your thinking is as good as someone else’s thinking, and that’s the thing that’s most likely to change practice.”

**Engagement with the Topic**

The school implementing the approach of IL articulated a specific premium on the value of a high level of student engagement with the topic in promoting student ability to synthesize new information, think creatively for themselves, and develop their own interpretations, as mentioned above. However, the staff in the schools using an IP approach also sought to stimulate student engagement with the topic, believing that depth of understanding promotes student ability to more fully synthesize information. In one classroom discussion aimed at raising student awareness of the issue of plagiarism, the teacher librarian proceeded to read, with great admiration, a poem she said had been submitted by a student. The stanzas were in fact composed of the lyrics of a song highly popular with the age group. As the teacher expected, the class instantly recognized the song and dismissed the claim of student originality with scorn and indignation. The issue of plagiarism was thus very successfully brought home. In another school, the student assignment focused on a local issue with which students were able to identify readily and form strong opinions. In spontaneous, fast-action line debates, students arranged themselves on either side of the classroom for the negative or the affirmative, literally swapping sides as they assimilated new information and changed their opinions.

In all these instances, student participation occurred in a classroom climate of trust, where students had the confidence to take intellectual risks. However, it must be admitted that some of the students in the study who were neither the youngest nor the oldest (years 8–10) indicated some degree of boredom with the meticulous nature of some of the skills that they were being taught. With regard to this problem, some teachers and teacher librarians felt that some latitude should be extended to younger students with regard to the degree of detail required in bibliographies, so long as the necessity for not claiming the work of others as their own was understood and demonstrated. The teachers and teacher librarians expressed expectations for the sophistication of the students’ attribution techniques increasing over the years.

**Encouragement to Use Non Web–Based Sources**

As mentioned above, there is now growing awareness in the literature about the negative impact on information processing and learning stemming from the way that information is structured on
the web. All the schools encouraged students to use non web–based sources of information, although web-based resources were certainly not forbidden, with the IL school particularly attempting to promote other information sources through the provision of starter kits for each of the groups. The evaluations revealed that the level of engagement and learning of students in this school was strong, although there were many reasons why this was the case. There are no clear empirical findings here, but this issue is important and requires further consideration in any further study of information use in relation to plagiarism.

**Assessment Issues**
Teachers and teacher librarians in all schools strongly valued student voice, and they were conscious of the need to design assignments that stimulate thinking and encourage students to reach their own interpretations of a topic. The staff of the school following the pedagogy of IL, in particular, urged tolerance and acceptance of student writing skills. Young writers are generally in a developmental stage and are mostly very unlikely to express themselves in the sophisticated language of the information that they find during the course of their research. To minimize the temptation for students simply to reproduce the text of information sources, they need to be reassured that the expression of their ideas in their own words is valued. Teachers and teacher librarians, especially in the schools using IP methods, felt that real value needed to be placed on the acknowledgement of source material in student work by the allocation of marks in the assessment rubric and that teachers needed to reinforce that expectation consistently.

**The Effect of the Action Research**
Most schools used elements of action research in developing their strategies. The approach of reflection and then adjustment was considered very valuable. In one school, a teacher commented:

> I can tell the difference between the first time we did the program and the second time. I think there were heaps of improvements, especially with that sheet structure [for note taking]. And you could see the difference—they seemed to pick it up, because I actually have a slightly less able class this semester.

It was this teacher who later said about the use of action research: “The rejection of strategies is just as important as the success.”

In the school where there were two consecutive evaluated iterations by the researchers, there was general agreement that the second iteration was more successful. Certainly the researchers found this with the second focus group of students at this school.

**Collaboration between Teachers and Teacher Librarians**
The importance of teamwork, including between teachers and teacher librarians to build the focus, often emerged. As well as emphasizing this aspect, the following quotation indicates the team and whole-school approaches that were espoused by many. The teacher team member making this statement summed up the huge benefits of collaboration perceived by both teachers and teacher librarians:

> I think the working together is profound...We know that, teachers in isolation doesn’t tend to improve practice. Teachers working together improves practice enormously, the
research tells you... If we did nothing else, but we work together, we would arrive at a better practice just by doing that. My other feeling about improving teachers’ practice is to get a really whole-school, shared understanding of what you’re teaching for. If we’re teaching for content, we will do the same thing and it will be plagiarized, if we teach for understanding [they] don’t plagiarize.

Conclusions and Implications

When students were interviewed in focus groups some time after the completion of their assignments, most demonstrated very good recall and retention rates of learning with regard to the strategies they had been taught for avoiding plagiarism in conjunction with their assignments. The most readily recalled strategy in most year levels was the technique for making notes, usually in bullet point form, before converting these notes into their own words. Generally, they learned to acknowledge direct quotations and ideas that they had paraphrased, to keep a progressive list of the sources they had consulted to facilitate the compilation of a comprehensive bibliography, and to format a bibliography correctly. In-text citation of paraphrased information had typically been introduced after year 7. The strategy that was least well-recalled in any year was the creative generation of their own ideas, although most understood the concept of providing their own perspectives and agreed that they had been encouraged to do so. There was particular understanding of this by students in the IL school, where staff had placed strong emphasis on it.

A key finding of the project was that there is a need for sequential teaching according to the capacity of year levels to cope. For example, in-text citations need not be required from younger students. However, there also is a need to maximize teaching when students are at the highest stages of responsiveness. Because the ability to synthesize information plays a key role in avoiding plagiarism, effective note-taking practices, especially, are of crucial importance to achieve in year 7 to begin to make good practice habitual. Otherwise, the findings of this research indicate that students will tend to revert to personal preferences in note taking developed over time and tend to dodge the more rigorous skills that promote better synthesizing of information. There is a need to continually reinforce good note taking, as well as other skills that help students to avoid plagiarizing and to allow sufficient time for students to develop skills during assignment work. There were suggestions from many participants, particularly students, that there should be reward for good practice through the allocation of marks in assignments. Other conclusions we draw is that assignment design is crucial, that teachers need to engage students through interesting approaches to learning, and that the selection of suitable and engaging topics is critical in promoting the ability in students to generate their own ideas. There also is a need for teachers to consistently encourage the development of individual —student voice.” This requires a tolerance of authentic but often undeveloped written expression, which may create a problem in assessment when the work of students learning to express themselves may appear inferior in comparison with the writing of those who have copied.

Clearly emerging from the study is the need for a whole-school policy to counteract plagiarism through teaching students to use information appropriately implemented with consistency across all year levels by all teachers. The teachers and teacher librarians in all the schools in the study were adamant that the problem of plagiarism would persist, despite the efforts of individual staff, unless a whole-school policy were adopted across all years and implemented and reinforced by
all staff. A policy should deal not only with standards and approaches but also with supporting the collaboration needed to develop a whole-school culture. (For a discussion of the findings regarding collaboration between teachers and teacher librarians from the Smart Information Use project, see Williamson, McGregor, and Archibald 2010.) The goal of any policy should be to promote a community of practice within which intellectual honesty is valued and respect for the work of others becomes ingrained.

The findings demonstrate that raising student awareness of the nature of plagiarism, and teaching them how to avoid it, need to be undertaken from the outset of secondary school and reinforced consistently and continuously across all subjects and year levels. In relation to strategies that can be used, the two pedagogical approaches discussed in this article, taken together, provide a powerful repertoire of ideas that can be implemented over time in any secondary school classroom anywhere. Teachers and teacher librarians, working in collaboration, are in a unique position to coordinate a blend of teaching strategies over the years of secondary schools, developing and executing the fine balance between the instructional practice and the inquiry learning approaches to teaching students to avoid plagiarism. Developing proficiency in the use of the various information handling strategies such as attribution and synthesis, and through use of their personal voices to express their own ideas, will enable students to manage responsibly the plethora of information to which they are exposed.

Teacher librarians, in particular, are well placed to coordinate the blending of the best elements of the instructional practice and the inquiry learning pedagogical approaches and to incorporate these ideas both across the curriculum and longitudinally over the years of schooling. No one in a school has a more complete whole-school view of curriculum potential within individual classrooms and grades and across the grades. While student awareness was the focus of this study, developing teacher and principal awareness is of prime importance. The visionary teacher librarian can work both at the policy level and the classroom level to lead the effort and to participate in creating responsible users of information. Working directly with school leaders to educate them about the necessity for a whole-school policy regarding appropriate use of information, as well as the development of a community of practice around the issue, will lay the groundwork for coordinated, planned, and strategic implementation. We suggest that the ideas arising from the findings of this research should not be presented as an effort to curb bad practice. Rather, they can be seen as strategies for developing engaged, thoughtful, and honest citizens who respect and value the work of others but who also are comfortable expressing their own voices.

Acknowledgement

The two-year Smart Information Use project is funded by an Australian Research Council (ARC) Linkage Grant. Under this Commonwealth Government funding scheme, most of the cash support comes from the ARC, but collaborating organizations provide some cash as well as in-kind contributions. For this project, the collaborating organizations are Scotch College, Mater Christi College, Wesley College, all in Victoria, Australia and Kooringal High School, in Wagga Wagga, NSW, Australia. The authors acknowledge the contributions of all these organizations. The authors also acknowledge, with thanks, the contribution of the two research assistants, Alyson Archibald and Jen Sullivan, who worked with them on the project.
Works Cited


Cite This Article

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The mission of the American Association of School Librarians is to advocate excellence, facilitate change, and develop leaders in the school library field. Visit the AASL website for more information.
Constructing Knowledge in the Twenty-First Century: I-LEARN and Using Information as a Tool for Learning

Delia Neuman, Associate Professor, Drexel University College of Information Science and Technology, Philadelphia

Abstract

To be efficient and effective learners in the information age, individuals must be able to engage successfully with a wide variety of information types and formats. Becoming lifelong learners in a world in which information flows freely and defies the boundaries of traditional disciplines and subject areas, children and youth in particular must develop strategies for engaging with ideas that transcend the curriculum and its usual topics and structures. The I-LEARN Model—Identify, Locate, Evaluate, Apply, Reflect, kKnow—describes the process of learning with information and provides school librarians and others with a teaching tool created specifically for information-age learning. A learning model that expands traditional information-seeking models in important ways, I-LEARN assumes that learning itself is the goal of information-seeking in schools and that information in its various representations is the basic building block for lifelong learning in the twenty-first century. Grounded in research and theory from both information science and instructional systems design, and based on the author’s own research and writing over more than a decade, I-LEARN builds on the well-known tripartite information literacy paradigm—accessing, evaluating, and using information—to operationalize an inquiry approach to learning.

Introduction

The I-LEARN model—Identify, Locate, Evaluate, Apply, Reflect, kKnow—both describes the process of learning with information and provides school library media specialists and others with a teaching tool linked directly to information-age learning. A learning model, I-LEARN expands traditional information-seeking models (e.g., Wilson 1999) in important ways. It also stands on the shoulders of such classics as Eisenberg and Berkowitz’s (1990) Big Six Information Processing Skills and Kuhlthau’s (1993) Information Search Process provides a way to operationalize the inquiry-learning approach proposed by Kuhlthau, Maniotes, and Caspari (2007).
I-LEARN assumes that learning itself is the goal of information-seeking in schools and that information in its various representations is the basic building block for twenty-first-century learning: the model’s “Apply” and “Reflect” stages put the application of information to learning at its center. Whether presented through print, audio, visual, multisensory, or digital media, the information itself is what learners apply and reflect on to make meaning. Grounded in research and theory from both information science and instructional systems design, and based on the author’s own research and writing over more than a decade, I-LEARN expands the well-known information literacy paradigm—accessing, evaluating, and using information—to focus specifically on the use of information as a tool for learning (see Neuman 2011).

The model draws heavily on Doyle’s (1992) early work in identifying the components of information literacy and on the American Library Association’s (ALA) subsequent definition of that phenomenon:

To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. . . . Ultimately, information literate people are those who have learned how to learn. . . . They are people prepared for lifelong learning because they can always find the information needed for any task or decision at hand. (ALA 1989, 1)

This definition is significant because it makes explicit the link between learning and information use. It suggests going beyond the general notion of information-seeking (accessing and evaluating information) to encompass the ultimate reason for students’ information-seeking—that is, learning. The key assumption underlying the I-LEARN model is that “developing expertise in accessing, evaluating, and using information is in fact the authentic learning that modern education seeks to promote” (AASL and AECT 1998, 2).

The I-LEARN Model

As Figure 1 shows, the I-LEARN model includes six stages that describe the process of learning with information:

- Identify a problem or question that can be addressed through information.
- Locate information that can be used to address the problem or question at hand.
- Evaluate the information.
- Apply the selected information to the learning task.
- Reflect on both the product and the process of the preceding stages.
- Know what has been learned so that it resolves the problem or question and so that it can be used to spur future knowledge generation.

Although the model is depicted in a linear fashion for the purposes of clarity and efficient presentation, it is by its nature iterative, offering possibilities for looping within and across each of its stages.
As Table 1 shows, the model also includes eighteen elements—three related to each stage—that flesh out those major stages with suggested ways to implement them. It is anticipated that in particular situations in practice, the number of these elements might increase or decrease—and some might even change—according to the needs of students and teachers and the demands of particular learning tasks. The elements listed under “Evaluate,” for example, might include only two of the three, or might focus on comprehensiveness rather than timeliness in the use of information, to learn something about a hot-button political or social issue. In other words, while the stages are stable, the elements should be considered possibilities rather than formulas.

It is significant that the “I” in the initial stage suggests several concepts in addition to “Identify”: the dependence on “information” as the building block for learning is clearly implied, as is the personal responsibility for one’s own learning assumed by constructivism: “I create my own understanding of the world. Further, it is important to note that the “kNow” stage ends with the element titled “activate”—the same element that begins the learning process under “Identify.” The implication is that greater knowledge about the world is likely to stimulate even more curiosity about its nature, structures, and processes. It also is useful to remember that the grapheme for “kNow”—which ends in “Now”—reinforces the idea that twenty-first-century learning is generally dynamic, rapid, and responsive to immediate situations and needs.

I-LEARN is clearly related to the three basic components of information literacy—access, evaluate, and use (see Figure 2). “Access” is obviously related to “Locate,” although the model encompasses locating information inherent in the environment as well as accessing information in databases and other library resources. “Evaluate” is the same concept in the model as it is in the usual conception of information literacy. I-LEARN’s chief contribution lies in its expansion of the dimension of “Use”: the three culminating stages greatly extend the information literacy idea of “use” by tying it directly to learning. In typical models of information behavior, “use” is generally a vague term describing something beyond the information-seeking process itself. In the I-LEARN model, however, “use” is central: “Apply” describes the process of using information to generate knowledge—that is, to learn; “Reflect” is seen as a key factor in ensuring that learning is personally meaningful; and “kNow” describes how individuals own and employ their knowledge once they have acquired it.
Table 1. The I-LEARN Model

<table>
<thead>
<tr>
<th>Identify</th>
<th>Choose a problem or question that can be addressed through information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate</td>
<td>A sense of curiosity about the world</td>
</tr>
<tr>
<td>Scan</td>
<td>The environment for a suitable topic within that world to investigate</td>
</tr>
<tr>
<td>Formulate</td>
<td>A problem or question about the topic that can be addressed with information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Locate</th>
<th>Access information, either recorded or in the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>On what is to be learned</td>
</tr>
<tr>
<td>Find</td>
<td>The information needed for that learning</td>
</tr>
<tr>
<td>Extract</td>
<td>The most relevant and salient information for that learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluate</th>
<th>Judge the quality and relevance of the information found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority</td>
<td>Credibility of source and/or author; internal logic; accuracy</td>
</tr>
<tr>
<td>Relevance</td>
<td>Topic at hand, level of learning/ depth required, appropriateness</td>
</tr>
<tr>
<td>Timeliness</td>
<td>Currency, accessibility</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Apply</th>
<th>Use the information for a learning task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generate</td>
<td>Construct new understanding, personal meaning</td>
</tr>
<tr>
<td>Organize</td>
<td>Determine appropriate cognitive structure (e.g., chronological, hierarchical, etc.)</td>
</tr>
</tbody>
</table>

| Communicate                   | Create appropriate product to convey that structure           |

<table>
<thead>
<tr>
<th>Reflect</th>
<th>Examine product and process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze</td>
<td>Adequacy of both form and content</td>
</tr>
<tr>
<td>Revise</td>
<td>Improve as necessary</td>
</tr>
<tr>
<td>Refine</td>
<td>Polish as appropriate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Know</th>
<th>Instantiate knowledge gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalize</td>
<td>Integrate with previous knowledge</td>
</tr>
<tr>
<td>Personalize</td>
<td>Recognize meaning as personal construct</td>
</tr>
<tr>
<td>Activate</td>
<td>Draw upon as necessary and/or appropriate</td>
</tr>
</tbody>
</table>
Theoretical and Research Background

Theoretically, the I-LEARN model draws from conceptions of the nature of information presented both in the information science literature (e.g., Buckland 1991; Marchionini 1995; Wilson, 1981, 1999) and in the literature of instructional design (e.g., Anderson and Krathwohl 2001; Gagné 1965, 1977, 1985; Hill and Hannafin 2001; Mayer 1999; Merrill 1983, 1999). It combines and expands these understandings in a way that suggests that information is a dynamic phenomenon consisting of entities and relationships that can be mixed and matched according to their nature and the uses to which they are put—including learning.

Buckland’s (1991) typology blurs the traditional distinction between information and knowledge and posits that information is more dynamic than such a clear dichotomy suggests. According to Buckland, information can be conceptualized as a process (i.e., the communication act); as knowledge (i.e., an increase in understanding or a reduction in uncertainty); and as thing (i.e., an object that imparts information). Marchionini (1995) builds on Buckland’s ideas to note that information —is anything that can change a person’s knowledge” and that it includes objects in the world, what is transferred from people or objects to a person’s cognitive system, and . . . the components of internal knowledge in people’s minds” (5). Both authors, then, affirm the dynamism of information.

Wilson (1981, 1999) represents another information-science perspective, and his own model opened the door for information-science investigations into how information is used as well as sought. Extending the concept of information-seeking to include information behavior (i.e., information-seeking embedded in a context) his model broadened the field’s scope to include the study of what might be done with information after it has been found. By including a step labeled “information processing and use,” Wilson became one of the earliest information-science researchers to consider directly the cognitive aspects of interactions with information. Clearly, one of the most important cognitive aspects of such interactions is the act of learning itself.

Gagne (1965, 1977, 1985) is revered among instructional-design theorists for linking the activities of instruction to the corresponding steps of cognitive information processing (e.g., showing the relationship of activities designed for “stimulating recall” to the step of “coding/storage entry”).
Gagne also proposed “categories of learning” that correspond closely to different types of information use, from making simple stimulus-response connections to engaging in highly complex information behavior (from mastering verbal information at one end of the spectrum to engaging in problem solving at the other). Similarly, Merrill (1983,1999) proposed that information to be learned consists of four types (facts, concepts, principles, and procedures) and that learning involves three kinds of cognitive performance (remember, use, and find). Anderson and Krathwohl’s 2001 revision of Bloom’s Taxonomy of Educational Objectives updates and encapsulates these long-held ideas about the nature of knowledge and of learning, as does the I-LEARN model (as explained below). Finally, the model is grounded in the understanding of learning summarized in Bransford, Brown, and Cocking (2000) for the National Research Council. These authors’ constructivist view—that learning is an active, dynamic process that involves stages and levels—meshes well with the dynamism of information itself. The I-LEARN model—itself a dynamic construct—encompasses all these dimensions.

I-LEARN links information behavior directly to the content of learning—specifically, to the four types of knowledge (factual, conceptual, procedural, and metacognitive) and to the six levels of learning (remember, understand, apply, analyze, evaluate, and create) described in Anderson and Krathwohl (2001). For example, as Figure 3 shows, “Locating” information involves finding the factual and conceptual knowledge that will be the building blocks of learning; “Evaluating” information involves using metacognitive knowledge to judge the appropriateness of information; and “Applying,” “Reflecting,” and “kNowing” all involve both procedural and metacognitive knowledge—knowledge of how to put facts and concepts together and of what ideas to select and how to arrange them into a coherent whole.

Figure 3. I-LEARN and the Types of Knowledge

Perhaps even more intriguing is I-LEARN’s relationship to the Anderson and Krathwohl (2001) taxonomy’s levels of learning displayed in Figure 4. “Locate” is clearly tied to the levels of remembering and understanding, since learners must remember and understand the facts and concepts they uncover while looking for information. “Evaluate” encompasses those two levels and also suggests levels of analyzing information and evaluating its quality. Finally, I-LEARN’s stages of “Applying,” “Reflecting,” and “kNowing” involve those four levels and add the taxonomy’s final two: learners apply information to solving problems and answering questions, thereby creating new knowledge on the basis of that information. While examining the details of all these interrelationships is neither useful nor even possible, the obviousness of their existence provides yet another tie to the key concept that information is the basic building block for human learning and reinforces I-LEARN’s grounding in learning theory.
The model also encompasses learning with information represented in all types of formats—print; single-sense visual and audio; multimedia, including static and motion media; and digital. While it focuses primarily on the information conveyed through these technologies, in its full explication it accommodates the learning affordances and constraints inherent in each (see Jonassen 2004; Kozma 1991; Smaldino, Lowther, and Russell 2008; Spector et al. 2008). By accommodating what over fifty years of research in instructional design and technology have shown about the details of learning with the full range of information formats, I-LEARN links information-based learning to a rich knowledge base that offers guidelines for designing, presenting, and assessing materials and experiences that support deep and meaningful learning.

The research base for I-LEARN also includes research and writing by the model’s creator over almost two decades (see Neuman 2011). A consistent theme throughout these publications involves how information can be organized and presented to enhance students’ opportunities for deep engagement with content that will enable them to construct higher-level knowledge. Ideas from many other information-science researchers—Bilal 2000, 2001; Crane and Markowitz 1994; Eisenberg and Small, 1995; Fidel et al. 1999; Kafai and Bates 1997; Kuhlthau 1997; Large et al. 1994, 1995, 1996; McGregor 1994; and Pitts 1994, to name a few—also have informed the development of the model.

I-LEARN in Practice

In practical terms, I-LEARN provides both a description of the process of learning with information and a strategy that can be taught and used to invoke that process successfully. With its deep grounding in research and theory, its potential as a learning tool seems strong. By “operationalizing” learning with information in six stages and a few elements within each, the model not only offers a clear and succinct way to explain what happens when we use information as the basis for our learning but also suggests a straightforward process that library media specialists and teachers can use to help students master the task of learning in the information age—whether that learning occurs in school or in other venues.

Validating I-LEARN in practice—the next step in its development—will clarify the extent to which its potential can be achieved. Currently, several approaches to validation are under discussion: developing and testing the model both in a university setting and with a school district and recruiting teams of school librarians and teachers nationally to collaborate with the author to identify information-based questions related to various curricular areas and to develop
possible scenarios for applying I-LEARN to solve them. The scenarios would then be used to
guide students’ research as they seek answers, and students’ experiences would form the basis
for revising and refining the scenarios. Ultimately, a collection of scenarios—much like the
widely used collection of MapQuests—would be made available.

**Figure 5** displays the form such a scenario might take. The six I-LEARN stages form a stable
scaffolding, while the elements can vary according to the task at hand. For example, in this
scenario one might Evaluate different elements of relevance and timeliness than those listed or
Apply the information to generate a landscape design rather than a full plan. Further, both the
stages and the elements can support learning either for a school assignment or for an interest
beyond the curriculum. If the example related to a school assignment, the elements might be
more structured and related to specific standards and outcomes outlined in an ecology
curriculum. If it were a personal project, the elements might be more related to the nature of the
student’s neighborhood and, for example, its need for a playground rather than a garden. The
interplay between the structure of the stages and the inherent flexibility of the elements provides
a tool that can be used in a variety of settings, both formal and informal, and that lays the
foundation for lifelong learning.

**Figure 5. I-LEARN Scenario: Going Green**

**Identify:**
*Activate:* What can I do to improve my neighborhood?
*Scan:* There’s a vacant lot at the corner that’s overrun with weeds.
*Formulate:* How can I start a neighborhood garden?

**Locate:**
*Focus:* What plants grow well in my climate?
*Find:* Books, databases, websites, radio, and television shows about gardening,
information from the local garden store, conversations with friends and neighbors who
garden.
*Extract:* Specific information about what plants—flowers, vegetables, trees, shrubs,
etc.—would work in a particular climate zone.

**Evaluate:**
*Authority:* Credentials of creator of the information, agreement of information from a
variety of sources, etc.
*Relevance:* What plants or mixture of plants would provide the best garden for this
neighborhood: flowers, vegetables, a mixture?
*Timeliness:* Given the season (e.g., fall, early spring), which information will be most
useful to me to get this project started?

**Apply:**
*Generate:* Create a plan for starting a neighborhood garden.
*Organize:* Questions for gathering neighborhood input, timeline, photos, design ideas,
etc.
*Communicate:* Survey instrument, print and other publicity, etc.

**Reflect:**
Review: Is the plan logical, complete, balanced, etc.? Will the survey questions get me the answers I need? Is the publicity attractive and interesting?
Revise: Find more or better information, create better questions and more compelling publicity, etc.
Refine: Finalize the survey and the publicity, revamp the timeline, polish the plan.

\textbf{kNow:}
Internalize: Integrate ideas about planning, seeking approval, gardening, etc., with knowledge gained about similar matters from other experiences.
Personalize: Acknowledge individuality of viewpoint, conclusions, the plan itself.
Activate: Put the plan into action and use it as the basis for planning other projects.

\textbf{I-LEARN: A Timely Tool for Today’s Learners with Information}

At this point in the information age, more and more organizations are coming to understand the critical importance of learning how to learn with information. The American Association of School Librarians and the Association for Educational Communications and Technology led the way with the development of the Information Literacy Standards for Student Learning (ILSSL) for \textit{Information Power: Building Partnerships for Learning} in 1998. Soon, the \textbf{Association of College and Research Libraries} followed suit with a series of documents related to learning with information: \textit{Information Literacy Competencies for Higher Education} (2000), \textit{Information Literacy Standards for Science and Technology} (2006), \textit{Research Competency Guidelines for Literatures in English} (2007), \textit{Information Literacy Standards for Anthropology and Sociology Students} (2008), \textit{Information Literacy Competency Standards for Journalism Students and Professionals} (2011), and \textit{Information Literacy Standards for Teacher Education} (2011).

Other organizations—not necessarily related to the field of library and information science—also have taken up the banner. In 2003, for example, the Educational Testing Service (ETS) adopted the European phrase “information and communication technologies,” or ICTs, and defined “ICT literacy” as “the ability to use digital technology, communication tools, and/or networks appropriately to solve information problems in order to function in an information society” (11, emphasis added). ETS has since identified what it calls iSkills and now offers an “\textbf{iSkills Assessment}” package along with its other evaluation tools.

A year later, the \textbf{Partnership for 21st Century Skills} published its \textit{Framework for 21st Century Learning} (2004), which includes eleven “core subjects,” four “interdisciplinary themes,” and three sets of skills that support students’ learning across all these subjects and themes—including a set titled “Information, Media and Technology Skills.” In 2007, the \textbf{International Society for Technology in Education} added “research and information fluency” as a major category in its revised \textit{Standards for Students}, and AASL threaded information literacy throughout its \textit{Standards for the 21st-Century Learner}. Currently, the \textit{Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects} not only focus on reading “informational text” but note the need for students to be able “to gather, comprehend, evaluate, synthesize, and report on information and ideas [and] to produce and create a high volume and extensive range of print and nonprint text in media forms old and new” (Common Core State Standards Initiative 2010, 4).
Beyond North American borders, UNESCO mounted an “information and media literacy” initiative in the early 2000s and more recently added an “ICT literacy” initiative to its efforts to improve children’s quality of life throughout the world. In 2009, Microsoft, Intel, and Cisco announced a joint and global —Partners in Education Transformation Project” designed to focus on the assessment of ICT skills and to drive instruction to focus on the information skills that are at the heart of http://newsroom.cisco.com/dlls/2009/prod_011309.html. Perhaps most notably, President Barak Obama identified October 2009 as —National Information Literacy Month.” Within the field of library and information science, the Information School at the University of Washington continues to conduct and publish research on the nature and impact of information literacy across audiences and contexts.”

All these efforts focus on the importance of using information as a tool for learning—and the I-LEARN model offers the only model (so far) designed specifically to address that importance. It supports higher-level learning in the information age, both theoretically and practically. Theoretically, I-LEARN is grounded in contemporary notions of both instructional/learning theory and information theory and builds on both bases to suggest a new theory—a way to conceptualize learning in an age that requires learners to take personal responsibility for defining their own questions; accepting and (more often) rejecting information to answer those questions; and using that information in both critical and creative ways to engender personal, actualizable knowledge. Its emphasis on evaluating information and applying it to generate this new knowledge places its focus directly on the higher levels in Anderson and Krathwohl’s (2001) revision of Bloom’s Taxonomy.

Conclusion

The I-LEARN model bridges the fields of information science and instructional/learning science by drawing on components of each to create a way to think about learning that responds directly to the actualities of a world brimming with information. While this blending of information-seeking and learning has been in the literature for well over a decade, the I-LEARN model is the first to combine them in a construct that is grounded in both theory and research and that also has practical implications. Providing this bridge is the most significant contribution of the model. The bridge both describes the process of learning with information and provides school librarians and other educators with a teaching tool directly linked to information-age learning. It offers strong promise for helping children and youth in particular to develop strategies for engaging with ideas that both exemplify and transcend the curriculum and its usual topics and structures to become lifelong learners.

Works Cited


Cite This Article

<www.ala.org/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume14/neuman>.

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Reaching All Learners: Understanding and Leveraging Points of Intersection for School Librarians and Special Education Teachers

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Abstract

This study investigated the information-seeking practices and interactions of school librarians and special education teachers to better understand how they support the learning of students with disabilities. The work of school librarians and special education teachers may appear divergent; however, as professionals in a rapidly changing educational environment, they share the need for resources in a variety of formats. In-depth interviews were conducted with six school librarians and six special education teachers representing a wide range of backgrounds and years of experience. Both groups expressed an increased need to learn more about accessing and using a wider range of multimodal resources and adaptive technologies. They also acknowledged the influence of the growing population of students with disabilities and the shift in PreK–12 public schools to more inclusive educational practices. Understanding the dynamics of their information-seeking behaviors may lead to additional entry points to use in helping all educators refine their information-seeking practices.

Introduction

In an inclusive or blended classroom, students with physical, cognitive, and emotional disabilities often are in a coteaching environment rather than in separate special education classes. An inclusion teacher will work alongside the classroom teacher to provide individualized support to students with a disability. In another possible scenario, consultant teachers share their expertise and knowledge with classroom teachers to help them meet the needs of the students. These models represent a shift from the self-contained special education classroom as the sole setting for learning and teaching for students with disabilities. Inclusion is the belief that the stakeholders of the learning community have “the responsibility of educating all students so that they can reach their full potential” (Friend 2011, 21). Inclusive education practices are becoming more widespread in PreK–12 education.
About 12 percent of the school-age population, or more than 5.7 million students between the ages of three and twenty-one, have a disability (U.S. Department of Education, 2009). Advocacy, legislation, and litigation brought about major changes in how students with disabilities are educated. One result of these influences is the legal right of students to be educated in the least restrictive environment (LRE). While this is often understood to mean the general education classroom, there is no one arrangement appropriate for every student.

One result of changing student demographics is that teachers are entering the field of education with elementary or secondary certification as well as literacy or special education certification. While these teachers may be well prepared academically, challenges in finding instructional materials still exist. For instance, in several recent studies educators shared that they are regularly frustrated when seeking the resources and materials required to adapt and modify science activities to support the needs of a variety of students (Hanson and Carlson 2005; Harris Interactive 2011; Hoffman and Mardis 2008; Perrault 2007). Teachers try to find a range of resources—visual, auditory, and interactive—that they can use in their instructional planning and teaching. However, many report that they did not know where to start looking for resources or what alternatives are available in adapting lessons and activities to meet all students’ interests and abilities.

**Purpose of the Study**
The purpose of this study was to investigate how school librarians and special education teachers access, evaluate, and use resources that support their work with students with disabilities. The study participants were New York State school librarians and special education teachers.

**Literature Review**

**Changing Landscapes for Teachers**
Inclusive education is on the rise and with a “greater percentage of special education students receiving services within the general education classroom, the roles of general and special education teachers have undergone significant changes” (Arthaud et al. 2007, 1). Special education legislation, such as the Individuals with Disabilities Education Act (IDEA), specifically speaks to the necessity of special education teachers to forge partnerships with general education teachers to best support students with disabilities. Collaboration is the act of planning and working together, and “by itself, is a powerful professional development tool” (Brownell et al. 2006, 169). Collaboration with peers is widely viewed as a means to gain additional expertise and as an important form of professional development (Brownell et al. 2006; Klinger 2004; Klinger et al. 1999; Rogers and Babinski 2002; Santoli et al. 2008). Educators increasingly report an ongoing need for professional development related to inclusion activities (Burke and Sutherland 2004; Kuester 2000), and they view collaboration as a key component in helping support the learning of students with disabilities (Darling-Hammond and McLaughlin 1995). Collaboration occurs between two or more or individuals but does not typically happen by chance; it is considered more a process than a product. Ultimately, collaboration should result in a better outcome for students and embody the idea that through working together we accomplish more.
Today’s education professionals deem some skills and dispositions essential for successful participation in collaborations—for example, thoughtfulness, knowledge, compassion, and leadership. The educational literature suggests reflective consideration of these traits may reveal areas for self-improvement and, in turn, lead to stronger collaborations (Eccleston 2010).

School Librarians and Special Education Teachers
Supplementing an extensive body of research on collaborative practices between general education and special education teachers is the research addressing the dynamics of collaborations between school librarians and general education teachers (Monticel-Overall 2005; Oberg 2009). However, there is limited discussion about how school librarians and special education teachers actually collaborate despite the fact that they have some similar aspects of their roles and responsibilities (Smith Canter et al. 2011). For example, both groups must interact with a diverse network of colleagues to support the learning of all students. Purposeful collaborations with peers will allow them to reach the full potential of their respective roles. The work of both school librarians and special education teachers offers a mix of instructional, administrative, and supervisory responsibilities different from that of general education teachers. For example, it is not unusual for special education teachers to supervise paraprofessionals and serve as a liaison for their staff to administrators (Eccleston 2010). Similarly, school librarians supervise library staff, frequently interface with administrators, and regularly collect and use data to support student learning.

In addition to some similarities in the respective responsibilities of school librarians and special education teachers, it is interesting to note the shared themes in the professional standards and dispositions of their professions (Smith Canter et al. 2011). Anderson Downing (2006) addressed these shared attributes and dispositions when she called for more collaborative relationship between school librarians and special education teachers for the sake of the students. She noted that each group brings specific strengths and expertise to the table that benefits one another, the general education teachers, and most importantly, the students.

Murray (2002), who has studied the relationship between school librarians and special education teachers for several years, also noted that although good practices exists to support the learning of students with disabilities, more could possibly be achieved through enhanced communication and cooperation between school librarians and special education teachers.

Recently, the question of whether school libraries and school librarians provide adequate services and resources to students with disabilities” was posed to New York State school librarians in a study by Small, Snyder, and Parker (2009). In this large-scale study with more than 1,600 respondents, the researchers stated that school librarians report addressing individual student learning abilities, needs and styles; Individualized Education Programs (IEPs); and selecting materials that feature individuals with disabilities when planning, implementing, and modifying library programs and services, they also indicate less attention to adequately physical accessibility and access to assistive technologies for students with disabilities (Small, Snyder, and Parker 2009, 12).

Notably, in all three phases of the Small et al. (2010) studies, the librarians reported that they lacked the knowledge and skills to provide adequate services and resources to special-needs students” (19). Teachers should have access to a variety of current and reliable special education
resources that they can integrate into their teaching and learning practices and thereby create authentic learning experiences.

The role of appropriate resources and the importance of access to them are noted extensively throughout the teacher education literature. Teachers’ access to resources, including the ease of access and the scarcity of resources, is one reported influence on attrition (Ball and Cohen 1999; Clark and Yinger 1979; Moore and Hanley 1982). The recognition of the importance of a range of resources for teaching and learning activities, coupled with the constraints of time, is cited as a potential driver for collaboration between colleagues (Eccleston 2010; Sardo-Brown 1990). Effective collaboration requires sharing resources (Carter et al. 2009; Friend 2011). By sharing resources, “everyone engaged in the collaboration shares ownership for the activity or intervention” (Friend 2011, 101). Sharing resources during a collaborative effort also may help develop the members’ professional knowledge.

Collaboration offers educators an avenue to “working smarter” when time is at a premium; it comes from “new strategies for coordinating, integrating, and redeploying resources” (Adelman and Taylor 1998, 58). Although a school librarian rarely participates in discussion about a school-based team approach to coordinating resources for students with disabilities, his or her expertise in accessing and evaluating information may be a valuable addition. For example, when a resource map is created and includes links to additional resources in the community at a local, state, and national level, the librarian’s information-seeking skills may come into play.

Method

A grounded theory approach was used as a strategy for investigating the information-seeking practices of school librarians and special education teachers. In-depth, semistructured interviews were conducted with six school librarians and six special education teachers in western New York State. A purposeful sampling approach was taken to recruit participants who represented a range of backgrounds and years of experience, although not by gender as all participants were female. The participants were a mix of early, mid-, and late-career individuals and varied in grade levels and types of schools. The breakdown is as follows:

School Librarians
- 20+ years experience in a large urban high school
- 30+ years experience in a large urban high school
- 5–7 year experience range in a suburban middle school
- 10–15 years experience range in an urban elementary school
- 2–4 years experience range in a suburban middle school
- 5–7 years experience range in a rural high school

Special Education Teachers
- 20+ years experience in a suburban elementary school
- 2–4 years experience range in a suburban middle school
- 10–15 years experience range in a rural middle school
- 5–7 years experience range in a suburban high school
- 5–7 years experience in a large urban high school
- 20+ years experience in a mid-size urban high school
Participant interviews were conducted either in-person or by phone, and field notes were taken for each encounter. The interviews typically lasted about 30–45 minutes and were digitally recorded with the permission of the participants. A constant comparative method was used, and interview transcripts, field notes, and memos were analyzed as they were completed.

Questions asked of school librarians included the following:

- Would you talk about how you work with students with disabilities in the library media center?
- How familiar are you with the characteristics of the different disabilities of your students? Do you have a need to learn more about the different disabilities?
- What resources do you currently turn to, or might you turn to, if you wanted to learning more about disabilities or inclusion strategies?
- How often, and in what ways, do you partner with special education teachers in your school?
- Are there environmental influences that either enhance or restrict your ability to collaborate with the special education teachers?
- Are assistive or adaptive technologies available to you and your students? How would you rate your comfort level in using assistive and adaptive technologies?
- Do you use resources from the public library in your work with students? Do you refer classroom teachers to the public library?
- Where do you typically turn for professional development?

Questions of special education teachers include the following:

- Do your students go to the library media center? If so, for what purposes?
- Do you or your students use the databases available from the library?
- How often, and in what ways, do you partner with the school librarian?
- Do you feel the library media center is accessible to all users? Why or why not?
- Are there environmental influences that either enhance or restrict your ability to collaborate with the school librarian?
- Do you use resources from the public library in your work with students?
- What resources do you currently turn to, or might you turn to, to learn about teaching and learning strategies to meet the needs of students with disabilities?
- What resources might you use if you want to learn more about assistive technology?
- Do you or your students with disabilities use multimodal resources?
- Are assistive or adaptive technologies available to you and your students? How would you rate your comfort level in using assistive and adaptive technologies?
- Where do you typically turn for professional development?

**Data Collection and Analysis**

Data collection and data analysis are a simultaneous process when performing grounded theory research. Data are analyzed using a constant comparative method for themes or categories to make an interpretation or draw conclusions (Creswell 2009, 203). Open coding, the first step in the process, was first completed with the data. AtlasTi, a qualitative software tool, was used in the data analysis. The twelve interview transcriptions were carefully read and analyzed, and categories of information emerged from this process. Categories are units of information to be
analyzed that comprise events, happenings, and instances of phenomenon (Strauss and Corbin 1998). Axial coding of the data followed the opening coding process. This involved interrelating the categories and creating a visual model of the theoretical framework that emerged (see Figure 1). The visual theoretical model created for this study outlines the casual conditions, context, central phenomenon, intervening conditions, strategies, and consequences. The central phenomenon—the key concept most frequently identified by participants—was identified from the various categories of open coding. The database was then revisited, and additional analysis was completed to continue relating the categories of information to the central phenomenon category that was initially identified.

**Figure 1.** Points of Intersection for School Librarians and Special Education Teachers in Supporting the Learning of PreK–12 Students with Disabilities
Research Design Limitations

There were several limitations of the research design that should be noted. First, the study examines perceptions and practices as reported by school librarians and special education teachers. As a result there is insufficient evidence to generalize across these two areas of education. Second, findings in a qualitative study may be subject to other interpretations. Future survey work and member checking may serve to triangulate and validate the accuracy of the findings.

Findings

This study of the information-seeking practices of school librarians and special education teachers found evidence of the need for shared information and resources. Both groups cited gaps in knowledge and lack of appropriate resources as detrimental to their work with students with disabilities.

The need for ongoing professional development that focuses on supporting students with disabilities emerged as a point of intersection for these two groups. Both groups repeatedly cited the challenges of keeping current in the best practices to support an ever-increasing diverse group of students as a significant area of concern. They specifically mentioned the challenge of keeping their knowledge base up-to-date and how important professional development is to them. Collaboration with other professionals and access to resources beyond the school walls were additional themes that emerged from this study.

Parallels

Special education teachers and school librarians spoke meaningfully and purposefully about their work with students with disabilities. The professionals were reflective in what they are doing to assist those students, but also were very aware of the challenges and influences they faced from multiple directions. Shared themes emerged in the comments by school librarians and the special education teachers in this study, including:

- The transitory nature of their positions and how they may be moved between schools and be assigned to multiple schools within a school year
- The sense that their work with students was strengthened though collaboration with colleagues in the school
- The continuous need for a wide range of multimodal resources to use in teaching and learning activities
- The supervisory, administrative, and management aspects of their positions.

The parallels that became evident in these two professional groups are reflective of the finding of other researchers in the area of need (Anderson Downing 2006; Smith et al. 2011).

Points of Intersection

The key concepts, or central phenomena, that were most frequently mentioned by both school librarians and special education teachers were lack of appropriate resources and gaps or lack of knowledge in three distinct areas: (1) characteristics of certain disabilities, (2) pedagogical
approaches to meet the needs of students with disabilities, and (3) how to access and use multimodal resources in the most efficient and effective ways. The shared need for more knowledge and more resources is a point of intersection in the work of these two groups supporting the learning of PreK–12 students with disabilities.

The other categories that emerged in the data analysis were then organized around this central theme to allow an understanding of the phenomenon in a form that could be tested against data later in the study. Figure 1 is a theoretical model showing the results of the data analysis in a visual framework as proposed in grounded theory research by Strauss and Corbin (1990).

Understanding Characteristics of Certain Disabilities

An elementary school librarian stated that she would like to know more about different physical disabilities to offer different modalities in terms of resources. Several other school librarians mentioned that they rely on informal conversations with teachers or the personal aide if they had questions about that student’s disability. Challenges may arise when the special education teacher or classroom aide is not in the library with the student. One librarian with many years of experience shared that “sometimes I know a kid has a disability because he has been in with a class in the library and I have worked with the class and just anecdotally picked up that there is something different about the way the kid is approaching the class. There is some sort of clue. I talk to the teacher and I say, ‘what is this kid’s disability and what do I need to know?’” This librarian then shared, “I offer students with disabilities different ways to approach what they need to do.” To varying degrees, all the librarians mentioned speaking with the special education or general education teacher to learn more about a student. Some said it happened informally in the hall when they ran into the student’s teacher; other participants spoke of tracking down the teacher for the information. Few participants mentioned reviewing the Individualized Educational Plan (IEP) for a particular student with a disability.

An IEP is a document prepared by the multidisciplinary team that specifies a student’s level of functioning and needs. It includes, among other things, the instructional goals and objectives and information regarding supplementary aids and services (Friend 2011). It is appropriate for school librarians—as professionals that potentially come in contact with a significant majority of students in the building—to review the IEPs of students they need to know more about. An IEP is a valuable tool for librarians to use in tailoring resources and services to meet the information needs of students in both the library and the classroom. However, reading and acting on a student’s IEP does not yet seem to be a widespread practice by school librarians. Of the six librarians interviewed, three of them had previously read IEPs for students. One librarian said she only looks at IEPs “if it is a behavioral problem and I am trying to understand why this student can’t hold it together in the library setting; otherwise it is a conversation with the teacher.” Another librarian said, “I should know if a child has oppositional defiance disorder or is a hemophiliac so I can best address the situation if something happens in the library.” Some librarians expressed either confusion about their access to the IEPs or were not aware that an IEP could help them understand more about a particular student’s disability.

Interestingly, even the special education teachers interviewed for this study who typically participate in writing the IEPs of students expressed an ongoing need for access to more information about characteristics of various students’ disabilities. In particular, several people mentioned researching aspects of autism spectrum disorder because they are working with an increasing numbers of students that are in the autism range. The ongoing need for both school
librarians and special education teachers to learn more about the specifics of their students’ disabilities is another example of how their information needs intersect.

**Potential Causes for Knowledge Gaps**

School librarians and special education teachers both referred, in various ways, to two factors: the increasing number of students with disabilities in the schools and changing frameworks for supporting diverse learners. These two factors may be considered, in part, as the causal conditions for the lack of appropriate resources and gaps in knowledge.

Lack of preparation in their pre-service or graduate programs was cited by the school librarians and special education teachers as reasons for knowledge gaps, or lack of confidence, in their pedagogical practices in working with students with disabilities. One librarian, discussing her lack of preparation and background knowledge, stated, “I feel I could definitely make more use of best practices in dealing with students with special needs. I did not have any exposure in my graduate studies.” Library and information studies graduate programs may wish to review course work to ensure it is preparing students to work with children and youth of all abilities. Specific content and learning experiences should foster an understanding in graduate students in how to best meet the needs of students with disabilities.

**Pedagogical Approaches**

Study participants pointed out knowledge gaps with respect of current characteristics of different disabilities and also concern with using a broad range of pedagogical approaches for some students with disabilities. The desire and commitment to help “students succeed” was expressed. Several participants said their schools approach was “every teacher a reading teacher.” Literacy and reading comprehension were two areas frequently mentioned by school librarians and special education teachers where they struggled to find appropriate teaching strategies and resources for their students with special needs. One special education teacher shared that her biggest struggle is finding appropriate interesting materials that appeal to older students, but that is written at a lower level so they can read and understand it is an ongoing challenge. She stated “I tend to make all my own materials so if I find a lower level version of Romeo and Juliet, I’ll make my own study guides and graphic organizers, or I will modify something that I have seen somewhere else so it is more accessible to my students.”

Literacy activities and resources for students with disabilities definitely represent a point of interaction for school librarians and special education teachers, and they offer potential for purposeful collaborations.

**Strategies**

In response to the challenges identified, two strategies were voiced in the interviews that need to be undertaken by educators to better support students with disabilities. First, most school librarians and special interest students appeared to recognize that in this changing landscape, collaborations and partnerships with colleagues are imperative to their work. Second, both groups acknowledged that access to resources and information, often needed to support diverse learners, might exist beyond the walls of the library or school.

One special education teacher in a large 7–12 urban school spoke of accessing and using online resource for teachers:
"There is another website that I have used—more in the past, not recently—but it is called wetheteacher.com and it’s a free website for teachers to use and share their materials. So if I have To Kill a Mockingbird materials and I upload it and you are teaching it and you search you can share my materials and read them. So I use the Internet a lot in finding resources."

These professionals recognize it is not just about increased use of online resources to help their students, but also finding resources for them though community agencies and public libraries. When asked about using the public library as a resource, a teacher at a large urban school replied,

"I do a lot with the public library—yes. Especially because my focus is history so I access the public library. They have a lot of local history resources and they have put them all online and you can access them from home."

When this teacher asked about interacting with the public librarian, she replied,

"In the summer of 2009, I took a series of professional development courses and we went on a field trip every day. One of the days it was to the public library and they showed us how to access all of these electronic resource. The public librarian showed us what they had and how to use it. And ever since then, once I found out about it, I’ve used the resources a lot."

Another librarian termed herself “a frequent flyer” of her local library with regard to finding resources to support students with disabilities. When asked about drawing on community resources, one librarian noted that in the region she lived we have a lot of agencies that are very willing to share their time and resources. And some of those agencies are actually in our union handbook, so I may call an agency and ask for advice or if they have materials they can share with me.”

Participants shared that employing some of strategies had resulted in both anticipated and unanticipated consequences, ranging from a shift in perspectives to a change in actual practices to, at times, an increased efficiency and effectiveness in locating and using resources.

**Discussion and Areas of Future Study**

All students are unique, with particular strengths and areas of growth, but students with disabilities require different learning techniques and supports. A fundamental belief that underpins AASL’s *Standards for the 21st-Century Learner* is that equitable access is a key component for education, or more specifically stated, “All children deserve equitable access to books and reading, to information, and to information technology in an environment that is safe and conducive to learning” (AASL 2007, 2). All educators therefore strive to meet a professional responsibility to grow and refine key areas of knowledge, skills, and dispositions, particularly around changing curricula and pedagogical practices, technology, and advanced information-literacy skills. Each group of educators brings to the relationship specific professional domain strengths that have the potential to contribute to, and shape, the collaboration in a mutually constitutive fashion (Perrault 2010). This study offers evidence of untapped areas of common ground between school librarians and special educations teachers that offer fertile ground for richer interactions, which may lead to collaborations and exchanges of information and resources.
A possible implication for making the effort to broaden the network and build on the shared mission to support all students is highlighted in the following story by a high school librarian:

"I think it is so important that we support these kids…we are a family at our school. We have two or three students with disabilities in the top ten and I think they are there in part because of the excellence in teaching and they are there I think because of the support they got in the library. And they didn't get left hanging, and that is quite an accomplishment for them."

Initially, this study confined itself to interviewing school librarians and special education teachers. Using the emergent themes, a survey instrument will be developed and distributed to a wider range of educators, including administrators. A survey will offer the chance to validate the accuracy of these findings and further explore the identified phenomena. The rationale for this step is to extend the scope and depth of this underexamined area of research. In particular, exploring how school librarians work with special education and general classroom teachers in supporting the transition process of young adults with disabilities from high school to higher education or to the workplace may prove beneficial to many students.

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**Works Cited**


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Educating Preservice School Librarians to Lead: A Study of Self-Perceived Transformational Leadership Behaviors

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Abstract

The purpose of this study was to determine the factors that impacted the level of self-perceived transformational leadership potential in preservice school librarians who participated in a master’s degree program in library and information studies focusing on leadership development. A mixed-method concurrent triangulation research design was implemented by using pre-existing data, the Leadership Practices Inventory (LPI), and a survey designed by the researcher. The study findings indicated that the participants’ leadership training facilitated the development of their self-perceived transformational leadership behaviors to a significantly higher level than the established national norms for the LPI in two areas—Modeling the Way and Enabling Others to Act. In addition, the assessment of leadership potential given during the program selection process had a positive correlation with the LPI subscale for Enabling Others to Act. Moreover, the social context of each participant’s circumstances had an impact on their self-perceived transformational leadership potential when considering the participants’ satisfaction with the support they received from their mentors, the amount of time they spent with their mentors, whether they selected or were assigned a mentor, their Graduate Record Exam scores, and the poverty level within their school districts.

Introduction

Historically, professional school librarian guidelines have advocated for leadership as a defining role of the school librarian (AASL 1988; AASL and AECT 1998). The most recent guidelines, Empowering Learners: Guidelines for School Library Media Programs (AASL 2009), explicitly states, “The school library program is built by professionals who model leadership and best practices for the school community” (45). Furthermore, for the first time, the guidelines devote an entire chapter to leadership, “Empowering Learning Through Leadership,” and prescribe specific leadership responsibilities in the following areas: leadership in a global society, building relationships, modeling leadership, and planning for the future. Nevertheless, even though this prescription for leadership exists on the national stage, school librarian leadership has been historically slow to manifest itself at the building level (McCracken 2001) or through library education (Vansickle 2002). This study employs both quantitative and qualitative methods to examine the self-perceived leadership potential of preservice school librarians who took part in a
recently conceived graduate education leadership program, Project LEAD (Leaders Educated to Make a Difference).

Project LEAD is similar to several university teacher education programs in various subject areas that have aligned themselves with the National Board for Professional Teaching Standards to promote excellence and leadership (NBPTS 2008a). Developed in 2005, in the graduate school library media program at the Florida State University School of Library and Information Studies, Project LEAD’s goal is to address the critical shortages and need for highly trained school librarians who exhibit leadership skills (Everhart and Dresang 2007) and began as the only program in the nation to focus on the Library Media National Board Certificate. In 2006, 30 teacher-leaders from throughout Florida were chosen to participate as a cohort in this newly developed leadership curriculum as part of their master’s degree. This approach—targeting teacher-leaders and enticing them with full scholarships—was specifically designed to create a leadership model for experienced teachers who transition from the classroom to the school library.

The development of programs such as Project LEAD is important for school librarians because the outcomes of school librarian leadership are compelling. It is clear from the longitudinal research conducted in various states and settings that when school librarians take on leadership roles, they contribute to the school environment in ways that create better learning opportunities for children (Scholastic 2008).

In accord with the definition of transformational leadership, (Bass and Bass 2008; Burns 2003) the Project LEAD program endeavored to teach its students to be transformational leaders. The National Board Standards, embedded into the curriculum, note that a school librarian has the opportunity to be such a leader within a school (NBPTS 2008b). As such, students were taught many skills that would allow them to model outstanding leadership practices, to encourage change through collaboration, create a shared vision and mission, use technology to enhance their school communities, and teach information literacy skills that are critical to success in the twenty-first century.

The question arose as to what extent did the Project LEAD students regard themselves as transformational leaders as they completed their program. Naturally, the month before the program ended was the opportune time to conduct a study to measure the transformational leadership potential of the Project LEAD students because they were about to graduate. The students were enthusiastic about their new careers. The skills they learned were still an intricate part of their mindset. This is when the data gathering from the potential graduates took place.

This study determined the self-perceived leadership potential of preservice school librarians who were teacher-leaders and participated in a leadership training program by examining their self-perceptions of their transformational leadership behaviors. This research also was designed to study the impact of an assortment of variables such as age, experience, school grades, mentor relationships, the type of community the participants were employed in, and prior degree levels on the dimensions of leadership behaviors.

Research Questions
The following questions and related hypotheses guided the investigation.
RQ1: To what extent does leadership education facilitate the development of self-perceived transformational leadership behaviors in preservice school librarians who were teacher-leaders?

H1: The self-perceived transformational leadership behaviors in preservice school librarians who were teacher-leaders will differ from the norms.

RQ2: To what extent does the assessment of leadership potential at the beginning of the master’s in library and information studies degree program focusing on leadership correlate to the self-perceived transformational leadership potential of preservice school librarians who were teacher-leaders?

H1: The self-perceived transformational leadership potential will be correlated with the scores on the assessment of leadership potential.

RQ 3: To what extent does the social context of each participant’s circumstances impact the self-perceived transformational leadership potential of preservice school librarians who were teacher-leaders and participated in a master’s in library and information studies degree program focusing on leadership?

H1: The social context of each participant’s circumstances will have an impact on the self-perceived transformational leadership potential of preservice school librarians who were teacher-leaders and participated in a master’s in library and information studies degree program focusing on leadership.

**Literature Review**

**Theoretical Framework**

School librarians have not been traditionally regarded as leaders by teachers (McCracken 2001), principals (Edwards 1989), or even school librarians themselves (Ishizuka, Minkel, and Lifer 2002; McCracken 2001) because of larger organizational dimensions and traditions in schools. Leadership can be defined many ways. For the purposes of this study, leadership is defined as the ability to create positive changes within an organization that benefit everyone within the organization (Kouzes and Posner 2007). Such leadership can be tailored to the particular personality of the leader, composition of the group to be led, or challenges the organization faces.

While leadership is important for established, stable organizations, it is often most needed when organizations experience turbulence. Organizational challenges require particular approaches to leadership that help members work together through times of change and remain committed to the organization’s core mission and purpose. Schools are often in the midst of change brought on by myriad local, state, and national forces. Transformational leadership is an especially useful form of leadership for schools because it is rooted in organizational change.

**Transformational Leadership**

Transformational leadership is a leadership approach that builds on the concept that leaders may bring about or guide change within an organization by engaging in unselfish behavior (Bass and
Bass 2008; Burns 2003; Posner and Kouzes 1994). Transformational leaders look beyond their personal needs and strive to achieve goals that are important to an organization as a whole. The end result of change guided by transformational leadership is an organization with members who are empowered, share a vision, and deliberately labor to achieve a common goal (Posner and Kouzes 1994).

Transformational leadership assists a group of people to move from one stage of development to a higher one and in doing so to address and fulfill better a higher human need” (Couto 1995,102). This is because of the deep interest transformational leaders take in the well-being of their followers and the lasting effects of their leadership efforts (Bass 1990; Burns 2003). These exceptional leaders exhibit the willingness to take risks, the ability to create a shared vision, collaborate with followers and other leaders, model exceptional practices, and encourage the people around them (Bass and Bass 2008; Burns 2003; Posner and Kouzes 1994). These skills can be applied to a variety of settings, whether the leader works with one person, an organization, or an entire culture (Northouse 2004). Generally speaking, transformational leaders are able to challenge their followers and motivate them to achieve levels of success they originally did not think were possible (Bass and Bass 2008).

Transformational leadership can be applied to schools—the setting relevant to this study. Sheppard (2003) theorized that without sharing the leadership role, changes within a school will likely be short-lived because of competing priorities that can change the leadership focus. Transformational leadership is useful because it is a process for creating change within an organization. When seen as a process, this type of leadership becomes a behavior instead of a role and the need for formal distinctions between leaders and followers is less necessary (Uhl-Bien 2003). In fact, anyone can be a leader at any given time within in an organization as long as he or she is inspiring others to create change. Because dramatic reforms are often called for in educational environments, transformational leadership is well suited for schools.

This approach to leadership eliminates the need for principals, the formal leaders of the organization, to accept the entire weight of a school reform and distributes some of the leadership roles to others to share the vision for the change. Often, school leaders must bring about change within an institutional culture that does not lend itself to accelerated restructuring efforts (Cohen 2003). Leadership becomes transformational within schools when the leaders identify with the behaviors of the teachers they are leading (Sheppard 1996). These connections encourage teachers within schools to feel understood and to be more involved, creative, and committed. Commitment is a key factor in inspiring change within schools because the commitment of teachers makes it possible for reform efforts to be sustained even when a principal is replaced. An administrator with transformational leadership practices can establish commitment because the administrator shares the leadership role with others involved.

Training in transformational leadership components and assessment of strengths has been suggested for school leaders (Greenlee 2004). School librarians in particular can benefit from this training. They have the advantage of being able to work with one student, a parent, a class, a teacher, an entire school, or a community. The fact that school librarians are not always perceived to be leaders (Edwards 1989; Ishizuka Minkel and Lifé 2002; McCracken 2001) makes the practice of transformational leadership an efficient way to influence change within schools because it has the potential of empowering school librarians to create change movements without officially being identified as leaders.
Many variables have the potential to influence leadership development. Organizational culture (Conner 2006; Schein 2004); the availability of mentoring (Daresh 2004; Scandura and Williams 2004); the debate between learned versus innate leadership traits (Bass 1990; Copeland and Chance 1996; Feidler 2001; Kouzes and Posner 2007), experience (Bridges and Hallinger 1995; Herron and Major 2004; McGough 2003), educational level (Barbuto and others 2007; Laflin 2009), and age (Arsenault 2004; Huusko 2006; Oshagbemi 2004) reflect the circumstances that create unique social contexts for individuals. These variables are often externally constructed and outside an individual’s control. Nonetheless, research has demonstrated that they can play a pivotal role in the performance of any kind of leadership.

Method

Population
There were 30 students chosen for the Project LEAD program from 6 Florida counties. The Project LEAD directors, 2 FSU professors, assessed leadership potential by combining several applicant scores. These scores consisted of a leadership rubric completed by principals, points awarded on a sliding scale for grade point averages, points for answers on the application questions, and points for leadership essays. Details concerning each of these criteria can be found in Figure 1. Points also were given to achieve a diverse group according to gender, race, age, ethnicity, and the subject taught. The total of the possible points was 100. The final selection of Project LEAD students was made from the students with the highest scores.

Figure 1. Assessment of Leadership Potential

Data Collection and Analysis
The research reported here uses a mixed-method design. A concurrent triangulation mixed-method design was chosen for this study because it was a purposive sample—the participants were chosen because they were all leaders. There was a concern that the statistical analysis might not be able to make distinctions between the participants. Therefore qualitative data was collected to provide an understanding of the similarities and differences within the population. A closed-ended quantitative survey would not have provided this specific information.

Two paper-based self-administered surveys were used to collect the majority of the data for this study. The Leadership Practices Inventory (LPI), aligned with the theoretical framework of transformational leadership (Abu-Tineh Khasawneh and A-Omari 2008; Brown and Posner 2001; Fields and Herold 1997; Hautala 2005; Ridgway 2001) was used as the primary data.
collection instrument. The LPI has been shown to be valid and reliable instrument for measuring transformational leadership (Brown and Posner 2001; Fields and Herold 1997; Harris 1996; Hautala 2005; Ridgway 2001). The LPI assesses five dimensions of transformational leadership: Modeling the Way, Challenging the Process, Encouraging the Heart, Enabling Others to Act, and Inspiring a Shared Vision (Kouzes and Posner 2007). These areas align to the types of leadership school librarians are encouraged to practice and the areas emphasized in the Project LEAD program.

Adding to its suitability, the LPI has been used to evaluate leadership practices in a variety of contexts. For example, Joseph (2009) used the LPI to evaluate a principal preparation program. The LPI was used by Koh (2008) to compare the management skills of preservice teachers to their leadership skills. Suwandee (2009) evaluated the leadership behaviors of executives who participated in a leadership program. Laflin (2009) assessed the extent to which students participating in a graduate teacher program perceived themselves to be practicing effective leadership behaviors. Moniz (2008) studied the correlation between exemplary leadership behaviors and the relationship that protégés participating in a mentoring program had with their mentors. The inventory has also been accepted as an instrument that can help analyze the differences and similarities of leadership behaviors according to social contexts, such as years of experience (Hillman 2006).

A supplemental questionnaire, containing closed and open-ended questions, collected student perception data on what was learned during the program, demographics, and information about each student’s social context. This information was enriched by pre-existing data about each respondent’s school grade level (A, B, C, D or F) and poverty level (percentage of free and reduced lunch) collected from the Florida Department of Education website.

The qualitative data obtained from the open-ended questions were grouped into themes using the software Nvivo. The t-test was used to examine the difference between the study population’s means and the national population norms reported by Kouzes and Posner (2003) for Research Question 1. Research Question 2 was analyzed by using the Spearman rank correlation coefficient to determine the relationship between the Project LEAD assessment, the LPI, and the LPI subscales. The chi-square test, Spearman rank correlation, and Pearson moment correlation coefficient were employed to determine the relationship between the LPI, LPI subscales, and social context variables in Research Question 3.

**Findings**

The first significant finding of this study is that there were significant differences between the mean scores of the self-perceived leadership practices of the study population and the national population. The study population scored significantly higher on two LPI subscales—Modeling the Way, \( t(47.01) = 3.865, p = 0.001 \) (two-tailed) and Enabling Others to Act, \( t(49.39) = 2.610, p = 0.014 \) (two-tailed). The qualitative analysis further revealed that the participants learned skills in each of the five leadership dimensions identified by Kouzes and Posner (2007) as shown in Figure 2.
This result substantiates that the leadership curriculum implemented for the study participants was a factor in the development of their leadership skills and supports previous research indicating leadership skills can be learned (Copeland and Chance 1996; Feidler 2001). The skills covered during the Project LEAD classes reflected roles typically expected of school librarians, such as promoting reading, collection development, providing reference and search assistance, assisting with technology, and collaborating with teachers (Edwards 1989; McCracken 2001). However, other skills, which might be considered more radical for school librarians, were also integrated throughout their coursework-building partnerships that exceed school boundaries, modeling innovative technology use, and serving as exemplary role models whose desire for lifelong learning is an inspiration to their school communities.

The Project LEAD courses served as a vehicle for transformational leadership training because they taught the students to alter the cultures in their school by going beyond the norms of what is expected of school librarians. By definition, transformational leadership may be practiced by any individual in an organization and occurs when they challenge norms by modeling behaviors that inspire, encourage, and enable others within an organization to make changes that benefit the entire organization (Kouzes and Posner 2007). Supporting this conclusion are the statements offered by the participants describing the skills they learned while enrolled in Project LEAD for each of the transformational leadership dimensions described Kouzes and Posner (2007). Figure 3 is a graphical representation of all of the benefits of participating in Project LEAD reported by the students. For example, risk-taking skills was only cited one time making it the benefit mentioned the least, while collaborating skills were mentioned the most.

Although the assessment of leadership potential at the beginning of the program did not correlate to the overall self-perceived transformational leadership potential as measured on the LPI, there was a relationship with the LPI subscale for Enabling Others to Act. There are at least two conclusions that can be drawn from this finding. First, the Project LEAD directors did an excellent job of choosing participants who were teacher-leaders. Their assessments scores, when compared to their LPI scores, depicted the homogeneity of the group that was chosen. Next, the positive relationship with the Enabling Others to Act subscale provides evidence that the teachers who participated in Project LEAD were actually leaders. According to York-Barr and Duke (2004), “Teacher leadership reflects teacher agency through establishing relationships, breaking down barriers, and marshalling resources throughout the organization in an effort to improve students’ educational experiences and outcomes” (264). Crowther, Ferguson, and Hann (2008) further assert that teacher-leaders advance the quality of life within their communities by
creating ties between their schools and communities. Hence the purpose of the teaching profession is to provide students with the tools that enable them to be successful in the future. Therefore it is logical that the Project LEAD assessment designed to find teacher-leaders had a high correlation with the Enabling Others to Act subscale.

When considering the reliability of the Project LEAD assessment, given the high scores of the participants on the LPI and the positive relationship the assessment had with the Enabling Others to Act, $r_s = .446, n = 28, p = .017$ LPI subscale, one can assume the assessment achieved its purpose. The Project LEAD directors were able to pinpoint a process appropriate for identifying candidates with strong leadership potential.

This study also uncovered significant relationships between the participants’ self-perceived transformational leadership potential and the following social contextual variables: school poverty, GRE scores, mentor contact hours, mentor selection, and satisfaction with the mentors. Age, grade point averages, district support, school support, experience, school grades, school levels, community types, the type of contact the mentors had with the Project LEAD students, and the location of the mentors did not have a significant relationship with the LPI.

**Figure 3. Benefits of Project LEAD**
School Poverty
Poverty levels within the participants’ schools had a negative correlation with the LPI subscale Challenging the Process, rs = .387, n = 29, p = .038. Students who worked in schools with higher poverty levels found themselves less likely to take risks. Perhaps they were less likely to take risks because of the school communities they work in. Their school populations typically need stability because of less funding and social circumstances.

While social circumstances might affect test scores, the Florida Comprehensive Assessment Test (FCAT) is administered to students in grades three through twelve. Much of the school year is spent learning standards in preparation for the test. The test is used to determine whether students have made adequate yearly progress and their scores are perceived to be a direct reflection of each educator’s ability to teach. Consequently, the participants in higher poverty level schools were probably less likely to take risks while preparing their students for the FCAT, which is used to partially determine school funding in Florida.

Graduate Record Exam
GRE scores were negatively correlated to the participants’ total LPI scores, r = .383, n = 30, p = .036 and the LPI subscale for Encouraging the Heart, r = .490, n = 30, p = .006. The results of this study actually suggest that it is harder for people with high GRE scores to learn transformational leadership skills. Perhaps this occurred because the people with high GRE scores in Project LEAD already were confident that they were leaders and already have their own ideas of what leadership means thereby hindering their ability to be receptive to new ideas for leadership development.

Mentor Variables
There were significant relationships with the variables mentor contact hours, mentor selection, and satisfaction with the mentors and the LPI. This affirms research citing the value of having good relationships with mentors (Daresh 2004; Kram 1985; Scandura and Williams 2004). More specifically, the amount of time the participants spent with their mentors was positively correlated to their total LPI scores, rs = .492, n = 30, p = .014 and the LPI subscales for Encouraging the Heart, rs = .492, n = 30, p = .006, Enabling Others to Act, rs = .426, n = 30, p = .019, and Modeling the Way, rs = .508, n = 30, p = .004. The participants’ satisfaction with their mentor was positively correlated to the LPI subscale for Encouraging the Heart, rs = .431, n = 30, p = .018. Moreover, there was a relationship between mentor selection and the LPI subscale for Enabling Others to Act, c2 (1, N = 30) = 5.792, p = .016. Those who chose their mentors had higher scores on the subscale.

Satisfaction with Support
Other variables did not have a significant relationship with the LPI. For example, the satisfaction with support from the school district and support within the schools did not have a significant relationship with the LPI. Neither did grade point averages, school grades, school levels, or community types. Perhaps under normal circumstances when students are trying to complete a degree program on their own, these factors would have hindered the participants’ LPI scores.

Self-efficacy, or the belief that one can accomplish a particular goal (McCormick 2001) seems to have played a significant role in what the students believed they were able to accomplish. Contrary to research that infers that negative cultures within schools can deter leadership
development (Leithwood and Jantzi 2008), the results of this study indicate support structures and self-efficacy can counteract these negative effects. The study participants had great willpower and a strong belief in their ability to complete the program. Their confidence seems to have manifested itself in their self-perceived leadership potential. It can be assumed that factors that normally hinder others are mere hurdles for people who deem themselves to be true leaders.

**Age**
The findings of this study were also contrary to other studies regarding the effects of age on leadership. Age is seen as an indicator of competence (Kearney and Gerbert 2009). It has also been determined that people from different generations have different leadership styles (Arsenault 2004). The participants were between the ages of 25 and 61. However, each person included in this study, despite their age, was a part of Project LEAD because their administrator found them to be highly competent. Moreover, this group was quite similar in their leadership skills despite the different generations represented among them. Perhaps if this group had not participated in a rigorous selection process that actually was able to pinpoint exceptional leadership potential, there might have been a relationship between age and the LPI. Again, the results for this factor attest to the success of the selection process.

**Experience**
The findings of this study concur with Miracle’s (2001) research using the LPI. Years of experience were not a factor in the participants’ leadership practices. Instead, the qualitative responses show the type of experiences of the Project LEAD students during the program made a dramatic difference in their leadership practices. This supports the findings of previous studies that suggest providing experiences beyond formal classroom settings can develop leadership skills (Thomas and Cheese 2005). During Project LEAD, specially designed experiences took the form of hands-on assignments in school libraries, interacting with mentors, volunteering at conferences, networking with highly acclaimed school library leaders, and interacting as a team within their county cohort.

**Suggestions, Recommendations, and Implications**
The conclusions drawn from this study have yielded suggestions regarding professional development for teachers, the education of school librarians, and the design of distance learning programs. Several recommendations also are offered concerning mentoring and relationships between institutions of higher education and school district partners. Lastly, there are implications regarding self-efficacy and its role in transformational leadership development.

**The LPI and School Librarians**
This study confirms that leadership skills can be taught. By their own admission, the transformational leadership skills that were taught to the preservice school librarians who participated in Project LEAD made a substantial difference in their schools even while they were still enrolled in the program. This implies that in the future school librarian programs can be tailored to pinpoint specific transformational leadership skills that may need to be addressed by individual students.
The Project LEAD Assessment
The Project LEAD assessment was proven to be a viable tool for choosing teacher-leaders with exceptional potential for being school librarians who practice transformational leadership behaviors. This is important because positions in school libraries are often seen as easy positions for seasoned classroom teachers to gravitate to (Everhart 2002). Numerous studies have documented the positive impact of school librarians who are leaders (Scholastic 2008). Therefore the individuals who assume these positions should be dedicated to providing leadership and optimal programming to their school communities. Perhaps in the future, the Project LEAD assessment can be used to assess the strengths and weaknesses of teacher-leaders to personalize their educational experiences to assist them with their leadership development needs.

Partnering with School Districts
The success of the Project LEAD program implies that partnerships between higher education institutions and school districts are a way to promote school reform. Still it must be recognized that the responses of the participants indicated that some school districts put in more effort to ensure the success of the program than others.

Verbal and written contracts with school districts are not enough to ensure that the districts offer continued support and monitor the mentors they provide. There needs to be specifications about how school districts will provide support. Furthermore, there is a need for consistent planned contact with district officials on a frequent basis if programs such as Project LEAD and school districts are expected to fully benefit from collaboration.

Skill Reinforcement
While it is encouraging that some of the students mentioned skills that were atypical for school librarians, the frequencies of the reported skills reveal an important detail about the order of the program’s coursework and the information retention rate of the students. Simply stated, the students mentioned skills taught in the last two semesters of their program the most. The frequencies of the skills reported by the students make it clear that skills should be reinforced periodically throughout degree programs so that students remember them. It is true that the Project LEAD students intermittently attended conferences and summer workshops to strengthen their knowledge of nontraditional school librarian roles. Despite this effort, many of them did not acknowledge the skills they learned for implementing these nontraditional roles. The lack of acknowledgement indicates that frequent mini-assessments, podcasts, or module slideshows might help students to retain the information throughout their degree programs.

Risk-Taking
Though risk-taking is an element of the transformational leadership behavior Challenging the Process (Kouzes and Posner 2007), it was only directly mentioned by one Project LEAD student. This was surprising because it can be inferred that risk-taking as a transformational leadership skill was taught throughout the Project LEAD program. The students were encouraged to surpass the normal standards of what is commonly expected of school librarians to create vital connections for school community stakeholders.

Perhaps only one participant directly mentioned risk-taking because of the culture within schools. Today teachers are working in environments that stress accountability and stability. While classroom teachers may be less inclined to take risks, school librarians have more
flexibility. They are typically not responsible for a subject area. For this reason, it might be projected that the Project LEAD students will probably begin taking more risks after they become school librarians. Nevertheless, since risk-taking is at the heart of transformational leadership, this skill needs to be directly taught and reinforced.

**Mentors**
Participants’ responses concerning their mentors yielded rich information. First, mentors need to be trained. In the future, there should be workshops for mentors. In cases like Project LEAD when coursework is offered at a distance, it would be advantageous to create a forum for mentors to share their experiences and support each other. The participants’ responses also pointed out that spending time with mentors is beneficial. Yet some of the mentors barely helped their students. Therefore it can be concluded that mentors who are interested in helping new school librarians should be recruited. This will help to ensure that mentors are highly qualified and committed to helping preservice school librarians.

**The Power of Professional Development for Teachers**
Some respondents’ comments attested to the fact that professional development truly can make a difference in the leadership behaviors of teachers and school reform. Sometimes all teachers need is a boost of confidence. Before Project LEAD, some participants were reluctant to share their opinions with their coworkers and administrators. The findings of this study show more of an emphasis needs to be placed on professional development in school districts that make teachers aware of their potential. It is true that teachers often received professional development throughout the year. While this type of professional development is helpful, this study demonstrates that sustained professional development, offered in a supportive environment, can make the difference between timid teachers and confident teachers who enjoy working in collaborative environments.

**Cohorts for Distance Learning**
Findings from this study have implications for cohorts in distance education. Namely, some of the students mentioned that working and meeting specifically with the people in their county was extremely helpful to them when completing assignments. The meetings became an additional support network. During these meetings the participants developed a morale that enabled them to complete the program when they felt overwhelmed. The cohort afforded each participant with an instant network of innovative professionals to interact with after they completed the program.

**Self-Efficacy**
Efficacy, or the belief one has the ability to achieve, is closely related to confidence in leadership skills (McCormick 2001). The Project LEAD students believed they could be leaders. They all applied for the program and were accepted because they believed they were leaders. During the program they did not allow the situations within their environments to hinder them from their goals. Despite the circumstances they were in such as not having a supportive mentor or teaching in a school with fewer resources, they continued to develop their leadership skills and finish the program. Once again, transformational leadership is an option for people who want to make changes within their organizations without having to be appointed leaders. Transformational leadership allows people to lead from any position as long as they desire to collaboratively orchestrate changes in beliefs, assumptions, and behaviors that benefit entire organizations.
The AASL Guidelines
Project LEAD provided a needed link between theory, practice, and the AASL guidelines. The results of the qualitative and quantitative responses show that the students did indeed learn the AASL guidelines and how to implement the theory that serves as their basis. This implies that there should be a consistent curriculum that is taught by school librarian programs to teach preservice school librarians to implement the guidelines. The Project LEAD curriculum can serve as a preliminary model because the curriculum has been shown to be effective in producing school reform through school library leaders.

Conclusion
The process used to identify the candidates for the Project LEAD program and to provide leadership training for the program participants was revolutionary in that it has never been attempted for school librarians before. As such, the program was not without its vulnerabilities. However, what this study found was that the project directors were successful in identifying candidates with great leadership potential. They were also successful in providing them with an education that enhanced their leadership skills and taught them how to connect the theory behind the AASL standards with professional practice.

Accordingly, the process used to develop and carry out this program can serve as a model for others who would like to create general teacher leadership programs or leadership programs for school librarians. This study substantiates that cohorts are a viable way to create a spirit of collaboration, improve the success rate of online students, and provide an excellent environment for teaching leadership skills. In this case, these findings can be considered applicable for those who would like to use cohorts or develop partnerships with companies or school districts as a means of educating leaders or online students.

Works Cited


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