Further Understanding of Collaboration: A Case Study of How It Works with Teachers and Librarians

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Collaboration between teachers and librarians is considered an essential element of school librarians' work. This case study examined a collaborative effort between teachers and librarians from diverse areas of expertise who collaborated in designing professional development workshops for a group of elementary school teachers and librarians. The purpose of the study was to further understand the process of teacher and librarian collaboration, and to evaluate the collaborative process using a proposed model of teacher and librarian collaboration. Findings support previous studies that indicate knowledge sharing, relationship building, and environmental factors are essential to successful collaboration. In addition, the study illustrates the close association between deep thinking and high-level collaboration. The process of collaboration appears to involve phases including a beginning phase, relationship-building phase, and productive phase. This study furthers the profession's understanding of how to engage in successful teacher and librarian collaboration to improve education.

Introduction

Collaboration of the type recommended in professional guidelines, *Information Power: Building Partnerships for Learning* (American Association for School Librarians [AASL] and Association for Educational Communications and Technology [AECT], 1998), is considered one of the "unifying themes for guiding the effective library media specialist" (p. 47) and an essential element of the work of school librarians. As Doll (2005) explains, "*Collaboration,* in the fullest sense … means that the school library media specialist and the teachers in the school will work together to plan for, design, teach, and evaluate instructional events for students" (p. 4). New standards for 21st century librarians also indicate that collaboration is an essential role for librarians "to broaden and deepen understanding" (American Association of School Librarians, 2007, Standard 1.1.9), "to provide instruction, learning strategies and practice" (p. 3) and "to exchange ideas, develop new understandings, make decisions, and solve problems" (Standard 2.1.5).

Problem Statement

Considerable anecdotal and empirical information exists about conditions for collaboration (Mattissech & Mosner, 1992), best practices for collaboration (Falwell, 1998), environmental conditions that improve teacher and librarian collaboration such as flexible schedules (Rowe, 2007), characteristics of successful collaboration (Callison, 1997), levels of collaboration (Loertscher, 1988, 2000; Montiel-Overall, 2005, 2008), and innovation and creativity resulting from collaboration (Doll, 2005; Farmer, 2007). However, almost no information is available about educators' awareness of the role of librarians as collaborative partners in developing and implementing curriculum. As an example, in a lengthy report on collaboration in schools (MetLife, 2009a, 2009b, 2010), based on a recent educational survey on the importance of collaboration in education, there is no mention of librarians as collaborators.

Classroom teachers and university faculty (hereafter teachers/educators) do not yet appear to have an understanding of the new role of librarians as partners in education, and continue to perceive librarians in only traditional roles (Montiel-Overall, 2008b; 2009). Furthermore, teachers/educators have little or no experience with the type of librarian collaboration suggested in LIS literature for 21st century librarians: high-level collaboration involving considerable knowledge of curriculum, standards for content across grade levels, and the ability to jointly plan and implement instruction (Montiel-Overall, 2009). A recent study with teachers indicates that few teachers have knowledge of librarians as collaborators, and that few teachers are aware of the potential role of librarians as co-teachers (Montiel-Overall, 2009). In general, teachers do not appear to be aware of how teachers and librarians are expected to work together nor of the underlying reasons for teacher and librarian collaboration (TLC) discussed in the literature (Lance, 1994, 2001, 2002; Lance, Hamilton-Pennell, Rodney, 1999; Lance, Rodney, Hamilton-Pennell, 2000; 2001; Lance & Rodney, 2005; Lance & Russell, 2004; Lance, Welburn, Hamilton-Pennell, 1993; Rodney, Lance, Hamilton-Pennell, 2002, 2003).

For teacher and librarian collaboration to be successful, a clear understanding by classroom teachers /educators about how and why teachers and librarians should collaborate is critical. Empirical data would be invaluable in developing a better understanding of how to promote TLC within the education field, particularly with teachers who have no prior experience or knowledge about integrating subject content and library instruction through jointly planned and implemented lessons.

In this article, the term "librarian" is used throughout to avoid confusion in the discussion of teacher and librarian collaboration. Other preferred terms for the librarian in the school include teacher-librarian, school library media specialist, information specialist, and media specialist. In this article, the term "teachers" refers to classroom teachers and the term "educators" refers to university faculty. This article is based on research presented at the American Educational Research Association Annual Meeting in San Diego, 2009.

Relevant Literature

Teacher Librarian Collaboration

An extensive body of literature on teacher and librarian collaboration (TLC) has developed over the past twenty years (Bush, 2003; Callison & Morris, 1989; Copland & Messner, 2004; Doll,

2005; Haycock, 1999; Montiel-Overall, 2005, 2007, 2008a, 2008b, 2009; Oberg, 1995, 1996; Russell, 2002; Shannon, 2009). Information exists on best practices for collaboration including environmental conditions, flexible schedules (Gavigan, Pribesh & Dickinson, 2010), on principal support (Farmer, 2007; Morris, 2007; Oberg, 1995, 1996; Shannon, 2009), on characteristics of successful collaboration (Kim & Ju, 2008), on time considerations (Callison, 2006), on levels of collaboration (Loertscher, 1988, 2000; Montiel-Overall, 2005, 2008a, 2008b; 2009), and on characteristics of highly collaborative teachers and librarians (Bush, 2003; Montiel-Overall, 2008a). The literature on teacher and librarian collaboration indicates that sharing knowledge and information can maximize time, materials, and expertise (Callison & Preddy, 2006). More importantly, the literature indicates the importance of integrating libraries and librarians into the school curriculum in improving student academic achievement (Lance, 1994, 2001, 2002; Lance, Hamilton-Pennell, Rodney, 1999; Lance, Rodney, Hamilton-Pennell, 2000; 2001; Lance & Rodney, 2005; Lance & Russell, 2004; Lance, Welburn, Hamilton-Pennell, 1993; Rodney, Lance, Hamilton-Pennell, 2002, 2003).

Although research in LIS has primarily focused on librarians' experiences with teacher and librarian collaboration, a recent study provides insights into educators' perceptions of TLC. Teachers were asked to indicate how frequently they engaged in certain activities with librarians and how important to student learning they perceived the activity to be. Teachers did not perceive planning lessons with librarians to occur frequently (Montiel-Overall, 2009). Teachers also perceived planning lessons with librarians to be less important to student learning than "arranging time for library use" (p.186).

Teacher to Teacher Collaboration

In spite of considerable information from LIS literature on collaboration, there is a dearth of information in the education literature about librarians as collaborators with teachers. Almost no information about TLC was found in a review of educational literature. A recent study by the MetLife Foundation (2010) on collaboration in schools indicates considerable interest by teachers in collaboration with each other and with principals. However, librarians are not mentioned in the 131-page final report. For the most part, the literature in education focuses on the same issues addressed in LIS literature but without consideration of the role of librarians. Leonard and Leonard (2003) found that while most teachers recognize the benefits of collaboration, reduced interest in teacher to teacher collaboration resulted from a lack of time. Time was perceived as a major impediment to teacher-teacher collaboration. Hara and colleagues (2003) found other impediments to collaboration among university educators. They found collaboration was more likely to occur on low level tasks such as providing data than on tasks requiring thinking together. Hara and her colleagues note that when interpersonal relationships were developed and trust and respect were established, the collaborative process appeared to move along more quickly.

Theoretical Framework

Collaboration is a construct best examined through multiple theoretical lenses. This study is grounded on a theoretical framework referred to as social constructivism. The writings of Vygotsky (1978) provide the theoretical structure for understanding group interaction.

Vygotsky theorized that individuals learn through social engagements with others. Moran and John-Steiner (2003) explain that Vygotsky's views describe "knowledge construction [as] a social, cooperative venture" and that "all mental functions are first experienced socially, learned in interaction with others" (p. 4). Based on this theoretical framework, an underlying assumption about collaboration is that meaning and knowledge are co-constructed. In this theoretical perspective, social interaction encouraged through collaborative activities enhances learning and improve teaching and learning (Fulton 2003; Leonard & Leonard, 2001a, 2001b).

A second theoretical lens guiding the study comes from organizational theory, which includes underlying assumptions about group work resulting in greater productivity, challenging traditional ideas of individualism, competitiveness, and working alone. Drucker (2000) suggests that institutional leaders who create communities interested in the common good reap benefits far beyond those achieved from the contributions of individuals. Others suggest that shared ideas and problem solving around a common goal are the essential reasons for collaboration (Austin, 2000; Senge, Roberts, Ross, Smith, & Kleiner, 1994).

Using these theoretical perspectives as lenses for examining collaboration, the goal of this study to was to gain insight into collaboration among teachers/educators and librarians and to examine teachers'/educators' understanding of teacher and librarian collaboration through their work on a collaborative project with librarians. This study attempts to address questions about how teachers/educators perceive teacher and librarian collaboration, how they collaborate with librarians on a joint project, whether cultural differences between disciplines represented by teachers/educators and librarians affect collaboration, and the extent to which levels of collaboration described in a proposed teacher and librarian collaboration model (TLC Model) are reached by participants.

Background to the Study

This study occurred during the 1st year of a three-year study funded by the Institute of Museum and Library Services (IMLS) on the effect of teacher and librarian collaboration on science information literacy of Latino students. During the first year, which was a planning year, a team of teachers/educators and librarians with expertise in the areas of teacher and librarian collaboration, science information literacy, and Latino language and culture were purposively convened monthly to plan intervention workshops that would be provided to six cohorts of 3rd, 4th, and 5th grade teachers and librarians (hereafter Cohorts) participating in a study during the following two years. The intervention workshops were to be designed to improve instruction through teacher and librarian collaboration. Members of the convened group of experts agreed to collaborate in planning the intervention workshops. The group of experts consisted of teachers and librarians (Peer Mentors) who would mentor the Cohorts during the following two years, and several university experts in science, Latino language and culture, and teaching who agreed to serve as advisors during the planning process and to provide resources or expertise as needed (Advisors). This study examines the collaborative process as it occurred among teachers, educators and librarians while they worked together to develop the professional development intervention workshops for the Cohorts.

A proposed model of teacher and librarian collaboration (Montiel-Overall, 2005) was used to inform participants about various levels of collaboration. The model (TLC Model)

describes a range of collaborative practices between teachers and librarians from low level collaboration to high level collaboration. Low level practices include relatively functional endeavors such as scheduling events and organizing activities (e.g., Coordination). High level collaborative practices include more complex endeavors which integrate library instruction and subject content (e.g., Integration).

The goal of the professional development workshops for the following years would be to help members of the Cohorts work in more complex collaborative ways to provide Latino students, who lag far behind their non-Latino peers, an integrated science and library curriculum (i.e. integrated science and information literacy curriculum). Finally, participants were asked to make every effort possible to engage in high end collaboration themselves as they planned the intervention workshops.

Research Design and Procedures

Case study methodology was used to gain in-depth understanding of a single real-life situation (Merriam, 2001). The intent of the study was to analyze and interpret the phenomenon of collaboration with librarians and teachers/educators to better understand the interconnectedness of factors previously identified in studies and to gain a better understanding of the process of collaboration between teachers and librarians.

Participants

Participants were convened after approval was obtained from the Institutional Review Board. Participants included three elementary school teachers and three school librarians (Peer Mentors) from two school districts, and four educators at a local university (Advisors). At mid point in the study, two teachers decided not to continue in the study and were replaced by an elementary teacher. The Peer Mentors were compensated for their time. The Advisors were not compensated. Three participants were Latino. The remaining participants were non-Latino. All participants except two teachers had more than 10 years experience in their respective fields (education and/or librarianship). Most of the team members had over 15 years of work experience.

Advisors included faculty from a university education department responsible for teacher education, a science curriculum coordinator, and faculty from a university computer science department. Advisors intermittently attended meetings, responded to questions via email, and provided information in their areas of expertise (e.g., science, Latino language and culture, education). Peer Mentors had strong backgrounds in librarianship/ information literacy, science, and language and culture. For example, a teacher Peer Mentor was a science/math coach. Another teacher Peer Mentor was a Spanish language and culture specialist. Librarians were highly experienced teacher-librarians with extensive experience collaborating with teachers. One of the librarians had received national recognition for her collaborative efforts as a teacher-librarian. Another librarian had helped create school district standards for librarians, which integrated information literacy standards with K-5 content standards. All Peer Mentors participated in pre-and post-interviews (see Appendix for sample interview questions).

Data Collection

Data collection took place during 2007-2008 academic year. Qualitative data included observation notes, fieldnotes, artifacts from monthly team meetings, and pre-and post- audio recorded semi-structured interviews of Peer Mentors and some Advisors. Triangulation of data was used to assure greater reliability of data. Transcripts of interviews were distributed to participants for review to provide greater trustworthiness (Lincoln & Guba, 1985). The researcher was a participant observer (Jorgenson, 1989) and facilitated member check and debriefing, which occurred informally at various times during the study and formally when participants were asked to review and correct the transcripts. In addition, the researcher attended meetings, which were generally four hours long after school hours during the first semester of the school year, and two to three hours during the spring semester. Informal meetings also took place at various times, and memos from these meetings were compiled. Audio recorded semi-structured interviews were transcribed verbatim. Data included the following: researcher observations, participant fieldnotes, meeting notes of meetings, interviews, and informal conversations.

Data Analysis

Qualitative data analysis was carried out by the researcher and two research assistants. The researcher provided instruction to research assistants on case study research (Merriam, 2001), qualitative data analysis (Creswell, 2008), and constructivist grounded theory approach (Charmaz, 2000), which "recognizes that the viewer creates the data and ensuing analysis through interaction with the viewed" (p. 523).

Analysis began with multiple readings of data. Coders (researcher and research assistants) discussed and agreed upon categories as they were initially identified. Coding and recoding of categories occurred as new insights were obtained. For example, the initial categories included (a) expertise, (b) respect, (c) trust, (d) patience (e) openness, (f) social environment, (g) common goal, (h) time, (i) sharing knowledge, and (j) integration of ideas. These categories were examined more closely to determine their relationship with each other. Displays were created to provide coders greater clarity of thought (Yin, 2003). Displays helped with more in-depth analysis to see whether and how categories supported theory. After a manual analysis of data occurred, transcriptions were entered into a data management system (ATLAS.ti). Recoding continued as additional information emerged from the data and new categories became evident.

Incidents between teachers/educators and librarians were examined to determine levels of collaboration proposed in a model of teacher and librarian collaboration (hereafter TLC Model). Incidents involving scheduling and/or organizing were categorized as low level collaboration (Coordination). Incidents involving teachers/educators and librarians working independently and then coming together to share were categorized a mid level collaboration (Cooperation), and incidents in which idea sharing resulted in a jointly developed outcome were categorized as high level collaboration (Integration).

Coding and recoding occurred to facilitate interpretation, and categories were changed after further analysis and interpretation. In the constant comparative method of grounded theory, incidents applicable to each category are compared. This occurred and led to second

level analysis with integration of categories. For example, in the initial analysis four major categories emerged: having a common goal, communication, developing relationships, and environment (i.e., setting). Tables were made to display categories as suggested by Miles and Huberman (1994). This led to reorganization of information and relabeling of items. Modifications in the tables and diagrams led to greater clarity of data and elimination of non-relevant information, which allowed greater clarity in findings and led to a deeper conceptual understanding of the collaboration process. As initial categories changed, general themes emerged from the data. Inter-rater agreement occurred throughout the process with excellent results.

Findings and Discussion

The following sections discuss findings of this case study. In the first section, the research questions are addressed. These include educators' perceptions of TLC, how participants collaborated and whether differences within the disciplines affected their collaboration, and levels of collaboration attained. The second section discusses general themes, which emerged from the data, which include shared knowledge, relationship building, and deep thinking. Themes, categories used to identify themes, and samples from data are presented on Table 1. The final section presents a conceptualization of the collaboration process. In this section, three phases in the collaboration process are identified, the initial phase, relationship phase, and productive phase. This section advances theory about the collaboration process, which is invaluable in TLC. Case research is considered a valuable tool in theory building (Yin, 2003).

Section I: Research Questions

Educators' Perception of Teacher and Librarian Collaboration. Findings indicated that teacher Peer Mentors and educator Advisors did not initially understand the meaning of collaboration as it is described and recommended in school library literature. Uncertainty about TLC continued even after several meeting into the planning year: a teacher Peer Mentor asked "What is collaboration anyway?" An educator participant attempted to explained that teacher and librarian collaboration meant: "The teachers get resources to use in the actual science curriculum and at the same time is improving kids' research skills, how to access information, the information literacy piece."

Questions asked during meetings indicated that teachers/educators did not know what librarians did when they collaborated with teachers at school. Questions asked included: "When do you [teachers and librarians] meet? How do you find the time to meet? Does your principal give you time to meet? What if teachers don't want to collaborate?" Teachers/ educators were interested in knowing how librarians carried out their work and requested demonstrations of what it looked like when librarians met with teachers to plan instruction. Demonstrations of teacher and librarian collaboration took place several times during the planning year at the school of one of the Peer Mentors.

A teacher participant indicated that teachers in her school district were not aware of librarians' professional guidelines for collaboration nor of information literacy standards. She said she did not know that these were integrated into content curriculum. Understanding the

role of school librarians was difficult at first. However, perceptions slowly changed over time. A teacher explained,

> It was difficult to get our bearings when we started out. You have to give it the time that it takes… I have a pretty good handle on …what we're going to be doing…, what roles each of us is going to play, and how together we're going to create something that's greater than the sum of its parts.

Collaborating with librarians to plan the intervention workshops for the following year provided valuable first hand experience in "shared thinking." Through the collaborative endeavor of planning the intervention workshops, participants essentially collaborated in ways that were similar to how they would expect the Cohorts to collaborate the following year. Previous experience may have contributed to teachers' and educators' initial concept of collaboration. A participant explained, "Some did it quicker and easier than others. Maybe depending on their own background and how much experience they had." Not all participants had positive perceptions of collaboration. Some participants' experiences with group work included having an individual "take over the group" or "letting everyone else do all the work." These notions changed as participants began planning: "Everybody did what they needed to do [and] no one took control."

How Teachers/Educators Collaborate. Although experience of participants differed somewhat from the type of collaboration the Cohorts would be involved in the following year, various similarities existed, which were categorized as communication, relationships, and conditions necessary for collaboration to occur. Categories identified in this case confirmed findings from other studies on collaboration. Careful examination of "incidents with properties of the category" as prescribed by Glasser & Strauss (1967, p. 108) resulted in identifying categories, which appear to be integral components of collaboration: having a common goal, being able to build relationships, and jointly creating outcomes. Sub-categories emerged as incidents within the categories were identified (e.g., communication, environmental conditions). A brief discussion of these categories follows.

Common goal. Understanding the goal of the project emerged from the data as an essential element that had to be clearly understood before the collaborators felt they were being productive. Although the primary goal of the project was to jointly develop professional development intervention workshops, which integrated the areas of expertise (i.e., TLC, information literacy, science, and Latino language and culture), teachers/educators expressed frustration about how to accomplish the goal. An educator explained, "[we] are not used to having to develop the plan itself … initially [we] were waiting to be told what needed to be done." Librarians, on the other hand, had a clearer initial understanding of the common goal, "[O]ur common goal was to design [professional development workshops] for next year," and were less frustrated with the process of accomplishing it without external direction and guidance. It took a number of meetings for all participants to understand their part of the collaborative effort and how each individual would contribute to the collaborative endeavor of developing workshops around their areas of expertise. The effort required lengthy discussions and making a series of minor decisions along the way. A teacher member of the participants

explained, "[the process of collaboration] is hard work, [a] long-term process with confusion and chaos until pieces come together."

Relationship building. Having a good relationship with other collaborators emerged as an essential component of collaboration. Some participants explained that they needed to become comfortable with others in the group in order to share ideas. Others stated that the way they developed respect for others was by building a relationship with them. A participant explained as her relationship with others developed, she began "looking forward to seeing people." Communication was also clearly at the heart of relationship building in order to resolve the fear factor. Initially, relationships appeared to be guarded but as participants got to know each other they began to trust each other ("you have to be able to just let yourself not be scared, not to hold your ideas back but to share those ideas"). For example, at the initial meeting, an Advisor noted that he felt a fair amount of animosity from a Peer Mentor: "there was no trust at all at the beginning…and I think that entirely changed over time." As relationships developed, discussions around shared ideas were more open and accommodating to the ideas of others. A participant explained the sharing process by stating: "When you collaborate like that, you share the work, you share the ideas you also share the excitement and the energy you need to get it done." This study confirmed that relationship building requires time. It also confirms that a pleasant social environment contributes to building relationships including trust, openness, respect, patience, knowledge sharing, expertise, and good ideas. Figure 1 illustrates how initial categories appear to work together. The illustration indicates that elements occur over time in a social environment. The left box represents elements needed for collaboration (Trust, Respect, Openness, and Patience). The left arrow indicates that these elements result in Knowledge and Shared Expertise (middle box). The right arrow indicates that these elements lead to Integration of Ideas.

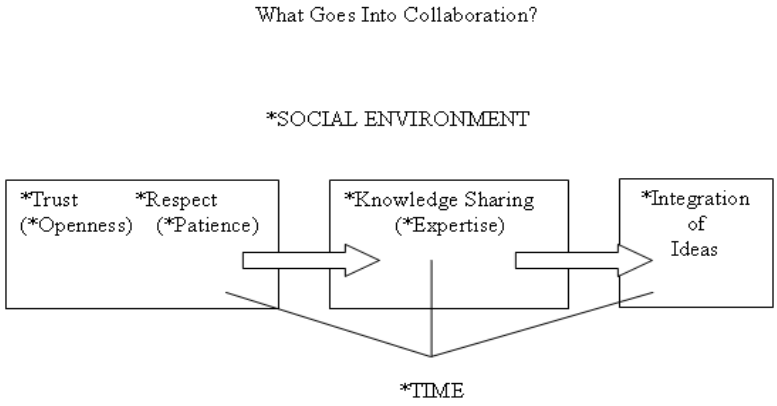

Figure 1. This illustration identifies elements of collaboration (identified with an asterisk), which emerged from the data.

Cultural Perceptions. Culture is defined as the daily activities that occur in a group, community or organization (Rosaldo, 1989). Cultural differences between teachers/educators and librarians were apparent at various times during the study requiring lengthy discussions to

resolve differences. First, teachers/educators were not comfortable with the idea of creating the plan for the intervention workshops. Teachers/educators explained that their experience with collaboration (working with others on a project) was limited to projects in which there was already a designated leader, prescribed tasks, and predefined outcome. An educator explained that teachers are used to "Here is what you are going to do … and they are uncomfortable sometimes when they don't hear that." The educator explained that in this collaboration, "we didn't have a pre-formed plan in mind … we were all supposed to create it. It's a lot of hard work." Teachers/educators also noted that they expected there to be already in existence a plan for what each person was supposed to do, which would eventually be presented by the researcher. A teacher/educator explained, "I feel like there is a "right" answer but we haven't found it yet." Second, teachers/educators also had a sense that there should have been a leader selected. Librarians, on the other hand, were comfortable that no one had "taken charge," and on occasions when someone took on the role of leader at a meeting, a librarian complained.

Another teacher/educator perception that emerged was that TLC would take teachers away from following prescribed curriculum, which teachers were supposed to rigidly follow in their school district. A teacher who withdrew from the study explained that the difficulty with TLC, as she understood it, was that elementary teachers were expected to follow a scope and sequence and that guided inquiry generated by teacher librarian collaboration would be difficult. As a teacher explained, "Why? [Because] you are going to take up too much of my time." Lack of time was given as an explanation for withdrawing from the study.

The other teacher who withdrew at mid year also explained that she did not have time to continue. She also expressed confusion and frustration about what collaboration meant and how it would improve teaching and learning. She explained, that at her school, teachers were required to collaborate (plan) by grade level around a specific agenda that was given to them. She explained that the way collaboration was being used in the research was completely new to her.

Finally, teachers/educators' perception of school librarians was captured in the following statements by teachers:

> "[librarians] …really are good getting resources and scheduling"
> "the librarians know everything"
> "Librarians [are] doing the technology."

Levels of Collaboration Attained. The TLC Model was used to identify levels of collaboration. Activities undertaken by IMLS team were examined based on three of the four facets in the model (Coordination, Cooperation, and Integration). The TLC Model provided a means of examining levels of collaboration reached during the process of planning by the research group. Actions and behaviors fell into three of the four facets described in the model. They occurred at different phases of the study. Following are examples:

Scheduling. Initially, participants focused on establishing a schedule for themselves and for the workshops they were planning (e.g., Facet A: Coordination in the TLC Model). During discussions about how to arrange the workshops (e.g., time of day) and who would go first, participants were respectful of each other's ideas, open to opinions about best times and place for the workshops. It appeared that talking about the schedule for the following year helped

participants open up with each other and become more comfortable working together on more important matters such as jointly planning presentations which occurred later during the first year.

Shared responsibilities. Another level of collaboration (Facet B: Cooperation) was also evident. Early during the planning year and then again at the end of the planning year, participants worked in teams of two or three to plan a single workshop that would integrate their areas of expertise. Participants carried out their planning outside of the monthly meetings. Several team presentations included separately planned segments created by each individual on the team. These types of interaction were classified as mid-level collaborative (Cooperation) because of the limited shared thinking involved in working together. Mid level collaboration was more apparent at the beginning of the year when teacher Peer Mentors just wanted to be assigned a segment of the intervention workshops.

Integration. A higher level collaboration (Facet C: Integration) was used to classify shared thinking, shared planning and the creation of something new. An example of high-level collaboration was evident in jointly planned presentations in which the segments of the presentation complemented each other. By the end of planning year, Peer Mentors had become actively engaged in jointly planning all aspects of the workshops including modules to be presented, content of the modules, and sequence. As an example, Peer Mentors collaboratively planned a lesson, which integrated Spanish/English cognates and science (e.g., insects/*insectos*). Librarians provided a mock demonstration of a meeting to plan the lesson around information literacy standards. With considerable effort, integration occurred. However, integration was never perceived as easy by teachers/educators, and a participant explained that at first he thought, "This is painful! But the more you do it, the closer you get, and the more ideas come out of it … and people start playing ideas off of each other." Although a high level of collaboration was difficult, it was eventually reached.

Section II: Themes and Categories

An outcome of this study was the emergence of three major themes of collaboration similar to findings from other studies. The first theme, shared knowledge, illustrates understanding required by participants to be productive in the collaborative endeavor. This theme includes cognitive elements of the collaborative process. The second theme, relationship building, illustrates affective elements required for collaboration. A third theme which emerged was deep thinking around ideas. It captured the effect of interactions identified in the first two themes.

Table 1 illustrates these themes and coding categories used to identify them. The themes capture essential components evident in the collaborative process. While themes are shown as separate entities in the table, they are interrelated components of multidisciplinary collaboration. According to Martin and Briggs (1986) cognitive and affective domains work together in creating knowledge and understanding and "no true separation of the domains can occur in any practical … situation" (p. 10). This appeared to be the case in this study. Themes and categories derived from the analysis are described in the following section with examples from the data.

Table 1
Themes, Coding Categories and Sub-Categories with Examples from Data on the Process of Collaboration

Themes	Coding category	Sub-category	Examples from data (quotes in italics)
		Understanding each other's area of expertise	**the mini presentations…[helped people get] to know each other.*
Shared Knowledge [Cognitive Domain]	Common Goal:	Understanding collaboration	**The project as I look at it is a way to think about …collaboration for **the end goal of improving** ...in the area of science.* *****Science is collaborative*** *when you look at science research and when people develop products and they are not just sitting there and doing their own thing. They are working together to develop products or figure out problems and that's what is going to help us here. Is that if we can take a look at what science curriculum is out there for third grade for example.* **The common goal of collaboration is improvement for students….* **So it's clear that what we produced by collaborating is going to be **far superior to what any one of us could have done as individuals.***
Relationship Building [Affective Domain]	Communication [Developing Interpersonal Relations]	Small talk	**…in the process of making small talk you begin to develop an understanding of the process.*
		Professional talk	*Understanding science learning and pedagogy *Learning about library standards and about language acquisition
	Qualities needed:	Being flexible	*****Flexibility and be willing to change.*** *It almost has to be a part of your persona as a teacher. It really does…. It can be learned.*
		Showing respect	**Talking to each other leads to respect, trust relationships.…*
		Being motivated	**I have to get something out of this too.* **I want to be with people like that…It is going to be more fun for me to be with the people who I am going to learn from…*

Table 1 (continued)
Themes, Coding Categories and Sub-Categories with Examples from Data on the Process of Collaboration

		Trusting others	**The only way we can find that trust is being listened to…*
		Being open	**Open to whatever…*
Deep Thinking Around Ideas	Accommodation:	Idea sharing	****We are going to figure out how we can put all four pieces into each module around the subject of science.***
[Cognitive & Affective Domains]			**I bounce ideas for sharing and I think its going well…*
	Consensus:		*Determining what the final product would look like-…
		Science teaching	***Analyze practice in terms of collaboration…** *Methods of presenting at the intervention workshops were agreed upon …
		Intervention workshops	*Improving teacher's content knowledge on science teaching ***Paradigm shift [changing the way you teach children]…**
		Latino students' needs	*Using standards- standards are going to be an integral part of the workshops. ***Learning how to teach Latino children… [*a different way of teaching them so they understand better…*]**

Shared Knowledge

Shared knowledge emerged as theme describing collaborators' need to know more about each other's area of expertise and their need to be clear about the goals of the project. Several participants knew each other but had never worked together. A librarian explained,
"It is interesting to me …that since the group is neutral to each other, the collaboration piece may take a little longer than it would if a person was a colleague because a part of the collaboration process is the element of trust."

Teachers' lack of prior knowledge about what teacher and librarian collaboration (TLC) involved was evident in questions raised at the meetings. Teachers indicated that they had never heard of TLC in their own professional experience and they wanted the librarians to demonstrate TLC. Teachers also wanted definitions of terms used by librarians such as *information literacy* and, *integrated instruction,* and numerous other terminology related to the

library profession. For example, teachers were not aware of research strategies discussed by librarians or of information literacy standards used by librarians to guide instruction. All participants expressed a need to have a better understanding early on about each other's areas of expertise.

Discussions about the role of librarians as collaborators provided a starting point for learning about each other. The proposed model of teacher and librarian collaboration also helped explain TLC. Examples from a previous study of highly collaborative teachers and librarians were provided to ease initial anxiety expressed about how the research team would meld their separate areas of expertise into workshops. Teachers' mental model for planning workshops initially was to develop totally separate modules on each topic:

> We really have not had much of an opportunity [to work collaboratively with those who are experts in another field]. What we've presented so far, for example, has been our own area of expertise but now how am I going to work with the other folks so that what we eventually present is a more collaborative sort of presentation? That's not clear yet.

Librarians on the other hand, explained, "When you collaborate …, you share the work, you share the ideas you also share the excitement and the energy you need to get it done." It was initially easier for them to initiate it.

Relationship Building

Relationships appeared to be an essential element for the success of collaboration. Building these relationships took time and energy. However, getting to know new people was important and helpful in bringing the group together during the lengthy meetings, which took place after school and often went through the dinner hour. A participant explained "Everybody was very excited to get going." Another participant explained that although she was often exhausted before the meeting, she left the meeting energized by the group. The experience appeared to provide stimulation and a common sense of satisfaction was realized by participants.

Communication. Two categories and multiple sub-categories defined the theme of relationship building. The first category, communication, captured various kinds of interaction that helped build relationships. Two sub-categories of communication were small talk and professional talk.

Small talk. Initial interaction among participants involved small talk about insignificant or personal information. Participants shared information about work, family, and personal experiences as a means of getting to know each other. Participants explained that they needed to become comfortable with others in the group in order to share ideas. Others stated that the way they developed respect for others was by building a relationship with them. At first, relationships appeared to be guarded before participants got to know each other and began to trust each other "you have to be able to just let yourself not be scared, not to hold your ideas back but to share those ideas"). A participant explained,

> And so in the process of making small talk you begin to develop an understanding of the person not just as some kind of a professional colleague but as an individual human being with all the personality characteristics and quirks that we all have as individuals.

Professional talk. As participants became more familiar with one another and comfortable talking with each other, they began to share ideas about the intervention workshops and how their areas of expertise could fit in. The group often lacked a common language for conceptualizing thoughts about other's areas of expertise. For example, although librarians in the group discussed collaboration as a new role for librarians recommended as a way of ensuring that students became information literate in the 21st century, teachers had a difficult time understanding what information literacy was and how it applied to their own areas of expertise. A teacher participant explained that it took a long time to get to the point where people understood each other professionally and could begin to discuss what was essential to developing the workshops: ("it takes a long time to where you're both inputting ideas and suggestions.")

An episode underscored the importance of establishing good communication in collaborative work. A teacher participant, who dropped out of the study half way through the first year, had rarely spoken during the meetings and minimally participated during small group breakouts, and seemed less communicative in general. Although the participant's silence was noticed it was attributed to shyness and lack of experience working on a group project. However, the participant later explained that she felt she didn't fit into the group since others had "an expertise" and she was "just a teacher." The participant indicated that what the group was doing was new to her and that she didn't understand what she could contribute. Thinking together seemed vague and abstract to her. Another explanation may be that the participant may have sensed what Charmaz (2000) describes as a subtle "power arrangement" that caused her to "retreat into silence" (p. 527).

Environment/Setting

Another category of collaboration that emerged as an element critical to its success, particularly since planning meetings were long and held at the end of the day, was having a comfortable environment and good conditions for meeting. This was labeled *Environment* or *Setting*, and has been identified in previous research by Mattissech and Monsey (1992) as important to collaboration. Having a convenient location was seen as a time-saver, particularly at the end of a workday. Meetings held at locations that were difficult to find or where parking was an issue resulted in annoyances that affected the meeting as participants entered the meeting in bad humor or frustrated. The size and friendliness of the meeting rooms also emerged as a factor in creating an atmosphere of contentment, congeniality and comfort. Participants' comments regarding factors that inhibited or facilitated collaboration were illustrated by the following: "meeting place [was] important," "needed to have a regular place," "more intimate … comfortable space." A sub-category of environment was food. Food helped participants bond. It was a way for participants to participate in social interaction prior to meetings, which enhanced their interaction during meetings.

> Having food was critical, particularly since meetings were held at the end of the day. You've got to bond. I think it would be hard for some people. I write about the food in my fieldnotes all the time. That's why [the teachers] and I bonded because we are early eaters.

Deep Thinking Around Ideas

The theme of deep thinking around ideas emerged during a third level of analysis. This theme emerged from episodes at meetings when participants were thinking and planning the intervention workshops. During these episodes, discussions included philosophical perspectives on teaching, conversations about pedagogy, discussions about the role of librarians in most schools, strategies for incorporating information literacy into science instruction (or any instruction), and analysis of teaching practices. In general, this theme identified a paradigm shift in the way some teachers and librarians on the research team approached their work together. This theme was defined by cooperation and a willingness to integrate their subject areas. It also reflected deeper thinking about how this would occur and why it would be beneficial to students. Minor decisions along the way contributed to outcomes. Decisions such as what to focus on at each workshop were considered minor decisions, which arose from participants accommodating to ideas and/or arriving at consensus. These categories, discussed below, helped identify the theme of deep thinking around ideas.

Accommodation. This category emerged from incidents in which participants' ideas changed about an issue. For example, participants became more knowledgeable about research strategies used by librarians to teach students how to find information, ways to connect children's background and science instruction through Spanish/English cognates, and innovative ways to use children's literature to teach science. Another example was evident in discussions about librarians teaching lessons (or parts of lessons) in the classroom. Teachers accommodated to the notion of librarians as teachers during the planning year.

Consensus. This category emerged from incidents in which participants began to make joint decisions about how to conduct the intervention workshops, about content, about who would teach and about what would be taught at the workshops. Reaching agreement was often difficult and was preceded by considerable discussion and consensus building, including participants taking time to explain, to talk things through, and to listen to different perspectives.

Section III: Toward a Conceptualization of the Process of Collaboration

This section presents a conceptualization of the collaboration process, which developed from an in-depth review and comparison of findings from this and other studies on collaboration. The phases reflect empirical evidence to advance theory about how teacher and librarian collaboration occurs. Three phases in the collaboration process are identified: the Beginning Phase, the Relationship Phase, and the Productive Phase. The previous two sections provide a backdrop for the conceptual model of the collaboration process. The phases of collaboration presented in the conceptual model are discussed below and presented in Figure 2.

Beginning Phase

The first phase of the process of collaboration is having a common interest in participating. This may be a prerequisite of collaboration. In a previous study, having a school culture where people were encouraged to work together was identified as a prerequisite of collaboration (Montiel-Overall, 2008). However, the type of collaboration in which open sharing and creating is encouraged may require an individual commitment. Individuals need to be motivated and committed to the collaborative effort. In this study, librarians were particularly motivated and

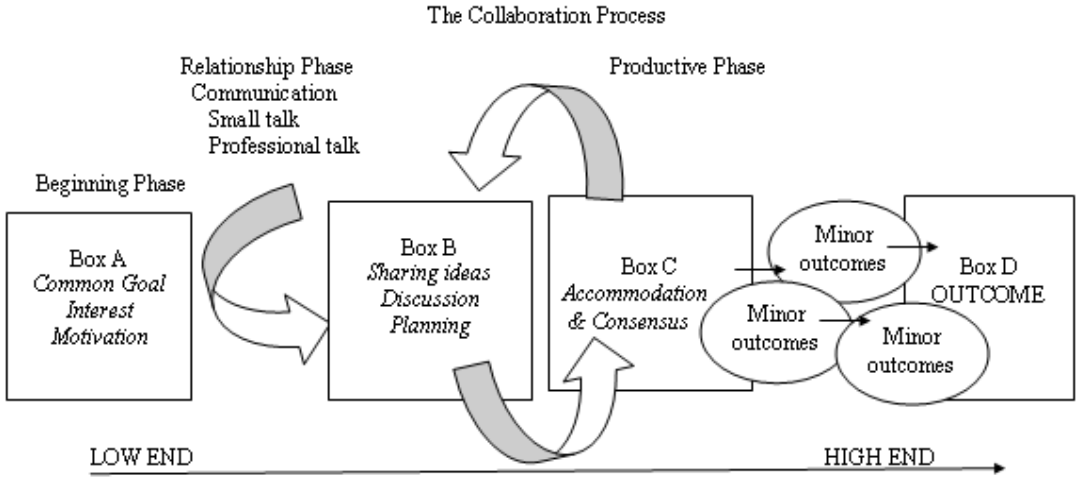

Figure 2. The illustration represents the collaboration process between teachers/educators and librarians collaborating on a common task. Box A depicts factors needed during the Beginning Phase of collaboration: common goal, interest, and motivation. The Relationship Phase identifies relationship building needed for collaboration. Communication is a means of developing relationships through small talk about family and friends and professional talk about work. The left arrow illustrates movement to the next phase illustrated in Box B, the Productive Phase, which includes sharing ideas, discussion, and planning. These acts involve accommodation and consensus shown in Box C. The small arrows on the right illustrate minor outcomes that result from actions in the Productive Phase, which lead to the final outcome of the process shown in Box D. The long arrow at the bottom indicates the range of levels collaboration from low on the left to high on the right.

committed to understanding how to work with teachers/educators who did not have experience with TLC. They were highly interested in participating in research to investigate how to improve TLC with teachers. However, both librarians and teachers/educators alike were highly motivated at the prospect of learning how to improve education for Latino students.

Relationship Phase

The Relationship Phase identifies a lengthy process of getting to know each other. This phase is necessary in helping participants feel comfortable with each other before engaging in serious planning. Discussions about family, friends and school district economic conditions helped participants bond and created a sense of community among participants. Meeting once a month with few or no meetings in-between prolonged the phase, which presumably would take considerably less time in a school setting where teachers and librarians interact daily. Providing a comfortable environment for participants contributed to relationship building. For example, appropriate room size, adequate seating, temperature, and food were identified as important factors that helped participants get to know each other. While these may appear to be superficial to collaboration, the lack of attention to these details was identified as possible reasons for relationship building to take so long. During the first semester of the study, meeting rooms were either too small or too large. These conditions affected the comfort level of participants (e.g., food was not close to the group, room temperature varied).

Another important aspect of relationship building is culture (the daily activities which occur in the lives of groups). Distinct differences and similarities among participants enhanced

and inhibited collaboration. For example, cultural differences were evident between school districts. A participant noted that the culture of her school district did not include the kind of collaborative relationship between teachers and librarians being described at meetings. "The teachers [at my school district] don't have that kind of relationship with librarians." Another cultural difference was familiarity with technology. Librarians were clearly from a culture that incorporates technology into their work. This culture was less apparent among teachers/educators who sometimes resisted using technology for communication such as email and PowerPoint and for accessing the pass protected Web site for the project.

Productive Phase

The productive phase identifies a higher level of collaboration in which deep thinking is evident. In this phase, participants engaged in productive discussions that moved collaboration forward. This occurred during the second semester as participants became more open about putting forth ideas and more accommodating to the ideas of others. Group cohesion was most evident in this phase.

This phase involves thinking together about minor outcomes (e.g., scheduling time and place, delegating responsibilities, creating charts, drafting a plan, revising the plan, finalizing the plan) that were nevertheless necessary to the group's sense of progress. Minor outcomes led to deeper discussions (e.g., the theme of deep thinking), accommodation to others' ideas, conflict resolution, and consensus building needed for a final outcome. Figure 2 on page 47 illustrates the conceptualization discussed above and provides further explanation.

Conclusion

It is critical for teachers/educators to understand the role of 21st century school librarians. This study indicates that the role of librarians as collaborators is still not widely understood by teachers/educators and that teacher/educators do not yet clearly understand the potential for integrating skills taught by school librarians (e.g., notetaking, citing sources, asking questions, understanding research process) into subject content. This study also indicates that the process of collaborating, which has been discussed in the literature for decades, may be unfamiliar territory to many in the education profession. Strategies to mitigate the time required to develop an environment conducive to shared thinking will be critical in promoting TLC in school settings.

The study has implications for school librarians who attempt to collaborate with teachers in new situations (e.g., being new to a school, beginning to collaborate with new teachers, or working with teachers with different content backgrounds). Key findings indicate that if teachers are unaware of the potential role of librarians as "teachers," considerable effort will be needed to ensure that teachers understand what TLC is and how library instruction can affect student learning.

An important aspect of case studies is that it furthers theory development (Yin, 2003). This study shows that the proposed TLC Model provides an indication of the level of collaboration teachers and librarians engage in when working together. Second, the study identifies the interrelationship between factors previously identified in research as components

of the process of collaboration and provides further understanding of why certain factors (e.g., comfortable setting) are essential to the success of collaboration.

The study also highlights the interconnectedness of personal (affective) and cognitive domains in collaboration. Integral aspects of the collaborative process such as relationship building and trust are not only inseparable and overlapping but essential in promoting deep thinking. Collaborators' knowledge of each others' personal and professional lives is not merely a superficial aspect of working together but is necessary to enable progressively higher levels of collaboration to occur. Understanding phases of the collaboration process may be key to school librarians' success as catalysts in improving teaching and learning within their school communities.

This case study adds to the literature on collaboration and provides a roadmap for school librarians who often must interact with a large number of teachers who have little or no experience with TLC. The progressive nature of collaboration highlighted in this case, illustrates the importance along the way of minor outcomes--even seemingly insignificant decisions about where to meet--which often enable progressively higher levels of collaboration to occur.

Since 21st century school library professionals envision collaboration as a means to an end in improving student academic achievement, it is essential that the phenomenon of teacher and librarian collaboration be fully understood. The study suggests that the ultimate goal of shared thinking is enabled though cognitive and affective factors associated with establishing strong personal and professional relationships.

The relationship phase of collaboration identified in this study and in previous studies is within the realm of possibility for every school librarian truly committed to becoming an instructional partner with teachers and should be initiated regardless of scheduling issues, previous teacher and librarian collaborative efforts, or principal support. Participants in this study reflected some of the same difficulties with collaboration that are encountered by school librarians working with teachers. For example, personal satisfaction is an important factor in collaboration and further research is needed in this area since, when this aspect of collaboration is lacking, there is little incentive for individuals to continue in the group effort to share ideas and to problem solve.

The study also suggests that more information is needed on how to inform the education community about ways that librarians can work with them (e.g., other than traditional resource development). For example, at the outset of the study, two Advisors who had previously chaired a university department responsible for teacher education were not knowledgeable about TLC or information literacy. The responsibility to educate teachers about how librarians can participate in teaching may have to continue to lie squarely with librarians since teachers have generally not made the connection with LIS literature about TLC.

This study confirms findings from previous studies which show that collaboration is a difficult process (John-Steiner, 1998; Leonard & Leonard, 2001a, 20003) and that "shared thinking" requires time and commitment (Clark, et al, 1996; Leonard & Leonard, 2001a 2000b), particularly at the initial stage of collaboration. Participants in this study demonstrated some of the same difficulties encountered by school librarians working with classroom teachers. While communication and relationship building have been identified previously as factors that influence the success of collaboration among teachers and librarians (Grover, 1996) and among

individuals involved in human service, government, and other nonprofit agencies (Mattessich & Monsey, 1992), this study reveals a clearer understanding of the connectedness between these two constructs.

Future Research

Although collaboration is discussed in both education and in library and information science, this study highlights cultural differences which may play a significant role in the lack of understanding between the two professions (i.e., between education and library and information science). Future research on cultural differences between school librarians and teachers/educators is a critical next step in determining more productive ways for library professionals to work with their colleagues in education. Further research is also needed on the role of personal satisfaction in collaboration to inform both professions about how to increase collaboration among colleagues.

Limitations

Several limitations of this study should be noted. First, during the first semester of the study, a key Advisor was unable to continue due to unexpected family obligations. Second, two teacher Peer Mentors were unable to continue and were replaced in the middle of the year. At first these changes were considered a setback to the cohesion of the group particularly for a librarian who had spent a considerable amount of time developing a relationship with the teachers. However, their immediate replacement reestablished a sense of cohesion by the group. The teacher who was selected as a Peer Mentor explained that she felt like part of the group from the first day. Finally, inconsistent attendance and participation by Advisors to the research group meetings due to scheduling and other time commitments required revisiting decisions and discussing topics that had already been discussed. This took valuable time and focus away from the task of developing the workshops.

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Appendix

Sample Questions: Pre and Post Semi-Structured Interview

Pre Semi-Structured Interview

1. Can you talk about the collaborative activities that have taken place within the research group thus far and how these activities are helping the group reach its goal?
2. What factors seem to affect the collaborative effort of individuals from the different disciplines represented in the research group?
3. In what way, if at all, was the collaborative effort by the research group the same or different from the collaboration you do at your school?
4. What do you consider the most important aspect of the collaborative effort so far?
5. What is your understanding about what school librarians do?

Post Semi-Structured Interview

1. Can you describe the purpose of the research group's collaborative effort?
2. Can you talk about the collaborative activities that have taken place within the research group and how these activities are helping the group reach its goal?
3. What level of collaboration do you think the group has reached?
4. How have your impressions about school librarians' work changed if at all during the post year?
5. Do you think the group has reached its goal? If so, how they reached the goal?