Toward a Theory of Collaboration for Teachers and Librarians

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Collaboration is a ubiquitous term that has been defined in numerous ways across diverse fields. This paper draws on information from these diverse fields to begin to develop a theory of collaboration within library science for teachers and library media specialists. In order to fully understand the meaning of collaboration and the relationship between collaboration and student academic achievement, an explanatory theory is needed. Toward the development of such a theory, a definition of collaboration for teachers and library media specialists is proposed. It defines collaboration as a process in which two or more individuals work together to integrate information in order to enhance student learning. The author argues that various notions of working together have been confused with collaboration and proposes four models to distinguish collaboration from other joint efforts such as coordination and cooperation. The models evolve from the literature and from the taxonomy for library media specialists and teachers developed by Loertscher (1982, 1988, 2000). The models are descriptive of the range of joint efforts involved in working relationships that can lead to fully developed collaboration. Numerous attributes—such as collegiality, respect, and trust—needed for collaboration to be effective are discussed. These attributes contribute collaborative activities, such as shared thinking, shared planning, and shared creation of integrated instruction. Two enablers and inhibitors, time and administrative support, are identified from the literature and discussed in relation to collaboration.

> Collaboration is a promising mode of human engagement but in order to become more than a passing fad, a theoretical structure and framework are needed to guide individuals and groups toward successful collaboration.—*Vera John-Steiner*

Collaboration has become a twenty-first-century trend. The need in society to think and work together on issues of critical concern has increased (Austin 2000a; Welch 1998) shifting the emphasis from individual efforts to group work, from independence to community (Leonard and Leonard 2001b). In this age of collaboration, the phenomenon

is described in a variety of ways: systems (Austin 2000b; Noam 2001), dialogue (Clark et al. 1996; Senge 1990), creative problem solving (John-Steiner 1992), and interorganizational relationships involved in information technology (Black et al. 2002). In education, collaboration is seen as an opportunity for school renewal (Fishbaugh 1997; National Council for Accreditation of Teacher Education 2000; Council for Exceptional Children n.d.) and an opportunity to involve many individuals in complex educational problems. Examples of these problems are: increased student needs as the number of students from diverse backgrounds who demonstrate low or failing test scores grows; diminished resources; an explosion of information through technology creating a more complex learning environment; and standards-based education requiring creative ways of meeting prescribed outcomes while engaging students in meaningful learning experiences. School library media specialists (SLMSs) play a major role in addressing these problems by collaborating with teachers. Professional guidelines identify collaboration as an essential responsibility of library media specialists that can contribute to improving learning outcomes (American Association of School Librarians and Association for Educational Communications and Technology 1998). However, in library science, as in other fields, there is "no consensus … on either an operational definition or theoretical foundation of collaboration" (Welch 1998, 27). Factors that make collaboration effective have yet to be clearly identified, although various ways in which teachers and SLMSs work together have been classified (Loertscher 1982, 1988, 2000). In order to fully understand the meaning of collaboration and the relationship between collaboration and student academic achievement, a theory of collaboration is needed. This paper begins to develop such a theory. It examines collaboration as it applies to SLMSs and teachers, drawing on the collective wisdom of a wide range of domains, including the corporate sector (Drucker 1999; Senge 1996), socio-psychology, cultural psychology, education, and technology (Bruffee 1999; Vygotsky 1978; John-Steiner, Weber, and Minnis 1998; Gray and Wood 1991; Olson and Olson, n.d.), to gain insights into successful collaboration. It further seeks to answer questions such as: What conditions and environmental factors are necessary for successful collaboration? What is the relationship between and among characteristics of successful collaboration? To what extent does effective collaboration affect student academic achievement?

Section A discusses various definitions of collaboration and proposes a definition for collaboration between teachers and SLMSs. Section B proposes four models of working together that have been characterized as collaboration. These models evolve from the literature and from the taxonomies for SLMSs and teachers proposed by Loertscher (1982, 1988, 2000). The models are descriptive of a range of experiences in working relationships. Model A describes coordination practices. Model B describes cooperation, which is frequently used interchangeably with collaboration. Models C and D describe fully developed collaborative efforts, which, I would argue, are most likely to impact positively student achievement. Section C identifies attributes of collaboration such as shared thinking, shared problem solving, and shared creation of integrated instruction, which surface as key elements in models of collaboration that lead to improved student outcomes. Section D identifies two key enabling and inhibiting factors that affect collaboration. Other factors are also suggested. Several underlying assumptions of the models are that individuals who collaborate engage in networking as a way to begin

developing collaborative relationships (Himmelman 1997) and that a certain degree of overlap exists in characteristics and attributes of collaboration (Callison 1997).

In discussing theory and practice of collaboration, the author has considered the needs of practitioners as well as interests of those in academia. Senge et al. (1994) believe theories are often considered part of the world of academics but not understood in the real world. He explains that the English word “theory” comes from the Greek root word *theo-rós,* meaning spectator. This derives from the same root as the word “theater.” Human beings invent theories for the same basic reasons they invent theater—to bring out into a public space a play of ideas that might help us better understand our world.

> It is a shame that we have lost this sense of the deeper meaning of theory today. For most of us, theory has to do with "science." It suggests something cold, analytic, and impersonal. Nothing could be further from the truth. The process whereby scientists generate new theories is full of passion, imagination, and the excitement of seeing something new in the world. (Senge et al. 1994, 29)

Theoretical Background

This paper draws on social constructivist learning theories of John Dewey, Jerome Bruner, Lev Vygotsky, and others who have written extensively about collaboration (Drucker 1999; John-Steiner 1992, 1998; Moran and John-Steiner 2003; Gray 1989). A social constructivist view of education envisions collaboration as a new way of learning for students, and a new way of planning and teaching for SLMSs and teachers (Fulton 2003). Vygotsky (1978) provides the theoretical structure for considering collaboration as a social process in which meaning is constructed from discussion among group members. Vygotsky (1978), a Russian psychologist whose collected works were published many years after his premature death, theorized that man learns through social engagements with others, and that “knowledge construction [is] a social, cooperative venture” (Moran and John-Steiner 2003). Vygotsky (1962, 1978) envisioned learning as a socially constructed experience involving more capable people guiding those less capable to understand ideas beyond their developmental level. He called this the zone of proximal development (ZPD), and believed that it is through social interaction and working together that we developed into the modern present day society. Although ZPD is generally discussed in relationship to the development of children, the concept has been expanded to include relationships among adults and is applicable to the relationship between SLMSs and teachers, and teachers and students (Brown 1993 cited in John-Steiner and Mahn 1996; John-Steiner, Weber, and Minnis 1998; Moran and John-Steiner 2003). Moran and John-Steiner (2003) explain that based on the Vygotskian framework, “all mental functions are first experienced socially, learned in interaction with others...” (4). An underlying assumption about collaboration is that meaning and knowledge are co-constructed. This view corresponds to a holistic social constructivist worldview in which relationship is the unit of analysis and environment is taken into account (Lincoln and Guba 1985).

Section A: Defining Collaboration

Although there has been an emphasis on collaboration for the past fifty years (Elliot 2001), there is a lack of consensus as to its definition and a limited understanding of the process of collaboration (Jenni and Mauriel 2004). Attributes of the phenomenon include reciprocity (Crow 1998); congeniality (Inger 1993); partnerships (Austin 2000b; Gundergan and Gundergan 2002); interaction between coequal parties (Friend and Cook 2000, 6); cooperation (Fitzgibbons 2000); information sharing, shared vision (Drucker 1999; Senge 1990; Bruffee 1999; Vygotsky 1978; John-Steiner, Weber, and Minnis 1998; Black et al. 2002); joint negotiation of common ground (Olson and Olson n.d., 18); shared power (Johnston and Thomas 1997); dialogue (Clark et al.1996); joint construction of knowledge (Moll and Whitmore 1993; Million and Vare 1997); joint planning (Riordan 1995); complementarity of skills, efforts and roles (John-Steiner, Weber, and Minnis 1998); teaming, strategic alliances, joint ventures (Katenbach and Smith 2001); creating new value together (Kanter 1996, 96); and multi-organizational processes (Himmelman 1997). Kukulska-Hulme (2004) explains that collaboration is a "philosophy of interaction" in which there is an underlying premise of consensus building (264). A definition proposed by Schrage (1990) is:

> Collaboration is the process of *shared creation*: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own. Collaboration creates a shared meaning about a process, a product, or an event. In this sense, there is nothing routine about it. Something is there that wasn't there before. Collaboration can occur by mail, over the phone lines, and in person. But the true medium of collaboration is other people. Real innovation comes from the social matrix... [and] is a relationship with a dynamic fundamentally different from ordinary communication (40–41).

John-Steiner, Weber, and Minnis (1998) proposed a similar definition that states:

> The principles in a true collaboration represent complementary domains of expertise. As collaborators, not only do they plan, decide, and act jointly; they also *think together*, combining independent conceptual schemes to create original frameworks. Also, in a true collaboration, there is a commitment to shared resources, power, and talent: no individual's point of view dominates, authority for decisions and actions resides in the group, and work products reflect a blending of all participants' contributions... (Minnis, John-Steiner, and Weber 1994, C-2 cited in John-Steiner, Weber, and Minnis 1998, 776).

In education, collaboration is intended to "promote the most effective teaching possible for the greatest number of students" (Pugach and Johnson 1995, 178). In the library field, Callison (1997) proposes that collaboration for SLMSs means "coplanning, coimplementation, and coevaluation" (37). Russell (2002) explains that collaboration is based on shared goals, shared vision, a climate of trust, respect, comprehensive planning,

and shared risks. “The teacher brings to the partnership knowledge of the strengths and weakness[es] of the students and of the content to be taught. The [SLMS] adds a thorough understanding of information skills and methods to integrate them” (36). Donham’s (1999) suggests what true collaboration means for library media specialists and teachers. She states:

> When teachers and library media specialists work together to identify what students need to know about accessing, evaluating, interpreting, and applying information; when they plan how and where these skills will be taught and how they relate to content area learning; when they co-teach so students learn the skills at a time when they need them; and when they assess the students’ process as they work with information as well as the end product, they have truly collaborated (21).

A definition proposed by (Buzzeo 2002) provides a guide for practitioners. It defines collaborative planning “as two or more equal partners who set out to create a unit of study based on content standards in one or more content areas plus information literacy standards, a unit that will be team-designed, team-taught and team-evaluated” (7).

The definitions highlight what professional guidelines (AASL and AECT 1998) emphasize: collaboration is important to support student learning (49), and to improve delivery of curriculum content by expanding the possibilities of instruction (Haycock 1998; Lieberman 1986). Studies indicate a connection between academic achievement and support from library professionals, particularly when they have collaborated with teachers (Lance n.d.). Collaboration is regarded as a way of changing instruction in order to have a positive effect on student learning outcomes, such as higher standardized test scores (Lance, Rodney, and Hamilton-Pennell 2001, 2002; Lance, Wellburn, and Hamilton-Pennell 1993). Collaboration is also identified as one of the factors that contribute to improved research skills (Kuhlthau 1993). This positive effect is one of the primary reasons collaboration is promoted (AASL and AECT 1998; Morris 2004).

These definitions begin to specify more clearly the meaning of collaboration for SLMSs and teachers. However, for the purposes of developing a more explicit explanation for SLMSs and teachers, a revised definition is proposed. It broadens these definitions to include concepts relevant to twenty-first-century SLMSs. The revised definition reflects fully developed collaboration.

Collaboration is a trusting, working relationship between two or more equal participants involved in *shared thinking*, *shared planning* and *shared creation of integrated instruction.* Through a shared vision and shared objectives, student learning opportunities are created that integrate subject content and information literacy by co-planning, co-implementing, and co-evaluating students’ progress throughout the instructional process in order to improve student learning in all areas of the curriculum.

Defining the Concepts

Shared thinking, shared problem-solving and shared creation of integrated instruction

When individuals come together to share their expertise and ideas in order to construct a fresh and innovative way of doing something, they are demonstrating characteristics of fully developed collaboration. Shared thinking or joint participation in thinking together about how to solve a mutually agreed upon "problem" is what is meant by shared problem-solving. The coming together to think about an issue and to plan together as co-planners and co-implementors is jointly carrying the plan to fruition. For a SLMS and a teacher this could mean actual instruction carried out either separately or jointly. Through the process of working together and thinking about how to integrate individual ideas a new understanding evolves that could not have come about through individual efforts. This is the essence of *shared creation of integrated instruction*, which results in the creation of a new educational experience or a learning opportunity. As an example, consider a science lesson on insects for primary students. Teacher and the SLMS meet jointly to think about what to include in the instructional unit. Together they decide how to sequence the instruction to include state and national standards requiring students to be able to identify insect characteristics, recognize differences in habitat and stages in life cycle, and understand the food chain. The teacher's knowledge of the students' developmental level and prior experiences guide the plan to have students work in small heterogeneous groups (Cohen 2004) to create a poster to present to classmates. The teacher and SLMS plan small group discussions in the classroom and in the library, booktalks, readers' theater, and literature circles throughout the unit. The library curriculum integrated into the study of insects reinforces critical thinking, research, and writing processes. Together the teacher and SLMS have shared in the creation of a learning experience that neither teacher nor SLMS could have created alone. They have become collaborators. They share characteristics of teams and groups in that they recognize each other's unique expertise, maintain a certain independence, jointly agree upon common goals, and implement them through mutual support, build trust leading to open and honest dialogue, recognize conflict is normal, and jointly participate in decisions. Unlike teams, members may not depend on a "leader" or "final authority" (Preeble and Frederick, n.d.). The learning experiences created through collaboration engage students in a process that makes learning more meaningful and less difficult. The process is one that develops their ability to find, use, and evaluate information in books and on the Web and develops additional abilities in writing, critical and creative thinking, and inquiry. After the educational experiences have been completed, SLMS and teacher reflect on what was successfully taught and why, and how to improve it in the future. This is co-evaluation.

Trusting, working relationship

"Trust can lead to cooperative behavior among individuals" (Jones and George 1998, 531). Efforts to define trust extend across the social science fields (Black et al. 2002; Luna-Reyes, Cresswell, and Richardson 2004; Olson and Olson, n.d.) but there is little agreement on its definition (Mayer 1995). Broadly defined, trust is believing that when an individual mutually agrees to carry out a responsibility it will be carried out as

promised (da Costa 1995; Riordan 1995). Trust is also viewed as a characteristic of a person. This characteristic has been called “propensity to trust” (Luna-Reyes, Cresswell, and Richardson 2004, 8). Others envision trust as evolving over time as individuals learn how to establish a relationship through “an ethic of caring” (Noddings 1988, 219; 1992), mutual respect, and completion of work promised by participants of a collaborative endeavor. Some risk is involved in trusting relationships particularly when it is thought of in terms of “a social relationship in which principals— for whatever reason—invest resources, authority, or responsibility in another to act on their behalf for some uncertain future return” (Shapiro 1987, 626). Most relationships involve some form of trust. These can be built on various forms of interpersonal needs from shallow dependence, shallow interdependence, deep dependence, and deep interdependence “depending on the type and depth of the interdependence of the relationship” (Sheppard and Sherman 1998, 422). Dependence occurs when an individual’s outcomes “are contingent upon the actions of another” (424). Interdependence is a “unidirectional dependency” (424). Collaboration in which thinking together occurs involves deep dependence, and relies on collaborators’ honesty and integrity. Shallow dependence would be exemplified in collaborative relationship in which there is little at stake. DiPardo (1997) explored how trust affected successful collaboration teams and found that members needed time to “explore one another’s thinking, to establish the sort of trust that makes open disagreement possible” (101). Communication and interaction are also central to trust building (Kanter 1996; Austin 2000b). Communication is most effective when collaborators work out in advance a “shared language” (Bernbom, Lippincott, and Eaton 1999), particularly when they are from different fields.

Content Areas

Content areas are subjects taught in school, including mathematics, science, art, music, drama, English, social studies, geography, history, physical education, and foreign languages, art, music, and drama. In the elementary grades, subject content areas are generally taught by the classroom teacher. In the middle grades and high school, specialist teachers are designated for each content area.

Library Curriculum

The library curriculum involves the development of information literacy: knowledge of how to access, evaluate, synthesize, and use information selectively from a wide variety of sources and formats. It also involves the ability “to effectively communicate or present results to relevant audiences” (Callison 2003, 229). SLMSs help students prepare for research projects by introducing them to databases and bibliographic references and establishing the authority of content and publishers. Information literacy is considered essential for students to succeed in school (Donham 1999; Southern Regional Education Board n.d.). Through these experiences students develop multiple cognitive processes, such as selecting, organizing, integrating, encoding, “complex technical or physical processes” (Callison 2003, 184), “process of inquiry” (210), and the research process (Kuhlthau 1993). Students also develop critical thinking and writing ability.

Integrating Content and Information Literacy Standards

Content standards are a complete set of outcomes or learning expectations that all students are expected to reach. National, state, and district standards create a framework for what is taught in schools. Standards for information literacy establish essential skills related to information needs, such as finding, interpreting, analyzing, and using information. These form the library curriculum. When SLMSs and teachers integrate content and information literacy, students learn how to make use of a wide range of resources and broaden their knowledge and understanding of information taught in the classroom (Woolls 2004). Students also experience a broader use of abilities developed in the classroom through the development of information literacy. For example, research projects initiated around a classroom learning experience are integrated into library instruction creating a holistic curriculum in which students are able "to take part in the process of knowledge-getting" because "[k]nowing is a process not a product" (Bruner 1968, 72).

Shared Vision and Shared Objectives

Shared vision brings individuals together to work around the same idea or overall plan. Individuals who collaborate at this depth find each other "indispensable" to their core mission (Rabuzzi n.d.). *Shared vision* means that teachers and SLMSs jointly develop common plans for delivering instruction or have a common purpose for integrating content and information literacy in a teaching situation. Common plans include shared objectives for instruction. At a minimum, shared objectives involve a common plan for a specific lesson. However, shared objectives can be established for units of study, or for the entire curriculum.

Equal Partners

In collaboration, equal partners work together to move things forward. Those participating in the collaborative effort are seen as having equitable roles in decision making as well as in work carried out (Million and Vare 1997). The focus of the partnership revolves around shared objectives, not issues of power. When power structures are ignored, the possibility of having more open communication is increased (Romer and Whipple 1991; Gray 1989; Hattrup and Bickel 1993) and the road is opened to build consensus on objectives (Morris, 2004). In collaborative relationships, equal partners resolve their conflict through discussion and agreement rather than authoritarian decisions (Hattrup and Bickel 1993). SLMSs are encouraged to take a "leadership role" in collaboration by demonstrating a willingness to work with teachers or initiating collaboration. Leadership as it is used here means leading others without force or coercion toward a shared objective (Wu n.d.) and is not meant to detract from an equal partnership, or impose a level of authority to the collaborative relationship.

Learning Opportunity

Learning opportunities are lessons, activities, or experiences brought about by SLMS and teacher as they share with each other their knowledge about their areas of expertise and their knowledge about students with each other. Learning opportunities are sequenced for the learner to facilitate their understanding of material being taught (Bruner 1968). Through collaboration, teacher and SLMS discuss factors that affect students understanding of materials. Examples of these factors are individual differences, developmental levels, and prior experiences (Bruner 1968). Together collaborators use their expert knowledge of content to create sequenced learning opportunities for students. These types *of learning opportunities* demonstrate innovative instruction intended to help students develop a deeper more lasting and meaningful understanding of content and information literacy. Learning opportunities encompass units of study, lessons, projects, programs, textbooks, literature, conversations, or exercises. Collaboration to create learning opportunities throughout the curriculum not only considers predisposition, structure, sequence, and reinforcement, but also take into account the process of knowledge getting (Kuhlthau 1993), and individual differences of students (Bruner 1968). Through collaboration, planning of learning opportunities is carried out jointly with each participant executing different but complementary aspects of the instruction.

Section B: Models—Multiple Perspectives

The process of collaboration is complex (Lieberman 1986; John-Steiner, Weber, and Minnis 1998; Wood and Gray 1991; Riordan 1995; Magolda 2005; O'Malley 1989), and despite multiple models and definitions (John-Steiner, Weber, and Minnis 1998) it is difficult to achieve. As an example, SLMSs and teachers have yet to fully engage in collaboration even though they have had the benefit of a conceptual framework for more than twenty years to assist them (Loertscher 1982, 1988, 2000).

In this section, the author proposes four models of working relationships between teachers and SLMSs often used to describe collaboration. These models evolve from Loertscher's Taxonomy (1982, 1988, 2000) and an extensive review of the literature on collaboration. The models are Model A: Coordination; Model B: Cooperation/Partnerships; Model C: Integrated Instruction; and Model D: Integrated Curriculum. The labels *coordination* and *cooperation* are commonly used in the literature to identify collaborative efforts (Austin 2000b; Fishbaugh 1997; John-Steiner, Weber, and Minnis 1998; Leonard and Leonard 2003; Loertscher 1982, 1988, 2000; Roberts, 2004). The author will argue that although these are often used interchangeably, there are distinct differences involved in coordination and cooperation. *Coordination* and *cooperation* may evolve into full collaboration but they serve markedly different purposes. Pollard (2005) explains, "In many people's minds [collaboration is] indistinguishable from *cooperation* and *coordination*, which are less elaborate and less ambitious collective undertakings" (n.p.).

The primary distinctions among the models are: (1) intent of the working relationship or reason for working together; (2) intensity or degree of involvement, commitment ,or participation among participants (hereafter intensity); and (3) interest in improving

student academic achievement or the extent to which the effort focuses on improving student outcomes.

Loertscher's (1988) classification describes various types of working relationships between SLMSs and teachers apparent in many schools. Loertscher provides two taxonomies: the Library Media Specialist Taxonomy—Levels 1–11, and The Teacher's Taxonomy of Resource-Based Teaching and Learning—Levels 1–8. The levels within these taxonomies do not correspond to each other except at two levels. Level 1 of both taxonomies reflects no involvement between SLMS and teacher, and Level 11 of the library media specialist taxonomy and Level 8 in the teacher taxonomy reflect involvement of the SLMS and teacher in curriculum development. There are similarities in the remaining levels, but not a one-to-one correspondence. Figure 1 provides a summary of Loertscher's classification.

The levels in Loertscher's taxonomies represent varying degrees of intensity between teacher and SLMSs. High levels of intensity in these working relationships indicate that all the needs of a collaborative partner are met, and that partners are highly responsible and dedicated. In the first level of Loertscher's taxonomies, teacher and SLMS are independent of one another and there is no involvement between the two. In the higher levels of the taxonomies, intensity increases to an optimum level of fully developed collaboration. Figure 2 identifies Loertscher's levels in approximate relationship to the four models and illustrates the range of involvement between teacher and SLMS. In the professional literature *collaboration* is clearly focused on high levels of engagement between SLMSs and teachers in order to improve student academic achievement (Haycock 2003; Anderson 1999).

Models A, B, C, and D involve a certain amount of networking as a precondition. Networking is a way for people to get to know each other and is important in building trust (Austin 2000b). The models also involve some form of shared objective, which becomes part of the reason participants come together. The models may or may not build on each other (Callison 1999). For example, Model A: Coordination does not have to have occurred for other models to be implemented. However, it may happen that an insignificant project involving coordination will build the trust needed for more involved collaborative efforts (Austin 2000b). For these efforts to be successful, however, high levels of trust are necessary (Lewis 1999) and participants must be seen as experts in their field. Research indicates that as collaborators become more involved in their work together and their responsibilities increase, levels of trust and knowledge increase (Black et al. 2002; Million and Vare 1997).

Model A: Coordination

This model represents a common practice of bringing groups, organizations, and individuals together to exchange information or alternate activities (Himmelman 1997). In this model people come together to help one another or to make their own work run more efficiently. Arranging schedules and making necessary adjustments in time, place, or work to avoid overlap in included in coordination (Pollard 2005). SLMSs and teachers

have a long history of coordinating joint functions, events, and practices that are mutually helpful to each other and provide students with opportunities that might not otherwise be possible (Ford 1996; Fox 2001). The joint efforts may or may not directly relate to student learning, however. Coordination might include shared resources, time, space, or students (Fine 2001). Coordination is often associated with regulating interaction of participants or events for their common benefit (Fine 2001). For example, the SLMS may coordinate activities for teachers in order to accommodate a greater number of students using the library. Coordination may improve the flow of activities, or reduce duplication of events (Loertscher 2000). In Figure 3, a spelling bee may be coordinated with different grade levels from different schools so that teachers can plan one event in the library rather than multiple events. SLMS and teacher may coordinate schedules for book fairs to accommodate different grade levels at different times. This model denotes the idea of efficiency in working together rather than one directly focused on student outcomes. Indeed, it could become a catalyst for more intense relationships by developing trust among participants, but, in general, coordination requires a minimal amount of involvement by participants. In fact, most events, projects, and activities that require scheduling are coordinated by one person (project coordinator) in communication with others.

Coordinate has another meaning, *equal to another,* when used as a noun (Winer and Ray 1994; Mattessich et al. 1992, 2004, Grover 1996). This meaning is not generally the one implied in discussions of collaboration. Coordination is used in this paper to define a less intense form of collaboration requiring less formal relationships, commitments, resources and time among participants (Pollard 2004; Himmelman 1997) and therefore may have less of an effect on student academic achievement.

Model B: Cooperation/Partnership

The cooperation/partnership model is frequently associated with management literature (Austin 1998, 2000a; Peter F. Drucker Foundation 1996). It involves two or more entities working together by agreement on similar goals or endeavors. Cooperation and partnerships requires more of a commitment than coordination. Kanter (1996) makes an interesting analogy between partnership alliances among companies and best marriage practices. Both situations are improved when partners meet the following criteria: individual excellence; importance; interdependence; investment; information; integration; institutionalization; and integrity, which includes mutual trust (109). When these criteria are met “the relationship … creates substantial change within each partner’s organization” (97). Partnerships are common in management where an end product is developed (Kukulska-Hulme 2004, 262–80). This management concept may underlie the use of the term in situations where SLMSs and teachers share responsibilities for an end product, such as displays for school science fairs.

In education, cooperation is more commonly used to describe relationships (AASL and AECT 1998; Monsour 1995) with members who come together to share funds, space, collections, shared time, and students for the benefit of students (Fine 2001; Fitzgibbons 2000). In some instances, individuals divide responsibilities (McInnerney and Roberts

2004). Cooperation involves a higher level of intensity, which often develops greater trust (Austin 2000a, 2000b) and confidence in working with one another. However, a minimal amount of effort on the part of one partner is also possible. For example, the SLMS might provide a book collection for a classroom lesson. This is often considered cooperation but it does not necessarily involve deep commitment, intensity of communication, or depth of co-planning by participating members although movement in that direction could occur. Cooperation may improve working relations for cooperating members by developing a collegial relationship and a friendly environment conducive to teaching and learning (Doiron and Davies 1998; Scott and Smith 1987; Leonard and Leonard 2001b)and job productivity (Schultz and Abbey 2001, 159–75).

Cooperation and partnership involve setting goals and reflect a philosophy of teamwork, cooperation, and networking (Himmelman 1997). These suggest interdependence (Pollard 2005) among members of the team. In teaching, cooperation is also used to describe an instructional strategy that brings students together to work on projects (Slavin 1995; Cohen 2004). Most cooperative learning involves projects divided into parts and assigned to cooperating partners (U. S. Office of Research Education 1992; Roschelle and Teasley 1995). Each partner completes a part, which contributes to an end product. In cooperative projects, often one partner is assigned (or undertakes) a major role and minor roles are assigned to others. In Loertscher's (1982, 1988, 2000) taxonomy, cooperation is reflected in the SLMS's willingness and ability to gather materials or resources to support teaching. Cooperation does not necessarily imply shared power or an equitable division of authority, nor does it necessarily reflect shared thinking or shared planning. An assumption underlying relationships involving cooperation between SLMS and teacher is that the SLMS is a support for the teacher. The notion of equal partners is not apparent in the words used by practitioners and in the literature (AASL and AECT 1998; Loertscher 1882, 1988, 2000). As an example, such terms as *support, help, assist, contribute,* and *aid,* are found in discussions about cooperation, indicating a one-way direction or one-sided relationship. This may also be true of partnerships. The relationship may be unequal but mutually beneficial. As an example, partnerships between a prosperous corporation that employs youth from underfunded school districts involves unequal partners but benefits the school by providing students with career opportunities and the corporation with a guaranteed workforce (Gray 1989) (figure 4).

Model C: Integrated Instruction

SLMSs and teachers are involved in *shared thinking, shared planning,* and *shared creation of integrated instruction* when their collaborative effort integrates content instruction and library instruction. Collaborators conceptualize together in addition to sharing responsibility. They are equal partners focused on integrating their expertise in meaningful learning experiences intended to help students reach their potential (Dewey 1963). The SLMS and teacher each contribute to the instruction. In many instances, the SLMS is also a teacher. The teacher and SLMS are experienced in developing subject content and library curricula. Information literacy from the library curriculum and subject content curriculum are integrated to provide students coherent instruction that may not be present when content and information literacy are introduced separately. The collective

wisdom of the SLMS and the teacher expand opportunities for learning. The SLMs is knowledgeable about standards at a local, state, and national level and is able to teach information literacy and understand how information literacy should be integrated into content instruction to develop processes, including critical thinking, writing, and research. Collaborators work side-by-side to plan activities, lessons, and units, creating a synergy that allows them to develop together what they could not develop alone (Friend and Cook 2000). In education and library environments, the deep-thinking intellectual activity of Model C is at the heart of collaboration, and is directed at the specific purpose of enhancing the educational outcomes of students (Dewey 1963). By having a shared objective at the course level, SLMS and teacher focus on student outcomes. The collaboration reflects an "intellectual operation" (Dewey 1963, 69) that distinguishes it from partnerships, cooperation, and sharing.

The SLMS or teacher initiate collaboration around a shared objective and integrate classroom curriculum and library curriculum through co-planning, co-implementing, and co-evaluating in order to improve student learning. Through the process of collaboration, the SLMS and teacher create meaningful lessons, which improve the student's conceptual development (Bruner 1968). Through this process teachers and SLMSs expand their individual potential and create jointly what would be beyond their capacity individually. Figure 5 illustrates elements of Model C: Integrated Instruction.

Model D: Integrated Curriculum

When the process described in Model C occurs across the entire curriculum with the SLMS collaborating at some time during the school year with every teacher in the school to plan, implement, and evaluate the content of instruction integrated with library curricula, Model D results. In this model, the principal is essential. He or she is responsible for establishing a norm for the school environment in which people work together. The principal can facilitate flexible scheduling, professional development, and distribution of resources that provide time for meeting and encourage classroom and library faculty to collaborate on instruction. The principal is responsible for opening up opportunities for faculty to take an active role in decisions involving curricular planning through regularly convened discussions and meetings. The principal acquires needed resources for the library and the classroom. When collaboration is successful in improving student outcomes, the principal can use data collected to provide evidence to those who allocate resources that collaboration is worth continued funding. Most importantly, the principal recognizes the SLMS as a co-equal to teachers who is capable of developing and implementing curricula. Collaboration in Model D ensures that the curriculum is aligned with standards, which is an area of expertise of twenty-first-century SLMSs. In Model D, input from the SLMS is integral to the process of planning and implementing schoolwide instruction and proposing curricular changes when needed.

When collaboration involves an integrated curriculum, SLMSs and teachers become more adept at integrating content and library curricula through their shared experiences. One or both collaborators know the standards for subject content areas (math, science, language arts, music, foreign language, and so on) and for information literacy. They also

know how to use innovative instruction to ensure standards are met at every grade level. In most cases, elementary teachers know the standards for the grade level they teach, and high school teachers know the standards for their subject area. SLMSs, however, are in a unique position of knowing both. They generally know the standards for the library curriculum, which includes information literacy, as well as standards for grade levels and subject areas. SLMSs who collaborate with teachers to integrate subject content and information literacy must, through professional development, keep abreast of changes in technology and information that supports student learning. The ease with which SLMS can access information makes this possible and prepares them to contribute fully to Model D. The model reflects major responsibilities for SLMSs. However, when seen as a process that is implemented systematically over time and makes use of modern teaching strategies such as integrated thematic instruction (Kovalik and Olsen 1994), the task seems less daunting. It is suggested that long-range planning of three to five years may be required for deep-level collaboration such as that suggested in Model D to occur (Haycock 1999; Morris 2004). Figure 6 illustrates Model D.

Section C: Attributes and Activities of Collaboration

Attributes of collaboration identified in the literature such as friendliness, congeniality, collegiality, reciprocity, respect, propensity to share (shared vision, shared thinking, shared problem solving, shared creation of integrated instruction), trust, flexibility, and communication are essential in varying degrees for each models to be effective. Attributes of collaboration are characteristics that describe qualities, features, or activities apparent within the definition of the phenomenon. The four models of collaboration demonstrate progressively complex relationships among individuals who have different roles and positions of authority but who share a common goal. In the case of teachers and SLMSs, their goal is to improve the education of students. As the roles of the collaborators are redefined to meet the needs of each other and of their students, the process becomes more rigorous and more dependent on individual characteristics to sustain the effort. Model A requires a minimal number of attributes for collaboration to be successful, while Models C and D require considerably more effort because of the level of commitment required, degree of perceived importance of the collaborative effort, amount of time available, and amount of energy required. In Model D, increased effort may also be needed to negotiate relationships inasmuch as there are many more individuals with whom to be friendly, reciprocate, respect, and trust. The unique activities that surface as key elements of models that are more integrative are shared thinking, shared problem solving, and shared creation of integrated instruction. These may be the core elements of collaboration that lead to improved student outcomes. How these attributes are acquired, developed, and sustained is the subject of future research (see figure 7).

Section D: Impediments or Enablers to Collaboration

A number of inhibitors and enablers affect collaboration. Two identified in the literature are time and the school principal (Leonard and Leonard 2003; Morris 2004; Oberg 1995;

Haycock 1999). These factors affect how often SLMSs and teachers can meet, anticipated levels of involvement, incentives, consequences of collaboration, and personal satisfaction. Research is needed to determine the ideal conditions that make it possible for collaboration to take place (enabling conditions) and those that make it difficult (inhibiting conditions). In a study by Kuhlthau (1993) to identify indicators of success in library media programs, four basic principles were identified in implementing a process approach in a school setting. These have similar characteristics of enablers of successful collaboration. They are: (1) team approach among administrator and school and library faculty with all participants having an essential role on the instructional team; (2) mutually constructivist view of learning; (3) shared commitment to lifelong learning; and (4) competence in designing learning activities to improve student learning (16). It should be noted that enablers and inhibitors are not opposites according to Kuhlthau. She notes that in classic studies of job satisfaction "satisfiers were not the opposite of dissatisfiers" (18). Kuhlthau's states that "[r]emoving the inhibitors will not necessarily assure that programs will be successfully implemented" (18). It may also be true that enablers may not be able to create collaborative efforts between librarians and teachers. This also will need to be considered in future research on collaboration to determine actual enabling or inhibiting effects of time and the principal on collaboration.

Conclusions and Recommendations

Collaboration has the potential for creating a renewal in education by combining the strengths of two or more individuals in productive relationships that can positively influence student learning. Hart (1998) explains, "Collaboration is critical among the specialists whose knowledge, skills, and caring come together to serve the whole child" (90). Moving toward powerful collaborative relationships involving greater intensity and commitment, as reflected in Models C and D, may propel improvements in education because of powerful symbiotic relationships between SLMSs and teachers, one that arguably creates far more interest in teaching and learning than current practices. Collaborators may feel a particular sense of accountability to their working partner, which affects the quality of instruction created for students. Perhaps the power of collaboration lies in students' greater understanding of material from being exposed to diverse opinions and distinct teaching and communication styles. Students may develop a sense of importance in the collaborative effort when they witness deep commitment to innovative instruction from those responsible for their education. Students may also gain from integration of information that mutually reinforces learning and brings about a greater understanding of content and information literacy. Collaboration involving SLMSs and teachers working as equal partners could transform education for our diverse population of students, particularly those who are disinterested, failing, and have lost hope. Through collective efforts exciting new learning experiences could be created that "teach students to participate in the process that makes possible the establishment of knowledge" (Bruner 1968, 72). This renewal will involve organizational changes and creative ways of structuring schools and curricula for greater student success. It will also involve daring educators—librarians and teachers—-who will commit to provide students an atmosphere of creativity, diversity of thinking, and learning within a rich context of inquiry, problem-solving, and writing that links what students know with what we would

like them to know. The task cannot be accomplished alone, but through collaboration it can be achieved.

This paper has attempted to provide a framework for understanding collaboration and characteristics that contribute to its success by proposing a model of fully developed collaboration that brings together educators to think creatively about how to integrate their areas of expertise throughout the curricula. The synergy created from teacher and SLMS collaboration infuses instruction with new ideas. The intellectual stimulation of thinking with someone else and the process of integrating instruction may create the nurturing environment students need to develop a better understanding of how different pieces of the curricula fit together and how to create new knowledge from these pieces. Collaboration at this deep level of thinking will have the most impact on student learning outcomes because it develops critical teaching, which results in critical thinking on the part of students. It also brings together a rich array of resources to enhance the learning of all involved. Collaboration that integrates curriculum is complex and necessitates schoolwide decision making.

Organizational changes at the school level, which is the most important place for collaboration to be encouraged, may be required. At the school site, a key to successful collaboration is the principal. Collaboration cannot be successful without a supportive principal. In a sense, the principal mediates collaboration in the same way that altitude is a mediating variable for boiling water. The principal does not necessarily have to be present or involved in every aspect of collaboration. In fact, collaboration may be more successful without the direct involvement of the principal (da Costa 1995). However, the principal must know what collaboration is, how it can be supported, and what results are possible through effective collaboration between the SLMS and teachers. The principal is critical in providing time for collaboration by arranging schedules for meetings between collaborators and flexibility in teaching and library hours (AASL 1991; Bradburn 1999). Yet despite the overwhelming evidence that flexible schedules are more conducive to learning than fixed library hours (Haycock 1998; Callison 1999; Donham, van Deusen, and Tallman 1994) fixed schedules in elementary school libraries are more common than flexible schedules (Hurley 2003). Equally important is the principal's role in providing professional development. They ensure resources are available for in-service workshops conducted by those who have had successful experiences and can demonstrate positive results from their SLMS and teacher collaboration. The principal is also responsible for evaluating faculty and could greatly impact the collaborative practices of Models C and D by acknowledging efforts to achieve high intensity collaboration among faculty and by "shaping supportive policy" (Austin 1992). Rethinking the role of the SLMS in school organizations will take leadership by the principal and commitment on the part of SLMSs and teachers. Research is needed to identify the principals' role in collaboration and factors enabling them to initiate and sustain collaboration among faculty.

Organizational changes on a larger scale are also necessary at colleges of education and schools of library and information science. These institutions must begin to provide preservice experiences in collaboration. Education student teaching requirements should include time with the SLMS as well as with a master teacher. Efforts to recruit SLMSs

should consider undergraduates enrolled in education courses, and school library internships should require experiences in collaboration. Library curricula must include pedagogy and methodology in teaching in addition to collection development because collaboration requires SLMSs to be capable teachers. Most states have already recognized this as an essential role of SLMSs and require teaching certificates as well as master's degrees in library science. Future research is needed to test the models presented and their attributes. Clearly, Model D: Integrated Curriculum has the most potential for improving student achievement. Studies on academic achievement (Lance, Rodney, and Hamilton-Pennell 2001, 2002; Lance, Wellburn, and Hamilton-Pennell. 1993) document the importance of the school library media center in improving students' success in school and provide a strong connection between test scores and the school library media center. Variables contributing to student success include collaboration as well as size of collection, level of development of the school library, and instructional technology (Lance 1994; Lance, Rodney, and Hamilton-Pennell 2002). Lance (n.d.) notes that since his first study, known as the Colorado Study, dramatic changes occurred as a result of technology and integration of libraries into school networks. This should position SLMS in roles of greater importance in developing information literacy. Collaboration described by Lance includes aspects of Models A, B, C, and D. He identifies collaborative activities contributing to student success as selection of materials (Model A), planning instruction, cooperatively (Models B and C), providing in-service training to teachers (Model D), and teaching alone (Model A) and with teachers (Model B and C). Although Models A, B, C, and D presumably have varying degrees of success in affecting student improvement, further research will be needed to determine the effect of each on student academic achievement. Model D moves collaboration in education into the twenty-first century. It channels the energy and creativity of all members of the educational community toward an overarching mission: the success of all students across the curriculum. To determine if collaboration that integrates curricula is powerful enough to accomplish this mission, we will need to know the conditions and environmental factors affecting collaboration; relationships between and among collaborators in effective collaboration; additional attributes of collaboration; and inhibitors and enablers of collaboration. This paper provides an initial effort in this endeavor to ensure that collaboration becomes more than a twenty-first-century trend.

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- Feedback

Figure 1. Information on the table summarizes levels in the taxonomies by Loertscher (1988): The Library Media Specialist Taxonomy and The Teacher's Taxonomy of Resource-Based Teaching and Learning. These levels were combined in 2000 version

Figure 1: Loertscher's Taxonomy

	Librarian's Taxomony	Teacher's Taxomony
Level 1	No involvement. Library media center is bypassed.	No involvement of library media center specialist or use of materials from the library media center.
Level 2	Students access information when needed.	Permanent room collection created. Little need to interact with the library media center.
Level 3	Specific requests from teachers and students addressed.	Materials borrowed from the library media center, public library or other sources for classroom use.
Level 4	Materials gathered on the spur of the moment.	Library media center specialist provides ideas and suggestions regarding materials for instruction.
Level 5	Informal planning in hall or lunchroom.	Use of library media center materials to supplement unit content.
Level 6	Advance notice for needed library materials.	Library media center materials/activities are integral to unit content rather than supplementary.
Level 7	A concerted effort to promote library	Library media specialist is a teaching partner to construct unit of instruction (of information literacy).
Level 8	Formal planning with teacher on a resource based project or unit.	Library media specialist is consulted as curriculum changes are being considered.
*Level 9	Participation in development, execution, and evaluation of a resource-based teaching unit (Level I).	
*Level 10	Participation in resource-based teaching units where the entire unit content depends on the resources of the LMC program (Level II).	
Level 11	Participation and contribution made along with teachers to planning and structure of what will be taught in school.	

Figure 2. Four models that evolve from the literature reviewed and Loertscher's (1982, 1988, 2000) Taxonomy.

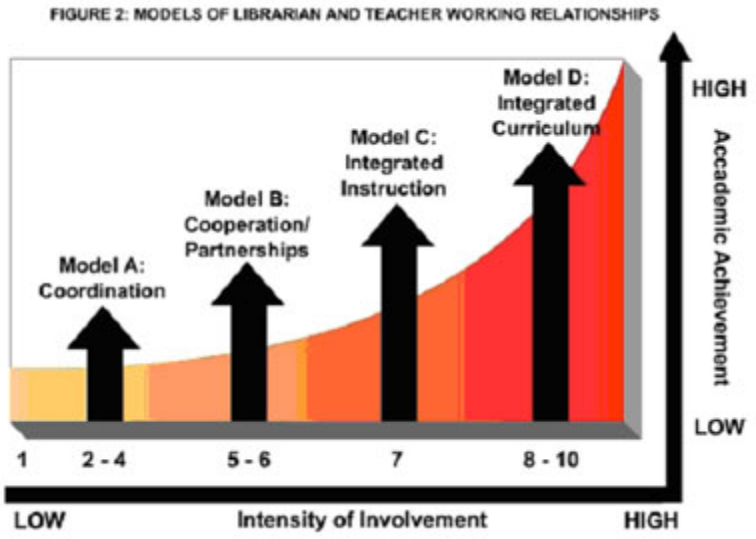

Figure 3. Coordination requires one person to manage events, activities, schedules. In this model teachers and librarian work together to ensure efficiency and order. Either the teacher or librarian can become coordinators of events, activities, and schedules for students. Scheduling may help students feel a sense of order but it is unlikely there is a relationship between coordinated events and student academic gains.

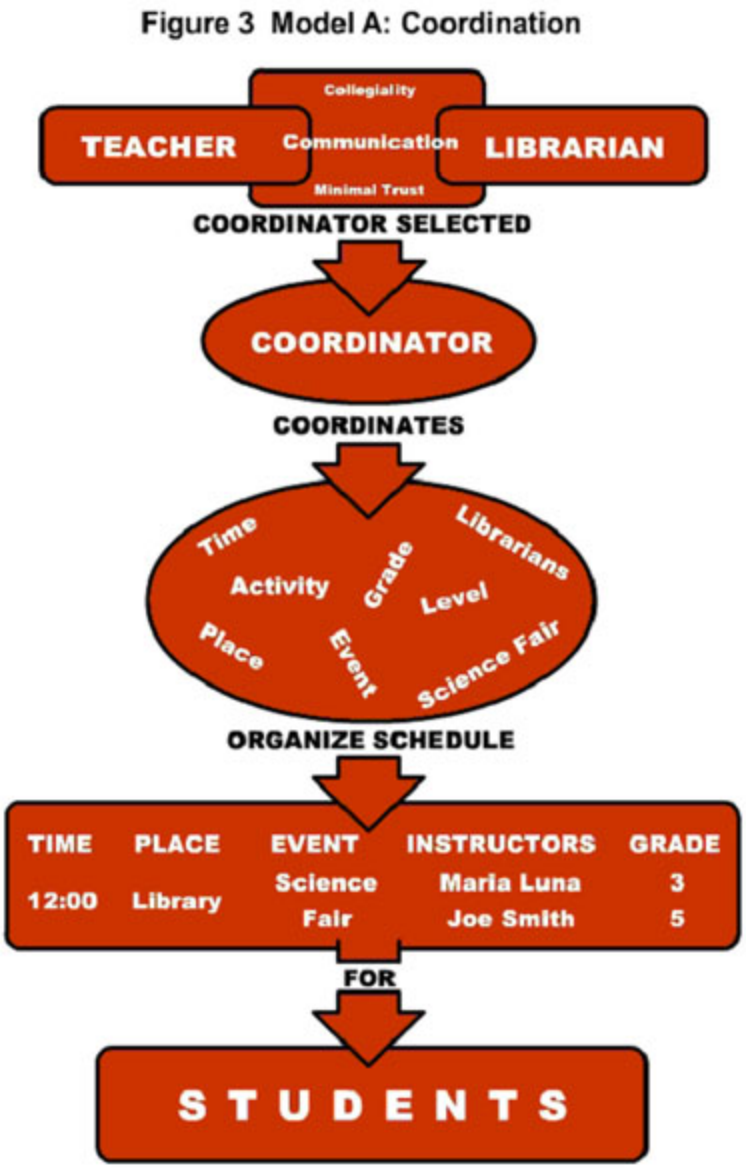

Figure 4. Cooperation/ Partnerships. Teachers and librarian work together but do not have to be involved in joint planning, thinking or evaluation although that would be a natural extension of cooperation. When teachers and librarian engage in joint planning, thinking, and evaluation it improves the learning experience for students. They may share objectives but do not necessarily have to create the learning opportunity jointly. Often cooperation involves dividing the work among participants.

Figure 4 Model B: Cooperation/Partnerships

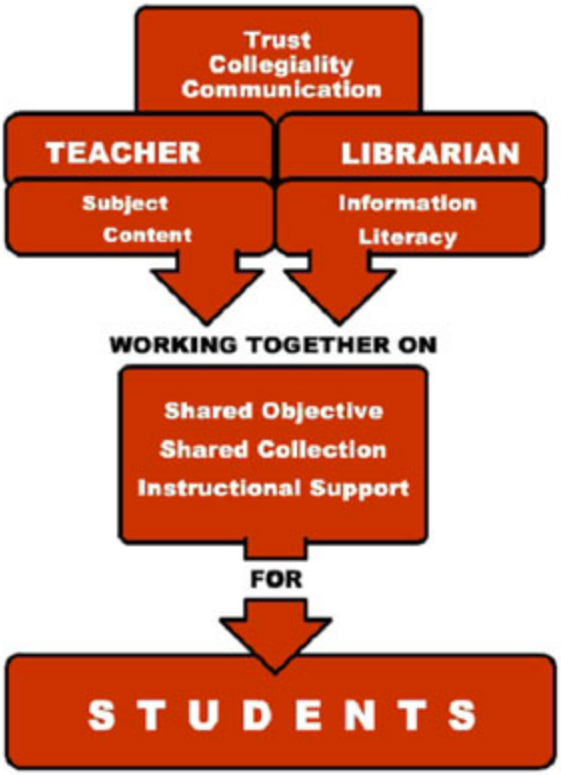

Figure 5. Model C: Integrated Instruction involves teacher and librarian in shared thinking, planning, and evaluation. As collaborators they come together as colleagues to create a learning experience for the students that will facilitate their learning. They are aware of factors such as individual differences, developmental level, and prior knowledge that might affect the sequencing of material taught. Each collaborator brings to the process their expertise in the subject content, knowledge of standards to be included in instruction, methodology, research process, writing process, etc. The librarian and teacher are able to create a more powerful learning experience together than they could not create individually.

Figure 5 Model C: Integrated Instruction

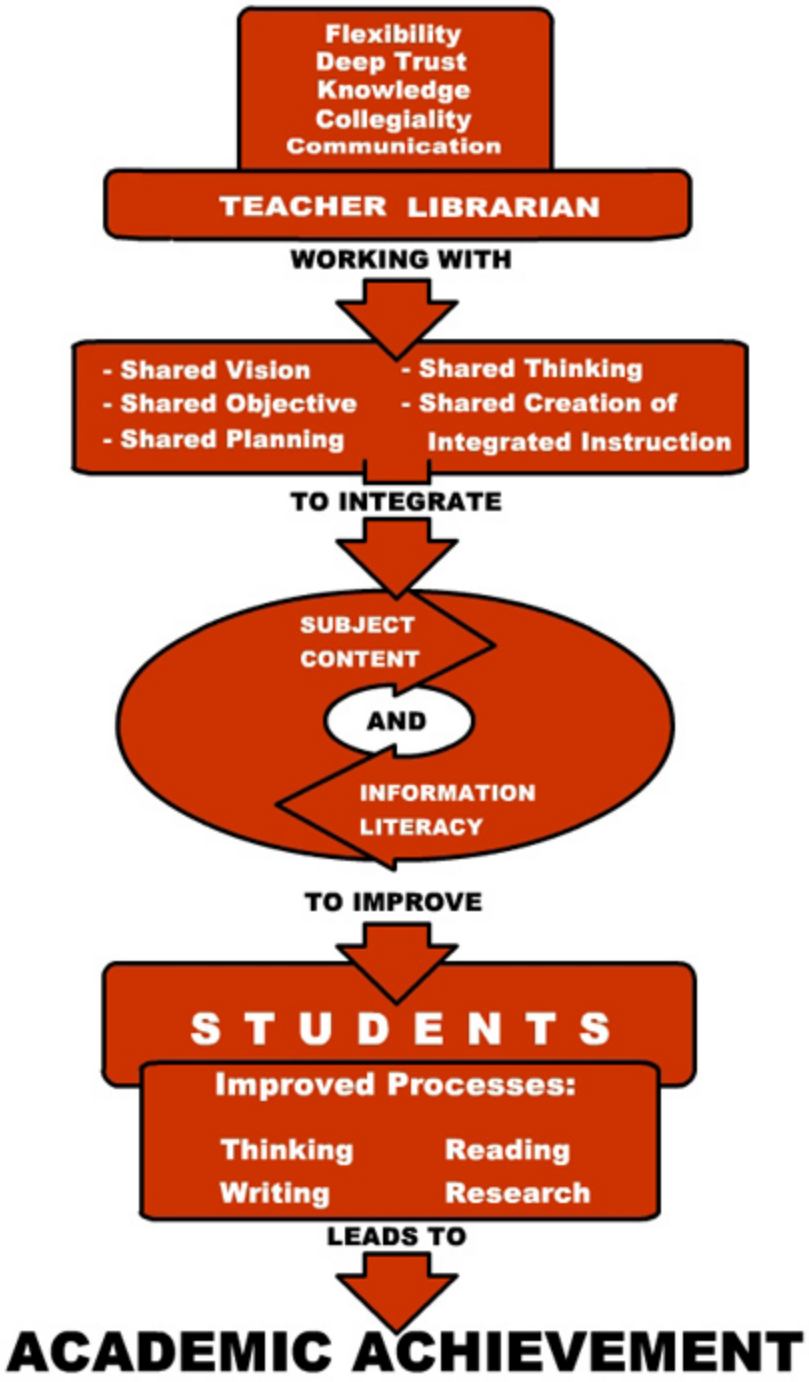

Figure 6. Model D: Integrated Curriculum involves all the elements of collaboration that occurs in Model C. However, collaboration affects the entire curriculum. Teachers and librarian work to integrated subject content and information literacy in all grade levels. A key factor in ensuring collaboration throughout the school between librarian and teachers is the principal. The principal understands the impact collaboration can have on student academic achievement, encourages collaboration between classroom and library faculty, supports collaboration with resources and schedules designed to

accommodate teacher and librarian time needs, provides professional development for faculty on collaboration, and establishes norms for shared thinking, shared planning and shared integrated instruction. To accomplish the enormous task of integrating instruction throughout the curriculum, librarian and teachers are creative in their use of time and resources through such innovation as integrated lessons planning and cross-age instruction. This model has the most potential for improving student learning because it supports conceptual development at al levels of the curriculum, creates a synergy among collaborators that transcends grade level and subject content, and provides multiple perspectives in designing and delivery of curriculum.

Figure 6 Model D: Integrated Curriculum

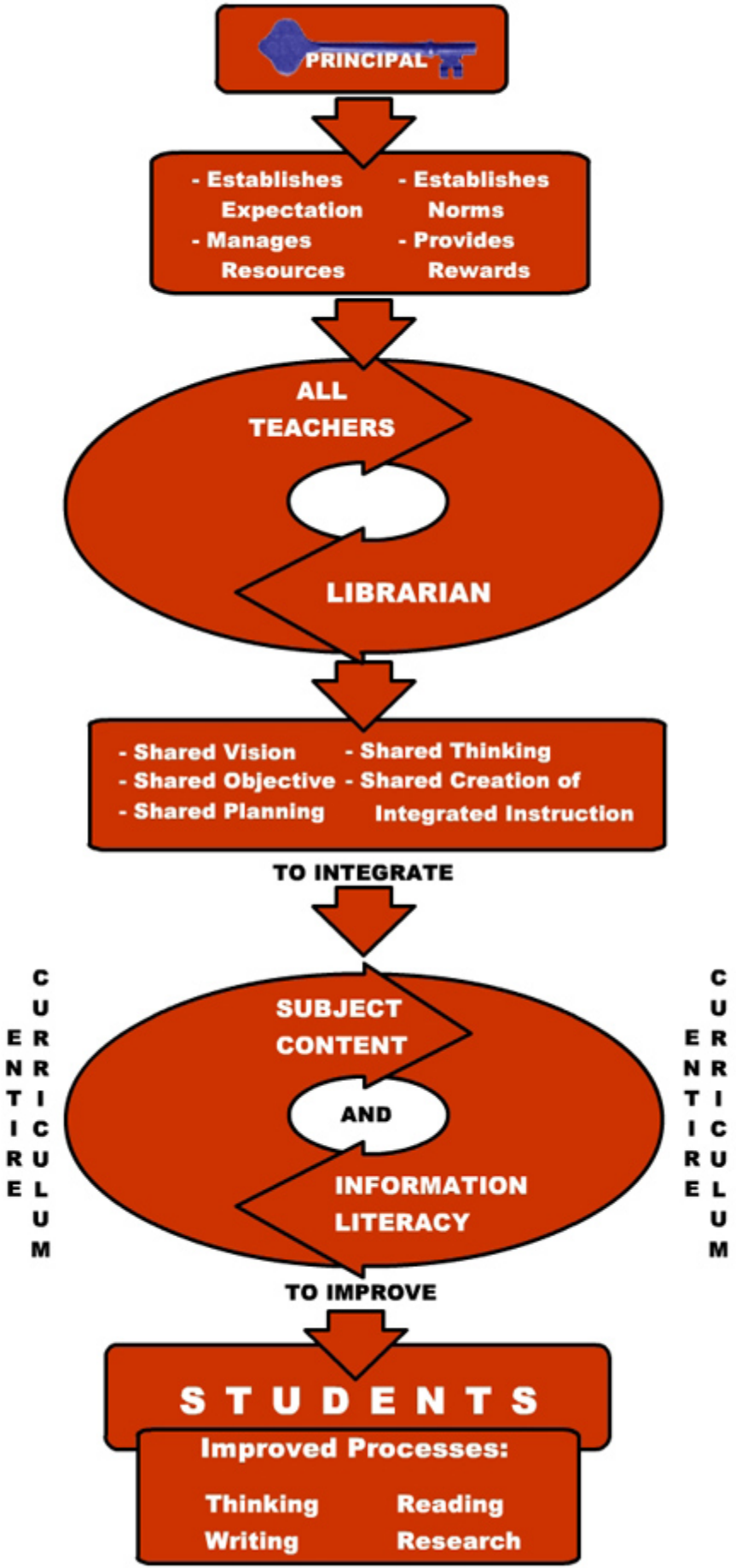

Figure 7. Attributes, activities, and attitude generated from the literature reflect a progression from Model A where the fewer attributes are necessary to Model D where the most attributes are present. There is some overlap among all models depending on personality, previous experience working together, commitment to the event, project, lesson/unit, and so on.

Figure 7: Attributes of Collaboration

Examples of Descriptors			
Model A: Coordination	**Model B: Cooperation**	**Model C: Integrated Instruction**	**Model D: Integrated Curriculum**
Shallow trust Congenial Collegial Friendly Communication	Shallow trust Respect Congenial Collegial Friendly Communication Dialogue Propensity to share	Deep trust Commitment Respect Congenial Collegial Friendly Communicate Dialogue Propensity to share	Deep trust Commitment Respect Congenial Collegial Friendly Communicate Dialogue Propensity to share
Examples of Activities Involved in Collaboration			
Gather resources	Gather resources Share resources Support Help Assist Contribute Aid Share funds Share space Share collection Share time Share students	Gather resources Share resources Support Help Assist Contribute Aid Share funds Share space Share collection Share time Share students Share objectives Share thinking Share problem solving Share creation of something new Share knowledge Co-plan Co-implement Co-evaluate Co-executeIntegration of classroom instruction and library instruction	Gather resources Share resources Support Help Assist Contribute Aid Share funds Share space Share collection Share time Share students Share objectives Share thinking Share problem solving Share creation of something new Share knowledge Co-plan Co-implement Co-evaluate Co-executeIntegration of library instruction across the curriculum
Attitude			
		Partners are Equal	Partners are Equal

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