

# Make the Connection

Quality School Library Media Programs  
Impact Academic Achievement in Iowa

*Marcia J. RODNEY*  
*Keith Curry LANCE*  
*Christine HAMILTON-PENNEL*



A Research Project by Iowa Area  
Education Agencies  
2002

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Quality School Library Media Programs Impact Academic Achievement in Iowa

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**Bibliography**

**List of Participants**

**Survey of School Library Media Centers in Iowa 2001**

**Make the Connection: Quality School Library Media Programs Impact Academic Achievement in Iowa (brochure)**

**Make the Connection: Quality School Library Media Programs Impact Academic Achievement in Iowa: Preliminary Results**

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- ◆ Collect information on LEA (Local Education Agency) library media services and their relationship to student achievement, specifically in the area of reading achievement in grades 4, 8, and 11.
- ◆ Identify areas of weakness to improve AEA instructional media services to LEAs.
- ◆ Compare Iowa data with past research on library media programs and services and their relationship to student academic achievement.

The Area Education Agencies would like to thank and credit the staff of 439 participating schools who made the time in their busy schedules to collect, compile, and report data required to complete the 2001 Statewide Library Study. Without their efforts, this study would not have been possible.

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The review of the literature was originally produced by Christine Hamilton-Pennell and Lynda Welborn for the first Colorado study (1992). It has been updated several times for subsequent state studies by Christine Hamilton-Pennell, owner of Mosaic Knowledge Works and adjunct professor with the University of Denver's Library and Information Science Program. She has done an excellent job of relating previous research on this topic to the themes of Information Power. This focus improves the organization and readability of the literature review and makes it more relevant to the current context of library media development.

For sidebar stories illustrating key findings of the study, we are indebted to Iowa's school library media programs. The success stories from the front lines of teaching information skills are probably the most telling evidence of all.

Keith Curry Lance  
Westminster, Colorado

Marcia J. Rodney  
Louisville, Colorado

## **Executive Summary**

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Iowa reading test scores rise with the development of school library media (LM) programs. The relationship between LM program development and test scores is not explained away by other school or community conditions at the elementary school level or by other school conditions at the middle school level. At both middle and high school levels, there was insufficient variation in LMS staffing to make further claims.

### **Library Media Program Development**

Iowa reading test scores rise with increases in:

- weekly LMS staff hours per 100 students,
- total weekly LM staff hours per 100 students,
- print volumes per student, and
- periodical subscriptions per 100 students.

Whatever the current level of development of a school's library media (LM) program, these findings indicate that incremental improvements in its staffing and collections will yield incremental increases in reading scores.

### **School & Community Differences**

The impact of LM program development on academic achievement cannot be explained away by:

- school differences, including:
  - school district expenditures per pupil,
  - teacher/pupil ratio,
  - the percentage of classroom teachers with master's degrees; or
- community differences, including:
  - children in poverty,
  - racial/ethnic demographics, and
  - adult educational attainment.

When other conditions are taken into account, LM program development alone accounts for about 2.5 percent of variation in Iowa reading scores for fourth and eighth graders. Generally its importance falls between that of community differences, which consistently demonstrated stronger effects, and school differences, which usually demonstrated weaker effects.

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### **Library Media Specialists & Strong LM Programs**

Library media specialists (LMSs) exert a complex web of effects on the LM programs. Findings about these effects are summed up in the following description of a strong LM program.

A strong LM program is one

- that is adequately staffed, stocked and funded. Minimally, this means one full-time library media specialist (LMS) and one full-time aide. The relationship, however, is incremental; as the staffing, collections and funding of LM programs grow, reading scores rise.
- whose staff are actively involved leaders in their school's teaching and learning enterprise. A successful LMS is one who has the ear and support of the principal, serves with other teachers on the school's standards and curriculum committees, and holds regular meetings of the LM staff. Students succeed where the LMS participates with classroom teachers and administrators in making management decisions that encourage higher levels of achievement by every student.
- whose staff have collegial, collaborative relationships with classroom teachers. A successful LMS is one who works with a classroom teacher to identify materials that best support and enrich an instructional unit, is a teacher of essential information literacy skills to students, and, indeed, is a provider of in-service training opportunities to classroom teachers. Students succeed where the LMS is a consultant to, a colleague with, and a teacher of other teachers.
- that embraces networked information technology. The library media center of today is no longer a destination; it is a point of departure for accessing the information resources that are the essential raw material of teaching and learning. Computers in classrooms, labs and other school locations provide networked access to information resources—the library catalog, electronic full text, licensed databases, locally mounted databases, and the Internet. Students succeed where the LM program is not a place to go, apart from other sites of learning in the school, but rather an integral part of the educational enterprise that reaches out to students and teachers where they are.

The noteworthy positive effects of library media programs on academic achievement, both direct and indirect, are summarized in Figure 1.

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### **TOTS TACKLE TECHNOLOGY AND IT'S TERRIFIC!**

*After several weeks of nagging them, I finally got my kindergarten teachers to bring their kids to my labs (I have two large labs in two of my three schools). They had the standard concerns, the kids were too young, too inexperienced, didn't know the keyboard etc. I explained to them that if the kids don't know that stuff, we could teach it to them and it wouldn't take long, and it didn't. After all, teaching is what we do!*

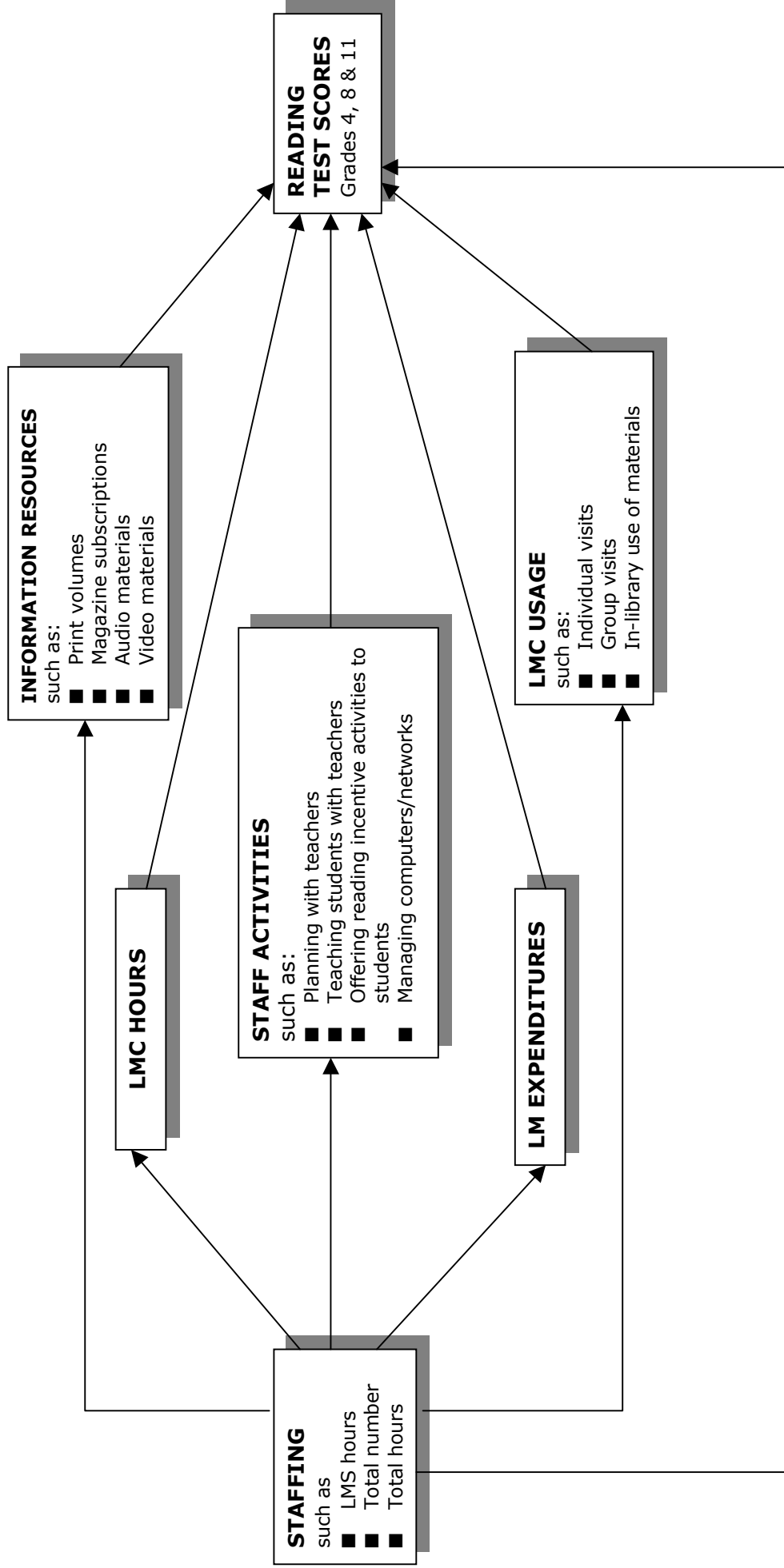
*I have several math-centered network applications that are well-suited to K-3. After the kids got used to it they could easily log in and find their programs and use them. I finally got the teachers to think of the lab as a place to support AND enrich their classroom activities. Those teachers are now my most staunch supporters. We have managed to change the thinking of some teachers. Needless to say, those kindergarteners are now my first graders and they are doing quite well. The new kindergarteners are about ready to start. Did I mention that using the mouse greatly helped several of the kids with fine motor skills and their handwriting improved as a side effect of their mouse usage?*

*I am in my 22nd year in my district. I am now working in three elementary buildings and we are in the process of automating all three libraries, which really isn't too bad considering I used to have four.*

Dave Podendorf, Elementary Technologist  
Council Bluffs Community School District  
Council Bluffs

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**Make the Connection**  
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**Summary Results**



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## **Introduction**

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For many years, the declining condition of library media (LM) programs in Iowa public schools has been a cause for concern to the Iowa Area Education Agency (AEA) media directors. As part of a campaign to reverse this alarming trend, leaders of these organizations resolved to document the impact of LM programs in Iowa schools and to share this information with school decision-makers for library media programs—school boards, superintendents, principals, teachers, even library media specialists.

In 1993, the Library Research Service of the Colorado State Library published a landmark study, **The Impact of School Library Media Centers on Academic Achievement**. By 2000, it was widely known that successor studies had been completed in Alaska, Pennsylvania, and Colorado, and that an Oregon study was in progress. Realizing the potential for such a study in Iowa, the AEA media directors raised funding for this purpose.

In 2000, the Iowa AEA media directors contracted for this study with the team of researchers responsible for the other three state studies in progress: Marcia J. Rodney, the principal investigator for this study; Keith Curry Lance; and Christine Hamilton-Pennell.

In addition to confirming in Iowa the findings of the first Colorado study, this project also sought to explore several issues that were being explored in the other state studies. Those issues included:

- identifying characteristics of library media (LM) specialists and programs that affect academic achievement,
- assessing the contribution of collaboration between teachers and LM specialists to the effectiveness of LM programs, and
- examining the growing role of information technology in LM programs, particularly licensed databases and the Internet.

On all three of those counts, this Iowa study was decidedly successful. This document reports comprehensively on the project, putting it into perspective with past research as well as the American Association of School Librarians' new standards, **Information Power: Building Partnerships for Learning** (1998). It also contains reports of the findings in a variety of readily useful formats, including: an executive summary, a brochure, and the preliminary report.

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### **A LETTER FROM A BELLEVUE STUDENT**

*During the Bellevue Read-A-Thon everybody reads a book, not a magazine, the first thirty minutes of each of four blocks one day a month. It is a way to give the students a chunk of time to "get into" a book, get hooked, and finish the title. We hope that reading will become a higher priority in the students' busy schedules once they get in the habit of reading. This is one student's thoughts on our Read-a-Thon.*

*I'm writing to let you know the importance of reading days to me. I remember the first reading day I went to the library and selected an interesting book, The Rainmaker, by John Grisham. Each student was required to read for two hours on these days, and as I began to read this book I had realized I could not quit after I'd already started. I finished the book on my own enjoying this so much and then went out and bought my own copy. I continued reading John Grisham's books and am thankful I did. To this day I have checked out each one of his books and enjoyed every one of them. I am extremely glad I did! Right now I am reading Scott Turow's Burden of Proof, and I enjoy this author just as well. I guess I could say that if I hadn't read the first book two years ago I probably would not be reading to this day. Before the school's reading days I cannot recollect any time that I had chosen to read a book on my own or for the fun of it. I believe reading days were of great benefit to me as well as many of my classmates and I strongly believe in reading as an activity that is not only educational but also is a great leisure activity. Having reading days in school once a month also gave me a little something to look forward to. I can only hope this continues and is made possible for other students as well. Sincerely, Jareb M. Steines*

*The student, Jareb Steines, is now a freshman at Loras College in Dubuque, Iowa. He graduated from Bellevue High school in Bellevue, Iowa. We are in our third year of using the Read-A-Thon to increase High School students' reading enjoyment.*

Janice Carr, Librarian  
Bellevue High School  
Bellevue

## **Review of the Literature**

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This study aims to replicate and expand upon previous research showing a link between student academic achievement and the school library media program. With the move to standards-based education, which focuses on what students have learned (proficiencies or outcomes) rather than what is taught (coverage of content), the school library media specialist is in a unique position to help students develop the information literacy skills which will enable them to achieve standards.

The new edition of **Information Power: Building Partnerships for Learning** (ALA, 1998), reflects a change in emphasis for school library media programs, from providing resources to students to creating a community of lifelong learners. Three overlapping roles are identified for school library media specialists (LMSs) in this document. The *learning and teaching* role supports the instructional goals of the school in both content (standards and subject curriculum) and process (information literacy skills). The *information access and delivery* role encompasses the more traditional responsibilities of the LMS, those of developing the media center's collection and services and providing access to them. A third role, *program administration*, includes both management of the library media program and larger training and advocacy functions within the school community.

This review of the research organizes the research findings under the three roles identified for the LMS in **Information Power** (1998). Many of the research studies were conducted in the context of the earlier guidelines, **Information Power: Guidelines for School Library Media Programs** (ALA, 1988). Although some of the goals in the document have changed, the underlying mission statement remains the same:

The mission of the library media program is to ensure that students and staff are effective users of ideas and information. This mission is accomplished:

- by providing intellectual and physical access to materials in all formats
- by providing instruction to foster competence and stimulate interest in reading, viewing, and using information and ideas
- by working with other educators to design learning strategies to meet the needs of individual students. (ALA, 1998, p. 1)



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### **Presence of a Library Media Center with a Professional Library Media Specialist**

Many studies conducted before the advent of the **Information Power Guidelines** dealt with the value of the mere presence of a library with a professional librarian, reflecting the lack of centralized library service, particularly at the elementary level. Willson (1965) showed that students demonstrated superior gains on the Iowa Test of Basic Skills (ITBS) in elementary schools with a centralized library and a professional librarian. Likewise, Becker (1970) compared ITBS scores between students in elementary schools with and without libraries and found that the presence of a library and the guidance and function of a librarian appeared to exert significant influence on pupil achievement in some information-gathering skills areas.

In the study by Hale (1969), SAT scores improved among students receiving library service from a professional. McMillen (1965) found that students in schools with good libraries and full-time librarians performed at higher levels in reading comprehension and in knowledge and use of reference materials than students in schools with minimal or no library service. Didier (1982) confirmed that student achievement in reading, study skills and use of newspapers was significantly greater at the seventh grade level in schools with professional library media personnel as compared to schools without them. Student access to the library media center was also significantly greater in schools with professional library media personnel than in schools without them.

Yarling (1968) found that the addition of a well-equipped and managed centralized library had a significant impact on the performance of elementary school students in library-related skills, particularly outlining and note taking. Students who used a new fully staffed and equipped elementary school library also showed significant improvement in library skills test scores in the study by Ainsworth (1969). McConnaha (1972) found that the library skills test scores of high school students who had attended an elementary school with both a library and a librarian who conducted a strong library skills program were significantly higher than those of students who did not have these advantages.

Recent statistics show that public schools have moved in the direction of providing professionally-staffed library media programs at all levels. In a U.S. Department of Education-funded study conducted recently (Michie and Cheney, 2000), survey results indicate that as of 1997, 98 percent of public

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schools have a school library media center, and 78 percent of public schools have a state-certified library media specialist.

### **Learning and Teaching**

#### Early Studies

Some research studies before the advent of **Information Power Guidelines** in 1988 referred to various aspects of the LMS's teaching role. Aaron (1975) studied a group of eighth grade students who participated in a program in which a full-time media specialist was added to the teaching team. In addition to showing significant improvement in language arts, spelling, and math computation, the students in the experimental group experienced improvement in their self-concept. Bailey (1970) studied a group of disadvantaged first-grade students who participated in a library resource program over a 12-week period. The experimental group showed a significant increase in total language ability and the ability to express ideas over the control group of disadvantaged students who received no special treatment. DeBlauw (1973) examined the rate of cognitive growth of students on achievement test batteries before and after implementation of a multi-media program. Elementary students showed significant gains, but the academic performance of high school students was unchanged by the program. A longer-term study of twelfth grade English students by Gilliland (1986) found that test scores on the study-locational portion of the California Assessment Program improved during the years following implementation of a library review program.

Gengler (1965) looked at differences in the ability to apply selected problem solving skills between sixth grade students who were instructed by a classroom teacher and those who received additional instruction from an elementary school librarian. Findings showed that the mean score on a problem solving skills examination for the librarian-teacher instructed group was significantly higher than for the teacher instructed group. Hastings and Tanner (1963) looked at whether improved English language skills could be developed at the tenth-grade level through systematic library experiences rather than the traditional emphasis on formal English grammar. The group that eliminated all traditional emphasis on formal grammar and spelling and instead received systematic work in the use of library references was significantly superior to the groups that emphasized traditional work in grammar and spelling.

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In a study by Hutchinson (1982), English teachers gave tenth-grade students special library skills instruction and practice over a two-week period. Library usage among the students increased regardless of their academic grade point averages. Hale (1970) found that an experimental group of twelfth grade students who were given a variety of library services and resources and the opportunity to work independently under the supervision of the librarian showed "remarkable enthusiasm" for learning. Barrilleaux (1965) focused on a comparison of the achievement of junior high school students in general science classes in which textbooks were used with students who used reference materials in the school library rather than a textbook. Results showed that for all investigated educational outcomes, the use of library materials without a basic textbook was the superior method of instruction.

### Instructional Role Since Information Power Guidelines

Much of the research taking place after the introduction of the **Information Power Guidelines** in 1988 focuses on the instructional role of the school library media specialist. Lance, Welborn and Hamilton-Pennell (1993) found that students whose library media specialists played an instructional role, either by identifying materials to be used with teacher-planned instructional units or by collaborating with teachers in planning instructional units, tended to achieve higher reading scores. A study by the Library Research Service in Colorado (1998a) also found that students earned higher reading scores in schools where the LMS played a vital instructional role, including planning instruction with teachers, providing information literacy instruction, providing in-service training for teachers, and evaluating students' work.

Five recent statewide studies reinforce the importance of the LMS instructional role. A study conducted in Alaska (Lance, Hamilton-Pennell and Rodney, 2000) revealed that students' test scores tended to rise when library staff spent more time teaching information literacy to students and planning instructional units with teachers. In Pennsylvania (Lance, Rodney and Hamilton-Pennell, 2000a), test scores increased as LMSs spent more time teaching cooperatively with classroom teachers and integrating information literacy skills into the school's approach to standards and curriculum. A new study in Colorado (Lance, Rodney and Hamilton-Pennell, 2000b) concluded that reading test scores rise as LMSs plan cooperatively with teachers (at the 7th grade level), identify materials for teachers, and teach information literacy skills to students. A Massachusetts study by Baughman (2000) found that both elementary and middle school students tended to score higher on the Massachusetts Comprehensive Assessment

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System (MCAS) test when there was a library instruction program. Likewise, in Oregon (Lance, Rodney, and Hamilton-Pennell, 2001), students tended to score higher on reading tests when their LMSs worked with classroom teachers to identify materials to support and enrich instructional units, taught essential information literacy skills to students, and provided in-service training opportunities to classroom teachers.

#### Gap Between Theory and Practice

Nevertheless, several researchers have identified a gap between theory and practice. Person (1993) found a discrepancy between the real and ideal role perceptions of LMSs. While they were aware of the roles identified in the **Guidelines**, they didn't perform them as often as they would have liked. Pickard (1993) also studied the gap between theory and practice of LMSs performing the instructional role and found that less than 10 percent of her sample appeared to be practicing the role to a great extent. Angelo (1994) verified this finding in a study which showed that the majority of LMSs were performing duties of the traditional librarian, such as student orientation and assisting students and teachers in finding materials, while a low percentage were performing planning and consultation roles. Kuhne (1993) concluded that school libraries need to be more integrated into the curriculum and that the school librarian could play a much more distinctive teacher role than he or she does today.

McCarthy (1997) studied LMSs who were "well above average" in the New England region and found that 58 percent of them believed that implementation of **Information Power Guidelines** was only somewhat realizable or not realizable at all. McCracken (2000), in a national survey of more than 500 LMSs, found that they perceived all the roles in **Information Power** (1988, 1998) to be more important than they were able to implement in practice. They also perceived that they practiced the role of information specialist (i.e., the traditional role of the librarian) to a greater extent than that of program administrator, teacher, or instructional partner and consultant.

#### Level of LMS Collaboration with Teachers

Instructional collaboration has many levels, and research indicates that LMSs are most often involved in the less complex levels. Slygh (2000) reports on the difficulty of establishing exactly what is meant by the term "collaboration." She uses a definition by Van Deusen and Tallman (1994)

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that delineates an interdependent relationship between LMS and classroom teacher involving a continuum of five progressively complex levels of instructional collaboration, from gathering materials to collaborating with a teacher to evaluate a unit. Slygh found that teachers in her sample of Library Power schools indicated a greater frequency of collaborating with the LMS in planning and designing instruction than in delivering it.

A study by DeGroff (1997) compared the ideal roles of the LMS as laid out in **Information Power** (1988) with the actual practice of these roles. She determined that the instructional consultant activities of LMSs were usually limited to gathering books for instructional units and seldom involved participating with teachers in developing, carrying out, or assessing unit plans. Van Deusen and Tallman (1994) found that more than half of their sample of LMSs did not assess student work at all during the study period. Michie and Chaney (2000) found that the overall percentage of library media centers working with teachers on curriculum development, collaboratively teaching curriculum units with classroom teachers or collaboratively evaluating curriculum units with classroom teachers ranged from two percent to 21 percent, depending on the subjects taught. The greatest amount of collaboration was with reading or English teachers.

Mosqueda (1999) studied the roles played by LMSs in 67 Florida schools named as National Blue Ribbon Schools. While the overwhelming majority of responding principals and LMSs agreed that the library media programs performed well in program administration and information access and delivery, an average of 75 percent of principals and LMSs thought the library media programs needed to be more fully integrated into the curriculum. Mosqueda's data does show a higher percentage of LMSs who spend time planning instruction with teachers on a daily (40 percent) or weekly (80 percent) basis than other research studies cited, which may indicate that LMSs in exemplary schools perform the instructional role more often than their counterparts in less well-recognized schools.

### Barriers to Collaboration

Barriers to LMSs practicing the instructional role include the attitudes of both LMSs and teachers, as well as program limitations such as fixed scheduling, limited resources, and lack of technology. Lai (1995) found no significant differences between teachers' and media specialists' attitudes regarding the LMS's role in curriculum development, instructional development and technology use. Both groups believed the LMS had only a marginal role in designing and producing materials for units. Beard (1999) found that key

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barriers to collaboration were time, desire to maintain the status quo, and lack of resources. In a national survey of LMSs by McCracken (2000), the biggest barriers cited to expanding their instructional role were lack of time and resources, specifically funding and clerical help. Several researchers (e.g., Slygh, 2000; Beaird, 1999; DeGroff, 1997) point to role confusion or role conflict of LMSs themselves, as well as lack of understanding of the instructional role of the LMS among the teachers and administrators they work with, as inhibiting expanded collaboration activities.

#### Positive Effects of Flexible Scheduling

Giorgis (1994) discovered that the majority of elementary school teachers perceived the LMS as a resource person and only a few as a collaborator. Nevertheless, during the course of her study Giorgis found that these views changed. Through flexible scheduling and collaborative planning, the perceptions of the LMS's role by classroom teachers, administrators, children and parents became one of teacher and collaborator.

Other researchers also attest to the positive effects of moving to flexible scheduling. Bishop (1992) found that the most significant changes in the role of the LMS occurred with the move to flexible scheduling and curriculum-integrated instruction. Fedora (1993) compared two exemplary school library media centers, one with fixed and one with flexible scheduling and found that the LMS participated more often in planning with teachers and as an instructional consultant in the flexibly-scheduled program. Van Deusen (1993) and van Deusen and Tallman (1994) found that LMSs in schools that combined both flexible scheduling and team planning had significantly more curriculum involvement. Hughes (1998), in her study of four library media programs in schools implementing whole language programs, found that all four LMSs moved to flexible scheduling in the LMC during the course of implementation and were able to provide leadership and direction in creating a library program that promoted the active construction of knowledge. Likewise, Beaird (1999) reported that one of the major enhancers to increased collaboration was flexible scheduling, and McCracken (2000) found that LMSs who use flexible scheduling perceived that they implemented the role of instructional consultant more than those who used fixed or combination scheduling.

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#### Positive Effects of Collaboration

Research indicates that a collaborative environment begets more collaboration. Beird (1999) discovered that as a result of a first experience with collaboration with the LMS, teachers were made aware of the presence of another professional on their campuses who could engage in collaborative planning and teaching. LMSs became more aware of teachers' needs as they provide for regular students as well as those with special needs. Straessle (2000), in her case study of a suburban junior high school, concludes that the more teachers and administrators understand and experience the role of the LMS as an instructional consultant, the more likely their perceptions will change and expectations increase, thus improving teacher instruction and student learning. Slygh (2000) reports that LMSs' perceptions of the degree to which their school climate was a professional community affected the amount of instructional collaboration they performed.

#### Positive Effects of Technology

Technology can also support the instructional role. Everhart (1992) found that high school library media specialists with automated circulation systems spent significantly more time in instructional development and use of technology than those without automated systems, although the actual time spent in development of the educational program was quite low. Van Deusen (1996a) found that both flexible scheduling and library automation were positively related to the LMS performing an instructional consultation role, as well as providing electronic support for teachers using technology, providing individual assistance to students, and reducing the amount of time spent on clerical duties. Jones (1994) concluded that technology expands the teacher-librarian partnership possibilities in literature-based instruction. E. W. Smith (1998) studied the changes occurring in media centers in Dekalb County, Georgia after the incorporation of technology, and found both that the media center program was a viable component of the school's curriculum and that the media specialist's role as teacher, information consultant, and information specialist had expanded.

#### Characteristics of Library Media Specialist

Perhaps the most important factor in successfully implementing the instructional role is the characteristics and skills of the school library media specialist himself or herself. Yetter (1994) found that LMSs successfully involved in resource-based learning were energetic, healthy and

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enthusiastic; showed leadership abilities; had theoretical understanding of resource-based learning; had the ability to translate theory into effective instructional plans; and were knowledgeable about specific learning resources. These LMSs saw teaching as their primary function. As a result, the colleagues of these LMSs saw them as vital participants in the instructional process. Esser (1999) interviewed 18 female LMSs in Kentucky to discover their initial motivations for entering the field and discovered that a desire for autonomy was high on the list. Her data suggested that these teacher-librarians achieve a greater degree of autonomy when they are collaborating with teachers, and they negotiate these relationships and create effective networks in order to carry out their work.

Farwell (1998) found that LMSs could play a pivotal role in the successful implementation of collaborative planning if they were knowledgeable about the curriculum, the library collection, information literacy instruction, and instructional design and delivery. They also needed to have good interpersonal skills and be willing to act as change agents. Van Deusen's (1996b) case study of a school library media specialist involved in an instructional planning process showed that she contributed as a peer and helped to clarify, initiate, summarize and test the discussion ideas. DeGroff (1997) concludes from her survey data that the most important factors supporting opportunities for teachers and LMSs to work together effectively were the librarian's knowledge, personality, and attitudes or interests.

K. G. Alexander (1992) studied four exemplary LMSs and found that they fulfilled most of the aspects of the instructional role. They spent large portions of each day giving instruction, effectively managed class and teaching time, provided instruction related to the curriculum, and used innovative instructional methods. They also instructed different sections of the school community, ensured that their media center had resources to support the changing curriculum, and assisted teachers in planning classroom instruction. Gehlken (1994) studied the school library media programs in three blue ribbon high schools and came to similar conclusions. In all three schools, there was a cooperative relationship between the LMS and the faculty, with opportunities for collaborative planning and integrating information skills into the classroom curriculum. The students in all three schools overwhelmingly indicated that the most important service provided by the school library media program was help from the LMS in finding and evaluating information. Bell and Totten (1992) found that teachers employed in academically successful schools tended to choose the library media specialist significantly more for cooperation on instructional problems than did teachers serving in academically unsuccessful elementary schools.



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### Other Aspects of the Instructional Role

Another aspect of the LMS's learning and teaching role identified in **Information Power** (1998) is to encourage and engage students in reading, viewing, and listening for understanding and enjoyment. Yetter (1994) found that LMSs involved in resource-based learning were enthusiastic about reading and books. Lai (1995) found that teachers and LMSs both strongly agreed that the LMS should work with teachers in helping students to develop the habit of reading.

In Australia, Todd, Lamb and McNicholas (1993) studied Year-Seven and Year-Eleven students and found that integrating information skills into subject content, with collaboration by classroom teachers and LMSs, had a positive impact on student learning, including better understanding of subject content and improved test scores. Todd (1995) analyzed the impact of integrated information skills instruction in a Year-Seven science class. The two treatment classes recorded significantly higher annual science scores than the control classes.

The adoption of state content standards and the movement towards standards-based instruction and assessment is too recent to have a substantial research base as yet. N. A. Alexander (1998) determined that standards policy is generally associated with improved student performance, although there are disturbing equity issues. In the school library field, a few research studies to date have looked at the connection between integrating information literacy skills into the curriculum and improved student learning. Grover and Lakin (1998) reported on the development and testing of a Kansas model which integrates information skills into planning and assessing learning across the curriculum. Teachers and librarians who participated in the study indicated that the model facilitated student learning in all grade levels studied and for units of any length. The "integrated assignment" stage of the model was reported as a key to enhancing student learning.

In regard to standards-based education, one of the more interesting developments of the past decade has been the elaboration and proliferation of the value-added assessment model originated in Tennessee by Sanders, et. al. (1997). This model is being considered in Colorado and other states as a method for evaluating the performance of both schools and teachers. In the author's most authoritative account to date, he reports that the strongest predictor of year-to-year improvement in students' test scores is teacher quality. To date, however, there have been no further reports from Sanders or others defining precisely what "teacher quality" means in

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empirical terms. Decades of library media research findings indicate that one major factor that has demonstrated consistently a positive, strong, and statistically significant relationship to quality teaching is a close working relationship between the classroom teacher and the library media specialist.

#### **Information Access and Delivery**

The information access and delivery role includes providing quality resources and technology that support the curriculum, offering convenient and flexible access to the media center's resources and services, and providing a welcoming environment that is conducive to learning. Recent studies show that LMSs still perceive this role to be their most important one, and the one they practice most often in reality (DeGroff, 1997; McCracken, 2000).

Early studies focused on service level and collection size as predictors of academic achievement. Greve (1974) discovered that the most valuable predictor of student test scores was the number of volumes in the school library. Thorne (1967) examined the reading comprehension and library skills of students using the augmented services of a Knapp Project library versus the nominal services of a second junior high school library in a two-year study. Findings revealed a significant difference in the mean gains of the experimental group over the control group in reading comprehension and library skills.

#### Access to Print Resources

More recent studies have focused on the connection between students' achievement in reading and access to print resources, particularly in libraries. The first Colorado study by Lance, Welborn and Hamilton-Pennell (1993) concluded that the size of a media center's staff and collection is the best school predictor of academic achievement. In that study, academic achievement was represented by reading scores, which were highly correlated with scores in other areas, such as writing and research skills. Elley (1994, 1996) compared the scores of students from 32 countries on the 1992 International Association for the Evaluation of Educational Achievements (IEA) Reading Literacy Study with data on the home environment and school and public libraries. He concluded that access to print, and especially the size of the school library, was the strongest predictor of reading achievement. Froese (1997) compared the IEA reading scores for British Columbia with variables related to school and classroom libraries and found that students who have the opportunity to borrow books

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from libraries have a considerable achievement advantage over those who cannot.

In his meta-analysis of reading research studies, Krashen (1993) concluded that more free voluntary reading results in better reading comprehension, writing style, vocabulary, spelling and grammatical development. He also determined that when books are readily available and the print environment is rich, more reading is done. Even second-language learners will be more successful in language acquisition when they read more in the second language. Children get a substantial percentage of their books--from 30 to 90 percent--from school, classroom and public libraries. They also read more when they have a comfortable, quiet place to read, such as the school library. Ramos and Krashen (1998) concluded that simply providing interesting books to children is a powerful incentive for reading, perhaps the most powerful incentive possible.

McQuillan (1997) drew similar conclusions. He found that access to print via the home, school and public library, and frequency of free reading accounted for nearly 80 percent of the variance in fourth grade reading test scores. He also reported a correlation between school and public library quality, library use, and amount of reading done by school children. In McQuillan's (1998) meta-analysis of literacy studies, there was considerable evidence that the amount and quality of students' access to reading materials is substantively related to the amount of reading they engage in, which in turn is the most significant determinant of reading achievement. More reading leads to better reading achievement.

Other researchers have also demonstrated a relationship between free voluntary reading and academic achievement. Digiovanna (1994) found that the amount of recreational reading was positively correlated with higher academic achievement levels for third, fifth, and seventh graders. Halliwell (1995) demonstrated a relationship between eighth graders' self-perceptions of being free voluntary readers and the degree of their success on the Missouri Writing Assessment. Lipscomb (1993) reported on the self-selected recreational reading of first through third-graders over a nine-week period in the summer and found that the total number of words read was a significant predictor of students' overall reading achievement and word recognition.

Access to print through public libraries has been shown to contribute to students' academic achievement. A Library Research Service study (no. 153, 1998) reported that in Colorado school districts scoring in the highest third on the 1997 Colorado State Assessment reading test, circulation of children's materials per capita by public libraries was 50 percent higher than

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in school districts scoring in the lowest. There were similar results for states scoring highest on the NAEP reading test. Ramos and Krashen (1998) reported that even one classroom trip per month to the public library had a positive impact on students' reading. McQuillan (1997) found that SAT scores were positively correlated with per capita public library circulation.

#### School-Public Library Relationship

A Library Research Service study (no. 150, 1998) reported that students are likely to earn higher reading scores if there is a relationship between the library media program and local public libraries. Such a relationship might include public library staff presenting booktalks at the school library, and the local public library providing a summer reading program. Similarly, Lance, Hamilton-Pennell and Rodney (2000a) found that Alaska students' test scores tended to be higher when the LMC had a cooperative relationship with the public library. Michie and Chaney (2000) reported that 60 percent of LMCs participated in some type of cooperative activity with a local public library, including borrowing materials for teachers or the LMC, informing the public library of curriculum or homework needs, and coordinating class visits to the public library.

#### School Library and Equity Issues

Several researchers point to the potential importance of the school library as a factor in equalizing access to print resources for disadvantaged children. McQuillan (1997, 1998) found a strong negative correlation between poverty and print resources at home. He concluded that school and public libraries could help increase access to print for low-income communities and schools, thus improving their students' reading achievement. The survey data collected by Baughman (2000) suggest that children from a lower socioeconomic stratum who have a school library program obtain a higher mean test score than similar children from schools without such a program.

Halle, Kurtz-Costes and Mahoney (1997) reported that the number of books in the homes of low-income, African-American children was related to children's reading scores at the end of the following year. They concluded that providing access to children's books through libraries may be one of the most important things disadvantaged communities and schools can do. McQuillan (1998a) studied the public library use of language minority students and found that Spanish-speaking households are much less likely to have access to books, and, therefore, fewer opportunities to further literacy

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development. He concludes that both public and school libraries must make concerted efforts to reach out to language minority parents and their children. Godina reports that Mexican-background students demonstrate different literacy practices in their homes and communities than those acknowledged at school, where they are viewed as having limited English proficiency and enrolled in low academic tracks. The local public library becomes an important locale for these students' literacy learning because it provides culturally-relevant reading materials.

Unfortunately, school libraries often appear to reflect the economic conditions of their communities. Krashen and O'Brian (1996) reported that socio-economic status was the most powerful predictor of student reading achievement in the Los Angeles Unified School District. Both Krashen (1996) and McQuillan (1998) made the point that the low student reading scores in California could be traced to the deplorable state of its school and public libraries. Allington, Guice, Baker, Michelson, and Li (1995) studied the variations in access to books in school libraries in twelve high- and low-income neighborhoods. They discovered that high-income schools had 21.5 books per student, whereas the low-income schools had 15.4 volumes. They also discovered disparities in number of magazine subscriptions, size of classroom libraries and access policies. McQuillan, LeMoine, Brandlin and O'Brian (1997) studied access to school libraries and found that students in high-achieving schools serving largely middle-class children provided greater access to books, more time to read in school, and more liberal circulation policies than those from lower-achieving schools in largely low-income neighborhoods. Smith, Constantino and Krashen (1996) found, not surprisingly, that school libraries in high income communities such as Beverly Hills had around three times as many books per student as school libraries in low-income communities such as Compton and Watts. Public libraries in high-income communities also had about twice as many books as those in low-income communities.

Two recent studies reinforce these conclusions. Duke (2000) studied 20 first-grade classrooms from very low- and very high-socioeconomic status (SES) districts. Data indicated substantial differences between low- and high-SES classrooms in all major areas examined--amount of print experienced, type of print experienced, and number of print-related activities. Neuman and Celano (2001) focused on the neighborhood settings in which literacy begins for young children, and the extent to which literacy is a potential factor contributing to differences in achievement. What they found was striking. Access to print resources, including children's books available for purchase, public areas where children might observe people reading, and the size and quality of book collections in local childcare

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centers, school and public libraries, varied dramatically between the neighborhoods of middle- and low-income children. Children from middle-income neighborhoods were likely to be deluged with a wide variety of reading materials, while children from poor neighborhoods would have to “aggressively and persistently seeks them out.” These children would have to rely on public institutions, which provided unequal resources. School libraries in these neighborhoods were in serious disrepair.

A case study of a Library Power elementary school in Chattanooga (Oberg, 1999) shows that the library media program can make a difference in a low-income school. Lakeside Elementary School, largely composed of low-income African-American children, improved LMC collections and facilities, developed collaborative planning between teachers and librarians through professional development; provided flexible scheduling to the LMC; and hired a full-time LMS. The school experienced dramatic improvements in student learning, as evidenced by scores on the TCAP (Tennessee Comprehensive Assessment Program), that are attributable at least in part to the Library Power Initiative.

#### Size of Library Media Center Collection

Size of the school library collection has been shown to be a positive predictor of student academic achievement (Greve, 1974; Lance, Welborn and Hamilton-Pennell, 1993; Elley, 1996). Baughman (2000) and Lance, Rodney and Hamilton-Pennell (2000b) found that the per pupil book count was correlated with higher test scores. Lance, et al, (2001) also found that Oregon reading test scores rose with increases in print volumes per student and periodical subscriptions per 100 students. Krashen (1995) found that a significant predictor of NAEP reading comprehension test scores was the number of books per student in school library media centers. Similarly, McQuillan (1997) reported that SAT scores were positively correlated with the number of books per student in the school library. Krashen and O'Brian (1996) did not find a significant relationship between books per student and student achievement in the Los Angeles Unified School District. They postulated that the number of books in a school library has little effect on literacy if access to them is restricted, the books are badly out of date, and students do not know where they are, as is the case in many California school libraries.

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#### Frequency of School Library Use

Frequency of library use has also been positively linked to student achievement scores. Baughman (2000) found that students at each grade level score higher when there is increased use of the LMC and more open hours at the library. Koga and Harada (1989) investigated the attitudes of students in Australia, Japan, Korea and Thailand towards school libraries and found that students with a keen attitude toward learning tended to use the library more often and demonstrated better academic achievement. The LMS at Lakeside Elementary School, a Library Power elementary school in Chattanooga (Oberg, 1999), found a direct relationship between the number of times students had been in the library and the level of their test scores in reading comprehension and reference skills. A Library Research Service report (no. 149, 1998) showed that states with above average reading scores on the 1994 NAEP reading test have schools where students visit the school library media center more frequently and borrow more books and other materials.

Flexible scheduling appears to support more frequent library use by individual students. Fedora (1993) found that in a flexibly scheduled library media program, students have more frequent access individually and in small groups than in a fixed-schedule program, where nonscheduled use is rare. Van Deusen (1996b) reported that instances of the LMS providing individual assistance to students was higher in flexible than fixed schedule situations. Lance, Rodney and Hamilton-Pennell (2000b) found that middle schools with high test scores tend to have LMCs that report a higher number of individual visits to the LMC on a per-student basis.

The extent to which flexible scheduling occurs in library media centers varies by type of school and educational level. According to recent survey results (Michie and Chaney, 2000), 95 percent of public secondary school library media centers and 60 percent of public elementary school library media centers (70 percent total) report that they use flexible scheduling, although it is most often used in combination with regular scheduling as well. Mosqueda (1999) reports a similar figure, with 75 percent of the LMCs of the reporting National Blue Ribbon Schools operating on a flexible schedule. Abdoler-Shroyer (1999) reports that in her population of Missouri's combined K-12 schools, 88 percent of the districts responding used the LMC for teacher released time at the elementary level, with 87 percent seeing students on a fixed schedule. At the high school level, 83 percent schedule high school classes on a flexible basis.

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#### Role of Library Media Specialist in Program Development

The role of the LMS in developing and providing access to the library media program has received a fair amount of attention in the research. Pembroke (1997) found that, when school librarians provide reading guidance or a bibliography, reluctant fifth grade readers can be motivated. Other motivating factors included access to the library and books; an adequate collection of print and non-print materials; and an inviting environment. Martin (1996) found that as library services increased (including reference, information skills, curriculum integration, interlibrary loan, reading guidance, and technical assistance), third grade test scores also increased. She found a statistically significant relationship among all the library media center variables (collection size, expenditures for the collection, staffing, and services) and overall achievement in grades 3, 5, and 11, indicating that the whole is greater than the sum of its parts. A Library Research Service study (no. 150, 1998) reported that students are likely to earn higher reading scores if there is a collection development policy for the school library media center. Lance, Hamilton-Pennell and Rodney (2000) also found that Alaska students' test scores tend to be higher when the LMC has a strong collection development policy.

K. G. Alexander's (1992) study of four exemplary media specialists found that they all provided continuous access to their media centers; assisted individual users; designed flexible circulation policies; used innovative methods to promote their media centers; and developed media center collections which supported all areas of the curriculum. Gehlken (1994) reported that in all three blue ribbon high schools studied, the LMS flexibly scheduled classes; organized and cataloged the collection; provided an inviting climate conducive to learning; assisted students in traditional and electronic methods of information access; and involved faculty in the selection of materials. The media centers in all three schools were organized, automated, easily accessible, and provided materials in a variety of formats across all levels and subject areas. The media center facilities were inviting, aesthetically pleasing, safe, and user-friendly.

#### Role of Technology in Student Academic Achievement

The role of technology in promoting student achievement has been the focus of several recent studies. In their review of educational technology research, Sivin-Kachala, Bialo, and Langford (1997) concluded that using technology has a positive effect on student achievement, attitudes toward learning, and student self-concept. Silverstein, Frechtling and Miyaoka



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(2000) found that technology usage had a small but significant impact on Illinois students' achievement, particularly at the higher grade levels, specifically eleventh grade science. Paul, VanderZee, Rue and Swanson (1996) reported that using the Accelerated Reader technology-based literacy program had a positive affect on student academic performance and attendance rates, especially for socio-economically disadvantaged children in urban areas. Peters (1998), on the other hand, found no significant difference in reading achievement when students used the technology-based Electronic Bookshelf Program.

Wenglinsky (1998) found a positive correlation between computer use and academic achievement in mathematics, but only if computers were used to convey higher-order skills or engage in learning games. Use of computers for drill and practice, the lower-order skills, was negatively related to academic achievement for both fourth and eighth grade students. Significantly, disadvantaged groups had less access to those aspects of technology that positively affected educational outcomes. Page (1999) reported that the presence of classroom technology had a positive effect on the mathematics achievement of low socioeconomic elementary school students, although reading achievement remained inconclusive.

DeFrieze (1998) found that reading achievement appears to be more influenced than mathematics achievement by the use of computers, particularly in an unstructured environment. She speculates that in an unstructured environment teachers have more control over the programs each student accesses, which may be the key to influencing students' higher achievement in reading. A significant finding by Bohannon (1998) is that high frequency of school computer use results in students earning significantly higher mean scores on reading achievement tests. This is true for males and females, as well as high and low socioeconomic groups. She concludes that frequent use of computers requires more continuous reading practice, regardless of the activity.

### Integrating Technology into the Library Media Center

There is perhaps no place where the library media specialist's role has changed more in the last ten years than in the integration of technology. Person (1993) reported that LMSs don't see a separate, organized technological media role for themselves, but see technology as a means to accomplish the goals and missions of the media center program as expounded in **Information Power** (1988). A Library Research Service report (no. 141, 1998) concluded that students earn higher reading scores if

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their school library media programs incorporate the latest information technology. Such technology includes a district-wide catalog, access to online databases, resources available through a local-area network, and access to the World Wide Web and the statewide library network. Lewanski (1998) showed a statistically-significant correlation between the use of computer-assisted library research and improvement in overall critical thinking skills. The control group, using a traditional paper-based process did not show such a relationship.

Lance, Rodney and Hamilton-Pennell (2000a) found that Pennsylvania students' test scores increase as LMSs spend more time managing information technology. Students also earn higher reading test scores in both Pennsylvania and Colorado (Lance, Rodney and Hamilton-Pennell, 2000b) where networked computers link school libraries with classrooms, labs and other instructional sites, enabling access to LMC resources, licensed databases and the Internet. Alaska students' test scores tend to be higher when the LMC is equipped to provide access to the Internet (Lance, Hamilton-Pennell and Rodney, 2000).

An Illinois study (Silverstein, Frechtling and Miyaoka, 2000) revealed that almost all Illinois schools are now connected to the Internet. McCracken (2000) found that 99% of high school LMCs, 95% of middle school LMCs, and 84% of elementary school LMCs had Internet access. Nevertheless, access to technology in school library media centers still varies widely. Powell's (1998) survey of 300 elementary and secondary school library media centers in Tennessee revealed a wide variability in technology access. McCarthy (1997) found that less than 50 percent of the New England school library media centers in her sample had automated circulation and cataloging systems, and these were mostly in middle and high school libraries. McCracken's figures (2000) show that the percentage of LMCs with online catalogs ranged from 60% in elementary schools to 84% in high schools. She also reported that LMSs perceive that integrating technology into the LMP is more important than the extent to which they perceive they have actually implemented it into their practice.

High-achieving schools tend to have more technological resources. Baule (1997) found that schools with exemplary technology were also more likely to have high-quality school library media programs. Yetter (1994) observed that the library media centers in successful resource-based learning schools had modern, spacious facilities designed for flexible use and access to technology. Gehlken (1994) noted that all three blue ribbon schools studied had library media centers which were committed to increasing student access to technology, and which had the flexibility and electronic capabilities

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to accommodate the changing needs created by new technologies. Students identified the electronic catalog, computer printer workstations and copying machines as some of the most important services provided by the library media program.

As Wenglinksy (1998) and DeFrieze (1998) demonstrated, it is not the amount of technology or computer use that counts in promoting student achievement, but how it is used. Many researchers (for example, McQuillan, 1996; Lance, Welborn and Hamilton-Pennell, 1993) have found no correlation between reading achievement and amount of computer software available. Technology must be integrated into the school library media program to influence academic achievement. An elementary school in California with a high Latino population (Ferguson, 2000) saw student achievement gains that were attributed to the technological upgrade of the LMC. Reading scores rose 8% from the previous year after the school hired a professional LMS who refurbished the LMC's technological resources and added reading literacy programs such as Accelerated Reader and the S.T.A.R. Reading testing program.

### **Program Administration**

The program administration role involves effective management of the human, financial and physical resources of the library media program. This role also provides leadership within the larger learning community. Adequate staffing, budget, and administrative support are key to the success of this role. When all these factors are maximized, research studies show a dramatic impact on student achievement.

### Maximizing Predictors of Student Achievement

Lance, Rodney and Hamilton-Pennell (2000b) found that when all LMC predictors of students achievement (i.e., staffing, expenditures, information resources and technology) are maximized, Colorado reading test scores tend to run 18 percent higher in the fourth grade and 10 percent higher in the seventh grade. In Pennsylvania (Lance, Rodney and Hamilton-Pennell 2000a), reading test scores tend to run 10 to 15 points higher when LMC predictors (i.e., staffing expenditures, information resources and technology, and information literacy activities of library staff), are maximized. In Alaska elementary schools with well-developed library media programs, 86 percent of students scored proficient or above on state reading tests compared with 73 percent of students in schools with less well-developed media programs

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(Lance, Hamilton-Pennell and Rodney, 2000). In Oregon, Lance, Rodney, and Hamilton-Pennell (2001) concluded that whatever the level of a school's library program, incremental improvements in its staffing, collections, and budget will yield incremental increases in reading scores. They also found that test scores rose when LMSs spent more time attending faculty meetings, meeting with library media staff at the district level, and meeting regularly with the principal.

#### Principal Support of the Library Media Program

Yetter (1994) found that schools that had successfully implemented resource-based learning had a common understanding and support from the principal, teaching faculty and library media specialist about the centrality of the library media program in the school's instructional process. These schools provided planning time for teachers and library media specialists to work collaboratively, clerical support for the LMS, flexible scheduling in the library media center, and principal support of the library media program. Likewise, Farwell (1998) determined that in schools with successful collaborative planning, the principal served as an advocate for collaborative planning and information literacy instruction, and provided financial support for the library media program, adequate clerical staff, and time during the school day for LMSs and classroom teachers to plan together.

Mosqueda (1999) concluded that the most important finding in her study of school library media programs in Florida blue ribbon schools was the overall favorable perception of principals and LMSs in regard to the leadership role they played in their schools. The reported strengths of the library media programs in these schools supported the research on what constitutes an exemplary program, including open access, administrative support, well-equipped facilities, technology integration, reading support, and good staffing. Gehlken (1994) reported that in all three blue ribbon high schools she studied, the principals actively supported and promoted the library media program. Standridge (1996) reported that student achievement in urban elementary schools was positively impacted by greater participation of the certified staff in school-based decision making, especially in the areas of goals, vision, mission, and curriculum and instruction.

There appears to be a two-way relationship between administrative support and LMSs performing the instructional role. In schools where there was fiscal and organizational support for the library media program, including automated systems and paid support staff, van Deusen (1996a) found that LMSs performed the instructional consultation role to a greater extent.

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Lumley (1994) concluded that instituting a curricularly integrated and flexibly scheduled library media program required leadership on the part of the library media specialist as well as principal support, resulting in strong leadership roles for the LMS in curriculum, instruction and staff development. Van Deusen (1996a) reports that the availability of support staff and automated library systems was positively related to LMSs' doing more consulting work with teachers and spending less time on nonprofessional tasks. McCracken (2000) found that the factors most frequently cited by LMSs as important to expanding their instructional role were support of the school administration and support of other teachers at the school.

#### Collaborative Activities of the Library Media Specialist

Lance, Rodney and Hamilton-Pennell (2000b) found that LMS involvement in collaborative activities has a direct impact on test scores. Higher levels of collaboration result from meeting with school administrators, serving on standards and curriculum committees, working with faculty at school-wide staff meetings, and meeting with library media staff at the building level. Data from Pennsylvania (Lance, Rodney and Hamilton-Pennell 2000a) reinforce the finding that test scores increase as LMSs spend more time serving on curriculum and standards committees. Hughes (1998) reports that LMSs who successfully participated in their schools' move to whole language became part of their school's leadership team, attended professional development workshops with teachers in the school, and spent more time pulling together curriculum-related resources in the library media center.

#### Effect of Library Media Center Staffing

Lance, Welborn and Hamilton-Pennell (1993) found that library media centers which have more endorsed staff tend to have staff who spend more time identifying materials for instructional units developed by teachers and more time collaborating with teachers in developing such units. They found that as the LMS's instructional role increases, the size of the library media center's staff and collection increases, which, in turn, is a direct predictor of student reading achievement. Martin (1996) also found a significant positive relationship between school library media center staffing and student achievement, especially in high school reading. Schools employing more media center staff had higher achievement test scores.

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A Library Research Service study (no. 141, 1998) showed that student reading scores were higher in schools where there is a state-endorsed library media specialist and where the LMS is supported by an aide. This is unfortunately not yet the norm. Michie and Chaney (2000) report that as of 1997, public school libraries had an average of 0.9 professional staff (included non-certified professional staff) and 0.6 other paid employees, overall. Twenty-two percent of public schools lacked a full-time or part-time library media staff person who is state-certified. McCracken (2000) reported that the biggest barriers cited by LMSs to expanding their instructional role were lack of time and resources such as funding and support staff.

Studies in Alaska, Pennsylvania, Colorado, Massachusetts, and Oregon (Lance, Hamilton-Pennell and Rodney, 2000; Lance, Rodney and Hamilton-Pennell, 2000a; Lance, Rodney and Hamilton-Pennell, 2000b; Baughman, 2000; Lance, Rodney and Hamilton-Pennell, 2001, respectively) attest to the value of full-time, endorsed media staff. In Alaska, at both elementary and secondary levels, the presence of a full-time librarian was a very strong predictor of average and above achievement. Regardless of the level of librarian staffing, however, the more LMS staff time was devoted to delivering library and information literacy instruction to students and providing in-service training to teachers, the higher the test scores. Colorado reading scores increased with increases in LMS hours per 100 students (for seventh grade) and total staff hours per 100 students. Pennsylvania reading test scores increased with increases in LMS staff hours and support staff hours. In Massachusetts, at elementary and high school levels, students who were served by full-time LMSs had higher test scores than those in schools without full-time LMSs, and non-professional staff assistance also made a positive difference in average test scores. Oregon reading scores rose with increases in total staff (both professional and support) per 100 students.

#### Library Media Specialist as Provider of In-Service Training

The involvement of a school library media specialist in technology-based staff training can support student achievement. Michie and Chaney (2000) report that in 1997, 43 percent of public school library media programs with access to the Internet arranged Internet training for teachers and 37 percent for administrators. In Colorado (Lance, Rodney and Hamilton-Pennell, 2000b), reading test scores increased with the amount of time LMSs spent as in-service trainers of other teachers. Alaska and Pennsylvania students' test scores tended to be higher when library staff spent time providing in-service training to teachers (Lance, Hamilton-Pennell and Rodney, 2000;

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Lance, Rodney and Hamilton-Pennell). Wenglinsky (1998) found that teacher's professional development in technology and the use of computers to teach higher-order skills were both positively related to academic achievement in mathematics and the social environment of the school.

#### Library Media Specialist Planning and Management Skills

School library media specialists in effective schools tend to have good planning, communication and management skills. Yetter (1994) observed that library media specialists in successful learning-based schools were expert in developing effective library media programs which were congruent with the state and national **Information Power** (1988) guidelines. The basic library procedures and processes in their library media programs functioned smoothly. A Library Research Service report (no. 150, 1998) indicated that students are likely to earn higher reading scores if there is a plan for the development of their school library media program. Gehlken (1994) reported that in all three blue ribbon high schools the LMSs took proactive steps to update students, teachers and administrators about new materials, technology, and services. Lumley (1994) concluded that instituting a curricularly integrated and flexibly scheduled library media program in an elementary school required LMS leadership in site-based staff development and good communication with staff and principal support.

#### Library Media Specialist Budgetary Role

A very important administrative role for the LMS is to obtain an adequate budget for the library media program. Angelo's (1994) study of Massachusetts school library media programs revealed that more than 90 percent were operating at the minimum level according to state standards in the areas of personnel, collection, and budget. Lancaster (1998) surveyed superintendents about their attitudes toward elementary LMSs. She reports that though there appears to be agreement on the importance of and role of the LMS, in concrete terms, they do not adequately fund or staff the program in many cases. Almost half of the superintendents spent less than two percent of their total budget on the LMC.

Lance, Welborn and Hamilton-Pennell (1993) found that students at Colorado schools with better funded library media centers tend to achieve higher average test scores, whether their schools and communities are rich or poor and whether adults in the community are well or poorly educated. Bruning (1994) also reported a positive relationship between student

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achievement measures and the proportion of a school district's budget spent on library materials, for both high- and low-income districts. Studies in both Colorado and Oregon (Lance, Rodney and Hamilton-Pennell, 2000b; Lance, Rodney and Hamilton-Pennell, 2001, respectively) found that student reading scores increased with increases in library media expenditures per student. Baughman (2000) reported that in Massachusetts, at elementary and middle school levels, average test scores were higher in schools with larger per pupil expenditures for library materials.

These findings are particularly significant since studies seeking a relationship between school spending as a whole and student performance have shown mixed results. Krashen (1995) found that expenditures for education did not affect reading comprehension scores, while Powell and Steelman (1996) did find that school spending was positively linked to state SAT and ACT performance. A review of over 400 studies of student achievement by Hanushek (1997) demonstrated that there is not a strong or consistent relationship between student performance and school resources after variations in family input are taken into account. Hedges, et. al. (1994) in their meta-analysis of studies of differential school inputs on student outcomes, show that a positive relationship between resources and educational outcomes does exist and is significant enough to be of practical importance. While there is no clear mandate for increasing school spending in general to support student achievement, the research does show that increasing expenditures for school library media materials has a positive effect.

A World Bank meta-analysis of funding studies (Acevedo, 1997?), indicated that differences in aggregate education budgets do not appear to have a tight association with learning outcomes, although class instructional time, school library resources and textbooks, and class frequency of homework are inputs positively associated with improved test scores. Based on this analysis, the PARE program (Programa para Abatir el Rezago Educativo) provided increased resources (including library resources) to Mexican schools. Data indicate that on average, PARE assistance had a significant positive effect on learning outcomes in Spanish. Acevedo concluded that roughly doubling the school resources allocated per student overcame a 30% deficit in test scores among rural students.

### **Summary**

The impact of school library media programs on academic achievement is well documented in the research literature. Studies demonstrate



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consistently that well-equipped, quality school library media centers that have professional staff involved in instruction contribute to the academic success of their students. Likewise, both higher order uses of technology and expenditures for library materials support student achievement. All three roles of the school library media specialist identified in **Information Power** (1998) lead to greater integration of the school library media program into the larger learning community and promote greater student achievement.

### **LISTEN, DO YOU WANT TO KNOW A SECRET?**

*When I introduce the media center to the new incoming ninth graders (usually through one of their English classes early in the school year) I always tell the students that I listen to their suggestions and will consider them if they are appropriate for the school setting - and I do that. I also do lots of one-on-one chats with students, plus students often see me processing new books and that always piques their interest. Many, many times it seems that girls are the ones who tend to hang around and want to talk, but with the Redwall series by Brian Jacques, it has been the boys (and I think we always work much harder on getting books into their hands). If the titles they suggest are appropriate, I purchase them.*

Sandy Benter, Media Specialist  
Waukee High School  
Waukee

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## Methodologies

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### Sample

**Iowa** has hundreds of public schools serving one or more of the three tested grades: four, eight, and eleven. Of the 717 schools serving fourth grade, 169 – 23.6 percent - participated in this study. Of the 401 schools serving eighth grade, 162 – 40.3 percent - chose to be included. Of the 370 schools serving eleventh grade, 175 – 47.3 percent - participated in this study. (See Table 1.)

Throughout this study, the participants were treated as three distinct samples, one for each tested grade. The following table reports the number in the sample for each grade and its proportion of the universe of all schools serving that grade.

**Table 1. Comparison of the Study Sample and the Universe of All Iowa Public Schools Serving Grades 4, 8, and 11 1999/2000**

Grade	Number in sample	Number in universe	Sample as percent of universe
4th	169	717	23.6%
8th	162	401	40.4%
11th	175	370	47.3%

### Survey

The survey of library media (LM) programs focused on several sets of potential predictors of academic achievement. These included: LMC hours, LM staff and their activities, technology, LMC usage, LM resource collections, and finances.

### Respondent Information

The questionnaire began with several items identifying the responding school—its name and address, grades served, and its school district—and the individual respondent—his/her name and title as well as telephone and fax numbers and e-mail address. All of this information was required to assess and address potential deficiencies in the initial response rate to the survey. The grades served were especially important as they made it possible to determine which tested grades a school included.

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### **Hours of the Library Media Center**

The second part of the questionnaire contained items concerning the library media center's hours of operation—both during and after school in a typical school week and in a typical week during summer months. It is expected that schools with higher test scores will be those with libraries that have longer hours.

### **Library Media Staff**

This part of the questionnaire contained items requesting the numbers of people and total person-hours worked by paid staff with different types of qualifications. As noted earlier, one of the most consistent findings of research about the impact of library media centers is the value of staffing them with individuals who are professionally trained for the job. Another consistent finding in past research is the importance of having support staff who free professionals to do their job.

### **Paid Staff Activities**

Perhaps the most fundamental question examined by this study was the value of staffing library media centers with trained individuals who engage in particular professional-level activities. The synergy of these activities, proved to have considerable impact on test scores. While the original Colorado study found strong evidence for the importance of the library media specialist's instructional role, those findings were based on just two items—the number of hours library media staff spent identifying and providing materials for instructional units developed by teachers and planning instructional units with teachers. The 2000 **Iowa** questionnaire included a much more comprehensive list of staff activities. Additional activities on this list included, among others, hours per typical week staff spent: providing library/information literacy instruction to individuals or groups; providing in-service training to teachers and other staff; and teaching collaboratively with classroom teachers. The rationale for asking practitioners to parse their time so many ways was to obtain more specific insights about exactly what it is that library media specialists do that makes a difference in how students perform on achievement tests. Despite an absence of research at this level of detail, it seemed reasonable to expect that some activities would be more effective than others and that their effectiveness might vary by school level (elementary, middle, high school).

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## **Library Media Technology**

A great deal of detailed information about library media technology was collected by the next section of the questionnaire. Respondents were asked to identify numbers of school computers both in and under the jurisdiction of the LMC and elsewhere in the school from which networked library resources may be accessed. Of those numbers, they were further asked to identify numbers of computers meeting various descriptions (e.g., with access to the library catalog, licensed databases, and the Internet).

## **Usage of Library Media Services**

The next part of the questionnaire solicited statistics about how often students and staff (i.e., administrators, teachers, others) interacted with library media center staff for different purposes, including library/information literacy instruction. This section also included items for circulation of library materials as well as counts of materials loaned to other libraries and obtained from outside the library (e.g., interlibrary loans, intra-district loans). Previous research and conventional wisdom indicate that library media specialists who impact student performance are those who are most actively engaged with teachers and students alike, particularly more direct involvement in teaching and learning activities. Evidence from previous research also supports the assumption that students who read more—both for school purposes and voluntarily—do better on tests.

## **Library Media Resources**

Despite the increasingly critical role played by library media staff in the instructional process, what most people think of first when the school library is mentioned is its collection. This section of the questionnaire solicits an inventory of the collection by format, including traditional print sources (e.g., books, magazine and newspaper subscriptions), non-print items (e.g., videos, software packages, and other audio-visual materials), and the rapidly growing “electronic” sector (e.g., CD-ROM, laser discs, and online database subscriptions). Traditionally, conventional wisdom dictated that the larger the collection, the better. As electronic sources of information proliferate and the value of up-to-the-minute information increases, this assumption becomes more questionable. Another wildcard related to this issue is the age of library collections. A larger collection is not necessarily a better one, if it consists increasingly of deteriorating volumes containing obsolete information.

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### **Annual Operating Expenditures for the Library Media Center**

Although few library media centers (LMCs) have budgets that include personnel costs, many have budgets for print and non-print materials, electronic access to information, and miscellaneous operating expenses. This section of the questionnaire asked for whole dollar figures on the total operating expenditures.

### **Area Education Agency Services**

As the AEA media directors were the prime movers of this study, they were interested in exploring the impact of AEA services to library media programs, such as licensed databases and technical assistance.

### **Available Data**

This study depends on demographic data that, whenever possible, was obtained at the school or neighborhood level.

The Iowa Department of Education provided data on the number of students in each school and the number of students eligible to receive free or subsidized school lunches in each school. The percentage of the student body receiving school lunch assistance was computed and then used as a school-specific poverty variable.

Each school's enrollment, subdivided by race and ethnicity, was provided by the Iowa Department of Education. Categories included were Native American, Asian/Pacific Islander, Black, Hispanic, and White. Four of these variables, Native American, Asian/Pacific Islander, Black and Hispanic, were then combined to determine the minority percentage of the school population. School minority percentages were utilized in regression analysis.

The educational attainment variable demonstrates the general level of education in the school's surrounding population. Educational attainment data for 1990 was extracted from the United States Census Bureau Web site. Although 2000 data had been collected at the time of this study, it was not yet publicly available. The variable refers to the percentage of people in

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a community age 20 and over with a high school diploma or equivalency or higher.

Total school expenditure data were also provided by Iowa on a district level. The per student expenditure amount was then accorded to each school within that district. Total school instructional budget and per student expenditures were the only factors considered. There were no program breakdowns in such areas as Talented and Gifted or Vocational.

This study also took into consideration key teacher characteristics such as average years of service, percent of faculty with advanced degrees, and average salaries. These figures were provided by the Iowa Department of Education.

The test scores used as indicators of students' academic achievement in this study are from the 1999-2000 scores on the reading portions of the Iowa Tests for Basic Skills (ITBS) for students in grades 4 and 8 and the Iowa Tests of Educational Development (ITED) for eleventh graders. Although not mandatory in Iowa, these tests were administered to the majority of all fourth, eighth, and eleventh graders in 1999-2000. Thus, one of the major criteria for a school entering the study sample was that its enrollment include students in at least one of those grades.

## **T-Tests**

A t-test is a common statistical technique for comparing two groups. It assesses the significance of the difference between the means (or averages) of the two groups. Accordingly, this test is appropriate for use with a continuous variable like hours of library media specialist staffing. Alternatively, categorical variables have limited values, such as yes/no questions about AEA media services. For example: For schools that do and do not utilize a given AEA service, is the difference in LMS staff hours a reliable one—i.e., one that would be found consistently in alternative samples—or just a fluke? This test is especially appropriate for use with small samples, a relevant asset in this study.

## **Statistical Significance**

Statistical significance is an often-misunderstood concept. Usually, when a statistical finding is reported, the first question someone asks is "Is that

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figure significant?" In this context, the intuitive response is to question the magnitude or size of the figure or the difference between two figures. There are no statistical tests to determine if a difference between two groups is "big enough," particularly if the groups in question represent an entire universe of subjects rather than a sample.

Statistical significance is about reliability or consistency. When a sample is studied, instead of the entire universe (in this case, library media programs in Iowa public schools), a pertinent question is "Are these results truly representative of the universe, or would different samples yield dramatically different results?"

Throughout later sections of this report, statistical significance is reported as "p," as in "probability." Three common milestones for statistical significance are reported: " $p < .05$ ," " $p < .01$ ," and " $p < .001$ ." Respectively, these designations indicate that the probability of reported results being an accident or a coincidence is less than one in 20, one in 100, or one in 1,000. Conversely, these figures may be interpreted to indicate 95, 99, or 99.9 percent certainty that the results are representative.

Generally, the levels of statistical significance reported represent two-tailed tests—ones indicating the probability that the reported results might be either exaggerated or suppressed. In some cases, however, significance levels are based on one-tailed tests—ones indicating only the likelihood that results reported may be exaggerated.

Throughout this study, statistical significance is most often reported in association with Pearson product-moment correlation coefficients in bivariate correlation analyses.

## **Bivariate Correlation**

In this study, bivariate correlation analysis served two purposes: 1) informing decisions about eliminating or combining variables, and 2) assessing the direction and strength of the relationship between two variables, such as the ratio of library media specialist staff hours to students and reading test scores.

Pearson's correlation coefficient ( $r$ ) indicates the extent to which two variables change together on a scale of  $-1.00$  to zero to  $1.00$ . Negative values indicate that a decline in one variable is associated with an increase in another, while positive values indicate that two variables increase together. For each report of this statistic, there is a corresponding indication of its statistical significance.

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(See earlier discussion about interpreting statistical significance.) In addition to assessing the direction and strength of relationships, Pearson's  $r$  helped to determine if any data elements were so strongly associated as to be either unnecessary or problematic if used together. In some cases, this statistic provided the basis for decisions to combine variables. Such data reduction was deemed desirable as it focused and simplified the model to be tested.

The significance of a bivariate correlation may be tested on a one- or two-tailed basis. Two-tailed significance testing assumes that the direction of the presumed relationship is unknown, thus one wishes to assess the possibility of error in either direction. One-tailed significance testing assumes that the direction of the presumed relationship is known, making it necessary to assess the possibility of error in only one direction. Because previous research consistently indicates that the effects on academic achievement of the library media variables under study are positive, some relationships significant on a one-tailed basis, but narrowly not on a two-tailed basis, will be reported.

## **Factor Analysis**

While correlation analysis examines relationships between pairs of variables, factor analysis establishes relationships among groups of related variables. This technique was particularly useful when two or more variables needed to be combined, but were measured on different scales (e.g., dollars and percentages).

Instead of reporting the correlation of each variable with each other variable, factor analysis helps to create composite factors by reporting factor loadings that indicate how strongly and in what direction each variable is related to a factor. A factor loading indicates how much weight is assigned to a given factor for a given variable. Factors on which a variable loads highly are closely related to that variable. At this stage, factor analysis was a more efficient method of confirming--and discovering--relationships among variables than comparing multiple relationships between pairs of variables.

Exactly how factor analysis works need not be understood. When sorted by factor, the results are easy to interpret, since a researcher can readily identify variables that load highly on a given factor. The researcher, however, must interpret what a factor represents and decide what to call it. The factor analysis technique will also generate a factor score based on a school's values on the variables that load on a factor. In several instances, closely related variables were replaced by a factor score.



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### **Multiple Regression Analysis**

Multiple regression was used to weigh the effects of library media variables relative to school and community variables as predictors of academic achievement. This technique is especially useful in assessing complex relationships among several potential predictors, because it weighs the importance of each predictor variable while ruling out the effects of the others.

Correlation and factor analyses of the original data elements helped to refine the model. They provided the basis for decisions to eliminate redundant variables and combine those that were so closely related as to produce statistical "static." In a multiple regression analysis, such "noise" complicates a model unnecessarily and suppresses the effects of other predictors statistically.

It is very important to note that this type of analysis makes two kinds of assumptions. It assumes causal order. The presumed cause-and-effect order in this model is suggested by previous research and practical experience. It is intuitively obvious that the status of library media centers may depend on more general school circumstances, just as they, in turn, may be driven by community conditions. It is equally apparent, however, that each of these sets of variables may affect academic achievement either directly or indirectly via some other variable not represented in this model.

An assumption of causal closure supposes that no critical variables are omitted from the model. This assumption is addressed as fully as was practically possible by this study. Without apology, its focus is on assessing the impact of school library media centers on academic achievement. The community and school variables included represent major antecedent conditions that might explain away that impact. For instance, the possibility that a correlation between the level of library media (LM) staffing and test scores might be a spurious result of generally high levels of staffing in a school was addressed by including the teacher-pupil ratio. Similarly, the possibility that a correlation between time spent by LM staff on library/information literacy instruction and test scores might be a spurious result of community affluence or socio-economic advantages was addressed by considering several alternative measures of those variables. Likely predictors of academic achievement for which data are not available include parental involvement in a student's education, extra-curricular activities of students, characteristics of school curricula, and pedagogical techniques of teachers. Nonetheless, no relationships between such likely predictors and the level of development of LM programs are anticipated.

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Because the original number of variables was large, it is assumed that an acceptable degree of causal closure was established. Nonetheless, Multiple R Square ( $R^2$ ) is taken as a sufficient statistical indicator of the extent to which the model may not be causally closed. This statistic indicates the percentage of variation in test scores which is explained by a given group of predictors.

Separate analyses were conducted for elementary, middle, and high school levels. In each case, multiple regression was used to generate initial path coefficients. Variables whose path coefficients were less than .10 and which were not statistically significant at at least the .05 level (generally accepted standards) were automatically eliminated from the analysis.

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### **TEAMWORK TAKES TIME, YIELDS SUCCESS**

*I have been fortunate to be able to collaborate most with teachers in grades 4 and 5. They bring students into the media center to work on several units each year, including animals, pioneers and the fifty states. Students become very aware of the research process and learn about the resources in the media center.*

*Last year, I was able to develop a math unit with the middle school math teacher on using spreadsheets. This year, the language arts teacher and the social studies teachers will be working with me on a Webquest unit for the Olympics and the Civil War. The neat thing about Webquests is that students can have access to first hand accounts of Civil War Battles through journals or newspaper accounts of the time, to primary resource documents through the Smithsonian site and their American Memory Collection.*

*I am on the technology committee which will be developing assessments for technology use by students in the next two years and on the leadership team which is restructuring change in the school.*

*For the past two years we've emphasized increasing student reading achievement. We just started Accelerated Reader, which I have in the media center. I am a member of the reading committee and head Read Across America here. I am also a member of a community board which looks at school issues 3 times a year. My administration is very supportive of my program and I feel valued as a member of the faculty. I feel that I am making a difference with the students and the faculty in this building.*

*I would collaborate more but time to plan is really the key. I received a grant 2 years ago to plan and work with the 5th grade teachers to revamp the State Project to include more technology and to give students more choice. That was ground breaking at the the time because we were able to take 2 whole days to plan and develop what would be done, when it would be done, and who would do what. The grant came through our AEA 2 which specified that the team that received the grant must include a media specialist. With funding the way it is now, we may not have opportunities like that for some time, if ever again.*

Dawn Bassett, School Media Specialist  
Garner-Hayfield Community School  
Garner

# Make the Connection

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## Library Media Predictors of Reading Scores

In promoting high academic achievement, the success of any library media (LM) program depends on the presence of at least one full-time, professionally-trained and credentialed library media specialist (LMS). Notably, at all three grade levels, schools with average or above levels of LMS staffing tend to have average or above reading scores. Conversely, schools with below average levels of LMS staffing tend to have below average reading scores. (See Tables 2 through 4.)

**Table 2. Fourth Grade Iowa Test Reading Scores by Level of Professional LM Staffing for Elementary Schools, 1999/2000**

Level of LM Program Staffing	Percent Proficient or Above on 4th Grade Iowa Reading Test		Total
	Average or above	Below average	
Average or above	39 54.2%	33 45.8%	72 100%
Below average	48 50.0%	48 50.0%	96 100%
Total	87 51.8%	81 48.2%	168 100%

### STUDENTS BATTY OVER RESEARCH

*During the last month I have been collaboratively teaching a unit on bats with a fifth grade teacher at Irving. Students began by watching a video, and then the classroom teacher taught them facts, such as they are mammals, invertebrates, etc. As the LMS I gave them lessons on factmonster.com., Searchasaurus, and using various sources to complete a report or project. I filled out a request for a "Scholarship" from the Dorothy Pecaut Nature Center, and naturalist Teresa Minaya came out and gave a marvelous presentation on bats. The classroom teacher has been showing students how to take notes. Tomorrow I will show the students the PowerPoint presentation I made on bats, and then students will begin the research phase of the unit. These students have learned a great deal about bats and doing research. Collaboration works!*

Debby Berthelsen, Library Media Specialist  
Sioux City Community Schools  
Sioux City

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**Table 3. Eighth Grade Iowa Test Reading Scores by Level of Professional LM Staffing for Middle Schools, 1999/2000**

Level of LM Program Staffing	Percent Proficient or Above on 8th Grade Iowa Reading Test		Total
	Average or above	Below average	
Average or above	33 53.2%	29 46.8%	62 100%
Below average	48 49.5%	49 50.5%	97 100%
Total	81 50.9%	78 49.1%	159 100%

### HINTON TEACHER SALUTES LIBRARIAN

*The 8<sup>th</sup> grade students at Hinton Community School are currently preparing research papers. For this project, the students have been assigned a decade in the 20<sup>th</sup> century. Within that decade, each student has chosen to research three people in a related area. A student who chose 1940-1950, for example, is researching three World War II generals. Another is focusing his paper on all-star basketball players of the 1990's.*

*In preparation for this research, our media specialist, Lori Minnard, introduced our students to various information skills. She explained our library's electronic card catalog and the Dewey Decimal System. The students then chose random topics that she had prepared and practiced keyword searching and finding a book according to the Dewey system.*

*We traveled to the school's technology center, and Mrs. Minnard guided the students through the EBSCO database, again giving them topics to practice researching. Each student will be required to use one EBSCO source in his or her paper. Mrs. Minnard also informed the students about various search engines. The 8<sup>th</sup> graders explored a few popular sites. Using reliable sources was discussed, as Mrs. Minnard explained the differences among ".com", ".org", ".edu", and ".gov" sites.*

*The students are currently in the reading and note taking steps of the process. They continue to use Mrs. Minnard as a resource. I, as the classroom teacher, am grateful for her help with this project. Our students are truly gaining life skills through this project, and are experiencing teamwork between staff members and technology in the classroom firsthand.*

Jennifer Drees, 7th grade Language Arts teacher  
Hinton Community School  
Hinton

## M a k e t h e C o n n e c t i o n

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

**Table 4. Eleventh Grade Iowa Test Reading Scores by Level of Professional LM Staffing for High Schools, 1999/2000**

Level of LM Program Staffing	Percent Proficient or Above on 11th Grade Iowa Reading Test		Total
	Average or above	Below average	
Average or above	40 55.6%	32 44.4%	72 100%
Below average	51 50.5%	50 49.5%	101 100%
Total	91 52.6%	82 47.4%	173 100%

Professional LMS staffing alone, however, does not suffice to explain how LM programs impact academic achievement. The LMS is simply the point person or prime mover who makes things happen in the LM program. For students to benefit from LM services, LMCs must be kept open; LM staff must pursue a variety of activities integral to high quality teaching and learning, LM collections must be developed and promoted, technology—both in the LMC and beyond—must be put to appropriate instructional uses, and the LM budget must be defended and developed. At one or more of the three grade levels under study, each of these characteristics of a strong LM program correlated positively and significantly with reading scores.

### **LETTER FROM A TEACHER: LIBRARIAN MOTIVATES TEENAGERS**

*As a social studies teacher I use our library facility on a regular basis. As technology seems to play an ever-increasing role in education I find the need to rely on our media specialist, Ann Bell.*

*The senior government classes have several research projects that require using the library. Perhaps the one that's the most fun is a simulated election. The students create their own buttons, banners, newspapers, PowerPoint presentations, issues papers, and speeches. Using the latest technology has really enhanced the quality of the finished products.*

*Ann has entered a number of the students' projects in state, national, and international competitions where the students have won numerous awards in recent years. Ann Bell and our library media staff are always friendly and helpful to the students and staff. Our media staff is one of the most valuable assets that our community possesses.*

Simon W. Rasche, Social Studies Teacher  
Camanche High School  
Camanche

# M a k e t h e C o n n e c t i o n

## Quality School Library Media Programs Impact Academic Achievement in Iowa

### Elementary School Level

Fourth grade reading scores tend to be higher for Iowa elementary schools whose library media (LM) programs have:

- more weekly hours of library media specialist staffing (both total and per student),
- staff who spend more weekly hours planning and teaching cooperatively with teachers, and managing school computer networks;
- collections that include more volumes per student, more magazine and newspaper subscriptions (both total and per 100 students), and more videos per 100 students;
- collections containing volumes with more recent copyright dates, especially for reference sources, and
- higher levels of in-library usage of materials. (See Table 5.)

**Table 5. School Library Predictors of Fourth Grade Reading Scores in Iowa Elementary Schools, 1999/2000**

Variable	Correlation coefficient (r)	Statistical significance (p)
<b>Library Staffing</b>		
Weekly hours of LMS	.145	.030†
Weekly hours of LMS per 100 students	.178	.021
<b>Staff Activities (Percent of Weekly Hours)</b>		
Planning with teachers	.144	.032†
Teaching with teachers	.129	.049†
Managing computer, automation, network	.143	.033†
<b>Information Resources</b>		
Print volumes per student	.154	.049
Magazine & newspaper subscriptions, total	.193	.015
Magazine, newspaper subscriptions per 100 students	.151	.029†
Videos per 100 students	.136	.042†
<b>Copyright Year</b>		
Print volumes	.225	.007
Reference volumes	.205	.016
<b>LMC Usage</b>		
In-library use per 100 students	.188	.018

†One-tailed statistical significance

# Make the Connection

Quality School Library Media Programs Impact Academic Achievement in Iowa

## Middle School Level

Iowa eighth graders tend to earn higher reading scores when their library media centers (LMCs):

- are open longer hours before school;
- have more weekly hours of LMS staffing per student; and
- are used more.

In middle schools with higher reading scores, students are more likely to visit the LMC as part of a class or other group, to visit the LMC individually for information skills instruction, and to use LM information resources that may not be available for use outside the LMC. (See Table 6.)

**Table 6. School Library Predictors of Eighth Grade Reading Scores in Iowa Middle Schools, 1999/2000**

Variable	Correlation coefficient (r)	Statistical significance (p)
<b>Library Hours</b>		
Hours LMC open before school per week	.130	.050†
<b>Library Staffing</b>		
Weekly hours of LMS staffing per 100 students	.153	.054
<b>LMC Usage</b>		
In-library use per 100 students	.142	.043†
Individual visits for info skills instruction per student	.153	.031†
Group visits per 100 students	.175	.028

†One-tailed statistical significance

### STOCK THE SHELVES, AND THEY WILL COME

*Ever since I started attending Linn-Mar Middle School, I have wanted to read more, and with a huge library like that it's not hard to find a book to read.*

Rachelle Ritzman, 8th grade student  
Linn-Mar Middle School  
Marion



# Make the Connection

Quality School Library Media Programs Impact Academic Achievement in Iowa

## High School Level

Eleventh grade reading scores tend to be higher for Iowa high schools whose library media centers (LMCs):

- have more weekly hours of library media specialist (LMS) staffing per student,
- offer more hours of reading incentive activities for students (both total hours and percent of weekly staff hours), and
- have larger collections of audio materials, including compact discs (CDs) and audio cassettes. (See Table 7.)

**Table 7. School Library Predictors of Eleventh Grade Reading Scores in Iowa High Schools, 1999/2000**

Variable	Correlation coefficient (r)	Statistical significance (p)
<b>Library Staffing</b>		
Weekly hours of LMS staffing per 100 students	.136	.038†
<b>Staff Activities</b>		
Offering reading incentive activities for students	.166	.031
Offering reading incentive activities for students (percent of weekly hours)	.147	.029†
<b>Information Resources</b>		
Audio materials (cassettes, CDs, LPs)	.146	.033†

†One-tailed statistical significance

### REACHING OUT BRINGS THEM IN

*Collaboration makes a difference - Getting teachers to take ownership of their library is a key to getting them involved. At Jefferson, we've strived to do just this by: surveying teachers with a "how may we help" survey at the beginning of the year, hosting a Bagel & Book Talk monthly last year, sending out a periodic Library Newsletter, weekly updates in the staff bulletin, invitations to have meetings in the library to bring teachers here to browse. As a result, I even had math teachers doing research in the library. One veteran science teacher who had never brought his students to the library collaborated on a weeklong unit on biomes. Make teachers feel welcome. It will pay off.*

Becky Stover, Media specialist  
Jefferson High School  
Cedar Rapids Community School District

## **M a k e   t h e   C o n n e c t i o n**

Quality School Library Media Programs Impact Academic Achievement in Iowa

### **TEACHING TOGETHER, TECHNOLOGY MULTIPLY RESULTS**

*Sophomore biology students are required to read articles related to each chapter and evaluate them. The first week of school the biology teacher and I bring them into the library for a review of the resources available. I demonstrate the electronic resources such as SIRS, EBSCO, and Electric Library which would most likely be used for their article. I update a vertical half sheet of our electronic resources with our user names and passwords they need to get into them. Each is given a sheet as many of these resources can be accessed at home also. Copies are also placed by the computers in the library for easy access.*

*Sophomore students for history and science classes do a "cemetery" project. From the beginning I am involved with their research from demonstrating Com Cat and SILO from which they can borrow books to using other electronic resources, to showing students how to use mPower and PowerPoint, to transferring their files through the school server to other computers, to showing them how to set up the projection equipment which the teachers require for their presentations. After that project is completed, the teachers and I re-evaluate the parts of the rubric to try to make it a more meaningful learning experience for the students if possible.*

*Presently I serve on the Technology Committee and the Inservice Committee and I help to read and write grants for our school. I also work very closely with the Technology Coordinator to discuss present and future technology needs and solve everyday problems/needs for teachers.*

*In collaboration with the 7th Grade English teacher, we do an extensive unit (about 10 lessons) on Information Sources. This is both an orientation to the library and its procedures and resources and a preparation for the research paper required in English. Time for hands-on practice using Com Cat, EBSCO, SIRS, Electric Library, Current Biography, the scanner, and other resources is given.*

Judy Thompson, K-12 Teacher Librarian  
Manning Community School District  
Manning

## **Program Benefits of LMS Staffing Levels**

---

Across all school levels, the one common predictor of reading scores is the level of library media specialist (LMS) staffing. Because such staffing correlates consistently with reading scores, it is worth exploring how a professionally-trained LMS affects a school’s LM program. Levels of LMS staffing relate to the LMC’s hours of operation, the types of activities pursued by LM staff, the information resources and technology made available to students and teachers, and the expenditures on the LM program.

### **Elementary School Level**

The value of library media specialists (LMSs) at the elementary level is evidenced by the characteristics of successful library media (LM) programs that are linked to the presence of professionally-trained managers of such programs. These characteristics include LMC hours, LM staff activities, information technology and resources, and LM expenditures.

#### **LMC Hours**

For Iowa elementary schools, as the total weekly hours of LMS staffing rise, LMC hours of operation before, during, and after school increase, and the number of hours during which the LMC must be closed during school decrease. These correlations likely reflect the fact that LMSs are trained to understand and appreciate the value of making the services of LM programs available to the fullest extent possible. (See Table 8.)

**Table 8. LMC Hours and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

<b>Variable</b>	<b>Library Media Specialist Staffing</b>	
	<b>Total LMS Hours per Week</b>	
	<b>Correlation coefficient (r)</b>	<b>Statistical significance (p)</b>
<b>Library Hours per Week</b>		
Hours LMC is open before school	.334	.000
Hours LMC is open during school	.291	.000
Hours LMC is open after school	.343	.000
Hours LMC closed during school	-.380	.000

# M a k e t h e C o n n e c t i o n

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

## LM Staff Activities

In Iowa elementary schools, schools with more hours of LMS staffing and more LMS hours per 100 students are ones where LMC staff tend to spend more time on a weekly basis:

- planning instructional units with teachers,
- providing in-service training to teachers,
- attending faculty meetings,
- working on standards and curriculum committees, and
- teaching cooperatively with classroom teachers.

Weekly hours spent on the following activities only correlate with total hours of LMS staffing. These activities include:

- managing school computer networks,
- offering reading incentive activities,
- meeting with other building or district LM staff,
- meeting with the principal and other administrators, and
- developing LM collections. (See Table 9.)

**Table 9. Selected Library Media Staff Activities and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing per Week			
	Total LMS Hours		LMS Hours per 100 Students	
	Correlation coefficient (r)	Statistical sig. (p)	Correlation coefficient (r)	Statistical sig. (p)
<b>Staff Activities (Hours per Week/Percent of Weekly Hours)</b>				
Planning instructional units with teachers	.512	.000	.244	.002
Teaching cooperatively with classroom teachers	.373	.000	.131	.048†
Providing in-service training to teachers	.502	.000	.208	.007
Offering reading incentive activities	.338	.000		
Developing collection	.275	.000		
Meeting with building/district LM staff	.302	.000		
Meeting with principal/administrators	.283	.000		
Attending faculty meetings	.434	.000	.140	.037†
Meeting with standards, curriculum committees, teams, task forces	.378	.000	.169	.031
Managing computer network	.387	.000		

† One-tailed statistical significance

# Make the Connection

Quality School Library Media Programs Impact Academic Achievement in Iowa

## Information Resources

Whether LMS staffing is considered in terms of total weekly hours or hours per 100 students, it is correlated most strongly in this analysis with the numbers of print volumes, magazine and newspaper subscriptions, and videos in the LMC collections. Numbers of reference books and audio materials also correlated with LMS staffing, albeit more weakly. These correlations are probably the least surprising in this report. One of the best-known and most important responsibilities of the LMS is to develop the LMC's collections. (See Table 10.)

Collection development requires an assessment of what is needed to support the school's curriculum and district academic standards, consultation with teachers and administrators, and judicious selection of books and other materials from the universe of information resources.

**Table 10. Library Media Information Resources and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing per Week			
	Total LMS Hours		LMS Hours per 100 Students	
	Correlation coefficient (r)	Statistical sig. (p)	Correlation coefficient (r)	Statistical sig. (p)
<b>Information Resources</b>				
Print volumes	.616	.000	.505	.000
Reference books	.245	.002	.176	.025
Electronic reference titles			.139	.039†
Magazine, newspaper subscriptions	.426	.000	.551	.000
Audio materials	.258	.001		
Video materials	.421	.000	.296	.000

† One-tailed statistical significance

## Information Technology

In Iowa elementary schools, schools with more hours of LMS staffing and more LMS hours per 100 students are ones that make information technology more readily available to students. (See Table 11.) Surprisingly, the strongest correlation is between LMS staffing and the number of library

## **M a k e   t h e   C o n n e c t i o n**

### *Quality School Library Media Programs Impact Academic Achievement in Iowa*

computers providing access to the school or district home page. Also related positively and significantly to LMS staffing are:

- the total number of library computers, and
- the number of library computers providing Internet access.

Only total weekly hours of LMS staffing correlated with other types of technology in the LMC, including:

- library computers providing access to databases,
- library computers providing access to the library catalog,
- library computers providing links to public library resources.

When located elsewhere in the school, the numbers of computers providing all of the above-mentioned types of access correlate with total hours of LMS staffing.

#### **MULTIMEDIA MOJO PACKS CURRICULUM PUNCH**

*I serve a building of 334 students (Clear Creek) in a grade 3-5 building in Clear Lake, Iowa. I also serve a kindergarten building (Sunset) with 120 students in the same community. We have for some years integrated our information management skills into the curriculum. We have block scheduling where students and the teacher come for a continuous time, the skill is taught and then we use that skill to produce a product. This can last for a few days upwards to a 2 week period.*

*Our benchmarks call for a multimedia project to be completed at each level and we often try to work that in with our skills. The multimedia project is an extension of the curriculum. For instance, third graders produce a Kid Pix slide show with slides depicting one of the disasters studied in their science unit, such as a tornado, snow storm, or hurricane. Fourth graders have the objective of gathering information from various resources. They review the automated card catalog, the online encyclopedia, and are introduced to EBSCO. As a product they produce a poster or Kid Pix multimedia project on rainforest animals.*

*All of the projects that we do are planned by both the teacher and the media specialist.*

Doug Harrenstein, Media Specialist  
Clear Lake Community Schools  
Clear Lake

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**Table 11. LM Information Technology and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing per Week			
	Total LMS Hours		LMS Hrs per 100 Students	
	Correlation coefficient (r)	Statistical sig. (p)	Correlation coefficient (r)	Statistical sig. (p)
<b>Information Technology</b>				
<i>Computers under library supervision:</i>				
All library computers	.364	.000	.163	.036
With Internet access	.362	.000	.148	.030†
With access to the LM catalog	.243	.002		
With access to LM databases	.360	.000		
With access to district/school home page	.370	.000	.246	.001
With a menu option or bookmark to a public library	.232	.003		
<i>Computers located elsewhere in school with access to LM resources:</i>				
With Internet access	.184	.028		
With access to the LM catalog	.188	.028		
With access to LM databases	.195	.020		
With access to district/school home page	.277	.001		
With a menu option or bookmark to a public library	.140	.049†		

†One-tailed statistical significance

## LMC Usage

Predictably, several types of library media center (LMC) usage correlate with levels of library media specialist (LMS) staffing. For Iowa elementary schools with higher levels of LMS staffing, students are more likely to visit their LMC in groups for the purpose of information skills instruction. This type of usage correlates relatively strongly with both total weekly LMS hours and LMS hours per 100 students. (See Table 12.)

Where total weekly LMS hours are greater, students are more likely to make group visits to the LMC and to borrow circulating books and other materials.

To a lesser degree, students served by well-staffed LM programs are also likelier to use information resources in the library, to visit the LMC individually, and to utilize interlibrary loan services to obtain needed information from other libraries.

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**Table 12. LMC Usage and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing per Week			
	Total LMS Hours		LMS Hours per 100 Students	
	Correlation coefficient (r)	Statistical sig. (p)	Correlation coefficient (r)	Statistical sig. (p)
<b>LMC Usage</b>				
Individual visits to LMC	.136	.043†		
Group visits to LMC	.403	.000		
Group visits for info skills instruction	.414	.000	.289	.000
Circulation	.345	.000		
In-library use of materials	.161	.043	.204	.010
Inter-library loans received	.172	.030		
Inter-library loans to others	.198	.012		

† One-tailed statistical significance

### LM Expenditures

There is a relatively strong correlation between the level of LMS staffing and LM operating expenditures. (See Table 13.) As LM budgets typically do not include a personnel component, their bulk can be attributed generally to the costs of information resources--print, non-print, and electronic. As a result, it seems likelier that the presence of the LMS influences the size of the LM budget rather than the other way around. A full-time LMS who is an integral part of the school's leadership is the best possible advocate for the LM program, particularly when its budget is up for review.

**Table 13. LM Expenditures and Library Media Specialist Staffing in Iowa Elementary School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing per Week			
	Total LMS Hours		LMS Hours per 100 Students	
	Correlation coefficient (r)	Statistical sig. (p)	Correlation coefficient (r)	Statistical sig. (p)
<b>LM Expenditures</b>				
LM operating expenditures	.514	.000	.500	.000



## **M a k e   t h e   C o n n e c t i o n**

Quality School Library Media Programs Impact Academic Achievement in Iowa

### **POPPER'S PENGUINS PROMOTE MULTI-LAYERED LEARNING**

*I am a media specialist in a K-5 building in Marshalltown. This year I am concentrating on working with third, fourth and fifth graders to increase their skills at doing basic research and creating PowerPoint presentations to share with fellow class members.*

*I am just finishing a fairly complex project with 5 third graders on penguins. The teacher and I work well together, but don't seem to get many opportunities to do that! She asked me to do some "stretching" work with these children, who are all performing at grade level or above in almost all areas.*

*We are doing this project as a literature integration project, since they have been reading Mr. Popper's Penguins with their classroom teacher. We have used print resources, Web sites, and online references to research different species of penguins. The students have worked to prepare a PowerPoint presentation as their culminating activity. They also have learned about copyright, plagiarism, notetaking, the use of spreadsheets, and of course, proper preservation of their project on our computer server! We have averaged 3 class sessions per week, but schedule those flexibly. We are really trying to show teachers that sometimes, this is the way to successfully work with children. The project has provided a great model for that as well as planning and cooperation between the media specialist and the teacher. The children have been anxious to work as many days as possible!*

Barb Burgess, Media Specialist  
Hoglan Elementary School  
Marshalltown

# Make the Connection

Quality School Library Media Programs Impact Academic Achievement in Iowa

## Middle School Level

As at the elementary level, library media specialist (LMS) staffing in Iowa middle schools correlated with several characteristics of successful library media (LM) programs: LM staff activities, information resources and technology, LMC usage, and LM expenditures.

### LM Staff Activities

As in similar studies for other states, the analysis at the middle school level revealed some anomalous results. For Iowa middle schools, the only LM staff activities that correlated with LMS staffing were offering reading incentive activities and meeting with standards and curriculum decision-makers. (See Table 14.) Where LMS staffing levels are higher, more weekly LM staff hours are spent in these activities. Although both correlations are relatively weak, the finding about reading incentive activities is somewhat surprising, as such activities are more often associated with elementary school LM programs.

**Table 14. Selected LM Staff Activities and Library Media Specialist Staffing in Iowa Middle School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Staff Activities (Percent of Weekly Hours)</b>		
Offering reading incentive activities	.190	.017
Meeting with standards, curriculum committees, teams, task forces	.173	.031

In addition to these activities, LM specialists in Iowa middle schools are more likely to request technical assistance and to acquire databases from their Area Education Agency (AEA) library media programs. Middle school LM programs that benefit from AEA technical assistance average 11.2 weekly hours of LM specialist staffing per 100 students, compared with 8.4 hours for programs that do not reap such benefits ( $t = 2.450, p < .05$ ). Similarly, programs that acquire AEA databases average 10.3 weekly hours of LM specialist staffing per 100 students, compared with 5.1 hours for programs that do not obtain such databases ( $t = 2.521, p < .05$ ).

## **M a k e   t h e   C o n n e c t i o n**

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### **ACCELERATED READING IS SWEET**

*We have the Accelerated Reader program. Every so often students can get a "Free Guess" slip from their reading teacher when they have passed a test. This allows them to come to the library and guess the number of m & m's, candy corn, kisses, etc that are in a jar. The one who comes the closest without going over wins the jar. This is quite popular.*

*At Christmas time students who have the required number of AR points get a red, white or green slip of paper. We use these to make a chain to go around our Christmas tree. We then pick 3-4 slips of paper off the tree and those students get a prize. This is also quite popular. I use my fine money to pay for these. Kids don't seem to mind paying fines because they know the money is being used for prizes like these.*

Barb Ballinger  
Pella Middle School  
Pella

### **Information Resources**

Findings about the relationships between LMS staffing and different types of information resources also confirm results reported for the elementary level. Iowa middle schools with more weekly LMS hours per 100 students tend to have higher item-to-student ratios for print volumes, magazine and newspaper subscriptions, reference books, and video materials. (See Table 15.) To a lesser degree, such schools are also more likely to have high ratios for electronic reference titles and audio materials.

## M a k e   t h e   C o n n e c t i o n

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

**Table 15. LM Information Resources and Library Media Specialist Staffing in Iowa Middle School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Information Resources</b>		
Print volumes per student	.621	.000
Reference books per student	.329	.000
Electronic reference titles per 100 students	.203	.012
Magazine, newspaper subscriptions per 100 students	.589	.000
Audio materials per 100 students	.151	.032†
Video materials per 100 students	.326	.000

†One-tailed statistical significance

### Information Technology

For Iowa middle schools, LMS staffing is correlated positively and significantly with the ratios of library and library-linked school computers to students. (See Table 16.)

Middle schools that have more hours of LMS staffing tend also to have more library computers, and especially more computers providing access to the Internet and LM databases, the school or district home page, and the LM catalog.

Middle schools with well-staffed libraries are also more likely to have computers school-wide that provide access to LM databases, the Internet, the school or district home page, and the library catalog.

## M a k e t h e C o n n e c t i o n

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

**Table 16. LM Information Technology and Library Media Specialist Staffing in Iowa Middle School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Information Technology</b>		
<i>Computers per 100 students under library supervision:</i>		
All library computers	.312	.000
With Internet access	.277	.000
With access to the LM catalog	.160	.047
With access to LM databases	.277	.000
With access to district or school home page	.227	.004
<i>Computers per 100 students located elsewhere in school with access to LM resources:</i>		
All computers located outside LMC with LM access	.461	.000
With Internet access	.440	.000
With access to the LM catalog	.154	.040 <sup>†</sup>
With access to LM databases	.488	.000
With access to district or school home page	.374	.000

† One-tailed statistical significance

### LMC Usage

As at the elementary level, middle schools with more professionally-staffed LMCs tend to be better utilized. Where weekly LMS hours per 100 students are higher, individual students are more likely to:

- visit the LMC in classes or other groups,
- borrow circulating materials,
- visit the LMC for group instruction in information skills,
- visit the LMC individually,
- use information resources in the library, and
- utilize interlibrary loan services to obtain needed resources from other libraries. (See Table 17.)

## **M a k e   t h e   C o n n e c t i o n**

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### **THE #1 RESOURCE IS THE LIBRARIAN**

*Sixth graders meet every day for 6 weeks for a media skills exploratory class. Along with the usual library topics, we also get into designing good title pages, inserting clip art and scanned and digital camera pictures into a document. We spend quite a bit of time working with bibliographies. We have found that even though these weren't taught along with the research project itself, students do remember what we have done and the teachers can spend more quality time with the actual writing process. The quality of the reports has improved considerably.*

*We are working very hard with critical thinking skills in our social studies classes. Students are to pick a topic, research both sides of the topic, get other peoples' points of view on the topic, and then form an opinion of their own based on their research. I work directly with teachers finding Web sites and then creating a hot list of these sites that students can access. We put the hot list on the school web page and then students can access these sites and work on their projects at home.*

*When teachers do research projects I suggest print materials--make a resource cart for them, look up sites on the internet and make hot lists for their classes and students have received at least two periods of instruction on using the internet. This has included using key words, Boolean logic, cutting and pasting notes, down loading graphics, ethics and Web page evaluation.*

*Collaboration with teachers--They wouldn't dare do a project without talking to me first! I think they are scared not to--only kidding, I hope. I work very closely with our sixth grade teachers because of our Media Skills class.*

Barb Bellinger, Librarian  
Pella Middle School  
Pella

## M a k e t h e C o n n e c t i o n

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

**Table 17. LMC Usage and Library Media Specialist Staffing in Iowa Middle School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Library Usage</b>		
Individual visits to LMC per student	.454	.000
Group visits to LMC per 100 students	.542	.000
Individual visits for info skills instruction per student	.286	.000
Group visits for info skills instruction per 100 students	.391	.000
Circulation per student	.528	.000
In-library use per 100 students	.261	.001
Inter-library loans received per 100 students	.211	.009

### LM Expenditures

Iowa middle schools with more weekly LMS hours per 100 students are likely to have higher LM operating expenditures per student. (See Table 18.) As at the elementary level, this relationship simply demonstrates the fact that the leading advocate for a school's LM budget is its LMS. Where LMS hours are reduced or such positions are eliminated, the erosion of the LM budget—and, as a result, the school's instructional resources—is practically inevitable.

**Table 18. LM Expenditures and Library Media Specialist Staffing in Iowa Middle School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>LM Expenditures</b>		
LM operating expenditures per student	.468	.000

# Make the Connection

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## High School Level

As at the elementary and middle school levels, the level of LMS staffing in Iowa high schools is correlated positively and significantly with LM staff activities, information resources and technology, LMC usage, and LM expenditures.

### LM Staff Activities

The anomalous correlation between LMS staffing and LM staff hours spent offering reading incentive activities first observed at the middle school level was repeated for Iowa high schools. In this case, however, it was the lone staff activity that correlated with LMS staffing. (See Table 19.)

**Table 19. Reading Incentive Activities and Library Media Specialist Staffing in Iowa High School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Staff Activities (Percent of Weekly Hours)</b>		
Offering reading incentive activities	.240	.002

In addition to reading incentive activities, LM specialists in Iowa high schools are more likely to request technical assistance from their Area Education Agency (AEA) library media programs. High school LM programs that request AEA technical assistance average 9.7 weekly hours of LM specialist staffing per 100 students, compared with 7.2 hours for programs that do not obtain AEA assistance ( $t = 2.851, p < .05$ ).

### Information Resources

As at other school levels, LMS staffing at Iowa high schools correlated predictably with the level of information resources available to students and teachers via the LMC. Where weekly LMS staff hours are higher, LMC collections include more magazine and newspaper subscriptions and print volumes, and, to a lesser extent, reference books and videos. (See Table 20.)



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**Table 20. LM Information Resources and Library Media Specialist Staffing in Iowa High School Libraries, 1999/2000**

<b>Variable</b>	<b>Library Media Specialist Staffing</b>	
	<b>LMS Hours per 100 Students per Week</b>	
	<b>Correlation coefficient (r)</b>	<b>Statistical significance (p)</b>
<b>Information Resources</b>		
Print volumes per student	.438	.000
Reference books per student	.292	.000
Magazine, newspaper subscriptions per 100 students	.523	.000
Video materials per 100 students	.151	.053

### Information Technology

As at other school levels, LMS staffing in Iowa high schools correlates positively and significantly with the availability of information technology, both within the LMC and throughout the school. (See Table 21.) The difference at the high school level is that computers located in the library are less important and those located elsewhere in the school are more important than before. Notably, the strongest correlations for library computers are for those linking to the school or district home page and LM databases. Computers school-wide that provide access to LM databases were the most strongly correlated with LMS staffing levels.

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**Table 21. LM Information Technology and Library Media Specialist Staffing in Iowa High School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>Information Technology</b>		
<i>Computers per 100 students under library supervision:</i>		
All library computers	.155	.042
With Internet access	.192	.012
With access to the LM catalog	.166	.030
With access to LM databases	.259	.001
With access to district or school home page	.374	.000
<i>Computers per 100 students located elsewhere in school with access to LM resources:</i>		
All computers located outside LMC with LM access	.347	.000
With Internet access	.336	.000
With access to LM databases	.478	.000
With access to district or school home page	.213	.011

## LMC Usage

Iowa high schools, like elementary and middle schools, demonstrate the extent to which LMC usage can be influenced by the level of LMS staffing. At high schools with more weekly LMS hours per 100 students, the per student usage ratios tend to be higher. (See Table 22.) Better-staffed LM programs encourage students to:

- borrow more circulating books and other materials, and
- visit the LMC in classes or other groups.

To a lesser extent, such programs also encourage students to:

- utilize interlibrary loan services to acquire needed resources not in the local collections,
- visit the LMC for group instruction in information skills,
- visit the LMC individually,
- use information resources in the library, and
- visit the LMC individually for information skills instruction.

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**Table 22. LMC Usage and Library Media Specialist Staffing in Iowa High School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>LMC Usage</b>		
Individual visits to LMC per student	.272	.000
Group visits to LMC per 100 students	.421	.000
Individual visits for info skills instruction per student	.175	.024
Group visits for info skills instruction per 100 students	.328	.000
Circulation per student	.543	.000
In-library use per 100 students	.256	.001
Inter-library loans received per 100 students	.336	.000

### LM Expenditures

As at other school levels, LM operating expenditures are correlated positively and significantly with the level of LMS staffing in Iowa high schools. (See Table 23.) Again, this relationship demonstrates the important advocacy role of the LMS.

**Table 23. LM Expenditures and Library Media Specialist Staffing in Iowa High School Libraries, 1999/2000**

Variable	Library Media Specialist Staffing	
	LMS Hours per 100 Students per Week	
	Correlation coefficient (r)	Statistical significance (p)
<b>LM Expenditures</b>		
LM operating expenditures per student	.371	.000

## **Relative Impact of Library Media, School & Community Factors on Academic Achievement**

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Correlation alone does not equal cause and effect. The fact that characteristics of better-developed library media programs are associated with reading test scores does not necessarily mean that the former causes the latter. Conceivably, many school and community characteristics might create antecedent conditions that would explain both LM program development and reading scores. For instance, it might be that rich schools or communities with well-educated adults have both high reading scores and well-developed LM programs. If that were the case, a well-developed LM program could not be credited as even a partial cause of high reading scores. It would be simply another fortuitous consequence of favorable school or community conditions.

Given data on potential antecedent conditions, however, such hypotheses are readily testable via multiple regression analysis. That statistical technique weighs the impact of each variable while controlling for all variables under consideration.

In this analysis, potential predictors of reading scores to be considered together include:

- an LM program development factor (a composite per-student measure of LM staffing, collection, and—at one grade level--expenditures levels);
- three school conditions: total school district expenditures per student, the teacher-pupil ratio, and the percentage of teachers with master's degrees;
- three community conditions: poverty (based on National School Lunch Program data), adult educational attainment (percent age 25 and over who graduated from high school), and the prevalence of racial/ethnic minority schoolchildren.

### **Elementary School Level**

Before submitting all of the library, school, and community data to multiple regression analysis with fourth grade reading scores, efforts were made to simplify the set of potential predictors to be tested. Some data reduction was achieved via correlation and factor analysis. Teacher years of experience and average salaries were sufficiently highly correlated with the percentage of teachers with master's degrees to justify eliminating them as

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redundant. Also, a factor score was substituted for a group of related library development variables in a subsequent multiple regression analysis.

#### *LM Program Development Factor*

Initial correlation analyses indicated that four LM development variables were strongly correlated with each other. (See Table 24.) These variables included per student or per 100 students ratios for staffing (both professional and total), collection holdings (print volumes and magazine and newspaper subscriptions), and total LM expenditures.

**Table 24. Correlation Analysis for Selected Library Media Variables for Iowa Elementary Schools, 2000**

Variable	LMS hours per 100 students	Total LM staff hours per 100 students	Volumes per student	Periodical subscriptions per 100 students	LM expenditures per student
LMS hours per 100 students	1.000				
Total LM staff hours per 100 students	.571 **	1.000			
Volumes per student	.505 **	.533 **	1.000		
Periodical subscriptions per 100 students	.551 **	.521 **	.565 **	1.000	
LM expenditures per student	.500 **	.309 **	.563 **	.493 **	1.000

\*\* p < .01

In the first factor analysis, all four variables loaded highly on a single factor, but the percentage of variation in those variables explained by that factor (56.9%) was deemed too low. (See Table 25.) For that reason, a second analysis was conducted, omitting the weakest variable, the LM expenditure ratio, and raising the percentage of explained variation to a more acceptable level (63.1%).

A second factor analysis produced an LM program development factor consisting of four ratios: those related to LMS staffing, total LM staffing, print volumes, and magazine and newspaper subscriptions. A composite factor score replaced these four separate statistics in the multiple regression analysis.

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**Table 25. Summary of Factor Analyses of Library Media Variables for Iowa Elementary Schools, 2000**

Variable	Factor Analysis	
	1 <sup>st</sup>	2 <sup>nd</sup>
Initial eigenvalue	2.843	2.526
Percent of variance explained	56.9%	63.1%
LMS hours per 100 students	.800	.812
Total staff hours per 100 students	.794	.836
Volumes per student	.750	.745
Periodical subscriptions per 100 students	.772	.782
LM expenditures per student	.643	

Extraction Method: Principal Component Analysis

As for LM variables, a correlation analysis of school and community variables was conducted to determine if any relationships existed between variables in these groups that might need to be addressed before including them in a regression analysis. While several pairs of variables demonstrated moderately strong relationships, the only problematic one was between two teacher-related variables, average teacher's salary and the percentage of teachers with master's degrees. (See Table 26.) Because the two variables were highly correlated, it was decided to include only the percentage of teachers with master's degrees in the regression analysis.

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**Table 26. Correlation Analysis of School and Community Variables for Iowa Elementary Schools, 2000**

Variable	Average teacher's salary	Average teacher's years of experience	District expenditures per pupil	Percent adults high school graduates	Percent students eligible for NSLP	Percent students minority	Percent teachers with advanced degrees	Teacher-pupil ratio
Average teacher's salary	1.000							
Average teacher's years of experience	.568 **	1.000						
District expenditures per pupil	-.054	-.113	1.000					
Percent adults high school graduates	.352 **	-.105	-.155 *	1.000				
Percent students eligible for NSLP	.103	.160 *	.454 **	-.391 **	1.000			
Percent students minority	.548 **	.231 **	.143	.123	.325 **	1.000		
Percent teachers with advanced degrees	.865 **	.508 **	.134	.309 **	.270 **	.547 **	1.000	
Teacher-pupil ratio	.396 **	.219 **	-.187 *	.225 **	-.129	.043	.338 **	1.000

\*\* p < .01

\* p < .05

### *LM Program Development & Other Predictors of Fourth Grade Reading Scores*

Multiple regression analysis of library media (LM), school, and community data for the elementary level identified four predictors of fourth grade test scores. (See Table 27.)

Overwhelmingly, though hardly surprisingly, the strongest predictor of academic achievement is poverty. The higher the percentage of students eligible for the National School Lunch Program, the lower the test scores. This single predictor accounts for almost a quarter (23.6%) of the variation in fourth grade test scores. Three additional predictors follow distantly, though each exerts some measurable influence of its own.

The second predictor, racial/ethnic minority status (percentage of students in such groups), accounts for almost eight percent of test score variation.

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The larger a school's proportion of minority students, the lower its test scores tend to be.

The LM program development factor places third, accounting for almost 2.5 percent of test score variation. Fourth graders tend to score higher on reading tests when their schools have better-developed LM programs.

Adult educational attainment in the community (the percentage of adults who graduated from high school) is the fourth and final predictor, accounting for about two percent of test score variation. The better educated the adults in the community, the better children score on academic achievement tests.

Notably, fourth grade reading scores are explained largely by community conditions. LM program development also exerts a small but significant influence on these scores. After community conditions and LM program development are taken into account, none of the school conditions exerted a measurable separate impact on academic achievement.

**Table 27. Multiple Regression Analysis of Predictors of Fourth Grade Reading Scores for Iowa Elementary Schools, 2000**

Predictor Added	R	Cumulative R Square †	R Square Change ‡	Standardized Beta Coefficient
Percent students eligible for NSLP (poverty)	.486	.231 **	.236	-.321 *
Percent students minority	.548	.291 **	.065	-.276 *
LM program development	.571	.313 **	.026	.167 *
Percent adults high school graduates	.587	.327 **	.018	.155 *

† For each line in this table, cumulative R square indicates the percentage of variation explained by all variables listed through that line.

‡ R square change indicates the percentage of variation explained by the variable identified on that line.

\* Significance of t for Betas <.05

\*\* Significance of F for Rs <.001

Excluded variables: teacher-pupil ratio, LM expenditures per student, district expenditures per student, percent of teachers with advanced degrees, and teachers' average years of experience.

### Middle School Level

As at the elementary school level, efforts were made to simplify the set of potential predictors of eighth grade reading scores. Some data reduction was achieved via correlation and factor analysis. Average teacher's salary was sufficiently highly correlated with the percentage of teachers with



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master's degrees to justify eliminating the former as redundant. Also, a factor score was substituted for a group of related library development variables in a subsequent multiple regression analysis.

#### *LM Program Development Factor*

The four LM development variables combined at the elementary school level were also strongly correlated with each other at the middle school level. (See Table 28.) These variables include per student or per 100 students ratios for staffing (both professional and total), collection holdings (print volumes and magazine and newspaper subscriptions), and total LM operating expenditures.

**Table 28. Correlation Analysis for Selected Library Media Variables for Iowa Middle Schools, 2000**

Variable	LMS hours per 100 students	Total LM staff hours per 100 students	Volumes per student	Periodical subscriptions per 100 students	LM expenditures per student
LMS hours per 100 students	1.000				
Total LM staff hours per 100 students	.660 **	1.000			
Volumes per student	.621 **	.713 **	1.000		
Periodical subscriptions per 100 students	.589 **	.585 **	.616 **	1.000	
LM expenditures per student	.468 **	.589 **	.512 **	.509 **	1.000

\*\* p < .01

In the first factor analysis, all four variables loaded highly on a single factor that explained over two-thirds (66.6%) of the variation in that group of variables. (See Table 29.) Unlike at the elementary school level, this middle school factor for library media program development includes LM expenditures per student.

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**Table 29. Summary of Factor Analyses of Library Media Variables for Iowa Middle Schools, 2000**

<b>Variable</b>	<b>Factor Loadings</b>
Initial eigenvalue	3.330
Percent of variance explained	66.6%
LMS hours per 100 students	.807
Total staff hours per 100 students	.851
Volumes per student	.870
Periodical subscriptions per 100 students	.835
LM expenditures per student	.707

Extraction Method: Principal Component Analysis

As for LM variables, a correlation analysis of school and community variables was conducted to determine if any relationships existed between variables in these groups that might need to be addressed before including them in a regression analysis. While several pairs of variables demonstrated moderately strong relationships, the only problematic one was between two teacher-related variables, average teacher's salary and the percentage of teachers with master's degrees. (See Table 30.) Because the two variables were highly correlated, it was decided to include only the percentage of teachers with master's degrees in the regression analysis.

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**Table 30. Correlation Analysis of School and Community Variables for Iowa Middle Schools, 2000**

Variable	Average teacher's salary	Average teacher's years of experience	District expenditures per pupil	Percent adults high school graduates	Percent students eligible for NSLP	Percent students minority	Percent teachers with advanced degrees	Teacher-pupil ratio
Average teacher's salary	1.000							
Average teacher's years of experience	.570 **	1.000						
District expenditures per pupil	-.150	-.149	1.000					
Percent adults high school graduates	.380 **	.017	-.249 *	1.000				
Percent students eligible for NSLP	-.056	-.024	.448 **	-.513 **	1.000			
Percent students minority	.467 **	.084	.194	.107	.363 **	1.000		
Percent teachers with advanced degrees	.768 **	.421 **	.062	.314 **	.123	.468 **	1.000	
Teacher-pupil ratio	.419 **	.220 **	-.229 *	.226 **	.027	.207**	.224 **	1.000

\*  $p < .05$

\*\*  $p < .01$

### *LM Program Development & Other Predictors of Fourth Grade Reading Scores*

Multiple regression analysis of library media (LM), school, and community data for the middle school level identified four predictors of eighth grade test scores.

Overwhelmingly, though hardly surprisingly, the strongest predictor of academic achievement is poverty. The higher the percentage of students eligible for the National School Lunch Program, the lower the test scores. This single predictor accounts for more than one-fifth (22 percent) of the variation in eighth grade test scores and obscures the impact of all other variables.

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Another regression analysis was conducted, excluding that and other community variables, to determine the importance of LM relative to other school variables. (See Table 31.)

When community differences are ignored, district expenditures per student explain the larger percentage of test score variation—almost ten percent (9.8%). The LM program development factor places second, accounting for 2.8 percent of test score variation. Eighth graders tend to score higher on reading tests when their schools have better-developed LM programs.

Notably, eighth grade reading scores are explained largely by community conditions. Setting aside such differences, LM program development also exerts a small but significant influence on these scores. After community conditions are set aside and LM program development is taken into account, the only school condition that exerts a measurable separate impact on academic achievement is per pupil spending by the district.

**Table 31. Multiple Regression Analysis of Predictors of Fourth Grade Reading Scores for Iowa Middle Schools, 2000**

<b>Predictor Added</b>	<b>R</b>	<b>Cumulative R Square †</b>	<b>R Square Change ‡</b>	<b>Standardized Beta Coefficient</b>
District expenditures per pupil	.313	.098 **	.098	-.332 **
LM program development	.355	.126 **	.028	.169 **

† For each line in this table, cumulative R square indicates the percentage of variation explained by all variables listed through that line.

‡ R square change indicates the percentage of variation explained by the variable identified on that line.

\* Significance of t for Betas <.001 for district expenditures per pupil, <.05 for LM program development

\*\* Significance of F for Rs <.001

Excluded variables: teacher-pupil ratio, percent of teachers with advanced degrees, and teachers' average years of experience.

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Regression analyses run at the high school level were unable to demonstrate similar results, not because LM programs are not important at that level, but because there is too little variation in library media specialist (LMS) staffing at those levels. This fact probably also explains why the relative impact of school and LM variables was obscured by community poverty at the middle school level. Almost seven out of ten middle and high schools in Iowa employ full-time LMSs and another one in seven schools at each level employs an LMS between half- and full-time. (See Table 32.) Regression analyses cannot measure effectively the impact of a variable—in this case, LMS hours per week—that varies so little.

**Table 32. Weekly Hours of Library Media Specialist Staffing by Grade Level, 2000**

<b>Weekly Hours of LMS Staffing</b>	<b>Percent of Schools Staffed by LM Specialist</b>		
	<b>4th Grade</b>	<b>8th Grade</b>	<b>11th Grade</b>
No LMS staffing	9.5%	5.0%	5.2%
Less than half time	38.1%	15.6%	12.7%
20-34 hours/week	14.9%	13.8%	15.6%
35 or more hours/week	37.5%	65.6%	66.5%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## **Conclusion**

---

Iowa reading test scores rise with the development of LM programs. The relationship between LM program development and test scores is not explained away by other school or community conditions at the elementary school level or by other school conditions at the middle school level. At both middle and high school levels, there was insufficient variation in LMS staffing to make further claims.

### **Library Media Program Development**

Iowa reading test scores tend to rise with increases in:

- library media specialist (LMS) staff hours per 100 students,
- total staff hours per 100 students,
- print volumes per student, and
- periodical subscriptions per 100 students.

Whatever the current level of development of a school's library media (LM) program, these findings indicate that incremental improvements in its staffing and collections will yield incremental increases in reading scores.

### **School & Community Differences**

The impact of LM program development on academic achievement cannot be explained away by:

- school differences, including:
  - school district expenditures per pupil,
  - teacher/pupil ratio, and
  - the percentage of classroom teachers with master's degrees, or
- community differences, including:
  - children in poverty,
  - racial/ethnic demographics, and
  - adult educational attainment,

When these other conditions are taken into account, LM program development alone accounts for about 2.5 percent of variation in Iowa reading scores for fourth and eighth graders. Generally its importance falls between that of community differences, which consistently demonstrated stronger effects, and school differences, which usually demonstrated weaker effects.

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### **Library Media Specialists & Strong LM Programs**

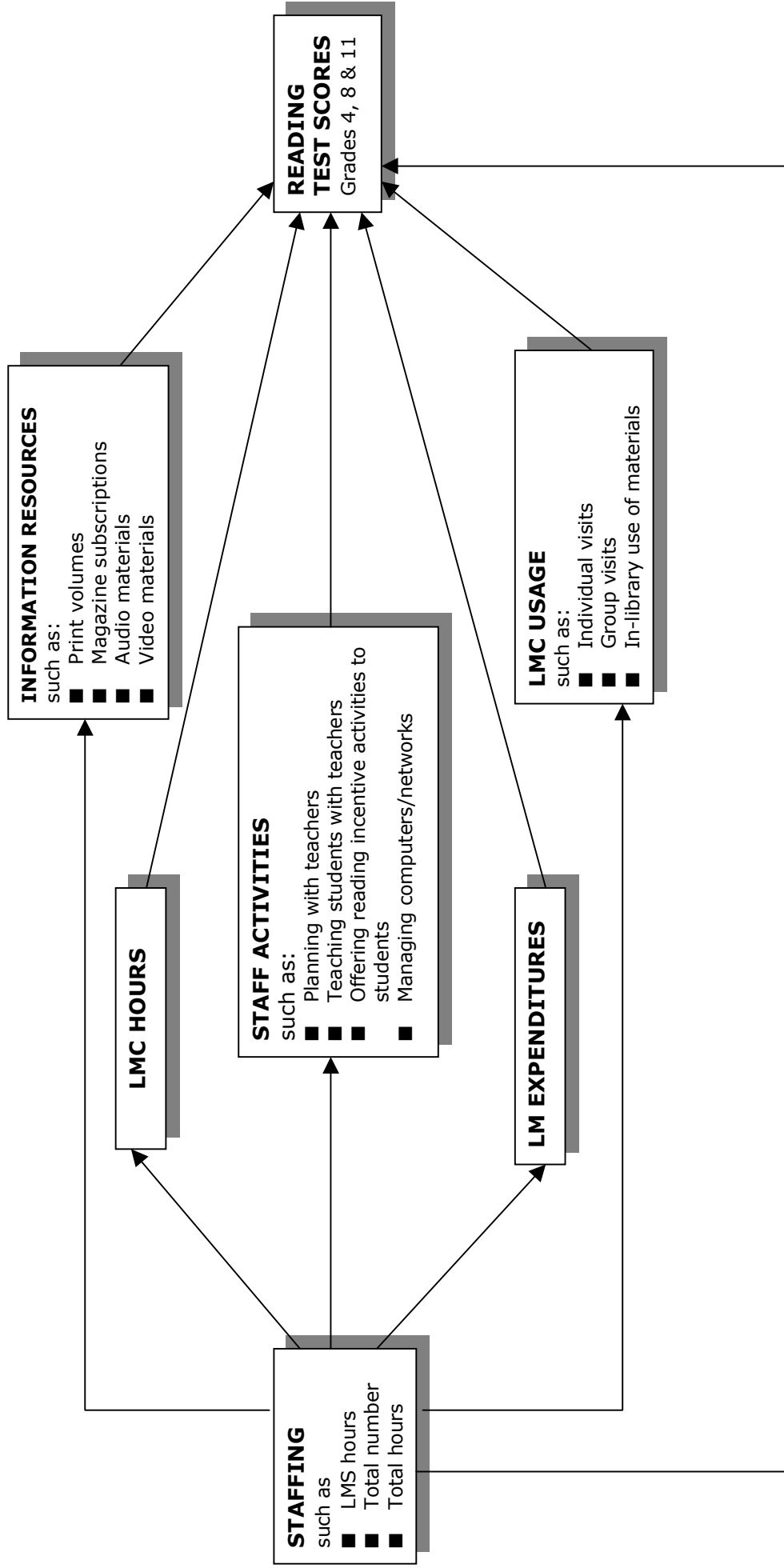
Library media specialists (LMSs) exert a complex web of effects on the LM programs. Findings about these effects are summed up in the following description of a strong LM program.

A strong LM program is one

- that is adequately staffed, stocked and funded. Minimally, this means one full-time library media specialist (LMS) and one full-time aide. The relationship, however, is incremental; as the staffing, collections and funding of LM programs grow, reading scores rise.
- whose staff are actively involved leaders in their school's teaching and learning enterprise. A successful LMS is one who has the ear and support of the principal, serves with other teachers on the school's standards and curriculum committees, and holds regular meetings of the LM staff. Students succeed where the LMS participates with classroom teachers and administrators in making management decisions that encourage higher levels of achievement by every student.
- whose staff have collegial, collaborative relationships with classroom teachers. A successful LMS is one who works with a classroom teacher to identify materials that best support and enrich an instructional unit, is a teacher of essential information literacy skills to students, and, indeed, is a provider of in-service training opportunities to classroom teachers. Students succeed where the LMS is a consultant to, a colleague with, and a teacher of other teachers.
- that embraces networked information technology. The library media center of today is no longer a destination; it is a point of departure for accessing the information resources that are the essential raw material of teaching and learning. Computers in classrooms, labs and other school locations provide networked access to information resources—the library catalog, electronic full text, licensed databases, locally mounted databases, and the Internet. Students succeed where the LM program is not a place to go, apart from other sites of learning in the school, but rather an integral part of the educational enterprise that reaches out to students and teachers where they are.

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**Summary Results**





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### **Differences in LM Programs for High and Low Scoring Schools**

How much will a school's test scores improve with specific improvements in its library media program? The answer depends on the library media (LM) program's current status, what it improves, and how much it is improved. The multiple regression analyses conducted as part of this study indicate that LM predictors (i.e., staffing, collections, expenditures) account for two to three percent of the variation in fourth grade reading scores when the impact of major school and community conditions is taken into account. A similar percentage of variation in eighth grade reading scores was explained through such analysis, but, at that level, only school conditions could be taken into account.

The three following tables (Tables 33 through 38) compare selected library media statistics for the 25 highest scoring and 25 lowest scoring schools at each level. These figures give some impression of what it might cost a school to move from being one of the lowest scoring to being one of the highest scoring on the state reading test. (Notably, a few of these illustrative statistics run counter to the findings of this study's more sophisticated analyses.)

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**Table 33. Staffing and Information Resource Statistics for Iowa Elementary Schools Scoring Highest and Lowest on the Fourth Grade Reading Test, 2000**

Variable	Elementary school averages (4 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>4<sup>th</sup> Grade Reading Scores</b> (Percent proficient & above)	84.43	42.32	99%
<b>Staffing</b>			
LM specialist hours	24.53	14.64	68%
per 100 students	7.99	4.91	63%
Total LM staff hours	53.57	45.20	18%
per 100 students	17.14	15.06	14%
<b>Staff Activities (Weekly hours)</b>			
Planning with teachers	2.97	1.72	73%
Percent	4.92	3.62	36%
Teaching with teachers	6.55	4.57	43%
Percent	12.76	11.06	15%
Providing in-service training	1.22	0.90	36%
Percent	2.17	1.79	21%
Doing collection development	2.17	1.38	57%
Percent	4.97	2.99	66%
Attending faculty or staff meetings	0.71	0.48	48%
Percent	1.19	0.95	25%
Meeting w/standards, curriculum comms.	0.61	0.38	61%
Percent	1.03	0.75	37%
Managing computers, network	9.51	4.93	93%
Percent	15.41	10.80	43%
<b>Information Resources</b>			
Print volumes	9,289	7,790	19%
per student	31.17	27.52	13%
Current mag. & newspaper subscriptions	17.81	13.39	33%
per 100 students	6.45	5.16	25%
Number of reference books	332.32	288.96	15%
per student	1.15	1.17	(2%)
Electronic reference titles	21.32	17.18	24%
per 100 students	6.01	6.46	(7%)
Current mag. & newspaper subscriptions	17.81	13.39	33%
per 100 students	6.45	5.16	25%
Video materials – tapes, discs	111.21	71.59	55%
per 100 students	32.62	23.87	37%

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**Table 34. Selected Library Media Statistics for Iowa Elementary Schools Scoring Highest and Lowest on the Fourth Grade Reading Test, 2000**

Variable	Elementary school averages (4 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>4<sup>th</sup> Grade Reading Scores</b> (Percent proficient & above)	84.43	42.32	99%
<b>Technology</b>			
LMC computers	23.48	19.07	23%
per 100 students	6.50	5.78	12%
School computers networked to LMC	46.48	38.52	21%
per 100 students	13.31	12.28	8%
<b>LMC Usage</b>			
Individual visits to LMC	280.43	206.14	36%
per student	0.91	0.77	18%
Group visits to LMC	19.17	15.68	22%
per 100 students	5.97	5.65	6%
Individual visits for info skills instruction	97.69	80.00	22%
per student	0.36	0.33	9%
Group visits for info skills instruction	9.97	7.29	37%
per 100 students	3.04	2.90	5%
In-library use of materials	105.30	41.96	151%
per 100 students	44.36	16.84	163%
<b>Annual Operating Expenditures</b>			
Total operating expenditures	\$5,298.07	\$4,178.33	27%
per student	\$16.85	\$14.67	15%

## M a k e t h e C o n n e c t i o n

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**Table 35. Library Media Staffing and Resources for Iowa Middle Schools Scoring Highest and Lowest on the Eighth Grade Reading Test, 2000**

Variable	Middle school averages (8 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>8<sup>th</sup> Grade Reading Scores</b> (Percent proficient & above)	65.94	48.96	35%
<b>Staffing</b>			
LMS hours	31.13	33.97	(8%)
per 100 students	11.74	8.23	43%
Total LM staff hours	60.81	64.05	(5%)
per 100 students	22.36	19.33	16%
<b>Staff Activities (Weekly hours)</b>			
Doing collection development	2.88	3.44	(16%)
Percent	5.93	5.40	10%
Meeting with school library staff	0.80	0.76	5%
Percent	1.16	1.19	(3%)
Attending faculty or staff meetings	0.88	0.82	7%
Percent	1.46	1.31	11%
Meeting w/standards, curriculum committees	0.75	0.60	25%
Percent	1.21	1.00	21%
Managing computers, network	12.21	10.44	17%
Percent	17.48	15.53	13%
<b>Information Resources</b>			
Print volumes per student	9,169	10,002	(8%)
per student	31.29	25.79	21%
Number of reference books	858.16	657.84	30%
per student	3.11	2.16	44%
Electronic reference titles	19.38	21.96	(12%)
per 100 students	8.23	5.72	44%
Current mag. & newspaper subscriptions	34.57	32.83	5%
per 100 students	11.92	9.71	23%
Audio materials – tapes, CDs, LPs	38.24	31.46	22%
per 100 students	8.58	6.00	43%
Video materials – tapes, discs	118.68	109.17	9%
per 100 students	34.17	44.45	(23%)

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**Table 36. Library Media Staffing and Resources for Iowa Middle Schools Scoring Highest and Lowest on the Eighth Grade Reading Test, 2000**

Variable	Middle school averages (8 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>Technology</b>			
LMC computers	21.85	31.92	(32%)
per 100 students	8.37	6.18	35%
School computers networked to LMC	85.70	58.96	45%
per 100 students	24.91	14.09	77%
<b>LMC Usage</b>			
Individual visits to LMC	376.42	312.48	20%
per student	1.44	0.79	82%
Group visits to LMC	18.85	14.74	28%
per 100 students	7.44	3.88	92%
Individual visits for info skills instruction	130.42	110.79	18%
per student	0.39	0.22	77%
In-library use of materials	155.96	128.86	21%
per 100 students	54.05	30.70	76%
<b>Annual Operating Expenditures</b>			
Total operating expenditures	\$7,609.38	\$6,736.40	13%
per student	\$25.55	\$21.98	16%

## M a k e t h e C o n n e c t i o n

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**Table 37. Library Media Staffing and Information Resources for Iowa High Schools Scoring Highest and Lowest on the Eleventh Grade Reading Test, 2000**

Variable	High school averages (11 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>11<sup>th</sup> Grade Reading Scores</b> (Percent proficient & above)	89.79	52.63	71%
<b>Staffing</b>			
LM specialist hours	32.98	31.00	6%
per 100 students	10.27	6.91	49%
Total LM staff hours	72.19	70.79	2%
per 100 students	20.11	16.99	18%
<b>Staff Activities (Weekly hours)</b>			
Teaching with teachers	13.33	12.73	5%
percent	18.20	19.07	(5%)
Providing in-service training	1.90	1.35	41%
Percent	2.64	1.81	46%
Offering reading incentive activities	3.50	1.42	146%
Percent	4.45	2.25	98%
Meeting with school library staff	1.58	0.76	108%
Percent	2.10	1.20	75%
Meeting with principal, administrators	0.98	0.78	26%
Percent	1.52	1.39	9%
Attending faculty or staff meetings	0.92	0.78	18%
Percent	1.38	1.37	1%
<b>Information Resources</b>			
Print volumes	8,457	8,812	(4%)
per student	25.38	21.81	16%
Number of reference books	798.19	698.42	14%
per student	2.33	1.70	37%
Electronic reference titles	21.08	11.96	76%
per 100 students	6.01	3.82	57%
Audio materials – tapes, CDs, LPs	69.69	28.57	144%
per 100 students	10.78	11.30	(5%)
Video materials – tapes, discs	138.46	97.78	42%
per 100 students	32.75	26.34	24%

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**Table 38. Library Media Technology, LMC Usage, and LM Expenditures for Iowa High Schools Scoring Highest and Lowest on the Eleventh Grade Reading Test, 2000**

Variable	High school averages (11 <sup>th</sup> grade)		
	25 highest scoring schools	25 lowest scoring schools	Percent difference (lowest to highest)
<b>Technology</b>			
LMC computers	29.50	23.31	27%
per 100 students	6.38	4.90	30%
School computers networked to LMC	82.11	73.04	12%
per 100 students	22.01	13.27	66%
<b>LMC Usage</b>			
Individual visits to LMC	361.19	348.73	4%
per student	1.14	0.89	28%
Group visits to LMC	17.96	17.72	1%
per 100 students	4.48	4.18	7%
Individual visits for info skills instruction	140.64	128.23	10%
per student	0.36	0.26	38%
In-library use of materials	211.04	194.88	8%
per 100 students	59.27	37.55	58%
<b>Annual Operating Expenditures</b>			
Total operating expenditures	\$8,806.68	\$9,543.12	(8%)
per student	\$23.38	\$22.20	5%

## **M a k e   t h e   C o n n e c t i o n**

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### **RACE YOU TO THE BOOKS!**

*Sustained Silent Reading (SSR) was instituted at the high school two years ago. I applied for and received a grant from our AEA to purchase hundreds of high interest paperbacks, nearly two per student, to be placed in the classrooms for easy student access. The paperbacks are in attractive blue baskets and may be exchanged for different titles whenever the students wish.*

*Students select which books go in their room's baskets. Students were so excited the first time they were confronted with 500+ (more were purchased later) new paperbacks to select from that they argued over which SSR room got to go next. They are the ones who ask when they can come to switch the books in their basket. When I wanted to buy the second batch of books, I went around to all the SSR rooms and asked the kids what books or genre they wanted. I should have tape recorded them -- they were adamant about what they wanted or did not want. In other words, they cared.*

*Teachers MUST read along with kids, of course. The football coach told me this was the first time he completed a book since he was in college. He read Harry Potter first, and thought his reading skills had really improved significantly. He told me, "Next time Aurilee calls me to read the scripture in church, I'm going to tell her 'sure'."*

Virginia Mieke, Library Media Specialist  
West Liberty High School  
West Liberty



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### **DIGGING INTO THE PAST BRINGS UP RICHES**

*As an overview of American history, in recognition of the recent century mark, I initiated a new collaborative teaching unit with the 5th-6th grade social studies teacher. We collaborated to create our "Decades" research project. To start the unit, students were introduced to the past hundred years with several activities: I prepared a two-day PowerPoint presentation, I set up browsing stations with books gathered and organized by decades, and I showed students historic photographs available on the Library of Congress American Memory Project Web site.*

*Students then chose topics of interest, and, working alone or in pairs, took research notes with guidance from both the teacher and me. Next, I taught students how to transform their research into PowerPoint presentations. Students presented their projects to the class, and also listened to elderly guest speakers who gave first-hand accounts of living through the earlier part of the century. Finally, I presented booktalks to students on historical fiction from the past hundred years, so that students could continue to extend their interests in history through recreational reading.*

*This unit is a good example of collaborative teaching, integration of technology and reading skills, and honoring the storytelling of older citizens. The teacher has expressed excitement and appreciation for my work as teacher/librarian and as gatherer of resources for this unit. Students have shown interest and excitement as evidenced by their on-task behavior and interest in one another's presentations. Parents have been impressed by students' PowerPoint projects.*

Anne Marie Kraus, Library Media Specialist  
Roosevelt Elementary School  
Iowa City

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### **WORD OF TALENT SPREADS**

*During the second week of school I visited every ninth grade classroom and introduced them to the media center and booktalked all 16 Iowa Teen Award books for this year. I keep them in a special place and as soon as one comes back it is checked out, which makes me very happy. I gave each student a bookmark with the titles and each English teacher a poster about the books. Another English teacher at a different level said that he had heard that I gave really good book talks and asked me to pick out some books to present to his basic English class.*

*Since then, I have had more requests for book talks. A teacher also requested that I arrange a panel of teachers to talk about their favorite books with her class.*

Barbara St. Clair, Library Media Specialist  
Urbandale High School  
Urbandale

## **M a k e   t h e   C o n n e c t i o n**

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### **TALKING BACK TO THE TEACHER/LIBRARIAN**

*I have individual book talks every quarter with 8th graders. This has been a cooperative program with library/media and English for the past six years. After finishing the book, they come to the media center either before or after school or during study hall, and we sit down in the media center office and talk about the book. They also have to cite the book using MLA format. If they do a good job, they get an "A" for a test grade in their English class.*

*Some students are hesitant at first about coming in and talking about their book one to one. After the first booktalk however, they are eager. When I ask students if they mind doing a booktalk or what they would change, their answer is always that they would rather do a booktalk than write a report.*

*It is hard to tell if a student has read a book with a short book report, but when they sit down with me, I am able to ask them questions since I have read the book. I have also had individual talks with student in high school Practical English class. These have been very successful since students in these classes do not like to read or write. With booktalks, they only have to read. The teachers that I have worked with in this cooperative unit, have really been supportive.*

*The only feedback from parents has been positive as their children are reading and improving their English grades.*

*The size of the eighth grade class has been as high as 130 and as low as 115.*

Beverly P. Sloan  
Winterset Junior/Senior High School  
Winterset

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### **IMAGINATION AND ANALYSIS HAND IN HAND**

*After reading the book I Was A Rat by Philip Pullman, I realized that it was a great beginning point for a unit on how propaganda can sway public opinion. (The book is loosely based on the idea that one of Cinderella's rats didn't get changed back to a rat after being transformed into a boy to act as a page boy. The newspapers get the story and make him out to be a major villain who must be "exterminated.") I talked to one of our teachers about working something out and after she read the book, she also saw lots of possibilities. Her practice teacher and I collaborated on a unit to show students that there are various sides to issues. The students did research using books, online databases, and the Internet to try to prove their viewpoint about a topic. The final product will be to make posters showing two viewpoints of one topic and then present the findings in class.*

*As an aside, the teacher came to me and said that one of the students had come up with the idea that the unicorns had disappeared into the Bermuda Triangle when Atlantis disappeared and that Jack the Ripper and Amelia Earhart also wound up there and got married. I thought it was fun that someone had taken several of the topics and played them together that way.*

Nancy Touil  
East Middle School  
Sioux City

## **M a k e   t h e   C o n n e c t i o n**

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### **TEACHING RESEARCH SKILLS TOGETHER**

*I work with our students on their information literacy skills in two ways. The first way is through an 8th grade exploratory class called Library Research. I meet with the students once each trimester for a 20-day period. During that time we work on researching topics that interest them, topics that use materials of which they need to be familiar, and topics that relate to the curriculum in their core classes.*

*The second way that I work with students on information literacy skills is through collaborative units with core teachers. For example, so far this year I have worked with 6th grade teachers on a biography unit during their computer classes and on an explorers unit during their Iowa history classes. My emphasis in both of those units was on finding appropriate sources and citing those sources correctly. I will soon be working with the 8th grade language arts teacher on a unit on historical narrative and with the 6th grade science teacher on an astronomy unit.*

*My involvement varies with each unit. In some cases the teacher and I plan together from the beginning, and both of us are present for all classes during the unit. In other cases the unit is one that the teacher has taught before; together we revised it to include the information literacy component and I am just present for that portion of the unit.*

*I would like to be able to do more collaboration but that is limited due to my regularly scheduled 8th grade exploratory classes. But the teachers and I are continually working on ways that we can collaborate working around that schedule.*

Cindy Kunde, Library Media Specialist  
West Middle School  
Anamosa

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### **SO MANY STUDENTS, SO MANY IDEAS**

*At the junior/senior high school level during Teen Read Week, prizes were given for various reading activities like using the library for research, checking out a book or filling out a reading survey. Each day a question was asked over the intercom dealing with authors or books and students raced to receive a prize. They had to answer questions such as "Name a title that John Steinbeck wrote," or "who wrote The Tell Tale Tell Heart?" One day they could recite a poem in order to win. We gave packages of bubble gum and free slices of pizza for grand prizes. We put all the names in for the week and just drew for the pizza slices. Students wrote an article about the week for our local paper. I did receive some positive remarks from parents. One parent said she was glad to see that students still cared about reading at the high school level.*

*I work closely with a high school English teacher and together we have written curriculum for a week of library instruction on everything from reference books, mapping of the media center to learning about Internet data bases like EBSCO. Our final project is a hands-on media scavenger hunt where groups of students find the answers to 55 questions. This takes place in the library and students receive a class grade for this week's worth of work. This class then goes on to read Anne Frank and write a research paper with a 35 entry bibliography using the library's resources. This class checks out over 200 books and videos dealing with WWII for this project. These are checked out to the teacher and kept in the classroom. We also use books from AEA 15 to help supplement our collection.*

*Students have come back to the library after I have gone over something like EBSCO and ask for a refresher or I do notice that they are using material that they didn't before a project. Once again, we have shared some of our WWII project with other teachers from other schools at our local AEA 15 workshops. We received good comments. The admin does notice that students are in the library for instruction and share that on my evaluations. I have had administrative talk about some library projects at local meetings like the Citizens Advisory in a positive way.*

Sherrie Stark, Media Specialist  
Wayne Community Schools  
Corydon

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### **AND THE SURVEY SAYS...HIGHER TEST SCORES!!**

*During the 2000-01 school year, faculty members of Williams Intermediate School in Davenport succeeded in increasing student achievement in reading.*

*Teams of teachers in grades 6 to 8 received in-service training from Linda Mannhardt, staff development coordinator, on how poverty and diversity affect schools.*

*At monthly meetings, faculty members studied effective strategies for teaching literacy, tested selected strategies in their teaching, and then returned to subsequent faculty meetings to share success stories.*

*After surveying students about their needs and interests, Sue Wolf, library media specialist, purchased new books and other materials (fiction, non-fiction, high-interest/low reading level), gave book talks to language arts students, and helped select items for the professional library available to teachers and parents. In addition, a variety of new media, such as books on tape and videos, and technological tools, such as a digital camera and scanner, were made available to students and teachers. She was assisted by Nancy McIntire, AEA 9 library media consultant.*

*Indicators of success:*

- *In a survey of interest in reading, there was a 2.5% increase in the number of students who indicated reading "frequently" (rather than "sometimes" or "never").*
- *Monthly increases in library circulation topped 100% several months and exceeded 250% one month.*
- *According to the Degrees of Reading Power test, 18% of sixth graders tested moved from the "needs" category to either "meets" or "exceeds." Gains for minority students were even higher, exceeding 100% improvement for Hispanics.*
- *Iowa Test of Basic Skills reading scores rose modestly for all 8<sup>th</sup> graders (2.8%), but dramatically for African-American students (16.4%).*

Margaret Van Fossen, Teacher  
Williams Intermediate School  
Davenport

## **M a k e   t h e   C o n n e c t i o n**

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### **Recommendations for Action**

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The findings of this study recommend five specific actions by Iowa school decision-makers:

- Library media programs should have **funding for adequate professional and support staff, information resources, and information technology**. Such conditions are necessary if not sufficient alone to generate higher levels of academic achievement.
- **Library media specialists** must assert themselves as **leaders** in their schools. It is their responsibility to take the initiative required for **information literacy** to become an **integral part of the schools' approaches to both standards and curriculum**.
- Principals can do much to make this possible, including adopting **policies and practices** and communicating **expectations** that encourage **LM specialists** to act as professional educators and **classroom teachers** to accept them as **colleagues**.
- The library media program cannot be limited to the library media center as a place. Just as LMSs must involve themselves in the design and delivery of instruction, **information technology** must be used to make information resources **available to teachers and students wherever they may be** in the school.
- While Internet access is important, the LMS has an important role to play in ensuring that teachers and students have access to **high-quality licensed databases** from which current, authoritative information may be obtained. Library media specialists can provide **the necessary training** to ensure teachers and students know how to use the information tools and assess an information resource.



# **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

## **Appendices**

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### **Bibliography**

### **List of Participants**

### **Survey of School Library Media Centers in Iowa 2001**

### **Make the Connection: Quality School Library Media Programs Impact Academic Achievement in Iowa (brochure)**

### **Make the Connection: Quality School Library Media Programs Impact Academic Achievement in Iowa: Preliminary Results**

## Make the Connection

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# Make the Connection

Quality School Library Media Programs Impact Academic Achievement in Iowa

## List of Participants

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### Elementary Schools (4<sup>th</sup> Grade)

ALBERT CITY-TRUESDALE COMM SCHOOL DISTRICT	ALBERT CITY-TRUESDALE ELEMENTARY SCHOOL
ALLAMAKEE COMM SCHOOL DISTRICT	WATERVILLE ELEMENTARY SCHOOL
ANAMOSA COMM SCHOOL DISTRICT	STRAWBERRY HILL ELEMENTARY SCHOOL
ANDREW COMM SCHOOL DISTRICT	ANDREW ELEMENTARY SCHOOL
ANKENY COMM SCHOOL DISTRICT	EAST ELEMENTARY SCHOOL
ARMSTRONG-RINGSTED COMM SCHOOL DISTRICT	ARMSTRONG-RINGSTED ELEMENTARY SCHOOL
BCLUW COMM SCHOOL DISTRICT	BCLUW ELEMENTARY SCHOOL
BELMOND-KLEMME COMM SCHOOL DISTRICT	PARKER ELEMENTARY
BENNETT COMM SCHOOL DISTRICT	BENNETT ELEMENTARY SCHOOL
BETTENDORF COMM SCHOOL DISTRICT	MARK TWAIN ELEMENTARY SCHOOL
BURLINGTON COMM SCHOOL DISTRICT	WASHINGTON ELEMENTARY SCHOOL
CALAMUS-WHEATLAND COMM SCHOOL DISTRICT	CALAMUS-WHEATLAND ELEM
CAMANCHE COMM SCHOOL DISTRICT	CAMANCHE ELEMENTARY SCHOOL
CARLISLE COMM SCHOOL DISTRICT	CARLISLE ELEMENTARY SCHOOL
CEDAR FALLS COMM SCHOOL DISTRICT	NORTH CEDAR ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	GARFIELD ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	HARRISON ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	HIAWATHA ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	JACKSON ELEMENTARY
CEDAR RAPIDS COMM SCHOOL DISTRICT	JOHNSON ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	KENWOOD ELEMENTARY SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	POLK ELEMENTARY SCHOOL
CENTERVILLE COMM SCHOOL DISTRICT	LAKEVIEW ELEMENTARY 4-5-6 SCHOOL
CENTRAL CLINTON COMM SCHOOL DISTRICT	WELTON ELEMENTARY SCHOOL
CHARLES CITY COMM SCHOOL DISTRICT	WASHINGTON ELEMENTARY SCHOOL
CLARKE COMM SCHOOL DISTRICT	CLARKE COMMUNITY ELEMENTARY SCHOOL
CLEAR CREEK-AMANA COMM SCHOOL DISTRICT	CLEAR CREEK ELEMENTARY SCHOOL
CLEAR LAKE COMM SCHOOL DISTRICT	CLEAR CREEK ELEMENTARY SCHOOL
COLLEGE COMM SCHOOL DISTRICT	PRAIRIE HEIGHTS ELEMENTARY SCHOOL
COLLEGE COMM SCHOOL DISTRICT	PRAIRIE VIEW ELEMENTARY SCHOOL
CORWITH-WESLEY COMM SCHOOL DISTRICT	WESLEY ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	BLOOMER ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	CRESCENT ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	FRANKLIN ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	HOOVER ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	PUSEY ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	ROOSEVELT ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	RUE ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	WALNUT GROVE ELEMENTARY SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	WASHINGTON ELEMENTARY SCHOOL
DALLAS CENTER-GRIMES COMM SCHOOL DISTRICT	DALLAS CENTER-GRIMES ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	ADAMS ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	EISENHOWER ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	GRANT ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	HARRISON ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	JEFFERSON ELEMENTARY SCHOOL

# **M a k e t h e C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

DAVENPORT COMM SCHOOL DISTRICT	MCKINLEY ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	WALCOTT ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	WASHINGTON ELEMENTARY SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	WILSON ELEMENTARY SCHOOL
DAVIS COUNTY COMM SCHOOL DISTRICT	DAVIS COUNTY ELEMENTARY
DENISON COMM SCHOOL DISTRICT	DENISON ELEMENTARY SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	JACKSON ELEMENTARY SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	WRIGHT ELEMENTARY SCHOOL
DOWS COMM SCHOOL DISTRICT	DOWS ELEMENTARY SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	BRYANT ELEMENTARY SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	IRVING ELEMENTARY SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	MARSHALL ELEMENTARY SCHOOL
DURANT COMM SCHOOL DISTRICT	DURANT ELEMENTARY SCHOOL
EAST UNION COMM SCHOOL DISTRICT	EAST UNION INTERMEDIATE CENTER
EDGEWOOD-COLESBURG COMM SCHOOL DISTRICT	EDGEWOOD-COLESBURG ELEMENTARY SCHOOL
ESTHERVILLE LINCOLN CENTRAL COM SCH DIST	ESTHERVILLE LINCOLN CENTRAL MIDDLE SCHOOL
FAIRFIELD COMM SCHOOL DISTRICT	WASHINGTON ELEMENTARY SCHOOL
FOREST CITY COMM SCHOOL DISTRICT	FOREST CITY ELEMENTARY SCHOOL
FREMONT-MILLS COMM SCHOOL DISTRICT	FREMONT-MILLS ELEMENTARY SCHOOL
GARNER-HAYFIELD COMM SCHOOL DISTRICT	GARNER ELEMENTARY SCHOOL
GLIDDEN-RALSTON COMM SCHOOL DISTRICT	GLIDDEN-RALSTON ELEMENTARY SCHOOL
HAMBURG COMM SCHOOL DISTRICT	MARNIE SIMONS ELEMENTARY SCHOOL
HAMPTON-DUMONT COMM SCHOOL DISTRICT	DUMONT ELEMENTARY SCHOOL
HAMPTON-DUMONT COMM SCHOOL DISTRICT	SOUTH SIDE ELEMENTARY SCHOOL
HARLAN COMM SCHOOL DISTRICT	WEST RIDGE ELEMENTARY SCHOOL
HINTON COMM SCHOOL DISTRICT	HINTON ELEMENTARY SCHOOL
HOWARD-WINNESHIEK COMM SCHOOL DISTRICT	CRESTWOOD ELEMENTARY SCHOOL
HUDSON COMM SCHOOL DISTRICT	HUDSON ELEMENTARY SCHOOL
INDIANOLA COMM SCHOOL DISTRICT	EMERSON ELEMENTARY SCHOOL
INDIANOLA COMM SCHOOL DISTRICT	IRVING ELEMENTARY SCHOOL
INDIANOLA COMM SCHOOL DISTRICT	WHITTIER ELEMENTARY SCHOOL
INTERSTATE 35 COMM SCHOOL DISTRICT	INTERSTATE 35 ELEMENTARY SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	CENTRAL ELEMENTARY SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	HELEN LEMME ELEMENTARY SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	MARK TWAIN ELEMENTARY
IOWA CITY COMM SCHOOL DISTRICT	ROBERT LUCAS ELEMENTARY SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	ROOSEVELT ELEMENTARY SCHOOL
JOHNSTON COMM SCHOOL DISTRICT	BEAVER CREEK ELEM SCHOOL
JOHNSTON COMM SCHOOL DISTRICT	HENRY A WALLACE ELEMENTARY SCHOOL
JOHNSTON COMM SCHOOL DISTRICT	LAWSON ELEMENTARY SCHOOL
KEOKUK COMM SCHOOL DISTRICT	LINCOLN ELEMENTARY SCHOOL
KEOKUK COMM SCHOOL DISTRICT	TORRENCE ELEMENTARY SCHOOL
LAWTON-BRONSON COMM SCHOOL DISTRICT	BRONSON ELEMENTARY SCHOOL
LOUISA-MUSCATINE COMM SCHOOL DISTRICT	LOUISA-MUSCATINE ELEMENTARY
MADRID COMM SCHOOL DISTRICT	MADRID ELEMENTARY SCHOOL
MALVERN COMM SCHOOL DISTRICT	CHANNY ELEMENTARY SCHOOL
MAQUOKETA COMM SCHOOL DISTRICT	BRIGGS ELEMENTARY
MAQUOKETA COMM SCHOOL DISTRICT	CARDINAL ELEMENTARY
MEDIAPOLIS COMM SCHOOL DISTRICT	MEDIAPOLIS ELEMENTARY SCHOOL

# **M a k e t h e C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

MID-PRAIRIE COMM SCHOOL DISTRICT	KALONA ELEMENTARY SCHOOL
MORNING SUN COMM SCHOOL DISTRICT	MORNING SUN ELEMENTARY SCHOOL
MUSCATINE COMM SCHOOL DISTRICT	JEFFERSON ELEMENTARY SCHOOL
MUSCATINE COMM SCHOOL DISTRICT	MULBERRY ELEMENTARY SCHOOL
NEVADA COMM SCHOOL DISTRICT	CENTRAL ELEMENTARY SCHOOL
NISHNA VALLEY COMM SCHOOL DISTRICT	NISHNA VALLEY ELEMENTARY SCHOOL
NORA SPRINGS-ROCK FALLS COMM SCHOOL DISTRICT	NORA SPRINGS ELEMENTARY SCHOOL
NORTH CENTRAL COMM SCHOOL DISTRICT	NORTH CENTRAL ELEMENTARY SCHOOL
NORTH FAYETTE COMM SCHOOL DISTRICT	HAWKEYE ELEMENTARY SCHOOL
NORTH IOWA COMM SCHOOL DISTRICT	NORTH IOWA ELEM BUFFALO CENTER
NORTH SCOTT COMM SCHOOL DISTRICT	VIRGIL GRISSOM ELEMENTARY SCHOOL
NORTH WINNESHIEK COMM SCHOOL DISTRICT	NORTH WINNESHIEK ELEMENTARY SCHOOL
NORTHEAST COMM SCHOOL DISTRICT	NORTHEAST ELEMENTARY SCHOOL
NORTHEAST HAMILTON COMM SCHOOL DISTRICT	NORTHEAST HAMILTON ELEMENTARY SCHOOL
NORTHWOOD-KENSETT COMM SCHOOL DISTRICT	NORTHWOOD-KENSETT ELEMENTARY
ODEBOLT-ARTHUR COMM SCHOOL DISTRICT	ODEBOLT-ARTHUR ELEMENTARY SCHOOL
OTTUMWA COMM SCHOOL DISTRICT	EISENHOWER ELEMENTARY SCHOOL
OTTUMWA COMM SCHOOL DISTRICT	WILSON ELEMENTARY SCHOOL
PATON-CHURDAN COMM SCHOOL DISTRICT	PATON-CHURDAN ELEMENTARY
PCM COMM SCHOOL DISTRICT	MONROE ELEMENTARY SCHOOL
PERRY COMM SCHOOL DISTRICT	PERRY ELEMENTARY
POMEROY-PALMER COMM SCHOOL DISTRICT	POMEROY ELEMENTARY SCHOOL
POSTVILLE COMM SCHOOL DISTRICT	CORA B DARLING ELEM AND MIDDLE SCHOOL
PRESTON COMM SCHOOL DISTRICT	PRESTON ELEMENTARY SCHOOL
RICEVILLE COMM SCHOOL DISTRICT	RICEVILLE ELEMENTARY SCHOOL
RUDD-ROCKFORD-MARBLE RK COMM SCHOOL DISTRICT	ROCKFORD ELEMENTARY SCHOOL
SCHALLER-CRESTLAND COMM SCHOOL DISTRICT	SCHALLER-CRESTLAND MIDDLE -ELEMENTARY
SENTRAL COMM SCHOOL DISTRICT	SENTRAL ELEMENTARY SCHOOL
SHEFFIELD-CHAPIN COMM SCHOOL DISTRICT	SHEFFIELD ELEMENTARY SCHOOL
SIOUX CENTRAL COMM SCHOOL DISTRICT	SIOUX CENTRAL ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	BRYANT ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	CLARK ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	CRESCENT PARK ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	EMERSON ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	EVERETT ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	GRANT ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	HUNT ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	IRVING ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	JOY ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	LEEDS ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	LINCOLN ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	LONGFELLOW ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	LOWELL ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	MCKINLEY ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	NODLAND ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	RIVERVIEW ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	ROOSEVELT ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	SMITH ELEMENTARY SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	WHITTIER ELEMENTARY SCHOOL

# **M a k e t h e C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

SOUTH HAMILTON COMM SCHOOL DISTRICT  
SOUTH PAGE COMM SCHOOL DISTRICT  
SOUTHEAST POLK COMM SCHOOL DISTRICT  
SPENCER COMM SCHOOL DISTRICT  
ST ANSGAR COMM SCHOOL DISTRICT  
STANTON COMM SCHOOL DISTRICT  
STRATFORD COMM SCHOOL DISTRICT  
TITONKA CONSOLIDATED SCHOOL DISTRICT  
TREYNOR COMM SCHOOL DISTRICT  
TRI-COUNTY COMM SCHOOL DISTRICT  
TURKEY VALLEY COMM SCHOOL DISTRICT  
VENTURA COMM SCHOOL DISTRICT  
VINTON-SHELLSBURG COMM SCHOOL DISTRICT  
WALNUT COMM SCHOOL DISTRICT  
WATERLOO COMM SCHOOL DISTRICT  
WATERLOO COMM SCHOOL DISTRICT  
WEST DES MOINES COMM SCHOOL DISTRICT  
WEST DES MOINES COMM SCHOOL DISTRICT  
WEST DES MOINES COMM SCHOOL DISTRICT  
WEST HANCOCK COMM SCHOOL DISTRICT  
WEST LYON COMM SCHOOL DISTRICT  
WESTERN DUBUQUE COMM SCHOOL DISTRICT  
WHITING COMM SCHOOL DISTRICT  
WILTON COMM SCHOOL DISTRICT  
WINTERSET COMM SCHOOL DISTRICT

SOUTH HAMILTON ELEM.  
SOUTH PAGE ELEMENTARY SCHOOL  
WILLOWBROOK ELEMENTARY SCHOOL  
FAIRVIEW PARK ELEMENTARY SCHOOL  
ST ANSGAR ELEMENTARY SCHOOL  
STANTON ELEMENTARY SCHOOL  
STRATFORD ELEMENTARY SCHOOL  
TITONKA ELEMENTARY SCHOOL  
TREYNOR ELEMENTARY SCHOOL  
THORNBURG ELEMENTARY SCHOOL  
TURKEY VALLEY ELEMENTARY SCHOOL  
VENTURA ELEMENTARY SCHOOL  
EAST LINCOLN CENTER  
WALNUT ELEMENTARY SCHOOL  
KITRELL ELEMENTARY SCHOOL  
ORANGE ELEMENTARY SCHOOL  
CLIVE ELEMENTARY SCHOOL  
FAIR MEADOWS ELEMENTARY SCHOOL  
WESTERN HILLS ELEMENTARY SCHOOL  
KANAWHA ELEMENTARY SCHOOL  
WEST LYON ELEMENTARY SCHOOL  
EPWORTH ELEMENTARY SCHOOL  
WHITING ELEMENTARY SCHOOL  
WILTON ELEMENTARY SCHOOL  
WINTERSET ELEMENTARY SCHOOL

## **Middle Schools (8<sup>th</sup> Grade)**

A-H-S-T COMM SCHOOL DISTRICT  
AKRON WESTFIELD COMM SCHOOL DISTRICT  
ALBERT CITY-TRUESDALE COMM SCHOOL DISTRICT  
ALBIA COMM SCHOOL DISTRICT  
ALBURNETT COMM SCHOOL DISTRICT  
ALLAMAKEE COMM SCHOOL DISTRICT  
ANAMOSA COMM SCHOOL DISTRICT  
ANDREW COMM SCHOOL DISTRICT  
ANITA COMM SCHOOL DISTRICT  
ANKENY COMM SCHOOL DISTRICT  
ARMSTRONG-RINGSTED COMM SCHOOL DISTRICT  
ATLANTIC COMM SCHOOL DISTRICT  
BELLEVUE COMM SCHOOL DISTRICT  
BENNETT COMM SCHOOL DISTRICT  
BETTENDORF COMM SCHOOL DISTRICT  
BONDURANT-FARRAR COMM SCHOOL DISTRICT  
BURLINGTON COMM SCHOOL DISTRICT  
BURLINGTON COMM SCHOOL DISTRICT  
CALAMUS-WHEATLAND COMM SCHOOL DISTRICT  
CAMANCHE COMM SCHOOL DISTRICT  
CARDINAL COMM SCHOOL DISTRICT  
CARROLL COMM SCHOOL DISTRICT

A-H-S-T MIDDLE SCHOOL  
AKRON WESTFIELD MIDDLE SCHOOL  
ALBERT CITY-TRUESDALE HIGH SCHOOL  
ALBIA HIGH SCHOOL  
ALBURNETT JUNIOR-SENIOR HIGH SCHOOL  
WAUKON JUNIOR HIGH SCHOOL  
ANAMOSA MIDDLE SCHOOL  
ANDREW HIGH SCHOOL  
ANITA JUNIOR-SENIOR HIGH SCHOOL  
NORTHVIEW MIDDLE SCHOOL  
ARMSTRONG-RINGSTED MIDDLE SCHOOL  
ATLANTIC MIDDLE SCHOOL  
BELLEVUE HIGH SCHOOL  
BENNETT JUNIOR-SENIOR HIGH SCHOOL  
BETTENDORF MIDDLE SCHOOL  
BONDURANT-FARRAR JR-SR HIGH SCHOOL  
JAMES MADISON MIDDLE SCHOOL  
OAK STREET MIDDLE SCHOOL  
CALAMUS-WHEATLAND SEC  
CAMANCHE MIDDLE SCHOOL  
CARDINAL JUNIOR-SENIOR HIGH SCHOOL  
CARROLL MIDDLE SCHOOL

# **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

CEDAR FALLS COMM SCHOOL DISTRICT	PEET JUNIOR HIGH SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	FRANKLIN MIDDLE SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	HARDING MIDDLE SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	MC KINLEY MIDDLE SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	ROOSEVELT MIDDLE SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	TAFT MIDDLE SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	WILSON SCHOOL
CENTRAL COMM SCHOOL DISTRICT	CENTRAL COMMUNITY JR-SR HIGH SCHOOL
CENTRAL DECATUR COMM SCHOOL DISTRICT	CENTRAL DECATUR JR-SR HIGH SCHOOL
CENTRAL LYON COMM SCHOOL DISTRICT	CENTRAL LYON MIDDLE SCHOOL
CHARITON COMM SCHOOL DISTRICT	CHARITON MIDDLE SCHOOL
CLARION-GOLDFIELD COMM SCHOOL DISTRICT	CLARION-GOLDFIELD MS
CLARKE COMM SCHOOL DISTRICT	CLARKE JUNIOR HIGH SCHOOL
CLEAR LAKE COMM SCHOOL DISTRICT	CLEAR LAKE JUNIOR HIGH SCHOOL
CLINTON COMM SCHOOL DISTRICT	WASHINGTON MIDDLE SCHOOL
COLLEGE COMM SCHOOL DISTRICT	PRAIRIE MIDDLE HIGH SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	GERALD W KIRN JUNIOR HIGH SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	WOODROW WILSON JUNIOR HIGH SCHOOL
DALLAS CENTER-GRIMES COMM SCHOOL DISTRICT	DALLAS CENTER-GRIMES JUNIOR HIGH SCHOOL
DANVILLE COMM SCHOOL DISTRICT	DANVILLE JUNIOR-SENIOR HIGH SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	J B YOUNG INTERMEDIATE
DAVENPORT COMM SCHOOL DISTRICT	WALCOTT INTERMEDIATE
DAVENPORT COMM SCHOOL DISTRICT	WILLIAMS INTERMEDIATE
DAVENPORT COMM SCHOOL DISTRICT	WOOD INTERMEDIATE
DAVIS COUNTY COMM SCHOOL DISTRICT	DAVIS COUNTY MIDDLE SCHOOL
DECORAH COMM SCHOOL DISTRICT	DECORAH MIDDLE SCHOOL
DENISON COMM SCHOOL DISTRICT	DENISON MIDDLE SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	HIATT MIDDLE SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	MCCOMBS MIDDLE SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	WEEKS MIDDLE SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	JEFFERSON JUNIOR HIGH SCHOOL
DURANT COMM SCHOOL DISTRICT	DURANT MIDDLE SCHOOL
EAST CENTRAL COMM SCHOOL DISTRICT	SABULA MIDDLE SCHOOL
EAST UNION COMM SCHOOL DISTRICT	EAST UNION JUNIOR-SENIOR HIGH SCHOOL
ESTHERVILLE LINCOLN CENTRAL COM SCH DIST	ESTHERVILLE LINCOLN CENTRAL MIDDLE SCHOOL
FAIRFIELD COMM SCHOOL DISTRICT	FAIRFIELD MIDDLE SCHOOL
FOREST CITY COMM SCHOOL DISTRICT	FOREST CITY MIDDLE SCHOOL
FORT DODGE COMM SCHOOL DISTRICT	PHILLIPS MIDDLE SCHOOL
FORT MADISON COMM SCHOOL DISTRICT	FORT MADISON MIDDLE SCHOOL
FOX VALLEY COMM SCHOOL DISTRICT	FOX VALLEY HIGH SCHOOL
FREMONT-MILLS COMM SCHOOL DISTRICT	FREMONT-MILLS MIDDLE AND SENIOR HIGH SCHOOL
GALVA-HOLSTEIN COMM SCHOOL DISTRICT	GALVA-HOLSTEIN MIDDLE SCHOOL
GARNER-HAYFIELD COMM SCHOOL DISTRICT	GARNER-HAYFIELD MIDDLE SCHOOL
GLENWOOD COMM SCHOOL DISTRICT	GLENWOOD MIDDLE SCHOOL
GLIDDEN-RALSTON COMM SCHOOL DISTRICT	GLIDDEN-RALSTON JR-SR HIGH SCHOOL
GMG COMM SCHOOL DISTRICT	GMG SECONDARY SCHOOL
H-L-V COMM SCHOOL DISTRICT	H-L-V JUNIOR-SENIOR HIGH SCHOOL
HAMBURG COMM SCHOOL DISTRICT	HAMBURG JUNIOR-SENIOR HIGH SCHOOL



# **M a k e t h e C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

HARLAN COMM SCHOOL DISTRICT	HARLAN COMMUNITY MIDDLE SCHOOL
HARMONY COMM SCHOOL DISTRICT	HARMONY MIDDLE SCHOOL
HIGHLAND COMM SCHOOL DISTRICT	HIGHLAND JUNIOR HIGH SCHOOL
HINTON COMM SCHOOL DISTRICT	HINTON MIDDLE SCHOOL
HUDSON COMM SCHOOL DISTRICT	HUDSON MIDDLE SCHOOL
HUMBOLDT COMM SCHOOL DISTRICT	HUMBOLDT JUNIOR HIGH SCHOOL
INDEPENDENCE COMM SCHOOL DISTRICT	INDEPENDENCE MIDDLE SCHOOL
INDIANOLA COMM SCHOOL DISTRICT	INDIANOLA MIDDLE SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	NORTHWEST JUNIOR HIGH SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	SOUTHEAST JUNIOR HIGH SCHOOL
JOHNSTON COMM SCHOOL DISTRICT	JOHNSTON MIDDLE SCHOOL
KEOKUK COMM SCHOOL DISTRICT	KEOKUK MIDDLE SCHOOL
KEOTA COMM SCHOOL DISTRICT	KEOTA HIGH SCHOOL
LAWTON-BRONSON COMM SCHOOL DISTRICT	LAWTON JUNIOR-SENIOR HIGH SCHOOL
LE MARS COMM SCHOOL DISTRICT	LE MARS MIDDLE SCHOOL
LENOX COMM SCHOOL DISTRICT	LENOX HIGH SCHOOL
LEWIS CENTRAL COMM SCHOOL DISTRICT	LEWIS CENTRAL MIDDLE SCHOOL
LINN-MAR COMM SCHOOL DISTRICT	LINN-MAR MIDDLE SCHOOL
LOGAN-MAGNOLIA COMM SCHOOL DISTRICT	LOGAN-MAGNOLIA JR-SR HIGH SCHOOL
LOUISA-MUSCATINE COMM SCHOOL DISTRICT	LOUISA-MUSCATINE JR-SR HIGH SCHOOL
MAQUOKETA COMM SCHOOL DISTRICT	MAQUOKETA MIDDLE SCHOOL
MARCUS-MERIDEN-CLEGHORN COMM SCHOOL DISTRICT	MARCUS-MERIDEN-CLEGHORN MIDDLE SCHOOL
MARTENSDALE-ST MARYS COMM SCHOOL DISTRICT	MARTENSDALE-ST MARYS JR-SR HIGH SCHOOL
MASON CITY COMM SCHOOL DISTRICT	JOHN ADAMS MIDDLE SCHOOL
MEDIAPOLIS COMM SCHOOL DISTRICT	MIDDLE SCHOOL
MOC-FLOYD VALLEY COMM SCHOOL DISTRICT	MOC-FLOYD ALLEY MIDDLE SCHOOL
MOULTON-UDELL COMM SCHOOL DISTRICT	MOULTON-UDELL HIGH SCHOOL
MURRAY COMM SCHOOL DISTRICT	MURRAY SCHOOL MURRAY JR/SR HIGH
MUSCATINE COMM SCHOOL DISTRICT	CENTRAL MIDDLE SCHOOL
MUSCATINE COMM SCHOOL DISTRICT	WEST MIDDLE SCHOOL
NEWELL-FONDA COMM SCHOOL DISTRICT	NEWELL-FONDA MIDDLE
NISHNA VALLEY COMM SCHOOL DISTRICT	NISHNA VALLEY JR-SR HIGH SCHOOL
NORA SPRINGS-ROCK FALLS COMM SCHOOL DISTRICT	NORA SPRINGS-ROCK FALLS JR-SR HIGH SCHOOL
NORTH CENTRAL COMM SCHOOL DISTRICT	NORTH CENTRAL JR-SR HIGH SCHOOL
NORTH IOWA COMM SCHOOL DISTRICT	NORTH IOWA MIDDLE SCH
NORTH MAHASKA COMM SCHOOL DISTRICT	NORTH MAHASKA JR-SR HIGH SCHOOL
NORTH POLK COMM SCHOOL DISTRICT	NORTH POLK JUNIOR-SENIOR HIGH SCHOOL
NORTH TAMA COUNTY COMM SCHOOL DISTRICT	NORTH TAMA HIGH SCHOOL
NORTH WINNESHIEK COMM SCHOOL DISTRICT	NORTH WINNESHIEK JR-SR HIGH SCHOOL
NORTHEAST COMM SCHOOL DISTRICT	NORTHEAST MIDDLE-HIGH SCHOOL
NORTHEAST HAMILTON COMM SCHOOL DISTRICT	NORTHEAST HAMILTON MIDDLE SCHOOL
NORTHWOOD-KENSETT COMM SCHOOL DISTRICT	NORTHWOOD-KENSETT JR-SR HIGH SCHOOL
OSAGE COMM SCHOOL DISTRICT	OSAGE MIDDLE SCHOOL
OSKALOOSA COMM SCHOOL DISTRICT	OSKALOOSA JUNIOR HIGH SCHOOL
OTTUMWA COMM SCHOOL DISTRICT	EVANS MIDDLE SCHOOL
PEKIN COMM SCHOOL DISTRICT	PEKIN MIDDLE SCHOOL
PERRY COMM SCHOOL DISTRICT	PERRY MIDDLE SCHOOL
POCAHONTAS AREA COMM SCHOOL DISTRICT	POCAHONTAS AREA MIDDLE SCHOOL

## **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

POSTVILLE COMM SCHOOL DISTRICT	CORA B DARLING ELEM AND MIDDLE SCHOOL
PRESTON COMM SCHOOL DISTRICT	PRESTON HIGH SCHOOL
RED OAK COMM SCHOOL DISTRICT	RED OAK MIDDLE SCHOOL
ROCKWELL CITY-LYTTON COMM SCHOOL DISTRICT	ROCKWELL CITY-LYTTON MIDDLE SCHOOL
RUDD-ROCKFORD-MARBLE RK COMM SCHOOL DISTRICT	ROCKFORD MIDDLE-SENIOR HIGH SCHOOL
SCHALLER-CRESTLAND COMM SCHOOL DISTRICT	SCHALLER-CRESTLAND MIDDLE -ELEMENTARY
SENTRAL COMM SCHOOL DISTRICT	SENTRAL JR/SR HIGH SCHOOL
SIBLEY-OCHEYEDAN COMM SCHOOL DISTRICT	SIBLEY-OCHEYEDAN MIDDLE SCHOOL
SIDNEY COMM SCHOOL DISTRICT	SIDNEY HIGH SCHOOL
SIGOURNEY COMM SCHOOL DISTRICT	SIGOURNEY JR-SR HIGH SCH
SIOUX CITY COMM SCHOOL DISTRICT	EAST MIDDLE SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	HERBERT HOOVER MIDDLE SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	WEST MIDDLE SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	WOODROW WILSON MIDDLE SCHOOL
SOUTH HAMILTON COMM SCHOOL DISTRICT	SOUTH HAMILTON MIDDLE AND HIGH SCHOOL
SOUTH PAGE COMM SCHOOL DISTRICT	SOUTH PAGE SENIOR HIGH SCHOOL
SOUTHEAST WARREN COMM SCHOOL DISTRICT	SOUTHEAST WARREN JR-SR HIGH SCHOOL
SOUTHERN CAL COMM SCHOOL DISTRICT	SOUTHERN CAL MIDDLE SCHOOL
SPIRIT LAKE COMM SCHOOL DISTRICT	SPIRIT LAKE MIDDLE SCHOOL
ST ANSGAR COMM SCHOOL DISTRICT	ST. ANSGAR MIDDLE SCHOOL
STANTON COMM SCHOOL DISTRICT	STANTON HIGH SCHOOL
STORM LAKE COMM SCHOOL DISTRICT	STORM LAKE MIDDLE SCHOOL
TITONKA CONSOLIDATED SCHOOL DISTRICT	TITONKA MIDDLE SCHOOL
TREYNOR COMM SCHOOL DISTRICT	TREYNOR JUNIOR-SENIOR HIGH SCHOOL
TRI-COUNTY COMM SCHOOL DISTRICT	TRI-COUNTY JUNIOR HIGH SCHOOL
TURKEY VALLEY COMM SCHOOL DISTRICT	TURKEY VALLEY JR-SR HIGH SCHOOL
TWIN CEDARS COMM SCHOOL DISTRICT	TWIN CEDARS JR-SR HIGH SCHOOL
URBANDALE COMM SCHOOL DISTRICT	URBANDALE MIDDLE SCHOOL
VAN BUREN COMM SCHOOL DISTRICT	VAN BUREN COMMUNITY JR-SR HIGH SCHOOL
VENTURA COMM SCHOOL DISTRICT	VENTURA JR-SR HIGH SCHOOL
VINTON-SHELLSBURG COMM SCHOOL DISTRICT	TILFORD MIDDLE SCHOOL
WALNUT COMM SCHOOL DISTRICT	WALNUT MIDDLE SCHOOL
WASHINGTON COMM SCHOOL DISTRICT	WASHINGTON JUNIOR HIGH SCHOOL
WATERLOO COMM SCHOOL DISTRICT	BUNGER MIDDLE SCHOOL
WATERLOO COMM SCHOOL DISTRICT	CENTRAL MIDDLE SCHOOL
WAYNE COMM SCHOOL DISTRICT	WAYNE COMMUNITY JUNIOR HIGH SCHOOL
WEST DES MOINES COMM SCHOOL DISTRICT	INDIAN HILLS JUNIOR HIGH SCHOOL
WEST DES MOINES COMM SCHOOL DISTRICT	STILWELL JUNIOR HIGH SCHOOL
WEST HARRISON COMM SCHOOL DISTRICT	WEST HARRISON HIGH SCHOOL
WEST LIBERTY COMM SCHOOL DISTRICT	WEST LIBERTY MIDDLE SCHOOL
WEST LYON COMM SCHOOL DISTRICT	WEST LYON JUNIOR HIGH SCHOOL
WEST SIOUX COMM SCHOOL DISTRICT	WEST SIOUX MIDDLE SCHOOL
WESTERN DUBUQUE COMM SCHOOL DISTRICT	CASCADE JUNIOR-SENIOR HIGH SCHOOL
WILLIAMSBURG COMM SCHOOL DISTRICT	WILLIAMSBURG JR-SR HIGH SCHOOL

# Make the Connection

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

## High Schools (11<sup>th</sup> Grade)

ALBIA COMM SCHOOL DISTRICT	ALBIA HIGH SCHOOL
ALBURNETT COMM SCHOOL DISTRICT	ALBURNETT JUNIOR-SENIOR HIGH SCHOOL
ALLAMAKEE COMM SCHOOL DISTRICT	WAUKON HIGH SCHOOL
AMES COMM SCHOOL DISTRICT	AMES HIGH SCHOOL
ANDREW COMM SCHOOL DISTRICT	ANDREW HIGH SCHOOL
ANITA COMM SCHOOL DISTRICT	ANITA JUNIOR-SENIOR HIGH SCHOOL
ARMSTRONG-RINGSTED COMM SCHOOL DISTRICT	ARMSTRONG-RINGSTED HIGH SCHOOL
ATLANTIC COMM SCHOOL DISTRICT	ATLANTIC HIGH SCHOOL
BELLEVUE COMM SCHOOL DISTRICT	BELLEVUE HIGH SCHOOL
BELMOND-KLEMME COMM SCHOOL DISTRICT	BELMOND-KLEMME COMMUNITY HIGH SCHOOL
BENNETT COMM SCHOOL DISTRICT	BENNETT JUNIOR-SENIOR HIGH SCHOOL
BETTENDORF COMM SCHOOL DISTRICT	BETTENDORF HIGH SCHOOL
BONDURANT-FARRAR COMM SCHOOL DISTRICT	BONDURANT-FARRAR JR-SR HIGH SCHOOL
BOONE COMM SCHOOL DISTRICT	BOONE HIGH SCHOOL
BOYER VALLEY COMM SCHOOL DISTRICT	BOYER VALLEY HIGH SCHOOL
BROOKLYN-GUERNSEY-MALCOM COMM SCHOOL DISTRICT	BROOKLYN-GUERNSEY-MALCOM JR-SR HIGH SCHOOL
BURLINGTON COMM SCHOOL DISTRICT	BURLINGTON COMMUNITY HIGH SCHOOL
C AND M COMM SCHOOL DISTRICT	C AND M JUNIOR-SENIOR HIGH SCHOOL
CALAMUS-WHEATLAND COMM SCHOOL DISTRICT	CALAMUS-WHEATLAND SEC
CAMANCHE COMM SCHOOL DISTRICT	CAMANCHE HIGH SCHOOL
CARDINAL COMM SCHOOL DISTRICT	CARDINAL JUNIOR-SENIOR HIGH SCHOOL
CARROLL COMM SCHOOL DISTRICT	CARROLL HIGH SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	GEORGE WASHINGTON HIGH SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	JOHN F KENNEDY HIGH SCHOOL
CEDAR RAPIDS COMM SCHOOL DISTRICT	THOMAS JEFFERSON HIGH SCHOOL
CENTERVILLE COMM SCHOOL DISTRICT	CENTERVILLE HIGH SCHOOL
CENTRAL CLINTON COMM SCHOOL DISTRICT	CENTRAL HIGH SCHOOL
CENTRAL COMM SCHOOL DISTRICT	CENTRAL COMMUNITY JR-SR HIGH SCHOOL
CENTRAL DECATUR COMM SCHOOL DISTRICT	CENTRAL DECATUR JR-SR HIGH SCHOOL
CHARITON COMM SCHOOL DISTRICT	CHARITON HIGH SCHOOL
CHARLES CITY COMM SCHOOL DISTRICT	CHARLES CITY HIGH SCHOOL
CHEROKEE COMM SCHOOL DIST	WASHINGTON HIGH SCHOOL
CLARION-GOLDFIELD COMM SCHOOL DISTRICT	CLARION-GOLDFIELD HS
CLARKE COMM SCHOOL DISTRICT	CLARKE COMMUNITY HIGH SCHOOL
CLEAR CREEK-AMANA COMM SCHOOL DISTRICT	CLEAR CREEK-AMANA HIGH SCHOOL
CLEAR LAKE COMM SCHOOL DISTRICT	CLEAR LAKE HIGH SCHOOL
CLINTON COMM SCHOOL DISTRICT	CLINTON HIGH SCHOOL
CLINTON COMM SCHOOL DISTRICT	LINCOLN ALTERNATIVE HIGH SCHOOL
COLLEGE COMM SCHOOL DISTRICT	PRAIRIE HIGH SCHOOL
CORNING COMM SCHOOL DISTRICT	CORNING HIGH SCHOOL
CORWITH-WESLEY COMM SCHOOL DISTRICT	CORWITH-WESLEY HIGH SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	ABRAHAM LINCOLN HIGH SCHOOL
COUNCIL BLUFFS COMM SCHOOL DISTRICT	THOMAS JEFFERSON HIGH SCHOOL
DALLAS CENTER-GRIMES COMM SCHOOL DISTRICT	DALLAS CENTER-GRIMES COMMUNITY HIGH SCHOOL
DANVILLE COMM SCHOOL DISTRICT	DANVILLE JUNIOR-SENIOR HIGH SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	NORTH HIGH SCHOOL
DAVENPORT COMM SCHOOL DISTRICT	WEST HIGH SCHOOL

# **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

DECORAH COMM SCHOOL DISTRICT	DECORAH HIGH SCHOOL
DENISON COMM SCHOOL DISTRICT	DENISON HIGH SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	EAST HIGH SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	HOOVER HIGH SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	LINCOLN HIGH SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	NORTH HIGH SCHOOL
DES MOINES INDEPENDENT COMM SCHOOL DISTRICT	ROOSEVELT HIGH SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	DUBUQUE SENIOR HIGH SCHOOL
DUBUQUE COMM SCHOOL DISTRICT	HEMPSTEAD HIGH SCHOOL
EAGLE GROVE COMM SCHOOL DISTRICT	EAGLE GROVE HIGH SCHOOL
EAST CENTRAL COMM SCHOOL DISTRICT	EAST CENTRAL COMMUNITY HIGH SCHOOL
EAST UNION COMM SCHOOL DISTRICT	EAST UNION JUNIOR-SENIOR HIGH SCHOOL
EDGEWOOD-COLESBURG COMM SCHOOL DISTRICT	EDGEWOOD-COLESBURG HIGH SCHOOL
FAIRFIELD COMM SCHOOL DISTRICT	FAIRFIELD HIGH SCHOOL
FOREST CITY COMM SCHOOL DISTRICT	FOREST CITY HIGH SCHOOL
FORT DODGE COMM SCHOOL DISTRICT	FORT DODGE HIGH SCHOOL
FORT MADISON COMM SCHOOL DISTRICT	FORT MADISON HIGH SCHOOL
FOX VALLEY COMM SCHOOL DISTRICT	FOX VALLEY HIGH SCHOOL
FREMONT-MILLS COMM SCHOOL DISTRICT	FREMONT-MILLS MIDDLE AND SENIOR HIGH SCHOOL
GARNER-HAYFIELD COMM SCHOOL DISTRICT	GARNER-HAYFIELD HIGH SCHOOL
GLENWOOD COMM SCHOOL DISTRICT	GLENWOOD SENIOR HIGH SCHOOL
GLIDDEN-RALSTON COMM SCHOOL DISTRICT	GLIDDEN-RALSTON JR-SR HIGH SCHOOL
GMG COMM SCHOOL DISTRICT	GMG SECONDARY SCHOOL
GRINNELL-NEWBURG COMM SCHOOL DISTRICT	GRINNELL COMMUNITY SENIOR HIGH SCHOOL
H-L-V COMM SCHOOL DISTRICT	H-L-V JUNIOR-SENIOR HIGH SCHOOL
HAMBURG COMM SCHOOL DISTRICT	HAMBURG JUNIOR-SENIOR HIGH SCHOOL
HARLAN COMM SCHOOL DISTRICT	HARLAN COMMUNITY HIGH SCHOOL
HIGHLAND COMM SCHOOL DISTRICT	HIGHLAND HIGH SCHOOL
HINTON COMM SCHOOL DISTRICT	HINTON HIGH SCHOOL
INDEPENDENCE COMM SCHOOL DISTRICT	INDEPENDENCE HIGH SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	IOWA CITY HIGH SCHOOL
IOWA CITY COMM SCHOOL DISTRICT	WEST SENIOR HIGH SCHOOL
IOWA FALLS COMM SCHOOL DISTRICT	IOWA FALLS HIGH SCHOOL 109
JEFFERSON-SCRANTON COMM SCHOOL DISTRICT	JEFFERSON-SCRANTON HIGH SCHOOL
JOHNSTON COMM SCHOOL DISTRICT	JOHNSTON SENIOR HIGH SCHOOL
KEOKUK COMM SCHOOL DISTRICT	KEOKUK HIGH SCHOOL
KEOTA COMM SCHOOL DISTRICT	KEOTA HIGH SCHOOL
KNOXVILLE COMM SCHOOL DISTRICT	KNOXVILLE HIGH SCHOOL
LAURENS-MARATHON COMM SCHOOL DISTRICT	LAURENS-MARATHON HIGH SCHOOL
LAWTON-BRONSON COMM SCHOOL DISTRICT	LAWTON JUNIOR-SENIOR HIGH SCHOOL
LE MARS COMM SCHOOL DISTRICT	LE MARS HIGH SCHOOL
LENOX COMM SCHOOL DISTRICT	LENOX HIGH SCHOOL
LEWIS CENTRAL COMM SCHOOL DISTRICT	LEWIS CENTRAL SENIOR HIGH SCHOOL
LINN-MAR COMM SCHOOL DISTRICT	LINN-MAR HIGH SCHOOL
LISBON COMM SCHOOL DISTRICT	LISBON HIGH SCHOOL
LOGAN-MAGNOLIA COMM SCHOOL DISTRICT	LOGAN-MAGNOLIA JR-SR HIGH SCHOOL
MADRID COMM SCHOOL DISTRICT	MADRID HIGH SCHOOL
MANSON NORTHWEST WEBSTER COMM SCHOOL DISTRICT	MANSON NORTHWEST WEBSTER HIGH SCHOOL

# **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

MAPLE VALLEY COMM SCHOOL DISTRICT	MAPLE VALLEY-ANTHON OTO HIGH SCHOOL
MAQUOKETA COMM SCHOOL DISTRICT	MAQUOKETA HIGH SCHOOL
MARTENSDALE-ST MARYS COMM SCHOOL DISTRICT	MARTENSDALE-ST MARYS JR-SR HIGH SCHOOL
MEDIAPOLIS COMM SCHOOL DISTRICT	MEDIAPOLIS HIGH SCHOOL
MFL MARMAC COMM SCHOOL DISTRICT	MFL MARMAC HS
MOC-FLOYD VALLEY COMM SCHOOL DISTRICT	MOC-FLOYD VALLEY HIGH SCHOOL
MONTICELLO COMM SCHOOL DISTRICT	MONTICELLO HIGH SCHOOL
MORMON TRAIL COMM SCHOOL DISTRICT	MORMON TRAIL JR-SR HIGH SCHOOL
MOULTON-UDELL COMM SCHOOL DISTRICT	MOULTON-UDELL HIGH SCHOOL
MOUNT PLEASANT COMM SCHOOL DISTRICT	MOUNT PLEASANT HIGH SCHOOL
MOUNT VERNON COMM SCHOOL DISTRICT	MOUNT VERNON HIGH SCHOOL
MURRAY COMM SCHOOL DISTRICT	MURRAY SCHOOL MURRAY JR/SR HIGH
MUSCATINE COMM SCHOOL DISTRICT	MUSCATINE HIGH SCHOOL
NEVADA COMM SCHOOL DISTRICT	NEVADA HIGH SCHOOL
NEW HAMPTON COMM SCHOOL DISTRICT	NEW HAMPTON HIGH SCHOOL
NEWTON COMM SCHOOL DISTRICT	NEWTON SENIOR HIGH SCHOOL
NISHNA VALLEY COMM SCHOOL DISTRICT	NISHNA VALLEY JR-SR HIGH SCHOOL
NORA SPRINGS-ROCK FALLS COMM SCHOOL DISTRICT	NORA SPRINGS-ROCK FALLS JR-SR HIGH SCHOOL
NORTH CEDAR COMM SCHOOL DISTRICT	NORTH CEDAR HIGH SCHOOL
NORTH CENTRAL COMM SCHOOL DISTRICT	NORTH CENTRAL JR-SR HIGH SCHOOL
NORTH IOWA COMM SCHOOL DISTRICT	NORTH IOWA HIGH SCHOOL
NORTH MAHASKA COMM SCHOOL DISTRICT	NORTH MAHASKA JR-SR HIGH SCHOOL
NORTH POLK COMM SCHOOL DISTRICT	NORTH POLK JUNIOR-SENIOR HIGH SCHOOL
NORTH TAMA COUNTY COMM SCHOOL DISTRICT	NORTH TAMA HIGH SCHOOL
NORTH WINNESHIEK COMM SCHOOL DISTRICT	NORTH WINNESHIEK JR-SR HIGH SCHOOL
NORTHEAST COMM SCHOOL DISTRICT	NORTHEAST MIDDLE-HIGH SCHOOL
NORTHWOOD-KENSETT COMM SCHOOL DISTRICT	NORTHWOOD-KENSETT JR-SR HIGH SCHOOL
NORWALK COMM SCHOOL DISTRICT	NORWALK SENIOR HIGH SCHOOL
OSAGE COMM SCHOOL DISTRICT	OSAGE HIGH SCHOOL
OSKALOOSA COMM SCHOOL DISTRICT	OSKALOOSA HIGH SCHOOL
OTTUMWA COMM SCHOOL DISTRICT	OTTUMWA HIGH SCHOOL
PCM COMM SCHOOL DISTRICT	PCM HIGH SCHOOL
PELLA COMM SCHOOL DISTRICT	PELLA HIGH SCHOOL
PLEASANTVILLE COMM SCHOOL DISTRICT	PLEASANTVILLE HIGH SCHOOL
POMEROY-PALMER COMM SCHOOL DISTRICT	POMEROY HIGH SCHOOL
PRAIRIE VALLEY COMM SCHOOL DISTRICT	PRAIRIE VALLEY HIGH SCHOOL
PRESTON COMM SCHOOL DISTRICT	PRESTON HIGH SCHOOL
RED OAK COMM SCHOOL DISTRICT	RED OAK HIGH SCHOOL
RUDD-ROCKFORD-MARBLE RK COMM SCHOOL DISTRICT	ROCKFORD MIDDLE-SENIOR HIGH SCHOOL
SAYDEL COMM SCHOOL DISTRICT	SAYDEL HIGH SCHOOL
SENTRAL COMM SCHOOL DISTRICT	SENTRAL JR/SR HIGH SCHOOL
SHEFFIELD-CHAPIN COMM SCHOOL DISTRICT	SHEFFIELD-CHAPIN COMM HIGH SCHOOL
SHELDON COMM SCHOOL DISTRICT	SHELDON HIGH SCHOOL
SHENANDOAH COMM SCHOOL DISTRICT	SHENANDOAH HIGH SCHOOL
SIDNEY COMM SCHOOL DISTRICT	SIDNEY HIGH SCHOOL
SIGOURNEY COMM SCHOOL DISTRICT	SIGOURNEY JR-SR HIGH SCH
SIOUX CENTRAL COMM SCHOOL DISTRICT	SIOUX CENTRAL HIGH
SIOUX CITY COMM SCHOOL DISTRICT	EAST HIGH SCHOOL
SIOUX CITY COMM SCHOOL DISTRICT	NORTH HIGH SCHOOL

# **M a k e   t h e   C o n n e c t i o n**

*Quality School Library Media Programs Impact Academic Achievement in Iowa*

SIOUX CITY COMM SCHOOL DISTRICT	WEST HIGH SCHOOL
SOUTH HAMILTON COMM SCHOOL DISTRICT	SOUTH HAMILTON MIDDLE AND HIGH SCHOOL
SOUTH PAGE COMM SCHOOL DISTRICT	SOUTH PAGE SENIOR HIGH SCHOOL
SOUTH TAMA COUNTY COMM SCHOOL DISTRICT	SOUTH TAMA COUNTY HIGH SCHOOL
SOUTHEAST POLK COMM SCHOOL DISTRICT	SOUTHEAST POLK HIGH SCHOOL
SOUTHEAST WARREN COMM SCHOOL DISTRICT	SOUTHEAST WARREN JR-SR HIGH SCHOOL
ST ANSGAR COMM SCHOOL DISTRICT	ST ANSGAR HIGH SCHOOL
STANTON COMM SCHOOL DISTRICT	STANTON HIGH SCHOOL
TIPTON COMM SCHOOL DISTRICT	TIPTON HIGH SCHOOL
TREYNOR COMM SCHOOL DISTRICT	TREYNOR JUNIOR-SENIOR HIGH SCHOOL
TRI-COUNTY COMM SCHOOL DISTRICT	TRI-COUNTY HIGH SCHOOL
TURKEY VALLEY COMM SCHOOL DISTRICT	TURKEY VALLEY JR-SR HIGH SCHOOL
TWIN CEDARS COMM SCHOOL DISTRICT	TWIN CEDARS JR-SR HIGH SCHOOL
TWIN RIVERS COMM SCHOOL DISTRICT	TWIN RIVER VALLEY HIGH SCHOOL
URBANDALE COMM SCHOOL DISTRICT	URBANDALE HIGH SCHOOL
VAN BUREN COMM SCHOOL DISTRICT	VAN BUREN COMMUNITY JR-SR HIGH SCHOOL
VENTURA COMM SCHOOL DISTRICT	VENTURA JR-SR HIGH SCHOOL
VINTON-SHELLSBURG COMM SCHOOL DISTRICT	WASHINGTON HIGH SCHOOL
WAUKEE COMM SCHOOL DISTRICT	WAUKEE SENIOR HIGH SCHOOL
WEST BEND-MALLARD COMM SCHOOL DISTRICT	WEST BEND-MALLARD HIGH SCHOOL
WEST DELAWARE COUNTY COMM SCHOOL DISTRICT	WEST DELAWARE HIGH SCHOOL
WEST HARRISON COMM SCHOOL DISTRICT	WEST HARRISON HIGH SCHOOL
WEST LIBERTY COMM SCHOOL DISTRICT	WEST LIBERTY HIGH SCHOOL
WEST LYON COMM SCHOOL DISTRICT	WEST LYON HIGH SCHOOL
WEST SIOUX COMM SCHOOL DISTRICT	WEST SIOUX HIGH SCHOOL
WESTERN DUBUQUE COMM SCHOOL DISTRICT	CASCADE JUNIOR-SENIOR HIGH SCHOOL
WESTERN DUBUQUE COMM SCHOOL DISTRICT	WESTERN DUBUQUE HIGH SCHOOL
WHITING COMM SCHOOL DISTRICT	WHITING SENIOR HIGH SCHOOL
WILLIAMSBURG COMM SCHOOL DISTRICT	WILLIAMSBURG JR-SR HIGH SCHOOL
WINTERSET COMM SCHOOL DISTRICT	WINTERSET SENIOR HIGH SCHOOL
WODEN-CRYSTAL LAKE COMM SCHOOL DISTRICT	WODEN-CRYSTAL LAKE- TITONKA HIGH SCHOOL

## Survey of School Library Media Centers in Iowa 2001

**Direct questions to:  
Media Directors at your AEA**

<b>Due Date: February 28, 2001</b>
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**This questionnaire may be downloaded from  
<http://www.aea9.k12.ia.us/statelibrarystudy.html>**

**Return the completed survey in enclosed postage paid envelope or to  
Marcia J. Rodney  
527 W. Ash Ct.  
Louisville, CO 80027**

### PART A - RESPONDENT INFORMATION

Please identify your school by Name, Level, and District, and provide **all contact information** for the individual who responded to this survey.

- Complete a separate questionnaire for **each** school.
- **Do not** combine data for multiple schools in one survey.
- **ALL shaded areas require a response!**

AEA Name										AEA #	
School Name											
School Level (Mark one) <input type="radio"/> Elementary <input type="radio"/> Jr. High/Middle <input type="radio"/> High <input type="radio"/> Combined											
Grades in school (circle <b>all</b> that apply)    Pre-K    1    2    3    4    5    6    7    8    9    10    11    12											
District Name											
School Address								County			
City										Zip code	
The number of Library Media Centers you manage in your <b>building</b> :											
The number of Library Media Centers you manage in your <b>district</b> :											
Name of Respondent						Title:					
<b>Three ways to contact the respondent:</b>											
Phone (    )				Fax (    )				e-Mail			

### PART B - SERVICE HOURS PER TYPICAL WEEK

Please report the typical **weekly** number of hours this library media center is open for use. Report hours during school, before and after school hours, and during the summer.

<i>Item</i>	Line	Number of Hours per Typical <b>Week</b>
Number of hours open per typical school <b>week</b> during school hours	1	
Number of hours open per typical school <b>week</b> before school hours	2	
Number of hours open per typical school <b>week</b> after school hours	3	
Number of hours closed per typical school <b>week</b> during school hours	4	
Number of hours open per typical summer <b>week</b>	5	

## PART C - SCHOOL LIBRARY MEDIA STAFFING - PAID

- Please report the levels of **paid** staff for this library media program.
- Include both the **number** of people at each level (Col. A) and the **total number of staff-hours** per typical **week** for each staff type (Col. B).
- **Do not report more than 40 hours per week per person.**
- Count each individual only once.
- Do **not** include volunteers or student workers or their hours, if any.

**Example:** If two people are reported as "All other paid staff on line C 2 (a) and one works 20 hours per week and the other 10, enter 30 on line C 2 (b).

Paid Staff	<i>Line</i>	<b>Col. A</b> Number of People (head count, <b>not</b> FTE)	<b>Col. B</b> Total Staff-Hours per Typical <b>Week</b>
Library media specialists with teacher & library certification	1		
All other paid staff	2		
<b>TOTALS</b> (Add lines 1 and 2 in <b>both</b> columns → )	<b>3</b>		

## PART D - PAID STAFF ACTIVITIES PER TYPICAL WEEK

- Report your best estimate of the **number of hours** per typical **week** your staff spends on **each** of the following activities.
- Include **all** staff hours, not just professional staff.
- Col. B is **OPTIONAL**. **Only** complete it if you wish to report voluntary unpaid overtime.

Activities	Staff-hours/typical <b>week</b>		
	<i>Line</i>	<b>Col. A</b> Regular Paid hours	<b>Col. B</b> Unpaid Overtime hours
<b>Collaboration</b>			
Hours spent <b>weekly</b> identifying materials for /planning instructional units with teachers	1		
Hours spent weekly teaching students <u>cooperatively</u> with teachers or providing information skills instruction to students—individually or in groups (e.g., locating information, citations, copyright/plagiarism, evaluating Internet sources, note-taking)	2		
Hours spent weekly providing in-service training to teachers and/or other school staff (includes informal one to one and formal group sessions)	3		
Hours spent weekly offering reading incentive activities for students (e.g., reader's advisory services, book talks, story times, author visits, puppet shows)	4		
Hours spent weekly on collection development (e.g., selecting materials)	5		
<b>Leadership</b>	6		
Hours spent weekly meeting with school library staff from building, district, or beyond			
Hours spent weekly meeting with principal/other building or district administrators	7		
Hours spent weekly attending general faculty and/or staff meetings	8		
Hours spent weekly with meeting standards and/or curriculum committees/teams/task forces	9		
<b>Technology</b>			
Hours spent weekly managing computers/library automation/computer network	10		
<b>Other</b>			
Hours spent weekly on <b>All other library activities</b> (e.g., processing, retrieving, checking in and out, re-shelving/re-storing) <i>plus</i> <b>Extra duties unrelated to school library services</b> (e.g., monitoring restrooms, lunch, etc.)	11		
<b>TOTAL WEEKLY HOURS OF PAID STAFF</b> (Add Lines 1 through 11 → )	<b>12</b>		



## PART E - SCHOOL LIBRARY MEDIA TECHNOLOGY

- FIRST, determine the number of computers located *in or under supervision of* the school library. This might include some computers not located *in* the library.
  - (**Note:** For this question, the terms “computer”, “terminal”, and “workstation” are considered synonymous.)
- Enter this number on Line 1 in Col. A.
- THEN, determine the number of computers that are:
  - located elsewhere in the school (like a computer lab, mini-lab, administrative office, etc.), and
  - are *not* under supervision of the school library, and
  - *are* connected to LMC resources. (Do *not* include any that are *not* connected to LMC resources)
- Enter this number on Line 1 in Col. B.
- On Lines 2 through 6, enter the number *of* the Line 1 Totals, in *each* column, that have the accesses, options, etc. specified on each of Lines 2 through 6.
- A computer in either of the Line 1 Totals may be included on as many of Lines 2 through 6 as necessary.
- For example, a computer in the school library might have Internet access *and* a school home page. This computer would be counted on both Lines 2 *and* 5 under Col. A.

Computer Connections and Access	Line	Number of computers in school	
		Col. A <i>Located in or under supervision of school library</i>	Col. B <i>Located elsewhere, not under library control, but connected to LMC resources</i>
<b>TOTALS: FIRST, enter on this line the <i>TOTAL</i> number of computers in <i>each</i> of the Col. A and Col. B categories:</b>	1		
<b>THEN, enter the number of each of the Line 1 TOTALS that have...</b>			
Internet access	2		
Access to the school library catalog	3		
Access to school library databases (e.g., ProQuest, SIRS, EBSCO, E-Library)	4		
Access to a district or school home page to guide users to library resources	5		
Menu option or bookmark to a public library catalog	6		

## PART F - SCHOOL LIBRARY MEDIA USAGE PER TYPICAL WEEK

- Please report the following types of usage of the library media program **per typical WEEK**.
- If these figures must be estimated, and it is easier to estimate for a month or a year:
  - estimate for a month and divide by four; or
  - estimate for a year, and divide by the number of weeks the library media center is open annually.

<i>Type of Usage per Typical Week</i>	<i>Line</i>	<b>Number per Week</b>
<b>Total Visits to the school library</b> , scheduled or unscheduled, by:		
<b>Individuals</b> (students, teachers, administrators, parents, student aides, volunteers, others). Do <i>not</i> count people who are in the LMC in groups	1a	_____ people
<b>Classes</b> or other <b>groups</b> (e.g., the number of <b>classes</b> or <b>groups</b> of teachers, administrators, parents, or students touring your library)	1b	_____ groups
<b>Information skills instruction contacts</b> , scheduled or unscheduled, for purposes like locating information, citations, copyright/plagiarism, critical thinking, evaluating Internet sources, or note-taking by:		
<b>Individuals</b> (students, teachers, administrators, parents, others) Do <i>not</i> count people who are in the LMC in groups	2a	_____ people
<b>Classes</b> or other <b>groups</b> (e.g., the number of <b>groups</b> of teachers, administrators, parents, or students touring your library)	2b	_____ groups
<b>Total circulation</b> of materials, including all formats, in a typical <b>week</b>		
<b>In-library use</b> of materials in a typical <b>week</b> (estimate based on re-shelving count)	4	_____
<b>Inter-library loans to any other library</b> , both in and outside of your district, in a typical <b>week</b>	5	_____
<b>Inter-library loans received from any other library</b> , both in and outside of your district, in a typical <b>week</b> . This includes materials received from your AEA.	6	_____

## PART G - SCHOOL LIBRARY MEDIA COLLECTION

- Report in Col. A and Col. B on *all* holdings (except N/A on Line 4).
- Include all circulating and non-circulating items, *but*
- *Exclude* any materials that are *not* available for use by teachers or students, such as materials reserved for library media staff, the principal, counselors, etc.
- Report average copyright dates in Col. B. If these dates cannot be obtained from an electronic catalog, randomly select 25 items in the category (e.g., one per range or section, every third item, an item from every fifth shelf), and *average* their copyright dates.

<i>Item</i>	Line	<b>Col. A</b> <i>Number</i>	<b>Col. B</b> <i>Average Copyright Year</i>
Books of all types (# of volumes)	1		
Reference books <b>only</b> copyright	2		
Encyclopedias & reference titles on CD-ROM or laser disc	3		
Current print subscriptions to magazines & newspapers	4		<b>N/A</b>
Audio materials (cassettes, CDs, LPs)	5		
Video materials (cassettes and discs)	6		
Computer software packages for use in school library by students	7		
Does the school library subscribe to any online or CD-ROM services (e.g., ProQuest, InfoTrac, UMI, SIRS, Newsbank)?	8	<input type="checkbox"/> YES <input type="checkbox"/> NO	

## PART H - ANNUAL OPERATING EXPENDITURES

- Report the annual operating expenditures for this library media program from school or district funds.
- **Exclude** major one-time capital outlays for computers, furniture, and other equipment.
- **Exclude** labor costs and fees and salaries of personnel assigned to media responsibilities.
- **Exclude** spending from income from book fairs, bake sales, donations, and other volunteer efforts.

<i>Item</i>	Line	<i>Whole dollars only</i>
<b>TOTAL ANNUAL OPERATING EXPENDITURES</b>	1	<b>.00</b>

## PART I - SCHOOL LIBRARY MEDIA MANAGEMENT

- Please mark YES or NO for each of the following questions.
- If there is no library media professional, mark N/A on line 4.

Does the library media staff submit an annual budget request?	1	<input type="checkbox"/> YES <input type="checkbox"/> NO		
Does the library media program have an advisory committee?	2	<input type="checkbox"/> YES <input type="checkbox"/> NO		
Does the library media professional or staff submit an annual report?	3	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
Does the library media professional direct, supervise, or coordinate support staff?	4	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
Does the library have a selection policy and reconsideration policy to prepare itself for challenges?	5	<input type="checkbox"/> YES <input type="checkbox"/> NO		

## PART J - PARTNERSHIP BETWEEN SCHOOL LIBRARY AND PUBLIC LIBRARY

- In this Part and in Part K following, please mark YES or NO for each question.

Do you have a local public library?	1	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program have a working relationship with the local public library?	2	<input type="checkbox"/> YES <input type="checkbox"/> NO
<i>In which of the following ways do your school library media center and the local public library work together?</i>		
Are there electronic access links (such as shared catalog access) between your library and the local public library?	3	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the public library staff present booktalks at the school library?	4	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the school library provide homework alerts to the public library?	5	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the school library direct reference questions to the public library?	6	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the school library receive bulk loans from the public library?	7	<input type="checkbox"/> YES <input type="checkbox"/> NO
Is there a summer reading program at the public library?	8	<input type="checkbox"/> YES <input type="checkbox"/> NO

## PART K - PARTNERSHIP BETWEEN SCHOOL LIBRARY MEDIA PROGRAM AND AEA INSTRUCTIONAL MEDIA SERVICES

Do you take advantage of staff development activities at your AEA?	1	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program acquire databases through the support of AEA media resources?	2	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program use reference information and services from the AEA media program?	3	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program utilize instructional resource materials from the AEA media program?	4	<input type="checkbox"/> YES <input type="checkbox"/> NO
Do you request consulting services from the AEA media program? (by phone, e-mail, face-to-face)	5	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program participate in the cooperative purchasing opportunities offered through the AEA media program? (e.g.; ACEM - AEA Collaborative for Educational Media)	6	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the library media professional regularly receive communication from the AEA Instructional Media staff?	7	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program use production services offered by the AEA media program? (e.g.; slides, video duplication, lamination, printing)	8	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does your library media program request technical assistance from the AEA media program? (e.g.; circulation systems, loading software, computer networks)	9	<input type="checkbox"/> YES <input type="checkbox"/> NO

**Sample Questionnaire—DO NOT RETURN**



Iowa schools with a higher percentage of the best reading scores tend to have stronger library media programs than schools with the lowest percentage of good scores.

.....

At Iowa elementary schools, when the confounding effects of poverty are taken into account, library media programs exert a measurable impact on test scores while other school variables, such as per pupil expenditures and teacher-pupil ratio, do not.

.....

At Iowa middle schools, no matter what overall per pupil spending is, library media services have a positive impact on test scores, while teacher-pupil ratio and teacher experience do not.

.....

At Iowa high schools, the more time library media specialists spend motivating students to read, the higher their test scores are.

### Other School Library Impact Studies

For more information about recent research on the impact of school library media programs on academic achievement, visit the Library Research Service web site, <http://www.lrs.org>. Links are provided to:

- **The Impact of School Library Media Centers on Academic Achievement** (the original 1993 Colorado study),
- **How School Librarians Help Kids Achieve Standards: The Second Colorado Study** (2000),
- **Information Empowered: The School Librarian as an Agent of Academic Achievement in Alaska** (2<sup>nd</sup> edition, 2000), and
- **Measuring Up to Standards: The Role of Library Information Programs & Information Literacy in Pennsylvania Schools** (2000)
- **Good Schools have School Librarians: Oregon School Librarians Collaborate to Improve Academic Achievement** (2001)

### Contact Information

Direct questions and comments about this research to:

Marcia J. Rodney  
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# Make the Connection

Quality School Library Media Programs  
Impact Academic Achievement in  
Iowa

Marcia J. RODNEY  
Keith Curry LANCE  
Christine HAMILTON-PENNELL



2002



# Make the Connection

## Quality School Library Media Programs Impact Academic Achievement in Iowa *Preliminary Results*

Preliminary results are in on the Iowa study of the impact of school libraries on academic achievement.

### Elementary Level

Fourth grade reading scores tend to rise with:

- weekly hours of professional librarian staffing (both total and per 100 students);
- library staff time spent planning and teaching with teachers and managing networked computers;
- the number of library books per student, the number of magazine and newspaper subscriptions (both total and per student), and the number of videos per student; and
- the number of books and other items used in the library per 100 students.

### Middle School Level

Eighth grade reading scores tend to increase with:

- the school library's weekly hours of operation,
- weekly hours of professional librarian staffing per 100 students,
- the number of individual library visits for information literacy instruction per student,
- the number of group visits per 100 students, and
- the number of books and other items used in the library per 100 students.

### High School Level

Eleventh grade reading scores tend to improve with:

- weekly hours of professional librarian staffing per 100 students, and
- weekly staff hours spent offering reading incentive activities for students (total and as a percent of total staff hours).

### Relative Impact of School Library Development, Other School & Community Characteristics

At the elementary school level, where the variation in library conditions was sufficient to analyze, it was determined that the level of development of the school library (i.e., its staffing and collections ) explains almost 2.5 percent of the variation in reading scores. Two other sets of factors were taken into account when assessing the impact of the school library: key characteristics of the community and the school.

Not surprisingly, the variables that outweighed the school library's impact were poverty and race/ethnicity. A third socio-economic variable, adult educational attainment, was narrowly outranked by the school library in its impact on test scores. Combined, these community variables explained almost a third of test score variation. Interestingly, when these community factors and the school library were taken into account, characteristics of the school (i.e., the education level of the school's teachers, the teacher-pupil ratio, overall per pupil spending on education) explained no additional variation.

### Additional Information

Stay tuned for the final report which will also identify characteristics of school libraries run by professional librarians. Professional librarian staffing correlated with test scores at all school levels.

This study replicates research conducted in Alaska, Colorado, Massachusetts, Oregon, Pennsylvania, and Texas.