

The Importance of Information Literacy Skills in the Middle School Curriculum

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In the early days of middle schools, educators placed a great deal of emphasis on school organization, school climate, teacher advisories, and exploratories. Increasingly, however, educators have begun to give more attention to the middle school curriculum and the delivery of instruction, especially to interdisciplinary instruction. That emphasis has forced many middle school educators to look beyond their own curriculum areas and to develop a basic understanding of the core curriculum areas (mathematics, science, social studies, and language arts/English), as well as the related domains of art, music, physical education, vocational education, and information literacy/library skills.

Too often, however, while teachers have worked to integrate curriculum and instruction across the core curricular subjects, they have ignored or slighted the related domains. In some cases, the reason is that state and national standardized tests tend to focus on the core curriculum and do not test student achievement in art, music, or physical education. In the case of information literacy or "library skills," some educators assume that because students do not receive a grade in "library," the content of the information skills curriculum cannot be very important. Few educators are even aware of the existence of national guidelines for student information literacy (AASL 1998) or of the various models that can be used to teach information literacy skills (see figures 1-6).

That lack of awareness is particularly unfortunate in light of the current emphasis on making all students computer literate before they enter high school. Computers and related technologies are major pathways to information literacy. Students can use computers to go beyond locating library resources; they can learn to use

CD-ROM and on-line databases, word processors, graphing software, presentation software, electronic bulletin boards, and e-mail. Students can become competent, independent users and evaluators of information. The key is for educators to help them develop the skills to evaluate information and to separate superfluous data from essential details. Mere exposure to information does not mean that students are informed (Kehoe 1993).

What exactly is information literacy? According to Hancock (1993), it is a resource-based approach to learning in the classroom, library media center, and community. Teachers and school library media specialists work together to provide students with a wide array of resources to solve problems. Thus, the goal of the information literacy skills curriculum, as identified by the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT) in the publication they co-authored, *Information Power: Building Partnerships for Learning* (AASL 1998), is the cognitive development of young adolescents through their engagement in more sophisticated research and problem solving than in the past (AASL 1998). *Information Power* asks educators to answer a basic instructional question: Is it more important that students "know" (usually regurgitate) a set number of facts for each discipline and related domain, or that they be able to identify problems and apply the skills and information to solve the problems? According to Loertscher and Woolls (1998), to be information literate, students need both a basic understanding of the research process itself and the ability to develop their own internalized strategies for finding, evaluating, and using information.

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FIGURE 1
Information Problem-Solving Skills

1. Define the need for information.
2. Initiate the search strategy.
3. Locate the resources.
4. Assess and comprehend the information.
5. Interpret the information.
6. Communicate the information.
7. Evaluate the product and the process.

Developed from American Association of School Librarians (AASL). 1994. *Information literacy: A position paper on information problem solving*. Chicago, IL: AASL.

FIGURE 2
The Big Six

1. Task definition
 - Define the information problem.
 - Identify the information needed.
2. Information-seeking strategies
 - Brainstorm all possible sources.
 - Select the best sources.
3. Location and access
 - Locate sources.
 - Find information within the source.
4. Use of information
 - Engage the source (read, hear, view, touch).
 - Extract relevant information.
5. Synthesis
 - Organize information from multiple sources.
 - Present the information.
6. Evaluation
 - Judge the process (efficiency).
 - Judge the product (effectiveness).

Developed from Eisenberg, M., and D. Johnson. 1996. *Computer skills for information problem-solving: Learning and teaching technology in context*. Syracuse, NY: ERIC Clearinghouse on Information & Technology; and www.Big6.com.

Information Power (AASL 1998) sets forth the "Nine Information Literacy Standards for Student Learning," according to which a student must be able to

1. access information efficiently and effectively,
2. evaluate information critically and competently,
3. use information accurately and creatively,
4. pursue information related to personal interests,
5. appreciate literature and other creative expressions of information,
6. strive for excellence in information seeking and knowledge generation,
7. recognize the importance of information to a democratic society,
8. practice ethical behavior in regard to information and information technology, and
9. participate effectively in groups to pursue and generate information.

FIGURE 3
Information Seeking

1. Initiation (contemplating the task and possible topics; uncertainty)
2. Selection (selecting a topic; optimism)
3. Exploration (encountering inconsistency and improbability; confusion)
4. Formulation (forming a focused perspective; clarity)
5. Collection (gathering and extending; satisfaction or disappointment)
6. Presentation (connecting and extending; satisfaction or disappointment)
7. Evaluation

Developed from Kuhlthau, C. C. 1993. Implementing a process approach to information skills. *School Library Media Quarterly* 22(1): 11-18.

FIGURE 4
Information Skills for Electronic Resources

1. Presearch activities
2. Search for information—Develop a strategy for each function:
 - Browse (Most simplistic)
 - Hierarchical (More complex)
 - Analytical (Boolean logic)
 - Filtering (Choosing criteria that will limit the topic)
3. Interpret information—Summarize and paraphrase.

Developed from Pappas, M. L. 1995. Information skills for electronic resources. *School Library Media Activities Monthly* 12(8): 39-40.

FIGURE 5
FLIP IT!

1. Focus on the topic.
2. Locate resources that are appropriate.
3. Investigate the resources and implement the findings.
4. Produce the results for Intelligent Thinking.

Developed from Yucht, A. 1999. FLIP IT! Information-skills. *Teacher Librarian* 26(3): 37-38.

The information literacy skills curriculum is especially important in middle schools. It stresses several of Lounsbury's (1996) major programmatic areas of middle school education: a challenging and integrative curriculum, varied approaches to teaching and learning, assessment measures that promote learning, and a flexible organizational structure both in individual classrooms and on interdisciplinary teams. Information literacy skills also help to "deliver" the curriculum, improve computer skills, develop cognitive skills, improve student relationships with adults, and strength-

FIGURE 6
Pathways to Knowledge™

1. Appreciation
2. Presearch
 - Develop an overview.
 - Explore relationships.
3. Search
 - Identify information providers.
 - Select information resources and tools.
 - Seek relevant information.
4. Interpretation
 - Interpret the information.
5. Communication
 - Apply the information.
 - Share the new knowledge.
6. Evaluation
 - Evaluate the process and the product.

Developed from Harada, V., and A. Tepe. 1998. Pathways to Knowledge™. *Teacher Librarian* 26(2): 9–15.

en democratic values by teaching about academic honesty, copyright, and plagiarism (Howe 1998).

A strong information literacy component in the curriculum helps young adolescents begin to develop complex analytical skills at a developmentally appropriate time in their lives. Students pose meaningful questions about a topic, develop a multi-resource research plan, work independently and with other students to gather and integrate information, and achieve a product that describes the research process and conveys appropriate information about the topic (Zorfass, Remz, and Persky 1991).

Information literacy skills are ideally taught in the team environment of a middle school with an integrated instructional approach. These skills cannot be taught in a vacuum; they are important only when used to solve an actual problem. As Todd (1995) reported in his study of low-achieving fourteen-year-old students, integrated information skills instruction helps students learn both content and research skills. Information literacy is a process that young adolescents can use as they mature and as their future jobs and careers ask them to use information to solve increasingly complex problems.

A number of models (figures 1–6) have been developed to teach information literacy and problem-solving skills to students. Although only one (FLIP IT! by Yucht [1999]) was developed specifically for ten- to fourteen-year-olds, other models present step-by-step processes that can easily be used with middle school students. Although each model is different, they all focus on helping students develop an internalized information literacy model. In addition, they help students develop cognitive skills, improve lifelong learning skills, learn democratic values, and demonstrate ethical behavior. As Howe (1998) pointed out, the goal

of the information literacy skills curriculum is not to bring the fish (resource/information) to the student; rather, it is to help the student learn how to fish.

In the past, the information literacy/library skills curriculum was considered the domain of the school library media specialist and was even taught, in many schools, as part of a “library orientation” class. However, as *Information Power* (AASL 1998) states, to be most effective, information literacy skills must be integrated into the curriculum. In the middle school, this means that the school library media specialist must work closely with interdisciplinary instructional teams in both planning and implementing instruction. More than a “resource,” the library media specialist must be an active, participating team member.

For that to happen in any middle school, the library media specialist and the information literacy curriculum need the support and involvement of other people in the school. First, the principal and administrative staff must believe in and support (through funding, scheduling, and opportunities for professional collaboration and staff development) the importance of information literacy and convey that importance to all of the educators, students, and parents in the school community. The library media specialist must be dedicated to the student information literacy standards found in *Information Power* (AASL 1998) and believe not only that the library media program is essential to teaching and learning but that it must be integrated throughout the curriculum. The library media specialist works with teachers to identify, purchase, and/or borrow resources to match the learning styles of middle school students. Teachers likewise need to welcome the library media specialist on instructional teams; they should involve him or her in planning and implementing instruction and identifying developmentally appropriate resources for young adolescents *before* instruction begins. Finally, all members of the instructional teams and administrative staff must be willing to learn about information literacy (see figure 7); take risks; use alternative means of

FIGURE 7
Web Resources for Information Literacy

American Library Association Presidential Committee on Information Literacy

<http://www.ala.org/acrl/nili/ilitlst.html>

<http://www.ala.org/acrl/nili/nili.html>

Information Literacy for Lifelong Learning

http://www.ed.gov/databases/ERIC_Digests/ed358870.html

Institute for Information Literacy

<http://ala.org/acrl/nili/nilihp.html>

National Forum on Information Literacy

<http://www.infolit.org>

assessment, including portfolios and multimedia and hypermedia presentations; and freely evaluate the instructional process itself.

When subject matter and information-seeking skills are integrated and when teachers and library media specialists plan together, students have the greatest opportunity for learning (Pitts 1994).

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