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This digest is based on Information Skills for an Information Society: A Review of Research, by Carol Collier Kuhlthau.

Living in an "information society" implies dealing with a barrage of information on a daily basis. Our success and survival depend upon our abilities to locate, analyze, and use information skillfully and appropriately. Yet, in recent years, reports have documented the "functional illiteracy" of many adults, who are unable to manage the information they need.

Internationally, educators have begun research and development of means to increase information literacy. In schools, administrators, teachers, and library media specialists are working together to develop strategies that will enable school children to gain competence in using information. Library school media centers are key places where skills and resources are integrated to provide students with access to information about subjects across the curriculum. In addition, information technologies and information literacy programs have been developed for use in schools.

Public education's previously inadequate responses to the dynamic changes taking place in society were brought to national attention by the 1983 report, "A Nation At Risk: The Imperative for Educational Reform." As awareness increased of children's need to be able to manage information, several major developments in education occurred. These developments have been categorized as belonging to three groups: (1) acknowledgement of the need for a more integrated approach to curriculum development; (2) recognition that larger problems lie beyond the immediate one of providing students with basic computer literacy; and (3) adoption of a holistic approach to education centered around fundamental problem-solving techniques (Information and computing recommendations, 1986).

NEW DEFINITIONS OF LITERACY

A working definition of information literacy has been proposed by Martin Tessner: "Information literacy is the ability to effectively access and evaluate information for a given need" (Breivik, 1985, p. 723). Literacy thereby involves process skills which are applied for a particular purpose.
While related to library literacy, information literacy involves skills that are broader. Mancall, Aaron, and Walker provide a rationale for incorporating the development of critical thinking into library instruction: "Focus must go beyond location skills and 'correct answers' and move to strategies that will help students to develop insight and faculty in structuring successful approaches to solving information needs" (1986, p. 23). Library instruction that guides students through levels of information need in order to solve a problem or to shape a topic enables them to use information for learning.

In the information age, computer literacy, i.e., understanding what computer hardware

and software can do, is an essential component of information literacy. Information literacy raises levels of awareness of the knowledge explosion and involves understanding how computers can help identify, access, and obtain data and documents needed for problem solving and decision making (Horton, 1983).

INFORMATION SKILLS

Recognition that computer literacy involves more than knowing how to operate and program a computer goes hand-in-hand with the recognition that library skills involve more than knowing where to locate information sources. Library resource centers have become laboratories for learning the essential components of an information system and for interpreting information. Skills requisite for information literacy have been characterized as follows:
*Integrating knowledge of tools and resources with skills (such as the ability to plan a research strategy or to evaluate information);

*Dependent upon acquisition of such attitudes as persistence, attention to detail, and a degree of skepticism or caution;

*Time- and labor-intensive;

*Need-driven; and

*Existing independently of, but relating to, literacy and computer literacy. (Breivik, 1985, p. 723)

Information skills prepare students to meet the particular demands of the information age. Problem solving, decision making, critical thinking, information gathering, and sense making are abilities related to information literacy. These skills must be taught, in addition to basic literacy and computer literacy, if students are to function in an information environment (Demo, 1986).

THE LIBRARY MEDIA CENTER AS INFORMATION CENTER

Library media centers have evolved into school information centers in the information age. With the introduction of computerized circulation systems, collection databases, online database services such as DIALOG and Dow Jones, computer-assisted instruction, and word processing available to students, the library media center has become a natural place to learn and practice information skills.
Continual updating of facilities and maintaining of quality in staffing are necessary for the library media center to function successfully. A recent study of library media services in public schools which appeared on the U.S. Department of Education's 1986

list of exemplary schools found that a library media program seems to demand adequate staffing, even more than materials and equipment, in order to have the desired impact on education (Loertscher, Ho, and Bowie, 1987).

INTEGRATING INFORMATION SKILLS WITH CURRICULUM

Information skills are the mutual responsibility of teachers and library media specialists, and must be infused into instruction across the curriculum (Irving, 1985). No longer can schooling be expected to provide students with all of the facts they will need throughout their lives. Students need to know how to identify a need for information; to locate, gather, and select relevant information; and to apply information to resolve an issue under question.
Resource-based, as opposed to textbook-based, learning uses the resources of the library media center to access information for classroom learning. Working cooperatively with teachers, library media specialists can recommend resources to be used in instruction, as well as identify appropriate points to infuse specific information skills.

Library media specialists also engage in collection mapping (Loertscher, Ho, and Bowie, 1987), an evaluation technique which determines how a given collection responds to units of instruction within the curriculum of the school, or with the everyday curricular activities of the classroom (Eisenberg, 1984). Mapping techniques are used to implement integrated instruction for gathering and evaluating information about the curriculum.

Teachers should be trained to be information conscious and to integrate the use of library media centers and information skills in the curriculum. The United Nations Educational, Scientific, and Cultural Organization (Unesco) offers guidelines for such training (Hall, 1986).

Cooperation between teachers and media specialists can result in an inquiry approach to research in schools. Students develop higher-order thinking skills through inquiry, or problem solving, using such technological tools as online databases, CD-ROM (Compact Disc-Read Only Memory), and online public access catalogs (OPACs).

INFORMATION LITERACY PROGRAMS IN ACTION

Information literacy has become an international goal, and programs seeking its attainment are in progress across the world from Zimbabwe to the South Pacific.
In the United States, many states have centered such programs around the library

media center. For example, New York's Regent Action Plan requires that library and information skills be taught in grades 7 and 8 for the equivalent of one period of instruction per week (New York Regent's, 1985). The plan involves the integration of library instruction with classroom instruction. Other information literacy efforts are underway in Maryland, North Carolina, Pennsylvania, and South Dakota.

The American Federation of Information Processing Societies (AFIPS) has prepared a detailed curriculum to teach information skills to secondary school students. The goals of the curriculum include helping students to understand:

*The impact of information and technology on today's society;

*The importance of effective use of information, both to individuals and to society;

*Ways in which information is processed, obtained, and used; and

*Students' roles and responsibilities for living and working in an information age. (Information and computing recommendations, 1986, p. 160)

CONCLUSIONS

The information age requires of each of us a combination of technical skills and literacy abilities. Administrators, teachers, and library media specialists are joining forces to help students master information skills, thus enabling them to be competent information users in the future.
The implications of the findings cited here are obvious. Competent use of information can offer beneficial results to society at large; conversely, information illiteracy can cause real harm to individuals and to society.

Helping students to gain information literacy also means helping students to learn to think. Learning to question, to weigh alternatives, to interpret inferences, and to seek further data can only help individuals to cope with a continuously increasing wealth of information, and to survive in a world growing ever more complex.

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