Research and Practical Experiences of Recent Years That Support the Concept of the School Library Materials Center

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I have said before and I would like to begin by saying again that, "in my book," there is no more challenging or exciting work and there is no job of greater importance to progress in every sector of society than that of managing the availability and flow of knowledge through all media. This is the business of librarians everywhere and within elementary and secondary education, it is the business of the school librarian.

The School Library Materials Center concept is one answer given by our profession to the challenge of modern educational communication and information service requirements. It is an important idea, and since the approval in 1956 by the American Association of School Librarians of an affirmative statement which defined the role of the school library as an instructional materials center, this idea has become increasingly a guiding principle employed in planning school media services. The chief limitation of the concept, and of the philosophy behind it, is that it does not go far enough.

I believe the rationale we need today is one more similar to that used in justifying formation of the new Division of Learning Resources at Florida Atlantic University. This rationale identified two sorts of professional responsibility in educational media service: (1) To put at the disposal of the teaching faculty all media technology, services, and systems which will enhance the effective communication of ideas in a pre-programmed phase of learning; and (2) To put at the disposal of the student all media technology, services, and systems which will enhance the effective communication of ideas in a self-programmed phase of learning. For me, this statement expresses our professional responsibility clearly. To date, however, we have not been prepared to meet such a challenge.

In November 1963, over half the schools in America had libraries; however, many did not feature instructional materials centers. Less than half of the elementary schools support any form of library service. The shortage of professionally trained school librarians is more than acute across the country; many jobs remain unfilled and new ones are constantly opening up. There appears to be almost no

prospect whatsoever of recruiting and training the thousands of new librarians who will be needed. Most teachers themselves remain unknowing and untrained in proper media use and in use of resources afforded by libraries. And they are not, therefore, prepared to demand or even to recognize good service.

Looking ahead to a day (less than 20 years from now) when the U. S. population may number 270,000,000 and when something like three-fourths of the increase in American public school enrollments will be concentrated in fewer than 200 metropolitan centers, it is disturbing to note that the regional planning necessary to establish arrangements for media service which then will be needed by schools and colleges to sustain their expanding programs has not yet taken place except in a few of our largest cities.

Fortunately, the conditions are now right for change. American Education is ready to put new, needed programs into effect. National recognition of our manpower and citizen requirements for new and improved kinds of educational opportunity is reflected generally in educational planning. During World War II, and more especially in the last decade, there emerged a new communications technology which is now being harnessed for instruction and about which others will talk at length during the course of this institute. Within business and industry, as well as formal education, we find broad recognition of the vital importance of library and information services and of the need for training all Americans to use information and learning resources to maximum advantage for self-education as well as in-school activity.

The changed nature of modern society (created by the burst of technology, a world-wide explosion of population, etc.) is changing educational goals rapidly. In recent years we have established some wholly new emphases in teaching, for example, in the language arts, in science, in mathematics, and in the study of world cultures. The changed objectives of education are also reflected in new teaching methods, e.g. the current shift away from teacher-centered presentations towards self-paced learning, as well as in the places chosen to carry forward learning processes. Witness the influence of the Trump Plan advanced for secondary education, and note the laboratory settings created for individual study of modern languages as well as experimental use of computer controls for instructional systems keyed to individual learning requirements and to profiles of student accomplishment. These innovations, when assessed in terms of the short time in which we have moved from traditional classroom forms of teaching to emphasis on the seminar, large group instruction and tutorial approaches, are more than significant indications of where we are heading in the schools and how fast we are moving.

In a struggle to do more for more people in less time, to stretch our school dollars farther than we could before, many new patterns of administration have been conceived and are now being tried out in

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American schools. For example, to cope with the clock and calendar problems, new plans for class scheduling are being tried. New arrangements for teacher deployment and student grouping are characteristic of better schools. New definitions of student and teacher responsibility are being accepted for management of the learning process. And with increased stress on self-education has come a new dependence on learning resources and upon instructional technology per se.

Supporting these new approaches to instruction are new techniques for producing and distributing locally the kinds and amounts of materials needed. We have instituted some new practices in commercial as well as non-profit publishing. New organizations have been created (e.g. The Educational Media Council) and new educational aims have been adopted by established professional associations—goals which encourage among other things the use of "systems" approaches in teaching. We are demanding and getting new levels and kinds of public and private support of education; new sources of educational service (for instance, in-school television, as provided by MPATI); and the design of new media reference aids (e.g. the educational media index—which is a cross media guide to films, filmstrips, recordings, and tapes scheduled for publication by McGraw-Hill in the Spring of 1964). But perhaps the most dramatic of all such changes can be seen in new school facilities.

The shape of the future, as I see it reflected in physical terms, implies major shifts in education and in all component activities relating to instruction, including those managed by school librarians and by other school media specialists. For instance, here are the closing paragraphs of an article which was published recently in the Architectural Forum magazine:

As electronic teaching systems get into ever wider use, the implications for school planning seem clear. Someday entire school systems may be planned around central production and program-storage facilities, which can be tapped through an underground network by students in individual schools (there are those who suggest using the same network for distributing mechanical services, and even refills for the food-vending machines). Learning stations, with their high content of electronic devices, would be ideally suited to low-cost factory production as appliances are today. And if portable receiving stations could be plugged into the learning-service network, a computer could schedule periodic redistributions of such units to keep pace with population shifts.

This ultimate flexibility in school planning is strongly suggested by schools being planned today. In adding a science wing to the seven-year-old Wheatley School in East Williston, Long Island, where relatively new equipment was found to be

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educationally obsolete, the architects sought a scheme that would insure against rapid obsolescence. What they came up with was a plug-in science laboratory with a service network that can be tapped by a wide variety of moving laboratory modules. Designs like this one may soon eliminate the quandry of the school board trying to decide which way education will go in the future. They are, indeed, forerunners of tomorrow's "plug-in" school.[1]

The implications of educational media research conducted in recent years and practical experience gained in schools which are using newer media extensively are major factors encouraging change in education. For instance, media research and experimentation have taught us that school and college instruction is not always most effective when conducted in little square boxes of 20 to 30 feet on a side. Also, we have learned that people having different backgrounds often learn different things at different rates; some may learn better from one type of material while others may need quite different help.

We have also discovered from research and experimentation completed during recent years that there is not any magic in a nine-month school year or in a 40 to 50, or 55 minute class period. We have learned that sometimes people become more interested in what they are studying and that they remember much more of it afterward if they can work alone and have a brief review shortly after initial study (and then receive only occasional guidance through informal faculty consultation); that others may learn very well indeed from the "give and take" of seminar discussion; that parental assistance in learning languages taught via television produces excellent results; and that some ideas are easily mastered by large groups of several hundred or more students.

We have also learned that, unless our educational facilities are made sufficiently flexible to provide for the kind of instruction implied, they probably will not be worth the very large and, indeed, ever-increasing amounts of money they now seem to cost.

With regard to media, we have learned that today we must have immediately at hand a full spectrum of learning and information resources including books, magazines, and other forms of printed material; pictorial and graphic aids; motion pictures, discs, and recordings; television and teaching machines. We need them all for instruction and reference purposes. Sometimes we need many of them at one time--at other times, only a few or single units. Especially with respect to materials used directly in teaching, we have learned to look among all available media to seek out those which will help most directly to achieve a given goal of instruction, individual study, or review, and classroom presentation.

And here are some additional facts concerning needed research and the field experience of recent years. Television can, and is now being used successfully in teaching more than one-fifth of American

youngsters. Programmed instructional approaches are accelerating rates of learning as well as individualizing study in thousands of American homes, schools, and colleges. The single laboratory unit has virtually become standard equipment for teaching languages and, increasingly, other subjects. Computers are actually being used experimentally, for example, by the Systems Development Corporation in California, not only to make available a full range of modern techniques for storage, retrieval, and correlation of information, but also for instructional sequencing and the simultaneous recording of student response to any form or combination of forms of instructional media presentation.

Work being done in Monmouth, Oregon, suggests new approaches to instruction using simulation devices. These are devices which place students in artificial environments and present specific situations in which the student must respond by choosing among alternatives and by actually carrying out one particular course of action, not unlike the Driver-Trainer, but not limited to manual skills. Such systems make extensive use of slides, films, graphic materials, and recording equipment as well as supplementary printed aids. Technimation which animates the use of overlay transparencies through changing the polarization of light, and "Telemation" which makes use of multiple split-screen techniques for making comparisons in teaching as well as a broad range of new duplication and data transmission devices and other electro-mechanical aids—(some of which have been created solely to serve the needs of education—an innovation in this country) are important fruits of research effort also completed in recent years.

One point should be made in discussing school media research, and it is that often in such discussions we tend to compare the "apples" with "oranges" and thus confuse the contributions offered by specific media. What I mean to say is this. The development and application of programmed learning in elementary and secondary schools does not represent the invention and educational use of a new medium of communication. Programmed instruction is simply a new, small step-by-step approach to the organization of learning experience--an approach which is keyed to some rather explicit principles of stimulus-response psychology discovered quite a while ago, and first tested with pigeons and rats in the laboratory.

Educational broadcasting amounts to use of an electronic transmission belt which, at least in the case of television, is, indeed, capable of multi-media montage, but which should now be studied by educators more for administrative implications than as a unique form of communication.

The learning laboratory station or carrel is not a medium at all. It is simply a place or environment designed especially for learning which may cluster a variety of media. It is an environment, incidentally, which according to studies now under way may be influenced more significantly in effectiveness by its actual size, its relative

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isolation of one student from others, design of the control panel, and so on, than by what it actually communicates through tapes, films, slides, etc.

Or, to take the case of the motion picture, which I define as a distinct medium of communication, we have finally learned in education to stop making instructional films in the image of textbook chapters or sections and to use film more imaginatively—whether to illustrate dynamic concepts involving motion or to induce appreciation of a dramatic sequence, create a mood, or present vicariously, with an appropriate editing of space and time, the elements of a scientific process.

Multi-screen approaches (for example, those mentioned earlier as represented in "Telemation") which make possible the use of several projection devices at once are most significant, as I see it, in the sense that they foster a learning process accomplished as a result of a new synthesis. To present an example, one might show at one time in fixed position several elements of a demonstration on crystal formation while utilizing the motion picture to show ways in which the crystal changes in time and final results of the experiment.

Two more points regarding current media research and experimentation— we do now have available for use in education a rich variety of improved and newer media capable of single and multiple use. But when considering their instructional values, I would like to suggest that it may be most important—for instance, in the case of television—to recognize that because of its inherent technology and its capacities as a carrier, television too frequently is introduced in schools from the "top down" as a result of administrative decision. One consequence of this can be that the content of education is determined more by persons concerned with technology and mass dissemination of messages and less by professional personnel truly concerned with the needs of youngsters.

Also with respect to programmed instruction, the most essential concepts which underlie programming are now making contributions in team teaching, in ungraded programs, in dual progress activities, etc. Programming methods have also been integrated on trial bases into many other kinds of school work, for instance, in the laboratory, in homework, group discussion, for investigation, for self-correction, writing, etc. But from my point of view, programmed learning approaches are more significant for their encouragement of improved educational engineering and as almost unequaled sources of feedback from the learning process, with specific contributions being made to production of better textbooks, better instructional television, motion pictures, lesson plans, etc., than for any uniqueness in the form of programs themselves or in teaching machines. Incidentally and conversely, some of the skills of good text writing, demonstrations, and visual communication have much to contribute to programmed learning.

The implications of recent research and experimentation do have relevance for planning and operating school libraries, but they can not all be applied directly, a point I shall return to later.

But what then should a school library materials center be or become if answers do not come immediately from research or from experience? Or, to ask a different and I think maybe a better question, what media service functions must be performed in American schools and colleges today and what recommendations can be offered now which may help these functions to be performed well in the future?

My first answer calls for a definition for some, possibly a re-definition-of our field of professional responsibility. It is my view that a cluster of six functions represent the chief media service requirements of American schools and that increasingly these functions should be performed under single professional management. These six functions include the following: (1) Continuing research and experimentation involving both instructional uses of media as well as study of media service arrangements essential to satisfy school needs; (2) Local adaptation of teaching materials as well as production of new learning resources, taking into account any special requirements of single types of media as well as the need for "conceptual interlock" which increasingly must guide preparation of new materials in terms of their anticipated use in teaching; (3) Distribution of all types of materials and equipment essential to aid the instructional and research work of groups and individuals within the school community; (4) Counseling and training of individual teachers, students, and student groups to identify media requirements and to improve their use; (5) Demonstration and display services which will be more adequate than those normally provided in schools operating under typical present-day arrangements (arrangements which often tend to place responsibility for such work in the office of a harried superintendent or busy principal); and (6) Full use of modern computer technology to be employed not only to solve problems of an advanced statistical nature and to undertake information storage and retrieval work, but also to generate new instructional programs and, by what amounts to massive data correlation and actually, through synthesis, to create new knowledge by "intellectronic" processes. This is the way I would like to define our area of professional interest and responsibility.

A second recommendation I would like to offer concerns recruiting and professional education. In my view, the school librarian is one of several specialists in educational communication and information sciences—a specialist whose training must not only include sound undergraduate preparation and thorough training in education with a capital E—whose training, beginning in the fifth year and frequently extending through and beyond sixth year levels (especially for those anticipating acceptance of top management posts, i.e., supervisory

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jobs in large schools, school systems, county and state agencies) must include basic study of learning and information theory; communications theory, institutions, and processes; systems development and engineering; mastery of administrative science; a thorough grounding in economics, research methods, and statistical procedures; a full understanding of media production arts, crafts and sciences; as well as capacity to appraise the methods and techniques of instruction.

And this is not all I would like to suggest concerning the training of future professional colleagues. Although most of us accept technology in many aspects of our life, we still tend to fear it in education. We have begun to acknowledge only recently that one can not talk intelligently about a School Library Materials Center (or about any aspect of the modern school media service program) without discussing the program as a whole and without seeing it as an integral part of our total system of modern instructional services and technology.

Further, if it is to be truly in keeping with our need, the professional education of school librarians must be conceived as preparation of individuals to acquire detailed knowledge of current school subject emphases in terms of specific knowledges, attitudes, and skills which instructional processes are designed to elicit. Further, it should also be the education of those who will come to know intimately the full range and types of materials available covering given subject matters—in single media forms and/or in multi-media units.

Nor is it enough to know content and materials; one must also know the equipment required for use of materials and optimum environments for learning. This idea again suggests once more the need for understanding in depth of learning processes.

The school library function can not be performed well without detailed understanding of some very practical problems in school administration. Capacity for management of technology and technical personnel must be cultivated as well as comprehension of budget-making processes, curriculum planning skills, and intra-school as well as external public information and public relations know-how. (Are we to have a new school, for instance, a new gym-auditorium— [or swimming pool when the floor is rolled back], a new stadium, field house, or, a new learning resources unit?)

At the base of any professional training program there will, of course, be education for understanding and ability at least to supervise all basic library processes and routines and trained competency for application of specific library techniques and technology.

This list of responsibilities assigned to professional education in our field is awesome if you expect one person to be and to do all things in performing the library service function in schools. But I do not believe that school librarianship at the local level can or, indeed, ever should be expected to embrace in a single professional area the full range of concerns we have listed above. Rather, what

I do believe is that we have just described a number of management responsibilities associated with media service programs generally— programs which may call increasingly for new clustering of instructional resources personnel, some of whom will probably be given new names and trained in new ways to accomplish fulfillment of School Library Materials Center functions—EXPANDED—with the help of school administrators, teachers, research personnel, specialists in media production, et al who will have been trained to know much about instructional media services.

(Let me add in a final parenthesis to this section that new teaching methods and resources available to us today lead me to believe it may now be time to put together again service, training, and research components in our graduate programs of professional education.)

As important as the several hundred discreet studies completed during recent years on school uses of newer media have been, I recommend that the research we need most today must be developed more in sociological and organizational terms and be of the kind which relates more to educational practice as such than to the psychological laboratory. In the same way that studies of aerodynamics and carburetors have little or nothing directly to do with the influence of jet-age transportation or world business and industry, although, in a sense, one clearly is cause and the other effect, so discreet studies of learning behavior will not give us all the answers we need urgently concerning the planning of media services in schools or for the design of optimum plans for administration.

It is my view that over time (and it probably will not be long at that) we shall see develop on a regional basis—crossing municipal, county, and state lines—new instructional media service programs created for the purpose of serving both public and private education. I recommend that these new programs should give special attention to production of teaching materials (especially instructional television and related aids), provision of research and evaluation services, in-service training of teachers for optimum use of learning resources generally, and the regular exchange and distribution of instructional materials and equipment required for their use. The authority for and support of such regional efforts will have to be obtained through delegation by those who benefit directly from the service provided, probably using some type of council or federation plan. Such instructional media service "reservoirs" will, as I see it, enlarge logically and extend greatly the "reach" of the School Library Materials Center concept.

Finally, I would like to recommend that we continue to acknowledge in public—and loudly—our need for vastly increased public as well as private dollar support, especially at state, regional, and federal levels. The new demonstration school library programs initiated, and those to be initiated, with Knapp Foundation money (administered by the American Association of School Librarians) are certainly

steps in the right direction. But these are such very small steps that, in a sense, they might prove simply to be frustrating. We can not take forever to do our job of "tooling up" in education to prove the worth of our ideas. We need, therefore, to use every resource at our command to make the School Library Materials Center program a national effort which, in turn, may evolve logically into a media service complex approach—a complex capable of being tied, as it must eventually become, directly into a nation-wide system of educational inter-communication and information services. A massive program of state and federal aid must be developed which goes very far beyond present provisions of any support legislation in existence or being planned if we are to realize goals that we have been describing.

In closing, let me remind you of a statement—familiar I am sure to some in the room—"There should be a library and gallerie furnished for . . . schools . . . with all manner of books, mappes and spheres and instruments of astronomy, and all other things apperteninge to learning which may be given to schools or procured with the schools' money."

Certainly, here is our School Library Materials Center concept set forth clearly in Ashton's ordinances, issued in Shrewsbury, England, in 1578. How long does it take to realize a logical and relatively simple idea!

I suggest we try in the next 15 years, and not wait 400, to encourage the rapid evolution (by revolution if need be) of the School Library Materials Center idea to meet the challenge of our times and our professional responsibility.

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