The Impact of Independent Study on School Libraries as Media Centers

メディア・センター (学校図書館) に及ぼす個別学習化の影響

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要　　旨

コミュニケーション機器の急速な技術的開発は，学校教育の分野にも大きな影響を及ぼし，伝統的な教育技術の根幹であった教科書による教授，固定的段階的な教育課程，学級，学年，時間割などの制度に大きな転換を迫ろうとしている。その最も顕著な傾向が，教室における集団学習のパターンに代り，Team Teaching や個別学習が，大幅に採用されつつあることである。これに呼応し，更にメディアの多様化の趨勢により，従来の図書中心の学校図書館は，教材資料センター，あるいはメディア・センターと改称され，機能面及び資料面において急速な変革を示しつつある。

著者は，まずこの変革の大要を，新しい教育理論の紹介を導入として，新しい教師像，小・中・高の各レベルにおける個別学習の発展，学習計画と個別学習等の諸側面にふれて紹介している。そして，そのような変革が，学校図書館のメディア・プログラムに及ぼす影響を分析し，関係者の意識の変革，学校図書館員と教師との共同計画，職員の補強，サービスの範囲拡大と強化，個別学習に即応する図書館資料の強化，資料組織の新実験的方法，新しいメディアの利用に必須の機器，メディア・センターの設計等多面にわたる問題を網羅的にとりあげ，代表的理論，実例に触れながら総括を試みている。

結論的には 1968年改訂の新学校図書館基準の理念が，現実にどのように実行されているかの報告といえよう。 (S. W.)

Since the turn of the century, educational research has focused attention upon factorsof individual differences in children that are relevant to the process of learning to learn. An understanding of the significance of individual differences has led to a variety of experimental teachning methods and of newer theories of learning. These in turn have gradually led teachers and school systems away (a) from textbook teaching, (b) from a lock-step pattern of promotion up the educational ladder, and (c) from standardized class sizes and length of class hours. With increasing attention being focused today upon individualized instruction which has led to independent study, program changes have taken place at each of our educational levels, namely, at the elementary, middle school, junior high school and secondary high school levels. Individualized instruction and independent study require the use of many

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more library and learning resources than was true when the role of the teacher was dominant during the class period. Book collections have changed to multi-media learning resources organized for individual students who want to view, listen, read, discuss, and create new solutions to old or new problems.

The purpose of this paper is to focus attention on the patterns of change taking place at each of the educational levels in respect to learning theories, taeching methods, and independent study and to the impact of these changes upon the school library as a media center for servicing the needs of students and teachers.

The Era of Change in the 1970's

It has been predicted that the era of the 1970's will be a period of great changes. This prediction can hold much promise for some and much frustration for others, depending upon how and in what directions the changes take place. It also depends upon whether planning precedes change or whether change takes place for the sake of change. This holds true for all walks of life and at all professional levels.

In the field of education in the United States, however, changing patterns always have taken place. At no time in our history has education in our schools been a static process. Over the years there has been a continuing questioning, probing, evaluating, and researching of learning theories, of methods of teaching, of knowledge of behavioral pattern, of understaning of individual differences in children, and of awareness of environmental and cultural factors as they affect the learning process. All this has led to experimentation, to changes, and to innovation in many schools. But the changes that have taken place have not been at the same pace and have not taken place in all schools. Patterns vary greatly even within one state. There is no unified system of education. This makes for flexibility, for creativity, and for possible change.

Many people think of change as something

that has to take place quickly and disruptively. Changes in schools that result from educational research are usually very slow to take place. Often there is a forty-year lag before there is implementation of research findings. By the time implementation of such findings takes place, it all has a new sound and a new jargon. When the time is ready, changes and innovations to take place and progress moves a slow pace ahead.

Changing patterns have been taking place in school libraries, now being termed media center, learning resource centers, or instructional resource centers. The new terminology merely denotes that many more educators now promote what other have advocated for years, namely, that libraries should provide in easily accessible form all media of communicating ideas that will help children and youth to function more effectively in the learning process. With advances in technology many more media have been made available for use in schools, and with federal funds these learning resources have been made more accessible. Through the leadership of librarians as media specialists, quality programs of services, facilities, and quarters for the use of the newer media have been planned for schools and school systems and are functioning well. Many forces have been at work to bring about some of these changes, but these facilities and resource, exciting as many of them are, are not as yet to be found in the majority of schools. Quality teaching, quality facilities, and quality resources are still lacking in many rural schools as well as in some urban, suburban, and city school systems. We give lip service to the principle that all children should have equal educational opportunities, yet in 1970 there were still fifteen states that had no centralized shool library services in fifty percent of their elementary schools.[1] However, progress can be found throughout the country. Acceptance of unified media has taken place in many school systems, but implementation of changes in teaching methods, the provision of newer learning resources, and in the use of these media is only slowly taking place in other school systems.

Newer Theories of Learning—Newer Teaching Methods

This slowness of pace, however, gives school systems that are less financially able to move ahead rapidly a chance to see and to evaluate what actually happens in schools that are applying newer teaching methods to newer learning theories and resources. They can then utilize and expand upon four techniques such as, (1) the discovery method, (2) the creative inquiry method, (3) the learning by the use of multi-media method, or (4) the learning through a program of independent study system, that have proven to be valuable or they can discard those innovations which have proven to be costly without being beneficial to students in learning to learn.

Modern goals of education today focus attention on " individualization " of learning, on " self-direction " of the student, on development of the inquiring mind, and on motivation of students for continuous growth toward the improvement of their own abilities and talents. The objectives aim at helping each student to achieve the highest level for " self realization or actualization " possible. These goals are not new ideas, but they are being fashioned in new ways to meet modern situations and to find new solutions to problems.

For creative inquiry to be successful, a student first must have the opportunity to master established knowledge and traditional techniques for discovering knowledge. The method of transmitting this knowledge can be accomplished through large group lectures or can be learned individually through the use of reference of informational materials. Solitude or individual study is a second requisite for creative inquiry. The student needs time to work alone and to carry on independent explorations. Followed by reflection and observation, this should lead the student to discover relationships not previously perceived. Sharing, then, his new ideas with his peer group helps the student to clarify and individualize his learning. Finally, consultation with experts— be they teachers, a resource, a resource person

in the community, or a media specialist—helps the student to bridge the gap between materials and the present day and to gain insights and new ideas helpful at arriving at solutions to problems of whatever nature they may be. Thus the student is theoretically learning to learn creatively.

Along with creative inquiry, educators are rediscovering the age-old " discovery method " to achieve the goal of " self realization." This concept has been defended and reshaped by prominent educators for over 300 years. The old wine of Comenius, of Herbert Spencer, to name but two, is being put in new bottles by the educators of today to support the inductive process or learning by giving to students basic concepts and principles which underly facts, and by motivating them to learn, to think, and to question before they make critical decisions.[2] It is believed that this method of teaching also leads to an understanding of the interrelationship of subjects and ideas and not to the fragmenting and compartmentalizing of facts to be memorized and verbalized in a meaningless fashion. Again, the emphasis is upon the indivudual student to discover ideas and knowledge for himself, using independent study to achieve this.

Many new avenues of learning have opened in the twentieth century that give rise to a theory of learning by using many stimuli— verbal, auditory, and visual. The newer media make it possible to communicate ideas through the use of films, of filmstrips, of tape and disc recordings, of programmed instructional materials, of transparencies, or microforms, and of television, to mention some of the more obvious forms found in schools today. These help the student to learn in ways other than by direct experience or by the printed word. These newer means of communicating ideas have not only added to the knowledge explosion, but they also have enriched the viewer's or the listener's background of understanding concepts and have furthered his quest for knowledge. Students learn some things better through the use of one medium or stimulus than another. So by the use of multi-media

that are well organized and are easily accessible for group or individual use, students progress at their own pace, making use of whatever is best for them at the time of searching and of learning. To paraphrase an old cliché, the educator of today wants the right medium for the right child at the right time for the most effective learning.

New Teacher—Learner Relationship

Since media can create multiple learning situations, can be used by varying size audiences, can make learning more relevant, can expand and reinforce learning experiences, and can allow a student to learn at his own pace, changes in teacher-learner relationships are evident. Teachers and media specialists can now direct students in their search for knowledge. The role of the teacher of today is that of a guide and a consultant rather than that of a person who has to know all and to communicate all to the learner.

Modern theories of learning place the student foremost and in the center of the universe of the school. The programs and resources of learning and the methods of teaching revolve around the student and are no longer teacher-oriented. Changed methods of instruction incorporate independent study. This type of learning activity is one part of the well-known Trump plan,[3] which also recommends large group and small group work and supports the theory that an individual with time, motivation assistance, and proper resources and facilities can learn many things without close faculty supervision. This plan also allows for individual difference, abilities, and interests. When the student is studying something that he considers important or useful to him, it leads to creativity and simulates an inquiring mind. The student is encouraged to develop personal responsibility for learning, which sets up patterns for continuing education throughout life. Thus the school's resources, human and material, are focusing instruction on the individual and on independent study. This implies that facilities and resources for independent study

are open, staffed, and ready for student use during all hours of the school day. These facilities include media-centered libraries, study carrels, conference spaces, practice rooms, testing services, studios, production areas, laboratory bench space, specialized workshops, language laboratories, and electronic learning devices such as the computer, and touch dial-access retrieval systems. These areas and facilities provide for reading, listening, viewing thinking, writing, and recording to assist the learner in using media and to provide areas for independent study and small group conferences.

Independent Study Patterns in the Elementary School

Independent study or self-directed learning is not limited to any one level of the educational system. With team teaching and the nongraded elementary school has come independent study organized around content mastery and skill development. Ann Patrick[4] identifies three levels of independent study in elementary schools. These include : (1) seatwork or guided study, (2) teacher-directed situations with open-ended assignments and programmed materials, and (3) independent study in which a student selects his own topic and identifies his own problem through teacher-pupil planning.

Also practiced at the elementary school level is individualized instruction, which is larger in scope than independent study, but which includes independent study as part of its principle. Five examples of individualized instruction at this level include :[4] (1) IPI or individually Prescribed Instruction developed at the Learning Research and Development Center, University of Pittsburgh ; (2) SDL or Self-Directed Learning developed at the Mid-Continent Regional Educational Laboratory, Kansas City, Missouri ; (3) IGE or Individually Guided Education developed at the Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin ; (4) CMS or Computer-Managed System, also developed at the Wisconsin Center : and (5) the Project Plan of Westinghouse Corporation, which utilizes the

computer as a program for learning. Such programs (a) allow pupils the freedom to make choices and decisions in learning, (b) have flexibility in organization and in structure which permits pupils to progress at their own rate of learning, (c) involve much teacher and pupil planning and working together, and (d) provide core-like situations involving all subject matter in the solving of problems rather than working on one topic in isolation.

The detaild texbtooks or programmed instruction texts as well as computer assisted instruction leads a pupil through a sequence of learning activities at his own speed and record pupil scores and responses. A pupil proceeds through a unit or instruction in small steps, with possible branching to more complex or remedial materials. Criticism of these approaches is based upon their lack of human interaction and the isolated nature of the bits of information presented. This method concentrates more on how to learn rather than on content to be covered. System package for individualized study are also being designed and include diversified subject matter with varying levels of difficulty, varying degrees of depth and breadth and conflicting points of view and approaches. These packets include the lesson format, the media, and the methodology. The media might include filmstrips, video tape, recordings, books, magazines, or programmed textbooks. With the packets available, the teacher individualizes instruction to meet the needs of each learner and provides for pupil-teacher conferences and self evaluation based on behavioral objectives.

Independent Study Patterns in Junior High Schools

At the junior high school level, team teaching and other innovative methods are not as well established. But programs have been worked out using multimedia and do allow for independent study and contract electives for completing student projects. There are also individually programmed independent study activities in both developmental and corrective

reading. Students usually work alone, pacing themselves through the program of study worked out by the teacher and the student. Programmed materials that are often used at this level include mechanical and electronic instruction, book forms, and loose-leaf notebook type of materials organized in steps called frames. The student reads a statement and then answers a question by writing or pressing a key. The correct answer is then exposed or indicated and learning is immediately reinforced. The programs which transmit factual knowledge are prepared by experts and the student moves ahead at his own speed. This frees the teacher from routine drill, with the result that there is more time for more creative teaching. This type of material provides high motivation for the slow and inefficient learner. Where such programs are in operation, the school library or media center has assumed a new and important role in the total educational program.

Independent Study Patterns in High Schools

Independent study at the secondary school level has long been recognized by teachers and administrators as an effective method of learning since it aims at meeting modern educational goals and is student-centered in its approach to learning. There has always been time for individual study in the classroom, study hall, or learning center. But independent study has usually been limited to honor students, college placement programs, and enrichment projects for exceptionally bright and creative students. William M. Alexander and Vynce A. Hines completed a research project in 1966 for the U.S. Office of Education entitled *Independent Study in Secondary Schools*. Their findings, which covered both junior and senior high schools, identified at least five patterns of independent study programs at this level. A pattern called "Independent Study Privileges or Option" is designed to encourage large numbers of students to participate in independent study; scheduled time is provided

during the school week for this activity. The second pattern is called "Individually Programmed Independent Study" and may use programmed materials, but a student is guided individually in a program related to his particular need. A third pattern called "Job-Oriented Independent Study" focuses attention upon a career or vocational interest of a student. The preparation may range from a semi-skilled occupation to a research oriented discipline. "Seminars Based on Independent Study" is the title of the fourth pattern where students come together periodically to share their reading, projects, or research findings. The fifth pattern, "Quest-Type Program for Development of Special Aptitude," includes a variety of independent study activities. These students explore, extend, and refine special talents and interests that are not related to career choices. Independent study projects are being used in practically all curriculum areas. But, only a relatively small number of schools are making appreciable use of independent study; however, some 317 schools were so identified in 43 states. Most schools still use the conventional class situation, with the assign-study-recite method of instruction.

Flexible Scheduling and Independent Study

Along with enriched learning resources, newer teaching methods, and independent study is found flexible scheduling of students at all three enducational levels. The innovative programs allowing for independent study by each student have led to a greater change in class scheduling. In some schools, the class periods are shortened and school day is divided into fifteen or twenty minute modules of time. This provides for a varied class schedule and for teacher-student consultation time. A student's and a teacher's program could vary each day of the week. In another pattern of scheduling, the class period is lengthened so that there are longer blocks of time. For example, a school day is divided into four periods with classes meeting three times a week. Modular scheduling provides for flexibility of student

programming and provides opportunity for each student to do independent study. Much planning, cooperation, and patience on the part of students, teachers, library media specialists, administrators, and school board members is needed to move from the traditional pattern of student scheduling to modular flexible programming. Schools are still experimenting with this and even experimental schools are having to modify modular scheduling to care for the immature students who are not yet ready for complete independence, personal responsibility, and self-discipline. Since independent study is self-directed learning, preparing students for this freedom and helping them to develop a sensitivity to problems is a first step in implementation that some schools are now taking. All teachers and administrators are not completely satisfied, as yet, with the mechanics of independent study, but they do over-whelmingly favor it and feel it should be expanded.

Where traditional patterns of scheduling and of teaching methods are phasing out, there is a great impact upon the resources, the program of servicing, the staffing, the quarters, and the budgeting of the library that serves as a media center in a school with new innovative programs of teaching. Multimedia aids play a vital role in individualizing learning and in independent study. How to organize media effectively for use, how to make them easily accessible, and how to guide students and teachers in using them in meaningful learning situations brings a new demand upon the media specialist and upon the school media program. The student who has his own problems to solve will read, listen to records, and tapes, view, question, analyze, think, and experiment. He will examine, investigate, consider evidence, write, create, memorize, record, make self-appraisals, consult with resource persons, and share ideas with his peer group. This requires new attitudes, new regulations, new ways of organizing materials, and new programs of services to provide for the reading, listening, and viewing activities of individual students if media program are to be successful in meeting the objectives of the schools of which they

are a part. According to the Alexander study,[6] where independent study activities now exist school libraries rate very high because of their extensive facilities for using newer media such as teaching machines, tape recorders, audiovisual carrels (sometimes known as wet-carrels), but they still lack work space for students utilizing highly specialized materials needed for more independent study projects. In comparison with classroom libraries and departmental resource center, school libraries were rated to be the best used of all facilities for independent study; the other facilities were given consistently poor or low ratings. The same study by Alexander indicated that " the new media, including newer developments in educational technology, seem to have had only a modest impact on the independent study student."[7] One should not infer from this statement that media other than print were of little value to the junior or senior high school student, but they may not have as great a value as some media specialists would like to have one think, or quality media other than print might not have been easily available or accessible. It is true that the book and other printed materials are more abundantly available in most junior and senior high schools and still serve to answer most needs of the independent learner. But when print is used in wise combination with nonprint resources, clarification, new insights, and widened vicarious experiences do result. Also, in schools where all media pertaining to a subject are readily available and, where possible, housed in close proximity or on the same shelves, the student is apt to use more than one type of media in solving his problem. In other schools where there is a separate area provided for audiovisual learning resources and another area or library for print resources, the nonbook resources tend to be used more for group learning than for individual study.

Changing Patterns in School Library Media Programs

As we have seen, some schools at all acade

mic levels are developing innovative teaching methods and are trying out new theories of learning to meet the needs of modern society. At the same time, we have school library programs that are changing. Modern school libraries are developing media programs and are redesigning their facilities, services, and programs to meet modern educational goals, and are supporting the new educational theories and methods of teaching which are aimed at achieving these goals. The philosophy of these modern libraries respects the integrity of all types of materials and recognizes that students are individuals and that some learn more effectively with one type of material, while others learn better with another. When the library area is flexibly planned to function as a media center for learning with all types of media completely cataloged, easily accessible, and serviced by librarians as media specialists, each individual student, rather than just the exceptional student, is encouraged to do independent study and is guided in the use of whatever resources are most pertinent to his need.

Changing Attitudes

What are some of the changes that are taking place in modern school libraries? One of the first, and probably the most important, is the attitude of the school librarian toward the educational innovations that are evident in schools today. The librarian who has not kept pace with media developments, theories of learning, and teaching methods, and who has resisted such innovations probably has done little to change the library program. This situation is evident and prevalent in all too many schools. But the school librarian who has kept pace, who has a knowledge of trends, and who has assumed a leadership role in the school and in the field is the one who becomes involved (1) in creating a learning atmosphere and environment in which students can learn to think, (2) in finding ideas that work, (3) in acting as a catalyst for curriculum improvement, (4) in helping to develop enrichment programs for students in selecting quality

media, and (5) in motivating teachers and students to plan units, to utilize learning resources, and to evaluate progress and change. As a media specialist, the librarian has a responsibility to work with every teacher as an individual and as part of a working group. The media specialist librarian must be objective, must have a broad point of view, and must be a working member of faculty teams in planning projects. Such a person also must be willing to try new educational experiments in library administration, to conduct critical self-evaluative projects related to library services and resources, and to provide in-service training for teachers and students in utilizing newer media in creative learning situations. Good inter-personal relations with school administrators, faculty, students, and parents make this possible.

Cooperative Librarian-teacher Planning

A second change taking place in modern school libraries is a more subtle one and is one of priorities. In the past when evaluating library services to teachers and to students, services to students usually rated first. Today with greater emphasis on master teacher, team teaching, and with emphasis increasingly placed on the student as an individual, it is essential for the librarian to serve with teachers as a consultant in the planning stages of each instructional program. This always been recommended but today it assumes greater importance. Cooperative planning and cooperative evaluation between teacher and librarian assumes that the librarian is considered as a member of the team to plan library experiences, to make available follow-up materials, and to help in the evaluation of results of student projects for independent study. This requires careful planning by teacher and media staff. Librarians need to spend more time in classrooms as material specialists and consultants. In order to be prepared to assist with materials, the librarian will need to study teacher materials issued before program start, whether they be television programs or team

teaching projects. The librarian needs to serve as a consultant to teachers and to students as classroom collections of materials are assembled for use, and to keep up-to-date on class activities in order to recommend appropriate materials. The librarian needs to supervise programs of in-service training for teachers and students to develop techniques in using the newer media and in the production of teaching materials. The building up of the professional library with curriculum guides, resource and teaching units, criteria, and checklists to support faculty study and to encourage professional growth activities of teachers goes hand in hand with librarian-teacher cooperation and coordination. The school librarian as a specialist serves as an extension of the classroom and supports the learning process by promoting discovery and creative activities of students through cooperative staff planning and by helping each student to learn how to study at his own pace. Thus the school librarian as a media specialist needs to be knowledgeable about subject areas and to use his specialized knowledge of resources to help teachers design meaningful learning experiences for students. The significant role of the media specialist in working more closely with teachers becomes more evident.

Need for Additional Staff Members

This then leads to the third change which is taking place in modern school libraries and which is slower in being implemented. Because librarians need to spend more time in curriculum planning with teachers, they need additional staff to carry out all the activities of a learning center. This is essential if educational goals are to be achieved. But present economic conditions have drastically cut back budgets for staff, salaries, media resources, and media equipment. Yet no longer can a part-time librarian or a one-staff member librarian adequately service a media centered program. The minimal recommendations of the 1969 *Standards for School Media Programs*[8] of the American Library Association and the National

Education Association suggest "That the media center have one full-time media specialist for every 250 students, or major fraction thereof," and have supportive staff which includes a media aide and a media technician for each professional media specialist in schools of two thousand or fewer students. Many schools have increased their media staffs and other are seeking well trained librarians and assistants with varying competencies and professional preparation to provide for the increased scope of media services needed by both teachers and students. Knowledge and preparation today must cover contents in curriculum development, psychology of learning, methods of teaching, behavioral changes, subject area competencies, as well as specialization in media selection, utilization, and organization for use of specific media such as television programs, electronic and computerized processes, programmed instruction, and remote access systems.

Need for Expanded Services

More and more school librarians have accepted Lloyd Trump's[9] recommendation to move into the mainstream of the educational program in order to develop a library program of excellence and to relegate clerical tasks to clerical or media aides. The additional professional and supportive staff of the library as a media center, as recommended by National Standards, is imperative if students are to have the specialized help they need in developing their independent study projects. The fourth change, then, in modern school libraries is one of emphasis on services provided for students working on independent projects. With more and more students involved in individualized instruction, the demand upon library resources of all types is much greater. There needs to be sufficient media staff to carry on technical and clerical aspects of work in a media center so that the professional librarian can be freed to spend more time in giving individual guidance to students in reading, viewing, and listening activities. This includes helping the slow learner as well as the

gifted student. The gifted individual needs to be introduced to advanced techniques of research, while the slow learner needs extra help to find the right media to progress at his own speed. The librarian of today makes much more extensive use of cumulative records of students to gain knowledge of their interests and individual needs since students exhibit differing degrees of proficiency in the use of library resources. With this background of information, the librarian can be greater help to the student in locating the right materials and in using them efficiently.

With the great increase in elementary school libraries and in nongraded programs at this level, more professional staff time is being spent in storytelling and in book talk activities and in encouraging individual pupils in creative activities that grow out of the use of the media centered materials. These are reflected in library publications, in book reviews, and in book talks given by pupils as well as by exhibits and displays involving the work of children. Individual conferences with pupils concerning reading problems and for selecting other materials specially geared to their group or individual needs is implied if the school librarian is to fill the role of being a materials specialist. A friendly, informal, and tolerant atmosphere in an attractive library center helps to create the learning environment that encourages a broadened approach to subject fields and helps students want to learn.

Enriched Resources for Independent Study

Independent learning, creative inquiry, and learning by discovery all require a wider variety of materials and a much larger collection of learning resources than was true when textbook teaching to group of children predominated in the schools. Expansion and enrichment of the collection to provide for at least twenty volumes per student is part of fifth pattern of change taking place in school libraries where independent study and individualized instruction is being developed. At the high school level there is much more emphasis on

college level materials and for a rich collection of the world's best literature. Programmed materials, all types of communication media, and collections reflecting a wide variety of interests and reading levels must be selected with individuals in mind and these must be organized and cataloged to facilitate independent use. Vocational and personal guidance materials, high interest and low vocabulary books, much pictorial materials, and nonbooking audiovisual forms for slow learners must be made readily accessible too.

A study made by Lura E. Crawford of the Oak Park and River Forest Township High School on "The Changing Nature of School Library Collection"[10] revealed that in schools with independent study programs there were major changes in the media collections. There was greater duplication of titles of information and reference books required for student use as well as a greater variety and depth of titles to fit the needs of independent study courses. An enriched professional collection was found to be important for teachers who wanted to be awares (a) of the latest developments in their field, (b) of new project ideas, and (c) of new developments in methods of teaching. The study also showed that there was a greater emphasis on meeting the needs of the economically and culturally deprived and of the noncollege bound students. There was evidence of increased magazine holdings, bound or on microfilm, for in depth research by students at all levels. The crossing of subject lines and the interrelating of fields of study also influenced the media center collections. With interdisciplinary teaching there was a strengthening of books in the fields of art, literature, and foreign languages to satisfy the needs of the humanities courses. The social studies collection was broadened to service the new courses in Asian studies, Africa, and the American Negro. By the use of Federal funds made available to elementary and secondary schools, it has been possible to add materials for philosophy courses, to update science materials, provide programmed learning texts, and to increase the number of paperbacks (for which there is great demand) in all areas of the library collection.

Along with the enriched resources of traditional print materials, indexs, and bibliographies, the National Standards has identified over twenty different kinds of nonprint resources as being essential for media centered libraries. The diversity, quality, and quantity of learning resource has been necessitated by the role of the media center in supplying learning materials for the new teaching programs. From a wide variety of media, the student is able to select the type he finds most satisfactory for his own individual learning needs or he is guided to use it by both teachers and media specialists. This necessitates careful selection and evaluation of all types of materials by the media specialists.

Experimental Methods for Organizing Newer Media

Various methods have been experimented with in organizing newer media for ease of use since accessibility is a key factor to a successful media program. This represents the sixth pattern of change in modern school libraries. It has been found that when newer media receives the same processing, classfication, and indexing as that of printed materials and when all materials, regardless of location in a school plant, can be located through the card catalog, the users of the media center can obtain materials of all kinds quickly and easily. Some schools also use the divided classed catalog rather than the dictionary arrangement of the card catalog. Other schools are experimenting with the computerized book catalog for locating all learning resources. Some libraries, when possible, are shelving together, on the same shelves, both printed and audiovisual resources by classification. Students and teachers prefer this organization. Nonbook resources such as filmstrips, tapes, transparencies, and slides can be placed in specially prepared boxes for housing each type of media and can be shelved easily. This leads students who are browsing to use more than just one type of material.

Interdisciplinary concepts in the teaching of literature, art, and history and the interrelating of subject matter such as foreign language, history, art, and science of a particular country is being advocated and implemented in team teaching programs. The integration of media and the arranging of materials to support such interdisciplinary courses facilitates the use of such materials by students and teachers. In larger schools where subject resource centers are located in other parts of the school plant or in adjacent areas to the media center but which are under the supervision of the media staff member, it is relatively easy to bring together in one place book and non-book materials to support such courses. There is no virtue in shelving all materials strictly by the conventional Dewey Decimal system, although that classification scheme does serve the purposes of a school library. Shelving related materials for ease of use by a subject approach in special cases can prove very helpful. Facilities and personnel usually govern the decision as to which method is to be used. Flexibility, however, and experimentation now tend to prevail rather than rigidity of traditional patterns of organization.

Media Equipment for Independent User

It goes without saying that various forms of media equipment, such as projectors and recorders, are needed to use the "soft-ware" or newer types of media, e.g., films, tapes, and slides, now found in a school library media center. The range includes over twenty types of media with the quantity recommended for schools of varying sizes being cited in the National Standards. The equipment needed will vary from large projectors used in group or classroom situations to smaller viewers and recorders used by individual students and teachers doing independent study. Permanent installations and equipment to be checked out for overnight use are also needed. How to select, organize for efficient use, and keep the equipment in repair represents a seventh pat-

tern of change and decision making now taking place in a media centered program.

Most media centers have equipment suited to both large group utilization and individual use. Some are quite simple while other systems are very complicated. Ear phones attached to jacks for individual or small group listening are usually provided either at "wet carrels" equipped with electrical outlets or for use at special booths or tables. Some new schools have cables in each room making it possible to channel both sound and visual programs, e.g., closed circuit television and radio programs, to a classroom or a study area from a central studio, channel, or noncommercial station. This eliminates carting audio-visual equipment to a classroom for use and cuts down on duplication of expensive equipment and repairs. Several channels and engineers are needed to operate such facilities.

Dial access and computer directed random access systems are the latest in technological equipment and provide potential for more sophisticated independent and individualized study. Such equipment is very expensive and consists of study carrels in a library equipped with a telephone dial, headset, and television receiver which when dialed gives a specified program from a central control system. This has great value for independent study and holds potential for future expansion of information retrieval systems.

Duplicating machines, copiers, and production equipment located in as close a proximity to learning resources as possible saves time for students and teachers who are engaged in producing learning activities for project experiments or presentations necessary in independent study or for preparing for team teaching. Other equipment, e.g., telelecture and teletype facilities, communication centers with banks of audiotape playback machines, and television sets and computers for student use, add dimensions for independent study in schools with such facilities. Much of this equipment is found at all levels of the school system.

Designing Media Centers for Independent Study

The eighth and last pattern of change that is evident in media centered libraries providing for independent study for students and teachers is the shift from the classroom as the center for learning to the media center as the central learning facility or the "hub" of learning in the school. Much is being published relating to new designs for media centers, ranging from remodelled facilities to new buildings with carefully designed facilities for independent study, seminar rooms, and production centers. Areas are planned for study space for solitude and reflection, for individual and small group listening stations, for small group conference areas, for film preview space, for microfilm reader space, for circulation areas, for production and storage areas, for office space, and for maintenance and service areas. The size of the school, staff, money, and space determine how flexible and how expansible the plans are. Main features that are being tested include separate buildings of a campus type, a school-within-a-school pattern, neighborhood schools with media centers, the library-in-the-round, media centers with outside exits, court area for study, multiple resource learning centers to supplement the media center, and media centers planned on several floors of the school but adjacent to each other. There is also the library without walls.

Most new school buildings are planned to implement the modern methods of teaching, including large and small group instruction and facilities for independent and individualized learning. In such buildings, the media center becomes the focal point of the learning activities.

Summary and Conclusions

In this brief discussion of the impact of independent study on school libraries as media centers we have seen that changes are taking place in schools and in libraries at each of the educational levels. These changes are reflected in newer approaches to learning theories, in experimental teaching methods, in newer technological advance to help in the learning process, and in flexibility in planning programs of services for students and teachers in school library media centers. Implementation of the 1969 National Standards and the use of Federal monies are both making it possible, with larger staffs, enriched collections, and multimedia resources, to provide for the needs of students and faculty engaged in independent study. By working together for relevant programs of services that are child and youth centered, media school libraries are relating and responding to the needs of the individual and are creating a learning atmosphere and environment that is helping children and youth to think rather than to recite. Librarians as media specialists are serving as a catalyst for curriculum improvement and are helping students and teachers to find ideas of communication in all types of media to solve problems and to find ideas that work in developing creative activities. The role of leadership in such libraries is helping to revitalize both thinking and teaching and is creating a sense of joy in learning.

1) Louise Sutherland. "School Library Legislation at the Federal Level," in *Library Trends*, XIX, October, 1970, p. 199.
2) Edgar Dale. "Learning by Discovery", *The News Letter*, XXX, November, 1964, p. 1.
3) Lloyd Trump. *Planning a Team Teaching Program*. Cleveland, Ohio. Educational Research Council of America, 1968.
4) Ann Patrick. "Practices and Programs for Elementary Schools," in D. W. Beggs and E. G. Buffie, *Independent Study*. Bloomington, Indiana, Indiana University Press, 1965, pp. 68–82.
5) Marcus Lieberman. "Individualized Instruction," *Illinois Education*, LVII, May, 1970, pp. 389–592.
6) Alexander, *op. cit.*, pp. 39–45.
7) *Ibid.*, p. 44.
8) American Library Association, and National Education Association. *Standards for School Media Programs*. Chicago, American Library

Association, and Washington, D. C., National Education Association, 1969, pp. 12–16.

9)   J. Lloyd Trump. "Changing Concepts of Instruction and the School Library as a Materials Center," in *The School Library as a Materials Center: Educational Needs of Librarians and Teachers in Its Administration and Use.* Ed. by M. H. Mahar. Washington, D. C., U. S. Office of Health, Education and Welfare, 1963, p. 2.

10)   Lura E. Crawford, "The Changing Nature of School Library Collections," in *Library Trends*, XVII (April, 1969), pp. 383–401.

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