THE LEARNING-CENTER CONCEPT IN OPEN-SPACE

ELEMENTARY SCHOOLS OF TEXAS

DISSERTATION

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By

Don Dunlap, B. S., M. Ed.

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The first purpose of this study is to determine whether significant differences exist among the perceptions of principals, librarians, and teachers with respect to the following categorical practices or conditions relative to the learning-center concept in open-space elementary schools: (1) teacher preparation for use of the learning center; (2) student preparation for use of the learning center; (3) learning-center personnel and their role; (4) operation of the learning center; (5) facilities, materials, and equipment in the learning center; (6) use of the learning center for individualizing learning; and (7) use of the learning center for developing independent learning skills.

The second purpose of this study is to determine whether a significant correlation exists among specific categories.

The third purpose of this study is to establish the degree of emphasis placed upon various practices or conditions relative to the learning-center concept in open-space elementary schools of Texas.

Thirty-four principals, thirty-two librarians, and ninety-four teachers from forty-one open-space elementary schools

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completed a questionnaire consisting of sixty-five statements which are classified into seven categories. Participants responded to each statement on a four-point scale. Data for significance of differences are treated with a simple analysis of variance. Data for correlation of categories are treated with the Pearson Product Moment Correlation. Descriptive statistics are used to indicate the degree of emphasis placed upon each category.

Analysis of the data reveals that there are no significant differences among the perceptions of principals, librarians, and teachers with respect to any of the categorical practices or conditions relative to the learning-center concept in open-space elementary schools of Texas. Significant, positive correlations do exist between the following categories:

1. Teacher preparation for use of the learning center and student preparation for use of the learning center.

2. Learning-center personnel and their role and operation of the learning center.

3. Facilities, materials, and equipment in the learning center and use of the learning center for individualizing learning.

4. Facilities, materials, and equipment in the learning center and use of the learning center for the development of independent learning skills.

5. Student preparation for use of the learning center and use of the learning center for individualizing learning.

6. Student preparation for use of the learning center and use of the learning center for developing independent learning skills.

7. Use of the learning center for individualizing learning and use of the learning center for developing independent learning skills.

On a four-point scale of great emphasis, some emphasis, little emphasis, and no emphasis, personnel in open-space elementary schools were found to be placing some emphasis on each of the above categorical practices or conditions.

It is suggested that, when planning construction of open-space buildings, developing a learning-center program, or evaluating a program already in existence, information concerning current practices and conditions, as reported in this study, be given consideration. All planning should include administrators, librarians, and teachers.

It is also suggested that, when planning an individualized program, attention be given to student preparation for use of facilities and materials, to student acquisition of independent learning skills, and to the roles of instructional personnel.

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CHAPTER I

INTRODUCTION

The current emphasis on individualization of learning
and the recognition of the need to educate students in a
manner that will assure responsible, productive citizens
are important influences in contemporary elementary schools.
Current literature, in attempting to provide an appropriate
program of learning for individuals, emphasizes the need for
a wide variety of materials and activities adapted to the
pupils' great range of learning styles, interests, abilities,
and social backgrounds (5, 6, 11, 12, 19).

As a result of this trend in education, the perception
of the role of the library in schools also has changed. The
current tendency is not to look upon the library merely as a
place for checking books in and out, but rather to regard it
as a place where a large, varied collection of learning
materials, accessible and available to all classroom groups,
is stored and where pupils and teachers may engage in learning
activities (1, 3). Thus, libraries have evolved into learning
centers, and the name "library" is being replaced by such
names as "resource center," "media center," "instructional
center," or "learning center." The most noticeable illustration
of this new trend can be found in open-space elementary schools

where physical aspects of the learning center tend to make it almost an integral part of classroom space.

Statement of the Problem

The problem of this study is to investigate the application of the learning-center concept in open-space elementary schools of Texas by establishing, comparing, and analyzing principals', teachers', and librarians' perceptual responses obtained through a questionnaire. Particular emphasis is placed upon practices of the learning center which individualize learning and develop independent learning skills.

Purposes of the Study

The purposes of this study are the following:

1. To determine whether a significant difference exists among the perceptions of principals, teachers, and librarians in regard to seven categorical learning-center practices relevant to individualizing learning and developing independent learning skills in open-space elementary schools in Texas.

2. To determine whether there is a significant correlation between select, categorical learning-center practices which are relevant to individualizing learning and developing independent learning skills in open-space elementary schools in Texas.

3. To establish, through the use of perceptional responses of principals, librarians, and teachers, the degree of emphasis placed upon various practices in open-space

elementary schools of Texas which are relevant to the use of the learning center in individualizing learning and developing independent study skills.

Hypotheses

1. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to teacher preparation for use of the learning center.

2. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to student preparation for use of the learning center.

3. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to learning-center personnel and their role.

4. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to operation of the learning center.

5. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to facilities, materials, and equipment in the learning center.

6. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to use of the learning center for individualizing learning.

7. There are no significant differences among the perceptions of principals, teachers, and librarians in respect to use of the learning center for developing independent learning skills.

8. There is no significant correlation between the categorical practices of teachers in their preparation for use of the learning center and students in their preparation for use of the learning center.

9. There is no significant correlation between the categorical practices of learning-center personnel and their role and operation of the learning center.

10. There is no significant correlation between the categorical practices of facilities, materials, and equipment and use of the learning center for individualizing learning.

11. There is no significant correlation between the categorical practices of facilities, materials, and equipment and use of the learning center for developing independent learning skills.

12. There is no significant correlation between the categorical practices of students in preparation for use of the learning center and use of the learning center for individualizing learning.

13. There is no significant correlation between the categorical practices of students in preparation for use of the learning center and use of the learning center for developing independent learning skills.

14. There is no significant correlation between the categorical practices of use of the learning center for individualizing learning and use of the learning center for developing independent learning skills.

Background and Significance

The recent emphasis in schools upon individualization of the learning process and the impact of the recognition that the available fund of knowledge has become so great that students can no longer realistically be expected to absorb it have resulted in a change of direction of educational purpose. The emphasis is now on producing a citizen who knows how to learn by independently finding the information which he seeks and by applying it to the situation which originally prompted his search (7, 15, 18). This philosophy was expressed at a meeting between educators and industrial leaders in one Texas school district when the business men indicated, "We do not want walking encyclopedias. Send us persons who can think--can reason and solve problems. We will provide the time and place for them to find needed information"(13).

School finances prohibit the duplication in each class-room of the resources necessary for individualization of learning and, therefore, for opportunities for independent, informed selection of activities by pupils (4; 11, p. 210). The learning center in the open-space school, with its accessibility and potential for varied services, seems to be an invaluable aid in meeting new educational demands. Yet, a review of the literature reveals a lack of research concerning the use of such a center in open-space schools with respect to actual preparation for, and provision of, opportunities for individualization of learning and development of independent

learning skills. There are few guidelines or reports of current practices that could help schools in establishing a workable program of this nature. Though many open-space elementary schools are being constructed, no empirical evidence can be found which describes a typical learning-center program in an open-space elementary school; nor is there any indication that those existing programs are following procedures and practices characteristic of the learning-center concept.

The scarcity of information in this area can be attributed partially to the relatively short time during which any emphasis has been given to centralized resources for the elementary school. The concept of the elementary school library was first implemented in the 1930's, and at that time provision was made for nothing more than a special room for books and usually for tables and chairs placed in the center for a class to use during their assigned library time. For many years the general concept of the library was primarily as a place to house books or other printed matter (11, p. 209). Through the 1950's, elementary libraries continued to be a minor consideration in school development. Centralized collections and full-time librarians were provided almost exclusively in such favored, higher socioeconomic suburban communities as Winnetka and Evanston, Illinois, Shaker Heights, Ohio, and in a few urban communities such as Chicago or Detroit (10, p. 33).

Phyllis Hochstettler, who served as president of the American Association of School Librarians in the late 1960's,

indicates, "The elementary school library wasn't conceived during the 1960's, but in this decade its role as an important and integral ingredient in a program of quality education for American youngsters is being realized as never before" (10, p. 1). A study made by the United States Office of Education in 1962-63 indicates that, of the elementary schools included in its survey, only about 44 per cent had centralized libraries (9).

The American Association of School Librarians' 1960 Standards for School Library Programs greatly strengthened school library programs. The potential of this segment of the school program was forecast by this document, which indicates,

> In the education of all youth, from the slowest learner in kindergarten to the most intelligent senior in high school, an abundance of printed and audio-visual materials is essential. These resources are the basic tools needed for the purposes of effective teaching and learning (2, p. 2).

Another boost to school libraries came in 1962 when the Knapp Foundation granted over one million dollars to aid in a five-year program by the American Association of School Librarians to demonstrate the educational value of a complete program of school library services. Conducted in five elementary and three secondary schools, the program was formulated according to facilities, materials, and services recommended in the 1960 standards in order to show a good library program in action and to indicate what such a program could contribute to the school's total instructional program (17). The Elementary and

Secondary Education Act of 1965, with provisions for federal funding of materials, also helped to bring about great changes in elementary school libraries (10, p. 48).

In recent years, the library concept has continued to expand to include many types of communication which provide new functions and activities in learning situations (11, p. 210). The actual idea of an integrated program which brings audio-visual and printed materials together for enlarged services is not new; rather it was reported as early as 1941. However, with educational programs emphasizing individualization, inquiry, and independent learning, the concept has been developed on a much wider scale (1, p. 11). As the services of the library have been extended, schools have become aware of the possibilities for meeting the individual learning needs of students through the increasing media available. Technological advances, a need to make materials easily accessible, and curricula changes have all been influential in the development of the learning-center concept (11, p. 210).

The advances that have been achieved in school library programs are evident in the American Association of School Librarians' 1969 Standards for School Media Programs, which states,

> The philosophy of a unified program of audiovisual
> and printed services and resources in the individual
> school is one that has continuously grown and been
> strengthened in the last thirty years. This fusion
> of media resources and services provides optimum

> service for students and teachers. . . . The
> media program is indispensable in the educational
> programs that now stress individualization,
> inquiry, and independent learning for students
> (3, pp. 2, 3).

The open-space school promises to be still another influence

upon the evolving learning-center concept. This trend is

summarized as follows:

> A media center as a place. . . may not exist in the
> not too distant future. As the self-contained class-
> room begins to dissolve, losing first doors and then
> walls with emphasis placed on individual needs, so
> too will the media center dissolve until it is
> totally fused with the whole of the school environ-
> ment (1, p. 11).

The philosophy of the learning-center concept has

broadened. What remains to be accomplished is the attain-

ment of some insight into practices which could fuse material

resources with the current objectives of school curricula and

with current school design. Richard Darling, Dean of the

Columbia Graduate School of Library Service, adequately

expresses the situation:

> What we must do, if we are to prove the value of
> school media service, is to undertake a kind of
> evaluative research. We must. . . identify the
> goals, analyze the problems which stand in the
> way, describe and standardize the library activities
> to meet the goals. . . . (8, p. 22).

The present study provides an opportunity for analysis of

practices relevant to the application of the learning-center

concept in open-space schools in Texas. School districts

which contemplate constructing new buildings, planning a

learning-center program, or improving a program through media

services should find pertinent information available. On the
basis of obtained information, recommendations and suggestions
for further study are possible.

Definition of Terms

Learning-center concept refers to a wide and varied col-
lection of learning materials, space availability for a variety
of activities, accessibility to teachers and pupils, and em-
phasis upon active student involvement.

Learning center refers to a broader interpretation of the
word "library," but for the purpose of this study it will be
used synonymously with "library," "instructional materials
center," "media center," and similar terms.

Individualized learning refers to emphasis on active
rather than passive student learning, provision for individual
rate of learning, and consideration of individual needs and
interests.

Learning skills refer to those skills necessary for in-
dividualization of learning. Specifically, the term refers to
the ability to work independently when necessary and to the
ability to find, organize, apply, and evaluate information
relative to a problem or area of interest.

Nongraded or continuous progress refers to the plan
whereby students are moved from one level of learning to
another, irrespective of the progress of other class members,
whenever they have demonstrated mastery of a lower level.

Open-space school refers to a building in which the major
portion consists of one large area for learning and which offers
easy access to the library (media center, resource area,
learning center, or similar name).

Limitations of the Study

The results of this study are limited in that only open-
space elementary schools in Texas are included. Results are
based upon the assumption that it is possible to obtain from
the respondents, through the use of questionnaires, an accurate
report of their perceptions of reality.

Procedures for Collection and
Treatment of Data

The first step in collecting data was gathering the
information necessary for the construction of a questionnaire.
Following the completion of a tentative instrument, a panel
was chosen for the purpose of clarifying meanings of the
various items included in the questionnaire. The third step
in the collection of data was to select a jury of authorities
in the field of elementary education or library service for
the purpose of validating the instrument used to collect
information. The fourth step in the procedure for collecting
data was the establishment of reliability of the questionnaire
through a pilot study. Selecting the sample of open-space
schools was the fifth step in the procedures for collecting
data.

In the treatment of the data, percentages involved in the study were calculated manually. Other information provided by the respondents was compiled at the Data Processing Center of North Texas State University. Hypotheses one, two, three, four, five, six, and seven were tested, using the Simple Analysis of Variance, to determine whether or not there were significant differences among the perceptions of principals, librarians, and teachers in regard to seven categories relative to the learning-center concept. Hypotheses eight, nine, ten, eleven, twelve, thirteen, and fourteen were tested, using the Pearson Product Moment Correlation, to determine whether or not relationships existed between the selected categories relative to the learning-center concept. A complete description of the collection and treatment of data is found in Chapter III.

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CHAPTER II

RELATED LITERATURE

A review of the literature was undertaken in order to
become familiar with writings and research concerning the
individualization of learning, independent learning skills,
and the learning center. From the limited literature, a study
was made concerning the development of the open-space school
and the research in this area. In addition, a further in-
vestigation of the literature was conducted in order to study
various aspects of a learning-center program which are pertinent
to individualizing learning and developing independent learning
skills. These include teacher preparation for the use of the
learning center, student preparation for use of the learning
center, learning-center personnel and their role, as well as
the facilities, materials, and equipment, and operation of the
learning center.

Individualization of Learning

Though educators have long recognized the biological,
social, and psychological bases of individuality (96; 68; 3,
p. 4), only recently have functional plans begun to emerge
which make practical the implementation of individualization
in the schools (75, p. 1). One of the best known and most
organized systems which has been devised is the Program for

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Learning in Accordance with Needs (PLAN), a computer-based, ungraded program for language arts, math, science, and social studies in grades one through twelve. PLAN tailors objectives, content, rate, and instructional materials to the individual student. Individually Prescribed Instruction (IPI), a program covering selected areas in kindergarten through sixth grade, allows for daily evaluation of each child's work so that assignments can be made which are suitable for him. Individually Guided Education (IGE), a program for the elementary school, uses a wide range of materials and team-teaching methods, among other creative efforts, to provide a learning environment which develops and encourages independent student thinking. The Individualized Mathematics System (IMS) is a mathematics curriculum for grades one through six which provides for individualization. Programmed Logic for Automated Teaching Operations (PLATO) is a computer-assisted program in individualized instruction. The Duluth Plan for Individualization uses student contracts which, upon fulfillment by the student, allow him to obtain a specific performance objective. Hawaii, an Independent Study Program, is a method of individualizing instruction which emphasizes allowing students to select areas of study and methods for implementation (75, pp. 20-64). Learning Activity Packets (LAP), which were developed by the Nova Schools in Fort Lauderdale, Florida, contain objectives, pretests, lists of a variety of materials

and methods for obtaining objectives, and evaluative methods for teachers and students (14, pp. 317-318).

This study does not focus upon any one of these devised systems but rather upon the thrust and general characteristics inherent in all individualized approaches. No programs meet the individual needs of each child. At best, programs are group solutions to personal learning needs (34, p. 8).

Individualization is the method which aids a student to develop his own unique path of study and which allows for variances in rate, content, and approach, taking into consideration background, interests, ability, and learning style of the student (91, p. 6; 29; 95, p. 5; 56, p. 12; 98, p. 101). The chief justification for this approach is that it provides the means whereby every student regularly achieves mastery of the learning tasks which he undertakes (45, p. 3). The conditions which provide for mastery are the characteristics or conditions of the individualized approach. Pupil diagnosis is an initial step (45, p. 4; 91, p. 6; 75, p. 6; 31, pp. 38-39; 3, p. 5); diagnostic procedures are used to help the pupil determine his level of achievement and skill development in a particular learning sequence. Appropriate materials, equipment, and instructional methods are provided for the student (75, p. 3; 45, p. 4; 91, p. 6; 95, p. 5). Teacher and pupil, planning together, set specific performance objectives which take into consideration interests and needs, the latter including the individual's learning style. Also, consideration

is given to whether a student performs best when working alone, in a small group, or in a large group (6, p. 184). The student then may choose from a variety of materials and procedures which are appropriate for him. With lack of emphasis on grade levels or time units, a student then works toward the attainment of objectives at his own rate (37, p. 133; 91, p. 6; 45, p. 4). Evaluation is in terms of objectives as compared to the student's performance (45, p. 4; 91, p. 6; 95, p. 5).

Individualization allows for various teaching approaches: different students can work on different tasks toward different goals; different students can use different learning materials or equipment in working toward the same goal; different students can study a given task in different types of individual or group-learning settings; different students can be assigned to different teachers to produce effective teacher-student combinations; different students can study in a given learning situation by way of different methods of teacher-learning; and different students can be allowed different amounts of time as needed to achieve mastery of the learning task (45, pp. 3-4).

A report from conferences conducted by the Office of Regional Educational Planning for Suffolk County in New York describes various stages which may exist in a developmental sequence which would lead to the most desirable level of individualization. At level one, materials are simply varied in level; although all children generally progress through the same material, they do so at different rates. At level two,

materials may be varied in both level and approach, but these
considerations are not built into the curricular structure.
Next, a variety of activities are available for voluntary in-
volvement by students, followed by the fourth level where
students are assigned specific tasks based on diagnostic
results. On the fifth level, in the developmental sequence
moving toward total individualization, students may select
from among a variety of objectives and then engage in a pre-
determined set of experiences designed to accomplish those
objectives. Moving from this level, the student may select
from a variety of activities designed to promote specific
skills and abilities. Finally, students develop their own
objectives and devise plans for achieving these (49, pp. 13-15).

Current studies underscore the need for the individuali-
zation of instruction and learning. In a study of the gifted
by the Department of Health, Education, and Welfare of the
United States Office of Education, one of the major findings
was that while the number of gifted and talented from the total
elementary and secondary school population ranged from 1,500,000
to 2,500,000, existing services for the gifted served only a
small percentage (66, p. xi). In another study conducted by
the United States Office of Education, forty-six schools were
studied to review current developments in individualized in-
struction. Though little objective evidence was found con-
cerning the impact of individualization on learning, there were
strong indications that the results were highly positive (75,

p. 12). The report of an international seminar on individuality in learning involving educators from America and Europe reported that a need exists for developing styles of teaching based upon styles of learning (73). A study by Jane Singh (84), involving seven hundred students in grades four, five, and six, found that, when students were actively involved in their own learning which was structured to their personal interests, then gain in ability in handling reading skills became apparent.

Independent Learning

The end product and goal of individualization is an independent learner (37, p. 129; 49, p. 8; 95, p. 5). Edgar Berenstein characterizes the idealized independent learner as a student who works with problems which he has selected and who develops and carries out his own plan of attack, ending with knowledge gained and tested. He engages in inquiry and in evaluation of that inquiry. In addition to possessing basic skills and a range of critical thinking skills, he is intellectually creative. Such a student could choose his own learning topics and problems, make effective individual use of time, space, and learning resources of the school, and locate the printed materials, audio-visual resources and subject matter experts fitting his learning needs (12, pp. 5-7). Helen Carpenter and Carolyn Leopold state that the development of this general type of learner is basic to the preservation of the democratic way of life (17, p. 15; 62, p. 30). Robert

Travers further emphasizes the importance of independent

learners:

> Much knowledge should be acquired in the form of
> knowing where to look for it. . . . Learning in
> the higher grades of elementary school and through
> high school must become progressively more con-
> cerned with teaching pupils how to retrieve
> information from the vast amount stored in
> various sources. A person who knew only the
> information he has learned and is unable to
> find new information as he needs it, would be
> a sorry product of the educational system (88,
> p. 499).

Findings in a study by Robert Collins (20) resulted in

the recommendation that a philosophy of instruction, which is

based upon what is known about the learning process and which

involves the students as active participants in planning for

instruction, should be formulated. The Institute for the

Development of Educational Activities reports on a national

seminar concerning innovations in elementary schools which

reaffirmed that school curricula must be redesigned to teach

the student to reason, explore, and discover for himself (50).

James Coleman (19) believes that students achieve more when

they feel that they have control over their environment and

their destiny. Glen Heathers (45), in defining individualized

education, indicates that managing individualized instructional

programs in schools depends greatly on student self-direction,

accomplished either through the use of programmed materials or

through the students' development of competencies in selecting,

planning, and conducting learning tasks. Underlining the

importance of "learning how to learn," John Goodlad states,

"Change, rapid obsolescence of values and things, and automation compound the search for identity. . . . Boys and girls in our schools must assume (and this means the opportunity to assume) responsibility for their education" (97, p. 10). David Klaus indicates that research is most needed on literary instruction so that all of their lives students can teach themselves (58).

Carolyn C. Leopold sees the library as a "Center for Critical Thinking" where the librarian helps to give direction in library skills necessary for students to choose their media among many resources and the critical abilities necessary to learn from the resources they select. Leopold believes, "The process of education must build on a base of critical com-munication and information skills which man can use to gather the facts on which to form his opinions and his value judgments. The school library is the place where this training must be acquired. . ." (62, p. 30). Eleanor Ahlers states that the library can help students solve problems, develop inquiring minds and rational powers, think and read critically, be creative, study independently, make wise decisions,and accept social responsibility (1, p. 453). In the thirty-third year-book of the National Council for the Social Studies, Eunice Johns (53) delineates 180 study skills which would be supportive in the development of an independent learner.

As a result of a study, designed to develop instruments which evaluate the program of library services available in the elementary schools, Mary Gaver (36) formulated the "Library

Activities Checklist for Elementary School Libraries." This
list contains independent learning skills needed by pupils.
Lora Palovic (77) gives a continuum of skills which would help
provide for the development of an independent learner.

The Learning Center

The school library becomes a focal point for a program
of individualization and independent learning (7, pp. 2-3;
10, p. 141; 32, p. 80; 63, p. 57). Robert Havighurst points
out that there are two basic principles underlying curriculum
change and that both have significance for the library. First,
the human mind is looked upon as an "instrument for learning
rather than a storehouse for knowledge (44, p.538). The second
principle is that students can enjoy learning and can, therefore,
develop a desire to learn for the sake of learning (44, p. 538).

Ruth Davies holds that today's library should be an
"energizer of thought," not a "purveyor of knowledge" (26,
p. 23). The American Association of School Librarians' standards
state that the media program should provide services which will
help students develop good study habits, acquire independence
in learning, and gain skill in the techniques of inquiry and
critical evaluation (7, p. 8).

Richard Darling explains,

What has happened is that the school library program
has been integrated with the instructional program
and, at best, has become indistinguishable from
it. . . the school library has become the under-
girding for the entire curriculum--a service agency
supplying materials and guidance in their use, for
all instruction (24, p. 98).

The Nova School District in Fort Lauderdale, Florida, has been a forerunner in the blending of new curriculum direction and the utilization of library resources. The school stresses the individuality of the learner, based upon such factors as native ability, interests, background experiences, and unique learning styles. Classroom activities are based upon the fact that learning is influenced by the pace at which the student learns most comfortably and by his sensory strengths and weaknesses. The overall plans of the school include a program of continuous progress, flexible grouping, and team teaching. Curricular patterns and teaching methods utilize multisensory materials along with the unit approach. There is an emphasis upon pupils' assuming responsibility for the manner in which they study and for the rate of progress which they maintain. Pupils are expected to learn to solve problems as well as acquire information. The school stresses that pupils should be helped to build good attitudes toward learning and to master usable research skills. To aid in individualization, Learning Activity Packets, which have been previously described, were developed. Nova schools make extensive use of resource centers or learning centers which contain conference rooms, study carrels, a reading lounge, and audio-visual storage rooms. Student aides are trained and assume responsibility for circulation and shelving of materials. Parent volunteers also assist with clerical work and special services (76).

Though a review of the literature revealed little research related to the use of the learning center in the elementary school, much educational philosophy was found to support its potential. The promise of the learning-center concept is fostered by much of the most recent thinking in learning theory and instructional methods. Commonly offered as the best approaches to education today are programs which provide for individualized learning through consideration of rate, ability, level of achievement, interests, background experiences, motivation, styles of learning, and self-concept, programs which stress the attainment of independent learning skills to provide for life-long, self-motivated study, and programs which emphasize a continuous progress through a continuum of skills and concepts designed to offer optimum intellectual development in a discipline (4, 7, 40, 48). These programs have been initiated primarily as a result of recent thinking in learning theory; ideally, the effective use of the learning center could capitalize the best of varying viewpoints in this area.

Jerome Bruner (15) has provided much of the background for recent attempts by educators to analyze the structure of various disciplines, to develop a basic structure for a discipline, and to coordinate this structure with the work of psychologists in analyzing the intellectual development of a student in order to realize his full learning potential. Bruner indicates,

> Mastery of the fundamental ideas of a field involves not only the grasping of general principles,

but also the development of an attitude toward
learning and inquiry, toward guessing and hunches,
toward the possibility of solving problems on
one's own. . . . Just what it takes to bring
off such teaching is something on which a great
deal of research is needed, but it would seem
that an important ingredient is a sense of
excitement about discovery--discovery of regu-
larities of previously unrecognized relations
and similarities between ideas, with a re-
sulting sense of self-confidence on one's
abilities (15, p. 20).

The learning-center concept could provide an educational frame-

work for working toward the realization of ideals, such as

these forwarded by Bruner, as well as being supportive of the

theories of Piaget which are reflected in such currently

popular trends as "discovery method," "individualized learning,"

and "personalized education" (79, p. 200). The goal of a

properly executed learning center concept should coincide with

Piaget's view of the principal goal of education which he

states is

to create men who are capable of doing new things,
not simply of repeating what other generations have
done--men who are creative, inventive, and dis-
coverers. The second goal of education is to
form minds which can be critical, can verify, and
not accept everything they are offered. The great
danger today is of slogans, collective opinions,
ready-made trends of thought. We have to be able
to resist them individually, to criticize, to
distinguish between what is proven and what is not.
So we need pupils who are active, who learn early
to find out by themselves, partly by their own
spontaneous activity and partly through material
we set up for them; who learn early to tell what
is verifiable and what is simply the first idea
to come to them (79, p. 200).

The use of the learning center with its possibilities for promoting the development of an active, interested, involved, motivated learner also seems to agree with the thinking of Arthur Comb and Donald Syngg (21) who propose the development of an "adequate self" as a vital factor in the educational process. John Goodlad and Robert Anderson (40) underscore the benefits of a program which provides for a nongraded, continuous-progress program; such a program could be greatly enhanced through a well-planned and well-executed learning center.

While the learning center in the elementary school would seem to provide a focal point for the promising educational programs being advanced, there is a scarcity of research in this area. In a study of 472 schools with instructional materials centers, Alice Lohrer identified forty-one schools in seventeen states as having Type I libraries. This rating indicates that these libraries have outstanding resources and programs of service which allow students to do independent research at any time, using the facilities as a class, in small groups, or as individuals. In general, Lohrer found a trend for school libraries to broaden their resources to include all types of instructional materials (64).

In a study sponsored by the Department of Health, Education, and Welfare, many teachers expressed the belief that the potential of the media-center materials for effecting change was great. Ninety-nine per cent of the pupils

interviewed enjoyed going to the center because they liked to read and because they could locate materials to assist them with their work (90, p. 178). Focusing on high school libraries rather than on elementary ones, but perhaps indicative of operational problems at all levels, a study by Carolyn Anderson (8) found that librarians, teachers, and principals do not hold similar expectations for the role of the librarian.

Louis Jensen (53), who studied the educational services provided by elementary schools in the Midwest with operational media centers, found that the centers influence instructional practices in the elementary school by enabling teachers to meet the needs, interests, and abilities of each student. This is accomplished through multi-media approaches to instruction, individualization of instruction, and independent study with increased pupil participation and responsibility in the learning process.

Doris Cox (23) studied the role of the library in selected public schools in the South. Organizational plans varied from school to school. Findings from this study, which help clarify the curricular role of the library, were the need for (1) more involvement of classroom teachers in planning the total school program, (2) the exposure of librarians to more intense and sophisticated learning experiences in planning for the library's contribution to the development of productive thinking, and (3) more experimentation with experiential

learning opportunities by those engaged in planning preservice and in-service preparation of educators. A 1964 study of libraries in the State of Washington (2, p. 27) recommended that planning for new facilities should take into consideration the instructional-resources concept, independent study and research, small group conferences, and the production and use of a diversity of materials and media.

Open-Space Schools

Because of the realization of the value of communication media, architects have begun to design buildings in terms of media with the learning center as a hub around which class-rooms radiate (42, p. 95). Providing architecturally for individualized learning causes a move toward open planning and the creation of open spaces. The traditional locked-in classroom cannot adapt easily or quickly to small seminar groups, large-group instruction, or independent study (32, p. 80).

The Educational Facilities Laboratories reports that the words educators use to express their needs are "open," "simple," "flexible," and "ample," as well as "beautiful" and "exciting" (41, p. 15). Innovative approaches are handicapped by facilities which block groups of students and teachers from one another and which prohibit full use of technology (41, p. 16). Ole Sand, describing schools for the 1970's, sees the emphasis moving from the group to the in-dividual, from memory to inquiry, from self-contained

classrooms to self-contained schools, from scheduled classes
to appointments and independent learning, and from classrooms
which are like kitchens to classrooms which are like libraries
and living rooms (81, pp. 26-27). To accommodate teaching-
learning approaches, James Brown predicts that, in the 1980's,
the important changes in the physical design of schools will be
flexible arrangement, independent study stations, open spaces
and nonbearing walls, and greatly enlarged and much more richly
stocked learning-resource or educational media centers (14,
p. 12).

According to Frank Moyer, the trend toward open spaces
began toward the end of the 1950's when educators began to
question the appropriateness of traditional school design both
because of high construction costs and because of its in-
ability to accommodate innovative educational programs which
were becoming more and more concerned with the needs of in-
dividual students (71, p. 35). The first school building to
become nationally known for eliminating interior walls was an
elementary school in Carson City, Michigan. The open space
in this school was equivalent in size to four conventional
classrooms (30, p. 16). By the early 1960's, schools began
to appear which were more committed to the open space concept,
with larger and newer varieties of open areas (71, p. 38).
Beginning in 1967, the dominant design feature of Nations
Schools' "School-of-the-Month" and "Award-Winning School"
has been flexible, open instructional areas (71, p. 40). The

current trend now includes the addition of resource centers to the basic pods of classrooms in order to bring instructional materials closer to students and to increase the size of open areas (16, p. 6).

The open-space school, with a learning center which is centralized and somewhat integrated into the classroom, would seem to offer optimum realization of the learning-center concept in relationship to emphasis upon individualization and independent learning. But, research on any type of open-space program is as yet limited and sometimes contradictory. The National Seminar on Open-Space Schools reports agreement that the open-plan school with flexible arrangement and flexible teaching programs holds great promise as a method of training people to think for themselves (51). D. L. Pritchard (76) reports on a survey of teachers working in open-space schools. The concept behind the design of open areas was supported for the majority of pupils. Ninety per cent of the teachers believed that as much or more learning occurs in open-space classrooms as in regular ones. Seventy per cent thought that the open-space classroom provides for better pupil development than does the self-contained one. Sixty of ninety-three teachers believed that the design encourages students to be creative. Jack Warner (92) notes that teachers in an open-area school tend to use more supplementary instructional materials than do the teachers in self-contained classrooms.

In a study of open-space schools, Thomas Ledbetter (60) found that teachers like to use audio-visual equipment and materials and to have a central location for these. Robert Cheek (18), however, points out that there is no agreement among teachers as to the exact purpose for the open-space concept in elementary schools, even though he observes that facilities and equipment within an open-space school may encourage the flow of new ideas for improving the teaching and learning process. John Sackett (80) found a mean score for achievement and for self-concept to be lower for students in the open-space areas than for students in self-contained and in departmentalized classes. But when Charles Killough (57) compared students in nongraded, open-plan schools with a control group in a traditional elementary program and facility, his findings indicate that, after at least two years in the nongraded, open-space program, pupils made significantly better achievement in most cognitive areas. In comparing students in open-space schools with students in self-contained classrooms, Norman Heimgartner (46) notes that children in open-space areas increase in self-esteem, while the children in the self-contained rooms demonstrate a loss. In another comparison of students in open-space schools with students in self-contained schools, R. E. Myers (72) tentatively concludes that children in open areas learn to want more autonomy in the classroom. Carol Seefeldt, writing for Educational Leadership, maintains that open spaces do not necessarily guarantee freedom

and calls upon educators to examine and re-examine what does occur within open spaces. She recommends an analysis of the problems, the strengths, the weaknesses, the pitfalls, and the successes of open-space schools as a prerequisite to opening more and more spaces (83, p. 357).

A school which has pioneered in combining the learning center with open space is Matzke Elementary School of the Cypress-Fairbanks School District in Texas. The only enclosed spaces within the school are a science and art lab and a project center located at one end of the structure. In the learning center, which is located in the middle of the open space, are study carrels and a multitude of instructional materials: books, filmstrips, records, individualized labs, globes, and maps. During a visitation, the principal indicated that the intention of the program is to send pupils to use the materials, not to have them brought and directed personally by the teacher. On either side of the learning center are areas where pupils assemble for homeroom activities and basal instruction. After spending time in the homogeneous basal groups, students are prescribed individual learning activities and sent out into the materials section. Having been previously taught research skills, pupils are to a large degree on their own. They come to the center with a purpose, and according to the staff, they use their time wisely (69).

In reporting on the Matzke school in Educational Technology, Ralph Anderson indicates that there is no way to measure to

what extent the students of Matzke have established habits
of search, discovery, and learning which will give them special
advantages in higher education and in life, but he notes that
scores on certain standardized tests show signficant improve-
ment on the part of Matzke students as compared with other
students in the school district (9, p. 14).

<div align="center">Teacher Preparation for Use of
the Learning Center</div>

Running throughout the literature concerned with learning-
center programs is the consensus that teacher preparation for
the use of the learning center is a vital factor in its suc-
cess. A joint study/action publication from the American
Association of Elementary-Kindergarten-Nursery Educators, the
American Association of School Librarians, and the Association
for Educational Communications and Technology proposes a list
of eight guidelines to follow in preparing for the implemen-
tation of a media program. Their first recommendation is that
initially a statement of media-program philosophy be written,
involving the total school community, including parents,
teachers, administrators, and students; this step should be
followed with a written statement of behavioral objectives
which are based upon the school's educational philosophy (4,
p. 25).

Schools in the Elk Grove School District in Illinois
have pioneered in the use of learning centers for independent
study. The viability of their program is described as dependent

upon the degree of staff involvement in making it increasingly

meaningful and integral to the productivity of the schools.

A statement of philosophy, purposes, goals, and objectives is

considered a keystone in the building of the district's learning-

center program. Joyce Glasser, reporting on the program, in-

dicates that, at the outset, a school staff should establish

its own goals, since diverse concepts can eliminate chances

for success and since communication, unification of purpose,

and shared decision making are necessary ingredients for

productive operation (37, p. 20). Goal setting is listed by

Mary Gaver as one of the ten important steps in school library

development (36, p. 41). Bernard Franckowiak feels that the

key to the effectiveness of a library program is the communi-

cation between the librarian and the teachers and their awareness

of each other's goals and needs. An orientation with teachers

should help to set the tone for library service and actively

encourage teachers to utilize library services. If the library

is to meet the school's needs, there must be close teamwork

among the teachers, the administrator, and the librarian (33,

p. 247).

The American Association of School Librarians' 1969

media-center standards hold that the media program should

provide information to teachers about new materials, assist

in keeping them informed about recent developments in their

subject areas and in educational trends, and organize and

conduct in-service courses on the full spectrum of media and

their uses (7, p. 4). Ruth Ann Davies also notes the importance of providing professional literature (26, p. 80). The Texas Education Agency (87) has organized a network of demonstration schools which are recognized for accomplishments in individualizing learning and which are open for visitations. Some of these schools allow teachers to observe the learning-center concept in action. At Central Park Road Elementary School in Long Island, during Phase I of the Knapp School Libraries Project, activities involving teachers included showing them individually and in groups how to use library materials most effectively, helping them to plan for research activities and to find materials which they could use in preparing class or group lessons, and making known available library materials in curriculum meetings (86, p. 42).

The need for teacher preparation for the learning-center program is emphasized in a survey, as reported by Robert James Collins, which was carried on in eighteen schools in New York State and in twelve schools in Pennsylvania. Questionnaires, which asked respondents to indicate the degree to which certain curriculum materials were currently meeting their needs and the degree to which they felt that they were adequately informed about materials, were administered to 795 members of the elementary and secondary school staffs; 83 per cent of the total sample population were classroom teachers. The overall findings of the survey indicate that, regardless of the great increase in materials and equipment available,

teachers still depend on print-oriented materials, such as textbooks, workbooks, and supplementary reading materials, as the basis for classroom activity. Additionally, a need or desire for information was not found to be proportionate to the lack of knowledge or to the lack of current use of materials, indicating that many teachers do not independently seek out and use a variety of materials (20, pp. 16-18).

A study by Edward Streeter (85) was concerned with whether specific media competencies can be demonstrated to have a positive correlation to actual use of media in the classroom. A survey questionnaire was used with 436 teachers working in two schools in which equipment, materials, and supporting personnel were available to facilitate the teachers' use of a variety of instructional media. A positive correlation was found between the teachers' total media competency and their frequency of use. The study notes that it is recognized that quantitative use does not indicate quality.

Student Preparation for Use of the Learning Center

Literature concerning the learning center emphasizes the importance of bringing together the learner and the materials. The American Association of Elementary-Kindergarten-Nursery Educators' previously cited study/action publication lists six basic characteristics which a learning center should have if it is to support effectively the teaching-learning process. The first characteristic is described as "child

centered" followed by the terms "curriculum based," "service oriented," "rich in resources," "readily accessible," and "adequately staffed" (4, p. 28).

The importance of student involvement in establishing goals for the use of the learning center is emphasized by Doris Lee's statement, "Since a learning situation, to be effective, must be such that each child can bring personal meaning to it, the child must have at least a part in the planning and decision making" (61, p. 195). In a functional-media program, the student should be able to rely on all school instructional personnel and turn to many materials in a variety of formats to find the media and instructional modules best suited to fulfilling his needs (4, p. 10). A learning center should allow the student to select from all available resources the media which will assist him in achieving his goals (4, p. 11). Robert Weisgerber stresses that, for individualization to succeed, learners must have free access to materials (94, p. 5). David DeBarnardis reinforces this contention by noting that, in preparing a student for independent inquiry, individual research, and broadened study, schools must provide the learner with many types of materials and learning devices (28, p. 108). The Elementary-Kindergarten-Nursery Educators' study/action publication cites the most evident sign of the fusion of efforts of classroom and learning-center personnel as the reality of the "student freely involved in his own learning

process, permitted access to various learning areas, and a variety of new exciting materials" (4, p. 16).

The American Association of School Librarians' 1969 standards list one of the services of the library as that of assuming the responsibility for providing instruction in the use of the media center and its resources (7, p. 8). Lillian Glogau states that the teaching of children to locate and use media materials is one of the primary goals of the learning center (39, p. 380). Palovic (78) deals extensively with activities designed to bring students and materials together. Gaver's "Library Activities Checklist for Elementary School Libraries" includes record keeping in connection with instruction to pupils in the use of library resources as an item for evaluation (36, pp. 67-72).

Learning-Center Personnel and Their Role

The literature which exists in relation to the learning-center concept treats in some detail the many and varied responsibilities of learning-center personnel toward teachers and students (7, pp. 8-9; 4, pp. 18-19; 38, pp. 101-103). The role of learning-center personnel is explained by the Elementary-Kindergarten-Nursery Educators' Association:

> Every child is entitled to the best education
> possible to meet his specific needs and capa-
> bilities. The educational experiences which
> will enable this must be identified and the
> necessary resources and personnel made
> available. The skills: reading, listening,
> observing, speaking, and writing ideally
> should be taught through the cooperative

efforts of the media specialist and the
teacher. If the child is to develop a spirit
of inquiry, self-motivation, self-discipline,
and self-evaluation, it is important for all
school instructional personnel to assist in
shaping his learning environment and the
design of instruction (4, p. 10).

Garvin Johnston, as Mississippi State Superintendent of

Education, indicates that the librarian must be able to plan

cooperatively with teachers and that, if the librarian and

teachers are to function as a team, they must share some

responsibilities for designing and implementing programs to

achieve educational objectives (55, pp. 99-100). The American

Association of School Librarians' standards indicate, "If the

number and qualifications of staff personnel are substandard,

the resources of the center, no matter how extensive, cannot

be used to their fullest potential" (7, p. 22).

While this present study of the learning center is not

concerned with quantitive measurements in relation to number

of personnel, it is noteworthy that the 1969 media standards

recommend one full-time media specialist for every 250 stu-

dents or major fraction thereof (7, p. 12). In addition,

Joyce Glasser discusses three levels of learning-center

staffing. These are minimal staffing, average staffing, and

ideal staffing. In addition to professional personnel, parent

volunteers and learning-center aides are recommended for

inclusion at each level (38, pp. 93-108). The American

Association of School Librarians' standards also recommend

supportive media aides to perform clerical and secretarial
work (7, p. 16).

Gaver reports on a survey, which emphasizes the importance
of library personnel, conducted in connection with the study
of effective library service. Teachers in selected schools
were asked to respond to a checklist of 175 library activities
or services which were provided in their classrooms or for
their students. Checklist scores from those schools having
school librarians, whether part-time or full-time, were above
the average in all areas of the checklist (36, p. 26). Also,
checklists showed a higher score in those schools with a full-
time librarian than in those with only part-time coverage.
There was little, if any, differentiation in the number of
activities between schools with classroom collections only
and schools with central collections but no employed per-
sonnel (36, p. 29).

Ann Martin and Walter Stone (67) studied manpower utili-
zation and requirements in the educational-media field and
concluded that specialists who can identify educational needs,
select or aid in the design of specifications related to those
needs, and program materials for the curriculum are needed.
A study of school libraries in the state of Washington indicates
that the majority of librarians do not help teachers regularly
in planning units of instruction and introducing materials to
classroom groups. They conclude that the capabilities of the
librarian are not being utilized to the maximum and that there

is a need for closer working relationships between librarians and principals (2, p. 25). Another study by Sister Mary McCusker reveals that collections assembled by personnel not trained in selection are inadequate (65).

After studying elementary school libraries, Martha Bishop (13) notes that the librarians's influence upon the student's educational experiences is caused by the librarian's ability and willingness to help, his efforts to help students learn library usage, his efforts to inform students of the contents of the library, his interest in the personal needs and problems of the students, and his methods for controlling conduct. Studying the reading habits of sixth graders in schools with classroom libraries, schools with centralized libraries, and schools with a combination of these two plans, George Mehit (70) concludes that more than physical arrangement is involved in promoting utilization of library resources.

The School Library Manpower Project, funded by the Knapp Foundation, planned and carried out by the American Association of School Librarians, and directed in research by the Research Division of the National Education Association, was designed specifically to investigate and make recommendations concerning the development and utilization of school library manpower. The school library media specialist was projected as having functions such as evaluating, selecting, and acquiring materials, equipment, and services according to established standards; encouraging improved utilization of them; providing

supplementary materials; developing and implementing media
policies and procedures; participating as a member of various
curriculum and study committees; performing long-range planning
and activities based on analyses of educational needs; pro-
viding reading, listening, and viewing guidance and training
for students and teachers; supervising and improving job
performances of media-center support staff; informing faculty
and administration of innovations, research, and current
developments in instructional technology; and forming certain
public relations activities to communicate the philosophy and
goals of the school library media center to students, faculty,
administration, and community (82, pp. 18-19).

Facilities, Materials, Equipment, and Operation of the Learning Center

The success of a learning-center program lies partly in
its provision for the proper use of a variety of media (7,
p. 19). Many school media programs have been found to be
disorganized and inefficient, though large sums of money are
spent annually. For example, nearly one billion dollars were
expended in the area of instructional technology in 1970 and
1971 (59). Some schools erroneously believe that they have
achieved individualized instruction by acquiring a well-
stocked media center without actually fusing the materials with
the school's program (49, p. 3). In a study of instructional-
media equipment, Henry Davis (27) concludes that there is not
a full utilization of available materials.

Project Discovery (93), a research study concerning audio-visual aids, gave four schools unrestricted use over media and equipment in order to provide materials in abundance and in proximity to the site of learning. The purpose was to determine if such an environment would act as a catalyst to instruction and learning. It was found that visual media are strong catalysts toward greater exploitation of available printed media, that they can influence the classroom toward an atmosphere of anticipation, challenge, and discovery, and that they can be used in numerous, perhaps unorthodox, ways to achieve certain educational goals set by students as well as teachers.

The President's Commission on Technology identifies several potential benefits of educational technology. For instance, it can make education more productive and more individualized. Technology can give instruction a more scientific base, make instruction more powerful, make learning more immediate, and make access to education more equal (22, pp. 30-33). The Commission notes the causes of the lack of impact of technology upon education to be accessibility factors, lack of training for teachers, inadequate equipment, exclusion of media specialists from central planning, and poor programs (22, pp. 80-83).

Adequate collections of materials and equipment and accessibility and scheduling which allow for flexibility in use by varying numbers of students at varying times are

generally considered vital in meeting the individual needs
of students (1, pp. 452-453; 4, pp. 26-27; 7, p. 5; 28, p. 108;
52, p. 165). J. Lloyd Trump states that independent study
facilities include laboratories, workrooms, and the library
where students may review, listen, and work with appropriate
materials. All of these facilities of the school are related
and should be placed in locations as accessible to students
as possible (89, p. 2).

In a study of learning experiences in elementary school
libraries, Martha Dell Bishop (13) found the influence of
materials determined by their availability, accessibility,
utility, and organization. She also found that a good atmos-
phere facilitated productive work. In elementary schools,
individuals or small groups of children should have access to
the media center at all times during the school day, and
materials should be organized and arranged so that users of
the center can obtain materials of all kinds quickly and
easily (7, pp. 24-26).

Lillian Glogau believes that, if the media specialist's
time is scheduled on an open basis, and if the teachers' and
students' times are scheduled according to need, then in-
dividualized learning can take place in the media center as
well as in the classroom (39, p. 37). Gaver summarizes the
need for successfully bringing users together with materials
by stating that there should be "accessibility of activities
and services to all students and teachers in the school, both

in the classroom and in the library, at all hours of the school day, and for all special groups in the school" (36, p. 29).

In stating basic policies that shape the selection of materials, the American Association of School Librarians' media standards state:

> The collection meets requirements of the various curricular areas and provides for the diverse learning skills of individuals representing all levels and types of ability. Materials are also included that inspire and meet the independent interests and research needs of students. There- fore, the media collection is rich in breadth and depth in the subjects covered, the types of materials included, and the forms of expression represented (7, p. 20).

In addition, media equipment in sufficient amounts must be available to assure maximum accessibility and use of materials by groups and individuals. Lack of such tools hinders in- dividualization of learning and effective teaching (7, p. 23). The design, facilities, and arrangement of the learning center should be planned for the convenience and comfort of the users (7, p. 24). The media standards of the American Association of School Librarians' cover in detail the require- ments for print and nonprint materials, audio-visual equipment, and physical facilities deemed necessary to accomodate the needs of students (7, pp. 29-49).

Summary

Bruner, in his book, The Process of Education, states that, even after the fundamental ideas and attitudes are

given a central role in course content, the problem still remains as to how to match "materials to the capacities of students of different abilities at different grades in school" (15, p. 18). A review of the literature points to the possibility that the learning center in the open-space school could be a solution to this problem, but it is yet to be determined if learning-center programs underway in such schools are moving toward the realization of individualization of instruction and independence in learning.

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CHAPTER III

METHODS AND PROCEDURES

This chapter presents detailed information concerning
the construction, clarification, establishment or reliability,
and validation of the instrument used to obtain data. Also
included is a detailed discussion of the subjects and pro-
cedures for the analysis of the data.

Construction of the Questionnaire

A questionnaire was designed in order to obtain data for
the study. The tentative questionnaire which was developed
uses information gained from schools exhibiting various degrees
of the learning-center concept and from research of current
literature relevant to the library, individualization, and
development of individual learning skills. The original list,
which consisted of approximately 150 statements relative to a
learning-center concept, was condensed to seventy-three state-
ments, with the assistance of a librarian of two elementary
schools involved in a learning-center setting.

Selection of a Panel for Clarification

The tentative questionnaire next was submitted to a panel,
consisting of one principal, one librarian, and six inter-
mediate teachers who were employed in an open-space school.
The group was asked to clarify the wording of statement for

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meaning, to point out the statements which did not seem relevant
to the problem at hand, and to recommend additional statements
pertinent to the problem under study. No items were identified
as being unrelated to the problem under study, and no new
statements were suggested to be added to the original list.
However, nine statements were reworded or rephrased for clari-
fication.

Selection of a Jury of Authorities

The questionnaire was next submitted to a jury of author-
ities for the purpose of validating the instrument. Jury
members were selected from authorities in the fields of ele-
mentary education and library service. Those selected included
three professors of education, a college instructor of library
service, a library coordinator, an elementary principal in an
open-space school, and an elementary consultant who was formerly
a team chairman in a school emphasizing the learning-center
concept. The questionnaire, a letter of instructions, and a
self-addressed envelope for the return of the questionnaire
were mailed to each juror.

An explanation of the purpose of the study was given,
and each member of the jury was requested to examine each
statement on the questionnaire and to mark it as being valid
or invalid for the purpose of the study. Also, the author-
ities were requested to suggest any other statements which
they felt were pertinent to the study. Two members marked

nine items as being invalid; however, no statement was marked more than once as being invalid. Therefore, none of the items were eliminated, but there were several suggestions which were helpful in further clarification of seven of the items. No new statements were suggested by any of the jury members. Validity of the instrument was thus established, and the assumption was made that the questionnaire could be used as a medium to collect data for the study.

Pilot Study

A pilot study was conducted to establish a coefficient of stability and equivalence. The pilot-study group consisted of one principal, one librarian, and twenty teachers employed in an open-space school. The questionnaire was administered twice to the same group on separate occasions, with a time lapse of two weeks.

The questionnaire was delivered to the twenty-two members as a part of an orientation meeting held for the purpose of developing an understanding of the need for the study and of outlining the procedure to be followed in completing the questionnaire. Each person was asked to mark each statement as receiving no emphasis, little emphasis, some emphasis, or great emphasis in his school. Participants were not informed that the questionnaire would again be administered at a later date.

The twenty-two questionnaires were completed and returned. Two weeks later copies of the same questionnaire, along with an explanation of the purpose of the study, were then delivered for the second completion, to the same twenty-two persons who had previously completed the questionnaires. The variability between the first and second responses on each item was used to determine which items were unreliable and, thus, should be eliminated from the questionnaire.

The Pearson Product Moment Correlation was used to determine the correlation which existed between the first and second response of each member of the pilot-study group. A correlation coefficient of .54 is significant at the .01 level for a two-tailed test (1, p. 301). There were eight items with correlation coefficients less than .54; therefore, they were eliminated from the questionnaire (See Appendix D), leaving a total of sixty-five items which were established as having reliability as well as validity. Items one through seven were concerned with teacher preparation for use of the learning center; items eight through fifteen were related to student preparation for use of the learning center; items sixteen through twenty-two covered learning-center personnel and their role; and items twenty-three through twenty-eight involved operation of the learning center. Items twenty-nine through forty-one were related to facilities, materials, and equipment in the learning center; items forty-two through fifty-three were concerned with the use of the learning center

for individualizing learning; and items fifty-four through sixty-five involved use of the learning center for the development of independent learning skills.

Selection of Subjects

The names of the elementary schools to be included in the study were obtained by writing to the director of each of the twenty Education Service Centers located throughout Texas. Each director was asked to furnish the names of any elementary schools in his region in which the major portion of the building consisted of one large area for learning and which offered easy access to the library (media center, resource area, learning center, or similar name). Each of the schools must have been in operation a year or more. Fifty schools, along with principals' names, were listed as meeting the specifications set forth in the letters to the directors of the Education Service Centers. Letters and phone calls to these schools later revealed nine to be ineligible for the study because either they did not have a learning center, did not have a librarian, or included only grades one through three. Thus, forty-one schools were selected to be included in the study.

The principal of each selected school was sent a packet containing five questionnaires along with instructions. In an enclosed letter to the principals, the nature of the study was explained. Each principal was asked to complete a questionnaire, to give one, along with instructions, to the

librarian to complete, and to select at random three inter-
mediate teachers to complete one. In a letter of explanation,
each participant was assured of anonymity and was asked to
mark each statement as receiving no emphasis, little emphasis,
some emphasis, or great emphasis in his school. Stamped, self-
addressed envelopes were enclosed for the convenience of each
individual for returning the questionnaire.

Two hundred and five questionnaires were mailed to eligible
schools. One hundred and sixty usable questionnaires, 78 per
cent of the total sample, were returned from thirty-four
principals, thirty-two librarians, and ninety-four teachers.

Procedures for Analysis of Data

On the questionnaire, the four-point scale, which was
used for the ratings, was treated as an interval scale to
quantify the interval between the measuring units. An interval
scale yields measures which may be treated arithmetically and
which are a true quantitative scale (1, p. 7).

It should be mentioned that there is considerable disagree-
ment as to the specifications of a truly intervally scaled
questionnaire. Some authors maintain that the ordinal scale
is the most appropriate model for most measurement techniques
currently being used in the social sciences.

> This disagreement manifests itself both in
> explicit statements and implicitly, in the choice
> of statistical techniques. Some writers have
> taken the view that few, if any, of the techniques
> now used provide data that can be considered as
> appropriate to more than ordinal scales. Others

have taken the position that data from certain
measurement procedures--for example, those used
in measuring IQ, or in certain types of attitude
scales--may properly be treated as conforming
to interval scales. Still others have taken the
position that, although most of the measurements
used do not go beyond ordinal scales, probably
little harm is done in applying to them statis-
tics that are, strictly speaking, appropriate
to interval scales.
Statistics appropriate to interval scales
continue to be widely used in the analysis of
social science data, with or without the as-
sumption that the data actually meet the require-
ments of such scales (2, p. 196).

Instructions accompanying each questionnaire defined each

point on the scale. Values were assigned to each point on the

scale for quantification of data. Values assigned each point

are listed below:

Great emphasis   (4)

Some emphasis   (3)

Little emphasis   (2)

No emphasis   (1)

Values for each item in a particular category were totaled to

give each subject a score for each category.

Hypotheses one, two, three, four, five, six, and seven

were tested, using the Simple Analysis of Variance, to deter-

mine whether or not there were significant differences among

the perceptions of principals, librarians, and teachers. The

level of significance was predetermined to be .05, and the

calculated F ratios were compared with the values found in

the table of "the F-Distribution" at the .05 level of signif-

icance (1, p. 322).

Hypotheses eight, nine, ten, eleven, twelve, thirteen, and fourteen were tested, using the Pearson Product Moment Correlation, to determine whether or not relationships existed. The t-statistic was used to determine the significance of correlation. The level of significance was predetermined to be .05, and the calculated coefficients of correlation were compared with the "critical Values of the Pearson Correlation Coefficient" (1, p. 301).

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CHAPTER IV

ANALYSIS OF DATA

The basic purpose of this study is the investigation of
the learning-center concept in open-space elementary schools
of Texas with particular emphasis being placed upon practices
relevant to the use of the learning center in individualizing
learning and developing independent learning skills. Data
were obtained from questionnaires responded to by principals,
librarians, and teachers who are employed in an elementary
school building in which the major portion consists of one
large area for learning and which offers easy access to the
library or learning center. Each of these schools had been
in operation for at least one year.

Items on the questionnaire were organized around seven
categories: (1) teacher preparation for use of the learning
center; (2) student preparation for use of the learning center;
(3) learning-center personnel and their role; (4) operation of
the learning center; (5) facilities, materials, and equipment
in the learning center; (6) use of the learning center for
individualizing learning; and (7) use of the learning center
for developing independent learning skills. The respondents
were asked to mark each item on the questionnaire as receiving
great emphasis, some emphasis, little emphasis, or no emphasis
in their particular school.

Thirty-four principals, thirty-two librarians, and ninety-four teachers, a composite total of one hundred and sixty persons, returned usable questionnaires. Scores on each item were totaled to provide a score for each subject in each category. Then, scores were totaled in each category for group I (principals), group II (librarians), group III (teachers), and group IV (principals, librarians, and teachers). The mean and standard deviations were calculated for each group in each category, and the percentage of responses to each item was determined to provide information for further analysis of each category.

Data Relative to Hypothesis I

Hypothesis I stated that there would be no significant differences among the perceptions of principals, librarians, and teachers with respect to teacher preparation for use of the learning center. The Simple Analysis of Variance was used to determine whether or not a significance of differences exists. Data in Table I present the statistics relative to this hypothesis.

The F-ratio of 1.1237 is not equal to and does not exceed the table value of 3.00 at the .05 level of significance (1, p. 322). Therefore, the hypothesis is retained.

Scores for the category of teacher preparation for use of the learning center had a possible range of 7 to 28, with a score of 7 indicating no emphasis on teacher preparation,

TABLE I

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY 1--TEACHER
PREPARATION FOR USE OF THE LEARNING CENTER

Source	DF	Sum of Squares	Mean Square	F
Between	2	37.8650	18.9325	1.1237
Within	157	2645.2350	16.8486	. . .
Total	159	2683.1000	. . .	. . .

a score of 14 indicating little emphasis, a score of 21 in-
dicating some emphasis, and a score of 28 indicating great
emphasis on teacher preparation. Actual scores ranged from
11 to 28 for principals, from 12 to 26 for librarians, and
from 10 to 28 for teachers. Data in Table II present the
descriptive statistics relative to Hypothesis I.

TABLE II

DESCRIPTIVE STATISTICS FOR CATEGORY 1--TEACHER
PREPARATION FOR USE OF THE LEARNING CENTER

Status	Mean	Standard Deviation	Observations
Principals	22.70588	3.37126	34
Librarians	21.09625	3.52282	32
Teachers	21.47872	4.50264	94
Total	21.82500	4.10790	160

The mean scores of each group are quite similar. The mean of the principals' group is 22.7, the mean of the librarians' group is 21.9, and the mean of the teachers' group is 21.5. The standard deviations are 3.4, 3.5, and 4.5, respectively. The mean for principals is slightly greater than the mean for librarians, and the mean of librarians is slightly higher than that for teachers. The standard deviations indicate a slightly greater dispersion of scores on the part of teachers. Since there are no significant differences in perceptions among principals, librarians, and teachers and since the roles of the respondents provide perceptions from different viewpoints, the credibility of the reported perceptions, as to degrees of emphasis placed upon teacher preparation for use of the learning center, is strengthened.

The mean score for the composite group (group IV) is 21.83. In conversion on a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the point is 3.12 in regard to the degree of emphasis placed on practices and conditions relative to teacher preparation for use of the learning center. Appendix G provides a listing, with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relative to Hypothesis II

Hypothesis II stated that there would be no significant differences among the perceptions of principals, librarians,

and teachers with respect to student preparation for use of the learning center. The Simple Analysis of Variance was used to determine whether or not a significance of differences exists. Data in Table III present the statistics relative to this hypothesis.

TABLE III

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY II--STUDENT
PREPARATION FOR USE OF THE LEARNING CENTER

Source	DF	Sum of Squares	Mean Square	F
Between	2	13.8911	6.9456	. . .
Within	157	3883.0839	24.7330	0.2808
Total	159	3896.9750	. . .	. . .

The F-ratio of 0.2808 is not equal to and does not exceed the table value of 3.00 at the .05 level (1, p. 322). Therefore, the hypothesis is retained.

Scores on the category of student preparation for use of the learning center had a possible range of 8 to 32, with a score of 8 indicating no emphasis, a score of 16 indicating little emphasis, a score of 24 indicating some emphasis, and a score of 32 indicating great emphasis on student preparation. Actual scores ranged from 11 to 31 for principals, 11 to 30 for librarians, and 10 to 31 for teachers. Data in Table IV present the descriptive statistics relative to Hypothesis II.

TABLE IV

DESCRIPTIVE STATISTICS FOR CATEGORY II--STUDENT
PREPARATION FOR USE OF THE LEARNING CENTER

Status	Mean	Standard Deviation	Observation
Principals	23.64706	4.79825	34
Librarians	23.25000	4.77223	32
Teachers	22.91489	5.09830	94
Total	23.13750	4.95068	160

The mean scores of the groups are again quite similar, as
they were for Hypothesis I. The mean of the principals' group
is 23.6, and the standard deviation is 4.8. The mean of the
librarians' groups is 23.3, and the standard deviation is 4.8.
The mean of the teachers' group is 22.9, and the standard
deviation is 5.1, indicating a wider dispersion of scores
than those for principals and librarians.

The mean score for the composite group is 23.1, and the
standard deviation is 5.0. Since no significant differences
among the perceptions of principals, librarians, and teachers
exist, it can be concluded that the mean score for the total
of the groups is reasonably indicative of the degree of
emphasis placed upon student preparation for use of the
learning center.

The composite mean score of 21.83, converted to a point
on a four-point scale (great emphasis-4, some emphasis-3,

little emphasis-2, no emphasis-1), is 2.89 in regard to the
degree of emphasis placed on practices and conditions relative
to student preparation for use of the learning center. Appendix
G provides a listing, with percentages of responses to each
item, of the statements of practices or conditions included in
this category.

Data Relative to Hypothesis III

Hypothesis III stated that there would be no significant
differences among the perceptions of principals, librarians,
and teachers with respect to learning-center personnel and
their role. The Simple Analysis of Variance was used to
determine whether or not a significance of difference exists.
Data in Table V present the statistics relative to this
hypothesis.

TABLE V

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY III--LEARNING
CENTER PERSONNEL AND THEIR ROLE

Source	DF	Sum of Squares	Mean Square	F
Between	2	29.2062	14.6031	. . .
Within	157	3778.0375	24.0639	.6068
Total	159	3807.2438	. . .	. . .

The F-ratio of .6068 is not equal to and does not exceed the table value of 3.00 at the .05 level (1, p. 322). Therefore, the hypothesis is retained.

Scores on the category for learning-center personnel and their role had a possible range of 7 to 28, with a score of 7 indicating no emphasis, a score of 14 indicating little emphasis, a score of 21 indicating some emphasis, and a score of 28 indicating great emphasis. Actual scores ranged from 9 to 27 for principals, 10 to 26 for librarians, and 8 to 28 for teachers. Data in Table VI present the descriptive statistics relative to Hypothesis III.

TABLE VI

DESCRIPTIVE STATISTICS FOR CATEGORY III--LEARNING-
CENTER PERSONNEL AND THEIR ROLE

Status	Mean	Standard Deviation	Observations
Principals	20.20588	4.79760	34
Librarians	18.87500	3.88338	32
Teachers	19.57447	5.23735	94
Total	19.65875	4.89336	160

Though no significant differences among mean scores exist, the mean for librarians is slightly lower than those for principals and teachers. The dispersion of scores for librarians is also less than those for principals and teachers.

The mean of the principals' scores is 20.2, and the standard deviation is 3.9. The mean of the teachers' scores is 19.6, and the standard deviation is 5.2.

The mean for the scores of the groups as a whole is 19.6, and the standard deviation is 4.9. Since no significance of differences among the means exist, it can be concluded that the mean score for the total of the groups is reasonably indicative of the degree of emphasis placed upon learning-center personnel and their role.

The composite mean score is 19.6. Converted on a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the point is 2.80 in regard to the degree of emphasis being placed upon practices and conditions relative to learning-center personnel and their role. Appendix G provides a listing, with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relative to Hypothesis IV

Hypothesis IV stated that there would be no significant differences among the perceptions of principals, librarians, and teachers with respect to operation of the learning center. the Simple Analysis of Variance was used to determine whether or not a significance of difference exists. Data in Table VII present the statistics relative to this hypothesis.

The F-ratio of .7559 is not equal to and does not exceed the table value of 3.00 at the .05 level of significance (1, p. 322). Therefore, the hypothesis is retained.

TABLE VII

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY IV--OPERATION
OF THE LEARNING CENTER

Source	DF	Sum of Squares	Mean Square	F
Between	2	18.4991	9.2495	. . .
Within	157	1921.2447	12.2372	0.7559
Total	159	1939.7438	. . .	. . .

Scores on the category for operation of the learning
center had a possible range of 6 to 24, with a score of 6 in-
dicating no emphasis, a score of 12 indicating little emphasis,
a score of 18 indicating some emphasis, and a score of 24
indicating great emphasis on operation of the learning center.
Actual scores ranged from 10 to 24 for principals, from 6 to
24 for librarians, and from 9 to 24 for teachers.

Data in Table VIII present the descriptive statistics
relative to Hypothesis IV.

No significant differences among the mean scores of
principals, librarians, and teachers exists; however, the
mean of the librarians' scores was slightly lower than that
of principals and teachers. The dispersion of scores for
librarians is greater than those for principals and teachers.
The mean of the principals' scores is 22.0, and the standard
deviation is 3.0. The mean of the librarians' score is 21.0,

and the standard deviation is 4.5. The mean of the teachers' scores is 21.3, and the standard deviation is 3.3.

TABLE VIII

DESCRIPTIVE STATISTICS FOR CATEGORY IV--OPERATION
OF THE LEARNING CENTER

Status	Mean	Standard Deviation	Observations
Principals	22.00000	3.01511	34
Librarians	21.00000	4.50090	32
Teachers	21.28723	3.26803	94
Total	21.38125	3.49280	160

The mean for the scores of the groups as a whole is 21.4, and the standard deviation is 3.5. Since no significant difference of means exists, it can be concluded that the composite mean score of the groups is reasonably indicative of the degree of emphasis placed upon operation of the learning center.

The composite mean score is 21.4. In conversion on a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the point is 3.57 in regard to the degree of emphasis being placed upon practices and conditions relative to operation of the learning center. Appendix G provides a listing, with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relevant to Hypothesis V

Hypothesis V stated that there would be no significant differences among the perceptions of principals, librarians, and teachers with respect to facilities, materials, and equipment in the learning center. The Simple Analysis of Variance was used to determine whether or not a significance of difference exists. Data in Table IX present the statistics relative to this hypothesis

TABLE IX

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY V--FACILITIES, MATERIALS, AND EQUIPMENT IN THE LEARNING CENTER

Source	DF	Sum of Squares	Mean Square	F
Between	2	40.3426	20.1713	0.7140
Within	157	9381.6011	59.7554	. . .
Total	159	9421.9438	. . .	. . .

The F-ratio of 0.7140 is not equal to and does not exceed the table value of 3.00 at the .05 level of significance (1, p. 322). Therefore, the hypothesis retained.

Scores on the category for facilities, materials, and equipment in the learning center had a possible range of 13 to 52, with a score of 13 indicating no emphasis, a score of 26 indicating little emphasis, a score of 39 indicating some

emphasis, and a score of 52 indicating great emphasis upon

a condition or practice. Actual scores of individuals ranged

from 15 to 52 for principals, from 21 to 52 for librarians,

and from 17 to 52 for teachers. Data in Table X present the

descriptive statistics relative to Hypothesis V.

TABLE X

DESCRIPTIVE STATISTICS FOR CATEGORY V--FACILITIES,
MATERIALS, AND EQUIPMENT IN THE LEARNING CENTER

Status	Mean	Standard Deviation	Observations
Principals	42.55882	8.45018	34
Librarians	42.40625	8.11156	32
Teachers	43.50000	7.32172	94
Total	43.08125	7.69789	160

The mean of the teachers' scores was slightly higher and

the dispersion of scores slightly less than those for principals

and librarians; however, no significant difference exists.

The mean score of the principals is 42.6, of the librarians

42.4, and of the teachers 43.5. The standard deviation of

principals' scores is 8.5, while it is 8.1 for the librarians,

and 7.3 for the teachers.

The mean for the scores of the groups as a whole is 43.1,

and the standard deviation is 7.7. Since no significant

difference of means exists, the 160 observations are con-

sidered in the interpretation of degree of emphasis placed

upon the category of facilities, materials, and equipment in the learning center.

The composite mean score is 43.1. Converted to a point on a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the point is 3.32 in regard to the degree of emphasis placed upon facilities, materials, and equipment in the learning center. Appendix G provides a listing, with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relevant to Hypothesis VI

Hypothesis VI stated that there would be no significant differences among the perceptions of principals, librarians, and teachers with respect to use of the learning center for individualizing learning. The Simple Analysis of Variance was used to determine whether or not a significance of difference exists. Data in Table XI present the statistics relative to this hypothesis.

TABLE XI

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY VI--USE OF THE LEARNING CENTER FOR INDIVIDUALIZING LEARNING

Source	DF	Sum of Squares	Mean Square	F
Between	2	144.6561	72.3280	. . .
Within	157	9108.1189	58.0135	1.2467
Total	159	9252	. . .	. . .

The F-ratio of 1.2467 is not equal to and does not exceed the table value of 3.00 at the .05 level of significance (1, p. 322). Therefore, the hypothesis is retained.

Scores on the category for use of the learning center for individualizing learning had a possible range of 12 to 48, with a score of 12 indicating no emphasis, a score of 24 indicating little emphasis, a score of 36 indicating some emphasis, and a score of 48 indicating great emphasis upon a condition or practice. Actual scores of individuals ranged from 16 to 48 for principals, 19 to 48 for librarians, and 14 to 48 for teachers. Data in Table XII present the descriptive statistics relative to Hypothesis VI.

TABLE XII

DESCRIPTIVE STATISTICS FOR CATEGORY VI--USE OF THE
LEARNING CENTER FOR INDIVIDUALIZING LEARNING

Status	Mean	Standard Deviation	Observations
Principals	37.91176	8.07303	34
Librarians	36.78125	7.88520	32
Teachers	39.14894	7.35426	94
Total	38.41250	7.62847	160

The mean of the teachers' scores is higher and the dispersion of scores slightly less than those for principals and librarians; however, no significant differences exist. The

mean score of principals is 37.9, of the librarians 36.8, and of the teachers 39.1. The standard deviation of the principals' scores is 8.1, while it is 7.9 for the librarians, and 7.4 for the teachers.

The mean for the scores of the groups as a whole is 38.4, and the standard deviation is 7.6. Since no significant difference exists, the total 160 observations are considered in the degree of emphasis placed upon the category of use of the learning center for individualizing learning. The composite mean score is 38.4. Converted to a point on a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the point is 3.20 in regard to the degree of emphasis being placed upon practices and conditions relative to use of the learning center for individualizing learning. Appendix G provides a listing, with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relevant to Hypothesis VII

Hypothesis VII stated that there would be no significant differences among the perceptions of principals, librarians, and teachers with respect to use of the learning center for the development of independent learning skills. The Simple Analysis of Variance was used to determine whether or not a significance of differences exists. Data in Table XIII present the statistics relative to this hypothesis.

TABLE XIII

SIMPLE ANALYSIS OF VARIANCE FOR CATEGORY VII--USE
OF THE LEARNING CENTER FOR DEVELOPMENT OF
INDEPENDENT LEARNING SKILLS

Source	DF	Sum of Squares	Mean Square	F
Between	2	105.8881	52.9440	. . .
Within	157	12018.5119	76.5510	0.6916
Total	159	12124.4000	. . .	. . .

The F-ratio of 0.6916 is not equal to and does not exceed
the table value of 3.00 at the .05 level of significance (1,
p. 322). Therefore, the hypothesis is retained.

Scores on the category use of the learning center for
the development of independent learning skills had a possible
range of 12 to 48, with a score of 12 indicating no emphasis,
a score of 24 indicating little emphasis, a score of 36 in-
dicating some emphasis, and a score of 48 indicating great
emphasis upon a condition or practice. Actual scores ranged
from 16 to 48 for principals, from 15 to 48 for librarians,
and from 15 to 48 for teachers. Data in Table XIV present
the descriptive statistics for Hypothesis VII.

The mean of the principals' scores is slightly higher than
that of the teachers, and the mean of the teachers' scores is
slightly higher than that of the librarians; however, no
significant difference exists. The mean of the principals'

TABLE XIV

DESCRIPTIVE STATISTICS FOR CATEGORY VII--USE OF THE
LEARNING CENTER FOR THE DEVELOPMENT OF
INDEPENDENT LEARNING SKILLS

Status	Mean	Standard Deviation	Observations
Principals	37.73529	8.69451	34
Librarians	35.21875	8.57880	32
Teachers	36.31915	8.82471	94
Total	36.40000	8.73236	160

scores is 37.7, the librarians 35.2, and of the teachers 36.3.
The standard deviation of the principals' scores is 8.7, while
it is 8.6 for the librarians, and 8.8 for the teachers.

The mean for the scores of the groups as a whole is 36.4,
and the standard deviation is 8.7. Since no significant dif-
ference exists, the total 160 observations are considered in
assessing the degree of emphasis placed upon practices and
conditions relevant to use of the learning center for developing
independent learning skills.

The composite mean score is 36.4. Converted to a point
on a four-point scale (great emphasis-4, some emphasis-3,
little emphasis-2, no emphasis-1), the point is 3.03 in
regard to use of the learning center for development of
independent learning skills. Appendix G provides a listing,

with percentages of responses to each item, of the statements of practices or conditions included in this category.

Data Relevant To Hypotheses VIII, IX, X, XI, XII, XIII, and XIV

The Pearson Product Moment coefficient of correlation was calculated to establish an index of relationship between selected categories concerning the learning center in open-space elementary schools of Texas. Then, each coefficient was converted to a t-score, using the formula $t=r\sqrt{\frac{N-2}{1-r^2}}$ w/df=N-2 (1, p. 206), and compared with the tabled value at the .05 level to determine whether or not a significant correlation existed. Coefficients for relationships among the following categories were determined:

Category I--Teacher preparation for use of the learning center

Category II--Student preparation for use of the learning center

Category III--Learning-center personnel and their role

Category IV--Operation of the learning center

Category V--Facilities, materials, and equipment in the learning center

Category VI--Use of the learning center for individualizing learning

Category VII--Use of the learning center for developing independent learning skills

Data in Table XV present the statistics relative to hypotheses VIII, IX, X, XI, XII, XIII, and XIV.

TABLE XV

MATRIX OF CORRELATION COEFFICIENTS FOR SELECT CATEGORIES
RELEVANT TO USE OF A LEARNING CENTER

Categories	I	II	III	IV	V	VI	VII
I	1.0000	0.7484	X	X	X	X	X
II	0.7484	1.0000	X	X	X	0.6285	0.6442
III	X	X	1.0000	0.5344	X	X	X
IV	X	X	0.5344	1.0000	X	X	X
V	X	X	X	X	1.0000	0.7311	0.6601
VI	X	0.6285	X	X	0.7311	1.0000	0.7809
VII	X	0.6442	X	X	0.6601	0.7809	1.0000

Hypothesis VIII stated that there would be no significant correlation between the categorical practices of teachers in their preparation for use of the learning center (I) and students in their preparation for use of the learning center (II). The correlation coefficient is 0.7484. This coefficient, when it is converted to a t-score, equals 14.17. Since this score is greater than the tabled value of 1.960 (1, p. 293), the hypothesis is rejected.

Hypothesis IX stated that there would be no significant correlation between the categorical practices of learning-center

personnel and their role (III) and operation of the learning center (IV). The correlation coefficient is 0.5344. This coefficient, when it is converted to a t-score, equals 9.19. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Hypothesis X stated that there would be no significant correlation between the categorical practices of facilities, materials, and equipment (V) and use of the learning center for individualizing learning (VI). The correlation coefficient is 0.7311. This coefficient, when it is converted to a t-score, equals 13.47. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Hypothesis XI stated that there would be no significant correlation between the categories for facilities, materials, and equipment in the learning center (V) and use of the learning center for developing independent learning skills (VIII). The correlation coefficient is 0.6601. This coefficient, when it is converted to a t-score, equals 11.04. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Hypothesis XII stated that there would be no significant correlation between the categories for student preparation for use of the learning center (II) and use of the learning center for individualizing learning (VI). The correlation coefficient is .6285. This coefficient, when it is converted to a t-score,

equals 10.16. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Hypothesis XIII stated that there would be no significant correlation between the categories of student preparation for use of the learning center (II) and use of the learning center for developing independent learning skills (VII). The correlation coefficient is 0.6442. This coefficient, when it is converted to a t-score, equals 10.58. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Hypothesis XIV stated that there would be no significant correlation between the categories of use of the learning center for individualizing learning (VI) and use of the learning center for developing independent learning skills (VII). The correlation coefficient is .7809. This coefficient, when it is converted to a t-score, equals 15.71. Since this score is greater than the tabled value of 1.960, the hypothesis is rejected.

Although only seven possible relationships were chosen to be included and discussed in this study, coefficients were computed by the Data Processing Center for all possible combinations of variables or categories. A significant, positive correlation exists in all possible combinations.

CHAPTER BIBLIOGRAPHY

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CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

There were three purposes for this study: The first was to determine whether significant differences exist among the perceptions of principals, librarians, and teachers with respect to the categorical practices of (1) teacher preparation for use of the learning center, (2) student preparation for use of the learning center, (3) learning-center personnel and their role, (4) operation of the learning center, (5) facilities, materials, and equipment in the learning center, (6) use of the learning center for individualizing learning, and (7) use of the learning center for development of independent learning skills. The second purpose was to determine whether a significant correlation exists among specific categories. The third was to establish the degree of emphasis placed upon various practices or conditions relative to the learning-center concept in open-space elementary schools of Texas.

In order to gather data, a questionnaire was formulated, clarified for wording of statements, and validated by a jury of authorities. A pilot study then was conducted for the purpose of establishing coefficients of stability and equivalence.

With the assistance of twenty Education Service Centers located throughout Texas, forty-one schools, in which the major portion is open-space, were chosen for the study. These buildings, which had been in operation for a year or more, also contained a learning center, easily accessible to teachers and pupils.

Thirty-four principals, thirty-two librarians, and ninety-four teachers responded to sixty-five statements which were classified into seven categories and which described practices or conditions characteristic of a learning-center concept. Each statement presented four choices which were scored as follows: great emphasis, four points; some emphasis, three points; little emphasis, two points; and no emphasis, one point. Values for each item in a particular category were totaled to give each subject a score for each category. Then, scores were totaled and means determined for each group (principals, librarians, and teachers) in each category. The mean score for each group served as an indicator of the perceived degree of emphasis placed upon the seven categories pertaining to a learning-center concept. Each of the first seven hypotheses compared the perceptions of principals, librarians, and teachers for each of the categories. The Simple Analysis of Variance was used to determine whether or not significant differences exist.

The scores of principals, librarians, and teachers were totaled for each category, and a mean score also was calculated

for each. Seven hypotheses were concerned with the question
of whether or not relationships exist among various categories.
The Pearson Product Moment Correlation was used to determine
this information. Mean scores for each category were con-
verted to points on the scale to serve as indicators of degrees
of emphasis placed upon various conditions or practices.

Findings

From the analysis of the statistical data, the following
findings were apparent:

1. There were no significant differences among the
perceptions of principals, librarians, and teachers with
respect to the category of teacher preparation for use of the
learning center.

2. There were no significant differences among the
perceptions of principals, librarians, and teachers with
respect to the category of student preparation for use of the
learning center.

3. There were no significant differences among the
perceptions of principals, librarians, and teachers with
respect to the category of learning-center personnel and their
role.

4. There were no significant differences among the
perceptions of principals, librarians, and teachers with
respect to the category of operation of the learning center.

5. There were no significant differences among the
perceptions of principals, librarians, and teachers with

respect to the category of facilities, materials, and equipment in the learning center.

6. There were no significant differences among the perceptions of principals, librarians, and teachers with respect to the category of use of the learning center for individualizing learning.

7. There were no significant differences among the perceptions of principals, librarians, and teachers with respect to the category of use of the learning center for developing independent learning skills.

8. There was a significant positive correlation between the categorical practices of teacher preparation for use of the learning center and student preparation for use of the learning center.

9. There was a significant positive correlation between the categorical practices of learning-center personnel and their role and operation of the learning center.

10. There was a significant positive correlation between the categorical practices of facilities, materials, and equipment in the learning center and use of the learning center for individualizing learning.

11. There was a significant positive correlation between the categorical practices of facilities, materials, and equipment and use of the learning center for developing independent learning skills.

12. There was a significant positive correlation between the categorical practices of student preparation for use of the learning center and use of the learning center for individualizing learning.

13. There was a significant positive correlation between the categorical practices of student preparation for use of the learning center and use of the learning center for developing independent learning skills.

14. There was a significant positive correlation between the categorical practices for use of the learning center for individualizing learning and use of the learning center for developing independent learning skills.

15. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 3.12 in regard to the degree of emphasis placed on practices and conditions relative to teacher preparation for use of the learning center.

16. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 2.89 in regard to the degree of emphasis placed on practices and conditions relative to student preparation for use of the learning center.

17. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 2.8 in regard to the

degree of emphasis placed on practices and conditions relative to learning-center personnel and their role.

18. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 3.57 in regard to the degree of emphasis placed on practices and conditions relative to operation of the learning center.

19. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 3.32 in regard to the degree of emphasis placed on practices and conditions relative to facilities, materials, and equipment in the learning center.

20. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 3.2 in regard to the degree of emphasis placed on practices and conditions relative to use of the learning center for individualizing learning.

21. On a four-point scale (great emphasis-4, some emphasis-3, little emphasis-2, no emphasis-1), the score of principals, librarians, and teachers is 3.03 in regard to the degree of emphasis placed on practices and conditions relative to use of the learning center for the development of independent learning skills.

Conclusions

The conclusions are based on an analysis of items and categories included in the questionnaire designed for this study. Although cause and effect may not be established on the basis of correlational studies alone, tentative conclusions or inferences are suggested.

1. There was no significant difference in the perceptions of principals, librarians, or teachers in regard to the seven categories relative to a learning-center concept. This fact indicates that existing programs in open-space elementary schools of Texas are either cooperatively planned or characterized by active involvement of all personnel, or both.

Since there were no significant differences, the indicated degrees of emphases, as viewed from the standpoint of personnel in varying roles, would appear to be an accurate description of actual existing programs.

2. The significant, positive correlation found between the categories "teacher preparation for use of the learning center" and "student preparation for use of the learning center" suggests the possibility that, if attention and emphasis are given to involving and preparing teachers for use of the learning center, then they will, in turn, give attention and emphasis to preparing their pupils for use of the learning center.

3. The significant, positive correlation found between the categories "learning-center personnel and their role" and "operation of the learning center" suggests the possibility that adequacy of personnel and role expectations are influential factors in the type of learning-center program which exists.

4. The significant, positive correlation found between the categories "facilities, materials, and equipment in the learning center" and "use of the learning center for individualizing learning" suggests the possibility that availability and variety of facilities and materials are influential upon the degree of individualization attained, the types of activities in which pupils are involved, and the approaches used to individualize learning.

5. The significant, positive correlation found between the categories "facilities, materials, and equipment in the learning center" and "use of the learning center for developing independent learning skills" suggests the possibility that the availability and variety of facilities and materials are influential upon the level, degree, or type of skills to be learned and the type of activities in which pupils are involved.

6. The significant, positive correlation found between the categories "student preparation for use of the learning center" and "use of the learning center for individualizing learning" suggests the possibility that the preparation given students is influential upon the level or degree of

individualization attained, the kinds of activities in which pupils are involved, and the approaches used to individualize learning.

7. The significant, positive correlation found between the categories "student preparation for use of the learning center" and "use of the learning center for developing independent learning skills" suggests that the preparation of students is influential upon the level, degree, or kind of skills to be learned and the types of activities in which pupils are involved.

8. The significant, positive correlation found between the categories "use of the learning center for individualizing learning" and "use of the learning center for developing independent learning skills" suggests two equally logical possibilities. Individualized approaches are influential upon the level, degree, or kind of skills to be learned and the types of activities in which pupils are involved, or the development of independent learning skills is influential upon the level or degree of individualization attained, the kinds of activities in which pupils are involved, and the approaches used to individualize learning.

9. The primary focus of this study is to determine the capacity of the learning center to individualize learning and develop independent learning skills. Since significant, positive correlations were found in all seven of the hyotheses concerned with relationships among various categories

and since every category was included in one of the hypotheses, it may be concluded that all categories are relative in a study of individualization and independent learning skills.

10. In general, the degree of emphasis placed upon each category would seem to indicate that the learning-center programs in open-space elementary schools of Texas are in their developmental stages.

Educational Implications

While this study does not specifically deal with cause and effect factors, there are several possible educational implications derived from the data and conclusions:

1. The data and information provided in this study, especially the questionnaire itself, should furnish pertinent, useful information for school districts planning the construction of open-space buildings, for schools already in the process of developing a learning-center program, and for schools focusing their attention upon individualization of learning. The questionnaire should be useful as a planning guide and as an evaluative instrument.

2. A learning-center program should be planned cooperatively by administrators, librarians, and teachers.

3. Implementation of a learning-center program should begin with the preparation of teachers and students for use of the learning center. The principal and librarian should be involved actively in this process.

4. The learning center should be staffed adequately, and the roles of these personnel should be clearly defined. The learning-center staff should be involved actively with students and teachers in order that many, varied activities can occur.

5. If individualization of learning and development of independent learning skills are to be the major aims of a learning-center program, then facilities, materials, and equipment should be provided which will contribute to the attainment of these goals.

6. Schools planning an individualized program of learning should give consideration to more than just the kinds of learning activities provided for specific subject areas. Attention also should be given to preparing pupils to work independently and to use available facilities and materials. Of great importance to individualizing learning is the acquisition by pupils of a great number of independent learning skills.

Recommendations for Further Study

The learning-center programs in the open-space elementary schools of Texas used in this study have been explored and described to some extent. The findings, conclusions, and implications suggest additional studies.

A replication of the present study should be conducted in elementary schools designed with self-contained classroom

space, and comparisons of results should be made in order to examine the possible effects of open space upon use of the learning center or library.

An in-depth study should be made of possible cause-and-effect relationships existing among specific practices or conditions and pupil achievement, development of independent learning skills, pupil acceptance of responsibility, motivation, self-concept, and initiative.

Further study should investigate the effect of pupil and school-personnel attitudes upon various aspects of learning-center programs. Of particular interest would be a study of principals', librarians', and teachers' roles in the development of a school program based upon the learning-center concept.

APPENDIX A

SAMPLE OF FIRST LETTER TO TEXAS
EDUCATION SERVICE CENTERS

Dear_____:

I am a doctoral student at North Texas State University and
am interested in making a study of libraries, learning
centers, or instructional-material centers in open-space
schools. Personnel of Region X suggested that you or some
of your staff might be familiar with and could furnish
names and addresses (and names of principals if possible)
of schools in your region which are constructed with the
omission of load-bearing walls and which offer easy access
to the library or materials center.

For the purpose of my study, the schools should have been
in operation for at least one year. Your assistance will
be greatly appreciated.

Sincerely,

Don Dunlap

APPENDIX B

SAMPLE OF SECOND LETTER TO TEXAS
EDUCATION SERVICE CENTERS

Dear_____,

Recently I wrote, asking for your assistance in locating open-space elementary schools in your region.

My doctoral committee has approved my study, but it has requested a change in the definition of an open-space school. Therefore, would you please place a checkmark beside the names of those schools (feel free to add others) which fit the following description:

> An elementary school in which the major portion of the building consists of one large area for learning, and which offers easy access to the library (media center, resource area, learning center, and so on). The school also must have been in operation for a year or more.

Again, my sincere thanks for your help.

Sincerely,

Don Dunlap

APPENDIX C

SAMPLE OF LETTERS TO JURORS

Dear_____:

I am a doctoral student at North Texas State University and am currently working on a dissertation concerned with the application of the learning-center concept in open-space elementary schools of Texas. Learning-center concept, as defined in my study, refers to a wide and varied collection of learning materials, space availability for a variety of activities, accessibility to teachers and pupils, and emphasis upon active student involvement. "Learning center" will be considered as a broader interpretation of the word "library."

You have been suggested as one who is an authority in this area of education; therefore, I am writing to ask your help in preparing an instrument for collecting information relative to a learning-center setting.

On the enclosed check sheet, would you please mark each item as being either valid (V) or invalid (I) for the study suggested. Also, I would appreciate your suggestions as to any other statements which might be relative to the study of a learning-center situation.

Your assistance will be greatly appreciated.

Sincerely,

Don Dunlap

APPENDIX D

QUESTIONNAIRE

Please check the blank which indicates your position:

Teacher_____Librarian_____Principal_____

At the end of the following statements, please circle the number which best describes the practice as it exists in your school:

    1 No emphasis is placed upon this practice in our school.

    2 Little emphasis is placed upon this practice in our school.

    3 Some emphasis is placed upon this practice in our school.

    4 Great emphasis is placed upon this practice in our school.

1. The school has objectives for the utilization of the learning center.   1 2 3 4

2. Teachers were/are active and involved in formulating objectives or guidelines for use of the learning center.   1 2 3 4

3. Teachers are informed about new materials and equipment as they become available in the center.   1 2 3 4

4. Teachers are given instruction in how to use materials and equipment available in the center.   1 2 3 4

5. The librarian meets with teachers to discuss learning-center activities and services.   1 2 3 4

6. Visits have been/are being made to other schools for the purpose of observing learning-center programs in action.   1 2 3 4

7. Current literature relevant to learning-center programs is available and is used by school personnel. 1 2 3 4

8. Pupils are given instruction concerning the operation of the learning center. 1 2 3 4

9. Pupils are given instruction concerning the contents and arrangement of the learning center. 1 2 3 4

10. Pupils are involved in establishing goals and guidelines for use of the learning center. 1 2 3 4

11. The school has a well-defined and executed plan for teaching library skills. 1 2 3 4

12. Pupils are taught to use and care for audio-visual materials and equipment. 1 2 3 4

13. Records are maintained concerning pupil progress in a library-skills program. 1 2 3 4

14. There is a plan in use for learning-center orientation for new students entering during the school year. 1 2 3 4

15. Courses of study require students to accept some responsibility for independent study. 1 2 3 4

16. Adequate professional personnel services are available in the learning center. 1 2 3 4

17. Learning-center aides are available to increase the services in the learning center. 1 2 3 4

18. Parent volunteers are present to increase the services available in the learning center. 1 2 3 4

19. Pupil volunteers are present to increase the services available in the learning center. 1 2 3 4

20. The librarian has contact with students in learning-center activities. 1 2 3 4

21. The librarian meets with teachers in planning sessions. 1 2 3 4

22. The librarian shares in the responsibility for the total school program. 1 2 3 4

23. Flexibility of scheduling allows small groups   1   2   3   4
to use the center as the need arises.

24. Operation of the learning center provides for   1   2   3   4
quiet, independent study.

25. Operation of the learning center provides for   1   2   3   4
small-group work.

26. Pupils are permitted to use learning-center   1   2   3   4
materials and equipment individually.

27. Materials and equipment are accessible and   1   2   3   4
ready for use.

28. The learning center is attractive and in-   1   2   3   4
viting to pupils.

29. The seating arrangements in the learning   1   2   3   4
center will accommodate a variety of learning
situations, ranging from individual use
through small-group and large-group activities.

30. Facilities are available for pupils desiring a   1   2   3   4
quiet, independent place to study.

31. Facilities are available for the use of   1   2   3   4
mechanical equipment.

32. Facilities are available for pupil projects   1   2   3   4
and displays.

33. A variety of audio-visual equipment is avail-   1   2   3   4
able for use by teachers and students.

34. A variety of reference material is available   1   2   3   4
in the learning center.

35. A variety of learning labs for various sub-   1   2   3   4
jects, which allow students to practice skills
and to progress at their own learning rate,
are available for pupil use.

36. A variety of games and puzzles, which offer   1   2   3   4
practice in basic skills, are found in the
learning center.

37. An adequate book collection in the learning   1   2   3   4
center is geared to the basic instructional
program.

38. An adequate book collection in the learning   1 2 3 4
center is geared to recreational reading.

39. An adequate audio-visual materials collection 1 2 3 4
is available in the learning center.

40. Comfortable seating arrangements are provided 1 2 3 4
which encourage recreational reading by
students.

41. An adequate number of newspapers and magazines 1 2 3 4
are available to provide current information.

42. Students can be observed using learning-center 1 2 3 4
materials, which are designed to allow pupils
to work at their appropriate levels of learning
and to proceed at their individual rates of
learning.

43. Students can be observed using learning-center 1 2 3 4
materials prescribed by teachers as a result
of diagnostic practices.

44. Students can be observed using learning-center 1 2 3 4
materials in order to pursue personal interests.

45. Students can be observed using learning-center 1 2 3 4
materials in small group activities.

46. Students can be observed using learning-center 1 2 3 4
materials specifically prescribed because they
best meet the learning styles of the students.

47. Students can be observed using learning-center 1 2 3 4
materials, while working in pairs.

48. Students can be observed using learning-center 1 2 3 4
materials, while following directions from con-
tracts, learning activity packets, study guides,
and so on which do not provide pupil choices of
activities.

49. Students can be observed using learning-center 1 2 3 4
materials, while following directions from con-
tracts, learning activity packets, study guides,
and so on which do provide for pupil choices
of activities.

50. Students can be observed using learning-center 1 2 3 4
materials in studies where they choose the topic
or objective and plan their own activities.

51. Outlines of desirable skills, concepts, and   1 2 3 4
    knowledge in various subjects guide teachers
    in selecting activities for student use of
    materials in the learning center.

52. Students are granted increased amounts of time   1 2 3 4
    for independent study in the learning center
    when they demonstrate responsible, purposeful
    behavior.

53. Students engaged in individualized activities   1 2 3 4
    demonstrate wise use of time.

54. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    the table of contents of a book to dis-
    cover what general information it contains.

55. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    a book index to find out if specific in-
    formation is contained in a book.

56. When using learning-center facilities or   1 2 3 4
    materials, students can be observed making
    a bibliography of sources which they have
    used in research work.

57. When using learning-center facilities or   1 2 3 4
    materials, students can be observed con-
    sulting bibliographies contained in books
    as sources for further research.

58. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    the Dewey Decimal Classification System to
    locate a selection of books on a topic.

59. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    the Dewey Decimal Classification System to
    locate specific books on the shelves.

60. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    the card catalog to find all materials re-
    lated to their research problems.

61. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    the card catalog to determine the exact
    location of a book on the shelves.

62. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using
    indexes of encyclopedias to locate information.

63. When using learning-center facilities or   1 2 3 4
    materials, students can be observed using a
    variety of materials as sources of information
    in solving research problems.

64. When using learning-center facilities or   1 2 3 4
    materials, students can be observed com-
    piling reports from notes taken from books,
    filmstrips, magazines, tapes, and news-
    papers.

65. When using learning-center facilities or   1 2 3 4
    materials, students can be observed
    evaluating sources of information such as
    filmstrips, magazines, encyclopedias, or
    newspapers to find the one most appropriate
    for a specific need.

APPENDIX E

SAMPLE OF LETTER TO PRINCIPALS

Dear_____:

The role of the library (learning center, resource center, media center, and so on) currently is being carefully studied. In many open-space schools, it is becoming an integral part of regular classroom space with classroom activities extending into the learning center and vice versa. Research is being conducted at North Texas State University to determine the degree of emphasis placed upon certain practices relevant to use of the learning center.

To obtain data, principals from selected elementary schools are being asked to fill out one of the accompanying questionnaires and to give one to the librarian. Then, they are asked randomly (for example, drawing names from a container which holds the names of all intermediate teachers available) to select three intermediate teachers who will fill out and return the questionnaire. These questionnaires will require only a short time to complete. The names of school districts, schools, principals, librarians, and teachers will remain absolutely anonymous and will not appear in any form as a part of the study. A summary of research findings will be sent to each school participating.

Your assistance in this study will be greatly appreciated. Thank you for your consideration of this request.

Sincerely,

Don Dunlap
Study Director

Dr. Fred W. Tanner
Associate Professor of Education

APPENDIX F

SAMPLE OF LETTERS TO TEACHERS AND LIBRARIANS

Dear Educator:

The role of the library (learning center, resource center,
media center, and so on) currently is being carefully studied.
In many open-space schools, it is becoming an integral part
of regular classroom space with classroom activities extending
into the learning center and vice versa. Research is being
conducted at North Texas State University to determine the
degree of emphasis placed upon certain practices relevant
to use of the learning center.

To obtain data, teachers and librarians are being asked to
fill out and return the accompanying questionnaire. These
questionnaires will require only a short time to complete.
The names of school districts, schools, principals, librar-
ians, and teachers will remain absolutely anonymous and will
not appear in any form as a part of the study. A summary of
research findings will be sent to each school participating.

Your assistance in this study will be greatly appreciated.
Thank you for your consideration of this request.

Sincerely,

Don Dunlap
Study Director

Dr. Fred W. Tanner
Associate Professor of Education

APPENDIX G

TABLE XVI

DISTRIBUTION OF EACH OF THE FOUR POINTS IN THE EMPHASIS SCALE
BY FREQUENCY AND PER CENT OF THE 160 RESPONDENTS,
CLASSIFIED ACCORDING TO POSITION ON EACH OF THE
ITEMS RELATED TO THE LEARNING-CENTER CONCEPT

	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
Categories and Items	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
I. Teacher Preparation For Use of the Learning Center												
1. The school has objectives for the utilization of the learning center.	19 56%	13 38%	1 3%	1 3%	18 56%	11 34%	2 6%	1 3%	51 54%	25 27%	15 16%	3 3%
2. Teachers were/are active and involved in formulating objectives or guidelines for use of the learning center.	14 41%	16 47%	2 6%	2 6%	14 44%	13 41%	4 13%	1 3%	36 38%	28 30%	23 24%	7 8%

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TABLE XVI--Continued

Categories and Items	Scale												
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis							
	Frequency and Percentage of Responses												
	Principals				Librarians				Teachers				
	4	3	2	1	4	3	2	1	4	3	2	1
3. Teachers are informed about new materials and equipment as they become available in the center.	26 76%	8 24%	0 0	0 0	23 72%	6 19%	3 9%	0 0	66 70%	18 19%	9 10%	1 1%
4. Teachers are given instruction in how to use materials and equipment available in the center.	21 62%	10 29%	3 9%	0 0	16 50%	12 38%	2 6%	2 6%	45 48%	34 36%	10 11&	5 5%
5. The librarian meets with teachers to discuss learning-center activities and services.	12 35%	11 32%	9 26%	2 6%	13 41%	11 34%	5 16%	3 9%	41 44%	21 22%	18 19%	14 15%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
6. Visits have been/are made to other schools for the purpose of observing learning-center programs in action.	5 15%	20 59%	6 18%	3 9%	4 13%	13 41%	10 31%	5 16%	25 27%	28 30%	21 22%	20 21%
7. Current literature relevant to learning-center programs is available and is used by school personnel.	12 35%	9 26%	10 29%	3 9%	6 19%	15 47%	7 22%	4 13%	22 23%	38 49%	23 24%	11 12%
II. Student Preparation for Use of the Learning Center												
8. Pupils are given instruction concerning the operation of the learning center.	19 56%	13 38%	0 0%	2 6%	18 56%	9 28%	3 9%	2 6%	53 56%	30 32%	9 10%	2 2%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
9. Pupils are given instruction concerning the contents and arrangement of the learning center.	21 62%	11 32%	1 3%	1 3%	21 66%	8 25%	1 3%	2 6%	59 63%	25 27%	8 9%	2 2%
10. Pupils are involved in establishing goals and guidelines for use of the learning center.	2 6%	15 44%	9 26%	8 24%	2 6%	11 34%	13 41%	6 19%	9 10%	31 33%	33 35%	21 22%
11. The school has a well-defined and executed plan for teaching library skills.	13 38%	13 38%	6 18%	2 6%	10 31%	14 44%	4 13%	4 13%	31 33%	27 29%	23 24%	13 14%
12. Pupils are taught to use and care for audio-visual materials and equipment.	18 53%	14 41%	0 0%	2 6%	16 59%	12 38%	3 9%	1 3%	42 45%	38 40%	12 13%	2 2%

TABLE XVI--Continued

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
13. Records are maintained concerning pupil progress in a library-skills program.	4 12%	11 32%	8 24%	11 32%	3 9%	8 25%	8 25%	13 41%	12 13%	19 20%	35 37%	28 30%
14. There is a plan in use for learning-center orientation for new students entering during the school year.	4 12%	12 35%	11 32%	7 21%	4 13%	13 41%	7 22%	8 25%	15 16%	21 22%	26 28%	32 34%
15. Courses of study require students to accept some responsibility for independent study.	14 41%	16 47%	2 6%	2 6%	19 59%	9 28%	2 6%	2 6%	47 50%	26 28%	18 19%	3 3%

TABLE XVI--<u>Continued</u>

	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
Categories and Items	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
III. Learning-Center Personnel and Their Role												
16. Adequate professional personnel services are available in the learning center.	14 41%	14 41%	3 9%	3 9%	13 41%	10 31%	6 19%	3 9%	33 35%	34 36%	18 19&	9 10%
17. Learning-center aides are available to increase the services in the learning center.	12 35%	10 29%	8 24%	4 12%	9 28%	10 31%	5 16%	8 25%	30 32%	31 33%	13 14%	20 21%
18. Parent volunteers are present to increase available services in the learning center.	13 38%	3 9%	2 6%	16 47%	7 22%	6 19%	3 9%	16 50%	23 24%	20 21%	11 12%	40 43%

TABLE XVI--Continued

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
19. Pupil volunteers are present to increase the services available in the learning center.	7 21%	11 32%	9 26%	7 21%	4 13%	11 34%	7 22%	10 31%	24 26%	29 31%	18 19%	23 24%
20. The librarian has contact with students in learning-center activities.	17 50%	12 35%	5 15%	0 0%	19 59%	9 28%	2 6%	2 6%	51 54%	26 28%	7 8%	10 11%
21. The librarian meets with teachers in planning sessions.	12 35%	7 21%	11 32%	4 12%	4 13%	13 41%	7 22%	8 25%	23 24%	24 26%	23 24%	24 26%
22. The librarian shares in the responsibility for the total school program.	17 50%	6 18%	9 26%	2 6%	12 38%	12 38%	4 13%	4 13%	43 46%	24 26%	16 17%	11 12%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale 4 Great Emphasis											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
IV. Operation of the Learning Center												
23. Flexibility of scheduling allows small groups to use the center as the need arises.	28 82%	4 12%	2 6%	0 0%	25 78%	5 16%	0 0%	2 6%	63 67%	20 21%	8 9%	3 3%
24. Operation of the learning center provides for quiet, independent study.	19 56%	11 32%	2 6%	2 6%	17 53%	9 28%	4 13%	2 6%	48 51%	34 36%	10 11%	2 2%
25. Operation of the learning center provides for small group work.	24 71%	8 24%	1 3%	1 3%	23 72%	4 13%	2 6%	3 9%	57 61%	23 24%	12 13%	2 2%

Scale:
4 Great Emphasis 3 Some Emphasis 2 Little Emphasis 1 No Emphasis

Frequency and Percentage of Responses

TABLE XVI--<u>Continued</u>

	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
Categories and Items	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
26. Pupils are permitted to use individually learning-center materials and equipment.	27 79%	5 15%	1 3%	1 3%	26 81%	3 9%	1 3%	2 6%	68 72%	17 18%	6 7%	3 3%
27. Materials and equipment are accessible and ready for use.	29 85%	4 12%	1 3%	0 0%	24 75%	3 9%	2 6%	3 9%	70 74%	16 17%	7 8%	1 1%
28. The learning center is attractive and inviting to pupils.	26 76%	7 21%	0 0%	1 3%	19 59%	10 31%	1 3%	2 6%	71 76%	20 21%	3 3%	0 0%

TABLE XVI--_Continued_

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
V. Facilities, Materials, and Equipment in the Learning Center												
29. The seating arrangements in the learning center will accomodate a variety of learning situations, ranging from individual use through small-group and large-group activities.	19 56%	10 29%	2 6%	3 9%	20 63%	4 13%	3 9%	5 16%	52 55%	27 29%	10 11%	5 5%
30. Facilities are available for pupils desiring a quiet, independent place to study.	13 38%	15 44%	3 9%	3 9%	13 41%	13 41%	5 16%	1 3%	41 44%	33 35%	13 14%	7 8%

TABLE XVI--Continued

Categories and Items	Principals				Librarians				Teachers			
Scale												
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
Frequency and Percentage of Responses												
	4	3	2	1	4	3	2	1	4	3	2	1
31. Facilities are available for the use of mechanical equipment.	15 44%	14 41%	2 6%	3 9%	20 63%	6 19%	3 9%	3 9%	49 52%	26 28%	14 15%	5 5%
32. Facilities are available for pupil projects and displays.	14 41%	12 35%	4 12%	4 12%	14 44%	12 38%	4 13%	2 6%	37 39%	31 33%	13 14%	13 14%
33. A variety of audio-visual equipment is available for use by teachers and pupils.	26 76%	7 21%	0 0%	1 3%	26 81%	3 9%	0 9%	3 9%	72 77%	18 19%	3 3%	1 1%
34. A variety of reference material is available in the learning center.	26 76%	6 18%	1 3%	1 3%	21 66%	8 25%	1 3%	2 6%	71 76%	20 21%	2 2%	1 1%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
35. A variety of learning labs for various subjects, which allow students to practice skills and to progress at their own learning rate, are available for pupil use.	15 44%	14 41%	3 9%	2 6%	17 53%	7 22%	3 9%	5 16%	47 50%	23 24%	14 15%	10 11%
36. A variety of games and puzzles, which offer practice in basic skills, are found in the learning center.	12 35%	9 26%	10 29%	3 9%	12 38%	6 19%	8 25%	6 19%	46 49%	26 18%	10 11%	12 13%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
37. An adequate book collection in the learning center is geared to the basic instructional program.	18 53%	13 38%	3 9%	0 0%	21 66%	5 16%	5 16%	1 3%	62 66%	25 27%	7 8%	0 0%
38. An adequate book collection in the learning center is geared to recreational reading by students.	17 50%	12 35%	5 15%	0 0%	20 62%	9 28%	2 6%	1 3%	67 71%	21 22%	6 7%	0 0%
39. An adequate audio-visual materials collection is available in the learning center.	18 53%	13 37%	1 3%	2 6%	17 53%	9 28%	3 9%	3 9%	53 56%	30 32%	7 8%	4 4%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
40. Comfortable seating arrangements are provided which encourage recreational reading by students.	15 44%	9 26%	7 21%	3 9%	14 44%	12 38%	2 6%	4 13%	44 47%	32 34%	15 16%	3 3%
41. An adequate number of newspapers and magazines are available to provide current information	16 47%	10 29%	4 12%	4 12%	19 59%	6 19%	1 3%	6 19%	47 50%	30 32%	9 10%	8 9%

VI. Use of the Learning Center for Individualizing Learning

42. Students can be observed using learning-center materials, which are designed to allow pupils to work at their

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
42. (Cont.) appropriate levels of learning and to proceed at their individual rates of learning.	19 56%	10 29%	3 9%	2 6%	14 44%	9 28%	7 22%	2 6%	49 52%	30 32%	11 12%	4 4%
43. Students can be ovserved using learning-center materials prescribed by teachers as a result of diagnostic practices.	17 50%	12 35%	3 9%	2 6%	12 38%	12 38%	7 22%	1 3%	53 56%	21 22%	18 19%	2 2%
44. Students can be observed using learning-center materials in order to pursue personal interests.	15 44%	12 35%	5 15%	2 6%	18 56%	10 31%	3 9%	1 3%	55 59%	29 31%	9 10%	1 1%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
45. Students can be observed using learning-center materials in small group activities.	19 56%	11 32%	4 12%	0 0%	18 56%	11 34%	1 3%	2 6%	58 62%	28 30%	7 8%	1 1%
46. Students can be observed using learning-center materials specifically prescribed because they best meet the learning styles of the students.	15 44%	15 44%	4 12%	0 0%	13 41%	12 38%	3 9%	4 13%	41 44%	44 47%	7 8%	2 2%
47. Students can be observed using learning-center materials, while working in pairs.	17 50%	12 35%	2 6%	3 9%	17 53%	7 22%	5 16%	3 9%	54 57%	33 35%	6 7%	1 1%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
48. Students can be observed using learning-center materials, while following directions from contracts, learning activity packets, study guides, and so on which do not provide pupils choice of activities.	14 41%	13 38%	4 12%	3 9%	10 31%	12 38%	8 25%	2 6%	37 39%	30 32%	19 20%	8 9%
49. Students can be observed using learning-center materials,while following directions from contracts, learning activity packets,study guides, and so on which do provide for												

TABLE XVI--<u>Continued</u>

Categories and Items	Scale — 4 Great Emphasis, 3 Some Emphasis, 2 Little Emphasis, 1 No Emphasis — Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
49. (Cont.) pupil choice of activities.	14 41%	15 44%	3 9%	2 6%	9 28%	12 38%	6 19%	5 16%	36 38%	38 40%	15 16%	5 5%
50. Students can be observed using learning-center materials in studies where they choose the topic or objective and plan their own activities.	6 18%	18 53%	8 24%	2 6%	11 34%	12 38%	2 6%	7 22%	32 34%	37 39%	17 18%	8 9%
51. Outlines of desirable skills, concepts, and knowledge in various subjects guide teachers in selecting activities for student use of materials in the learning center.	5 15%	22 65%	6 18%	1 3%	8 25%	14 44%	8 25%	2 6%	40 43%	30 32%	14 15%	10 11%

TABLE XVI--<u>Continued</u>

Scale

4	3	2	1
Great Emphasis	Some Emphasis	Little Emphasis	No Emphasis

Frequency and Percentage of Responses

Categories and Items	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
52. Students are granted increased amounts of time for independent study in the learning center as they demonstrate responsible, purposeful behavior.	13 38%	11 32%	6 18%	4 12%	12 38%	14 44%	5 16%	1 3%	48 51%	34 36%	9 10%	3 3%
53. Students engaged in individualized activities demonstrate wise use of time.	10 29%	18 53%	4 12%	2 6%	6 19%	18 56%	8 25%	0 0%	28 30%	47 50%	16 17%	3 3%
VII. Use of the Learning Center for Developing Independent Learning Skills												

TABLE XVI--Continued

	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
Categories and Items	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
54. When using learning-center facilities or materials, students can be observed using the table of contents of a book to discover what general information it contains.	13 38%	13 38%	5 15%	3 9%	8 25%	15 47%	5 16%	4 13%	32 34%	45 48%	16 17%	1 1%
55. When using learning-center facilities or materials, students can be observed using a book index to find out if specific information is contained in a book.	15 44%	11 32%	6 18%	2 6%	11 34%	13 41%	5 16%	3 9%	34 36%	38 40%	20 21%	2 2%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
56. When using learning-center facilities or materials, students can be observed making a bibliography of sources which they have used in research work.	7 21%	16 47%	8 24%	3 9%	4 13%	17 53%	9 28%	2 6%	23 24%	31 33%	25 27%	15 16%
57. When using learning-center facilities or materials, students can be observed consulting bibliographies contained in books as sources for further research	7 21%	12 35%	11 32%	4 12%	3 9%	10 31%	14 44%	5 16%	17 18%	33 35%	28 30%	16 17%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
58. When using learning-center facilities or materials, students can be observed using the Dewey Decimal Classification System to locate a selection of books on a topic.	19 56%	6 18%	7 21%	2 6%	13 41%	10 31%	4 13%	5 16%	42 45%	27 29%	14 15%	11 12%

VII. Use of the Learning Center for Developing Independent Learning Skills.

59. When using learning-center facilities or materials, students can be observed using the

TABLE XVI--Continued

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
59. (Cont.) Dewey Decimal Classification System to locate specific books on the shelves.	19 56%	10 29%	4 12%	1 3%	15 47%	10 31%	2 6%	5 16%	46 49%	25 27%	12 13%	11 12%
60. When using learn-ing-center facilities or materials, students can be observed using the card catalog to find all ma-terials re-lated to their research prob-lems.	20 59%	11 32%	2 6%	1 3%	20 63%	7 22%	2 6%	3 9%	53 56%	27 29%	8 9%	6 7%
61. When using learn-ing center facilities or materials, students can be observed using the card												

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
61. (Cont.) catalog to determine the exact location of a book on the shelves.	18 53%	12 35%	2 6%	2 6%	17 53%	11 34%	1 3%	3 9%	53 56%	23 24%	9 10%	9 10%
62. When using learning-center facilities or materials, students can be observed using indexes of encyclopedias to locate information.	15 44%	15 44%	4 12%	0 0%	11 34%	15 47%	2 6%	4 13%	43 46%	31 33%	15 16%	5 5%
63. When using learning-center facilities or materials, students can be observed using a variety of materials as sources of information in solving research problems.	14 41%	12 35%	6 18%	2 6%	13 41%	11 34%	6 19%	2 6%	39 41%	36 38%	16 17%	3 3%

TABLE XVI--<u>Continued</u>

Categories and Items	Scale											
	4 Great Emphasis	3 Some Emphasis	2 Little Emphasis	1 No Emphasis								
	Frequency and Percentage of Responses											
	Principals				Librarians				Teachers			
	4	3	2	1	4	3	2	1	4	3	2	1
64. When using learning-center facilities or materials, students can be observed compiling reports taken from books, filmstrips, magazines, tapes, and newspapers.	9 26%	20 59%	4 12%	1 3%	6 19%	17 53%	6 19%	3 9%	33 35%	34 36%	19 20%	8 9%
65. When using learning-center facilities or materials, students can be observed evaluating sources of information such as filmstrips, magazines, encyclopedias, or newspapers to find the one most appropriate for a specific need.	10 29%	18 53%	5 15%	1 3%	6 19%	12 38%	10 31%	4 13%	27 29%	28 30%	26 28%	13 14%

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