A SURVEY OF AUDIOVISUAL MATERIAL USAGE IN INDIVIDUAL GUIDED EDUCATION - SECONDARY

A Seminar Paper
Presented to
the Graduate Faculty, College of Education
University of Wisconsin - La Crosse

In Partial Fulfillment
of the Requirements for the Degree of
Master of Science Audiovisual Media

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August 1976

UNIVERSITY OF WISCONSIN - LA CROSSE

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July 27, 1976
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ABSTRACT

Accountability, budget scrutiny, and taxpayer revolt create budgetary conflicts for educators facing competition from audio and visual entertainment, increased material to be taught, and the development of individualized education. To meet these challenges utilization of instructional technology is increasing on all levels. This movement received impetus from the Elementary and Secondary Act of 1965. Today those with the responsibility of meeting the demands for media materials face a difficult task on their reduced budgets. The wide variety of available materials, changing methodology and learning climates, short-term preferences, improved and new sensory aids are additional considerations in selecting the correct equipment.

To provide a tool for determining the value of audio and sensory materials in an individually guided program an accumulation of data was gathered through questionnaires, tabulations, personal interviews, and observations. The three year study resulted in identifying media materials acceptable to all levels and isolated other materials relative to grade and experience in an individualized program.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Introduction

In the past few years two educational events have brought about a change in educational methodology. These have been the influx of federal monies through the Elementary and Secondary Education Act of 1965 and the growth in popularity in the educational philosophy of individual guided education. Due to the newness of this combination little is known as to media preferences and the extent of changes in usage patterns as it applies to individualized secondary educational programs.

Statement of the problem.

It is the purpose of this study (1) to show teacher preference for various audiovisual equipment and materials through a series of questionnaire studies; and (2) to show usage of equipment in a sixth, seventh, and eighth graded school with an individualized program.

Individually Guided Education.

This term is used to express an educational movement that takes students on their level rather than grade and advances them in a series of individual promotions based on

physical, emotional, and social factors and intellectual and achievement changes. The vehicle used to implement continuous progress is a form of programmed instruction such as a unipac.

The unipac.

Since the references to unipacs will apply to that type of programmed instruction as developed at Webster Transitional School it shall be defined as a self-contained set of teaching-learning materials designed to teach a single concept and structured for individual and independent use in a continuous progress school program. The unipacs are prepared by individual teachers and include media materials to help develop, clarify, and provide enrichment for the leveled curriculum. Although unipacs are designed for continuous progress curriculums, it is not mandatory nor does it eliminate the need for group instruction.

Audiovisual materials.

This term is being replaced by media materials because of the new roles of the audiovisual materials emerging from instructional patterns. In our study we will include 35mm filmstrips, 2 x 2 inch slides, 16mm films, 8mm films, magnetic tape and disc recordings, globes, microfilm, kits, graphic materials, and all equipment for their utilization. The availability and variety of media in any one school

will depend upon that school's educational philosophy, financial commitment, and educational awareness. The development of instructional technology is relatively new (mid-1950's) and has been defined as that "area of endeavor that has brought machines, materials, and techniques together for educational purposes."[1]

Webster Transitional School.

In 1962 the Cedarburg School Board committed the district to individually guided education in all of its elementary schools. A decision was made in 1967 to include six through eight grades in the program and to build a new school to house approximately a thousand students. Input from all areas of operations was compiled and after much study it culminated in the building of Webster Transitional in 1973. The school incorporates open-space concept, team-teaching, and individually guided philosophy while housing teams of four academic teachers and approximately one hundred twenty students per unit called pods. The curriculum evolves from unipacs and leveled classes designed to better meet the individual needs of the student.

For this paper the sixth, seventh, and eighth grades

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[1]James D. Finn and others, "Studies in the Growth of Instructional Technology I: Audio-Visual Instrumentation for Instruction in the Public School, 1930-1960

will be considered secondary level. While elementary teachers are utilized in all academic areas Webster teachers are departmentalized within the team concept. The school worked closely with the Research and Development Center, Madison, Wisconsin in the development of individually guided education - secondary as one of the pilot schools. One-half of the eighth grade teachers have secondary degrees and licenses.

CHAPTER II

REVIEW OF THE LITERATURE

A historical approach to the educational philosophy in the use of audiovisual materials is appropriate and necessary to understanding their role today.

Although concerned primarily with visual aids, Ellsworth Dent offered a historical rationale for all audiovisual materials. In The Audio-Visual Handbook he stated:

> The use of visual instruction may be traced back through the educational history of the race. In primative times, boys were taught to hunt and fish and girls to cook through imitation, observation, and preparation, plus the spoken explanation. Early records were picture records. Cave men drew pictures to warn and inform. The Greeks utilized the school journey, the sand as a blackboard, and the real objects or things in their instructional processes. Such famous pioneers as Comenius, Rousseau, and Pestalozzi emphasized.[2]

It appears obvious that educational materials, both visual and audible, have historically been used in the educational process.

In 1946, Edgar Dale listed eight predictions in regard to the future of audiovisual materials in education. One prediction, becoming a reality today, was "Schools will

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[2]Ellsworth C. Dent, The Audio-Visual Handbook, Chicago: Society for Visual Education, 1946, p.24

be equipped to provide a 'cafeteria' of learning materials."[3] One has only to visit modern schools which have converted school libraries into media centers to see the reality of his dream. Models and maps, realia and games are as accessible to the student through the card catalog as books traditionally have been.

Although reasons for using these materials are numerous, two of the most prominent were offered by Dale in different editions of the same work. The first reason was the recognition of potential in using audiovisual materials in individualized instruction. This study investigated Dale's statement as to the variety of materials used in an individualized program of instruction.

> Through such a variety of materials we can provide for individual differences not only in rate of learning but also in the quality of learning. Through such a rich integration of concrete materials, we can keep education from being narrow and barren. Perhaps, too, many of these materials will aim to build social sensitivities to raise questions and pose problems to help provide information for their solution.[4]

The second reason offered by Dale in a later edition cited the ability of audiovisual materials to help students expand their physical surroundings and broaden their experiences.

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[3]Edgar Dale, Audio-Visual Methods in Teaching (New York: Dryden Press, 1946), p.525

[4]Ibid., p. 525

> Thus, through the wise use of word, recording picture, drawing, film, photograph, model, exhibit, poster, television, we can bring the world into the classroom. We can make the past come alive; we can make the present a rich experience instead of a meager one. We can help the farm boy to understand the city boy, the economically favored to communicate with the economically deprived. People distant in space -- continents apart--can be helped to see how much they have in common.[5]

While both of these reasons, individualizing instruction and broadening experiences, are still given today, a debate as to the extent audio-visual materials should play in the curriculum has lessened. No longer are media users described as lazy. More importantly, budget-conscious media directors and administrators are concerned with the type of materials that will receive the greatest usage. Investigation of Dale's reasoning as it applies in modern education is the foundation of this particular study.

Herbert Schueler and Gerald Lesser wrote, in Teacher Education and the New Media, that audiovisual materials are a tool of the teacher and a means to an end. They feel that these materials contribute no more to educational outcomes than other individual components such as books, buildings, test-tubes, and professors.[6] Audiovisual media is not a

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[5]Edgar Dale, Audio-Visual Methods in Teaching (Revised ed.: New York: Holt, Reinhart and Winston, 1954), p. 7

[6]Herbert Schueler and Gerald S. Lesser, Teacher Education and the New Media (Washington, D.C.: American Association of Colleges for Teacher Education, 1967), p. 96

replacement for teachers or other materials but an augmentation for the other components.

Opposing views were offered by William Clark Trow.

> The new media will not be particularly effective so long as they remain mere aids or adjuncts, an intrusion, a fifth wheel to the educational conveyance. The new parts need to be integrated into a man-machine system, and this requires clearcut readjustments in organization and procedure. The required changes may take a little time but they are within the range of feasibility.[7]

Regardless of the reasons audiovisual materials are used or the emphasis they seem to have, as William Seiler points out, "There is little doubt in the minds of many people as to whether audiovisual materials should be used in the classroom. They should and are being used, and their use is increasing."[8]

Differances of opinions among writers as to the effectiveness of this usage of sensory materials. Dent(1946) suggested that teachers tend to teach as they have been taught.[9] Others have suggested that the advent of media will greatly alter the role of the teacher and reshape the future of learning.

What ever the outcome of the controversy outside

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[7]William Clark Trow, Teachers and Technology: New Designs for Learning (New York: Appleton-Century-Crofts, 1963), p. 180

[8]William Seiter, "Audio Visual Materials in Classroom Instruction: ATheoretical Approach," Speech Teacher, XXI (September 1972), p. 197

[9]Ellsworth C. Dent, The Audio-Visual Handbook, (Chicago: Society for Visual Education, 1946), p. 23

influences will certainly have their effect on the manner of media usage. Considerations will have to be given to student preference, material availability, budgetary outlays, learning climate, and teaching modes. Yet it is the teacher who will make the final decision as to the extent and quality of that use. "To fail to use such materials," says Edgar Dale, "would be to deprive oneself and one's students of many of the most effective means ever developed in the centuries-old endeavor of all educators: to explain things well."[10]

In addition to the brief historical background in use of media materials it behooves one to investigate the needs and goals of the school in question, Webster Transitional School.

In formulating a decision guide the Cedarburg Board of Education utilized a cooperative study made with the Cooperative Educational Research Service (CERS) of the University of Wisconsin-School of Education during the 1966-1967 school year. This guide called for elementary schools to be built in 1967 and 1969 and a middle school to be completed in 1972. Both elementary schools were finished in 1967 and the middle school, Webster Transitional, in 1973 due to failure in passing the first bond offering.

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[10]Edgar Dale, Audio-Visual Methods in Teaching, Revised ed., 1954, p. 9

The Cooperative Educational Research Service surveyed 477 randomly selected residents of the District. From this group, percentages as to occupation, employment, income, and other characteristics were developed. All participants in the CERS survey were asked to select what, in their opinion, was the most important task of public instruction. Forty-eight per cent or 230 of the respondents stated efficient use of the three R's. A citizen's survey in 1970 followed up by including a second ranking of selected tasks of public education and again the three R's were selected as number one. A survey of faculty members involved in the planning process also selected the three R's as their first choice. Very close behind in all three groups mentioned above, was a desire for knowledge (Table I). It was also interesting to note that various occupational groups were consistent in the selection of the two most important tasks (Table II).[11]

Keeping the District's tasks of learning in mind it is important to point to another study which helped formulate the Webster philosophy. That was the research effort conducted by the University of Wisconsin Center for Research Program and Development, the Department of Public Instruction and the University of Wisconsin-Department of Education and

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[11]Gerald Skaar, "Educational Specifications for Proposed Middle School: Phase I", (Cedarburg School Board, 1971) (Mimeographed)

TABLE I

ORIGINAL RANKING OF THE SIXTEEN TASKS
OF PUBLIC EDUCATION FOR
CEDARBURG PUBLIC SCHOOLS 1966-1967

1. "The 3 R's ..."
2. "Desire for knowledge ..."
3. "Loyalty to America ..."
4. "Emotionally stable ..."
5. "Sense of right and wrong ..."
6. "Habit of weighing facts ..."
7. "A feeling for people ..."
8. "Information and guidance for wise occupational choice ..."
9. "Knowledge of world affairs ..."
10. "Well developed body ..."
11. "Special training ..."
12. "A fund of information ..."
13. "An understanding of government ..."
14. "Homemaking and handy skills ..."
15. "Management of finances ..."
16. "Enjoyment of cultural ..."

TABLE II

OCCUPATIONAL VARIABLE
CEDARBURG PUBLIC SCHOOLS, 1966-1967

		Professional	Managerial	Skilled
Most Important	1.	"3 R's..."	"3 R's..."	"3 R's..."
Two Next Important	2.	"Desire for knowledge..."	"Desire for knowledge..."	"Desire for knowledge..."
	3.	"Habit of weighing facts..."	"Understanding of government..."	"Wise occupational choice..."
Three Next Important	4.	"Feeling for other people..."	"Habit of weighing	"Specialized training..."
	5.	"Emotionally stable person..."	"Loyalty to America..."	"Habit of weighing facts..."
	6.	"Understanding of government..."	"Sense of right and wrong..."	"Sense of right and wrong..."

and Administration.

Its general purpose was to determine the imperative educational needs in the State of Wisconsin. After following a rather sophisticated and involved procedure and method of analysis, several needs were determined as imperative to the State and most of these were incorporated in Webster to achieve the tasks as outlined in the original survey.

The number one imperative need by far, was the teaching of Reading. This related well to the emphasis on basic learning skills outlined in the tasks surveys. The next four imperative needs were classroom facilities, individually guided instruction, education and motivating pupils and curriculum development. Other high ranking, imperative needs in this study included team teaching, flexible scheduling, instructional materials centers, junior high guidance, ways of evaluating teachers, quality of teacher candidates, the problem of the ineffective teacher, skilled trades and junior high school education. All of the above were incorporated to some degree in the Webster School.

Another survey of 152 middle schools was conducted in 1968-1969 by the Educational Research Service (ERS), part of the American Association of School Administration and Research Division of the National Education Association. This report was the first major survey attempting to identify

what was or was not part of the interest in middle schools in the United States. An attempt was made to analyze in depth all matters of organization, instructional practices, subjects and activities, length of operation, and special program features.

They (ERS) reported the following distinguishing features inherent in the middle school concept represented in the schools surveyed.

1. A span of at least three grades to allow for the gradual transition from elementary to high school instructional practices (must include grades 6 and 7, and no grades below 5 or above 9).

2. Emerging departmental structure in each higher grade to effect gradual transition from the self-contained elementary classroom to the departmentalized high school.

3. Flexible approaches to instruction: Team teaching, flexible scheduling, individualized instruction, independent study, tutorial programs - and other approaches aimed at stimulating children to learn how to learn.

4. Required special courses, taught in departmentalized form, such as industrial arts, home economics, foreign language, art, music, and typing. Frequently, an interdisciplinary approach is used, e.g., "unified arts," "practical arts," "humanities," "performing arts," "urban living."

5. Guidance program as a distinct entity to fill the special needs of this age group.

6. Faculty with both elementary and secondary certification, or some teachers with each type (until special training and certificates are available for this level).

7. Limited attention to interschool sports and social activities.[12]

> The most neglected age group in the schools today is that which is becoming known as the "inbetween ages"... These children in the middle years have been neglected under the present 6-3-3 plan of school organization. Neither the self-contained classroom of the elementary school nor the subject-centered program of the junior high school adequately meets their needs.[13]

Heeding the words of Mary Compton the Cedarburg School Board placed great interest in diagnostic surveys to isolate middle school problems. The Board's strong desire to provide excellent middle school education was aided by an existing pride and community support of the school system. All this culminated in a middle school that provides team-teaching, open-space concept, advisor-advisee programs, flexible scheduling, individualized instruction, independent study, and curriculum development calculated to meet the needs of the students in Cedarburg.

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[12]"Middle Schools in Action," Educational Research Service, American Association of School Administration and Research Division, NEA, (Washington, D.C., 1969), p. 2

[13]Mary F. Compton, "The Middle School: Altermative to the Status Quo," Theory into Practice, Vol. III, No. 3, (June, 1968), p. 108

CHAPTER III

PROCEDURE

While working on the faculty steering committe for the establishment of specifications for the, then, proposed Webster Middle School the author was given the responsibility of establishing audiovisual requirements. After a series of visitations to observe various functioning plans it was recommended that two instructional media centers (IMC) be built. One IMC housing magazines, newspapers, reference books, English and math supplementary materials was to be located in the center of four teaching pods on the west side of the school and used as a "silent" study area. The other IMC was to be found on the west side among the other four pods and contain reference books, supplementary materials for science and social studies, audiovisual materials and equipment, and a graphic arts area. This area was designated as an active study area. The graphic arts area was dropped for fiscal reasons and students now work in the teacher work room.

Next to be determined was the type and amount of the various available media materials that were to be purchased for the new school. This was not to prove an easy task since Webster was to be one of four pilot schools for the

Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin (Madison) and no model existed. Individually Guided Education Multiunit Schools - Secondary (IGE MUS-S) was to be an extension of the IGE K-5 grade program as developed by Klausmeier and the Research and Development Center.[14] The Charles Kettering Foundation through its affilate IDEA had also worked on an individually guided approach at the K-5 grade level. Because of this, a decision was made at Webster to purchase minimal sensory equipment until the school was in operation.

In 1974 a questionnaire was sent to the Webster staff for the purpose of aiding the selection of equipment to be used in the implementation of the IGE program. The questionnaire required respondents to evaluate nine material and equipment categories by rating them on a scale of 1-5 points. Ratings:

1 - Seldom useful; could probably get along without.
2 - Fairly useful; just the thing needed several times a year.
3 - Useful often; used often and would be missed if not available.
4 - Very useful; would have to improvise if not available.
5 - Needed; nearly impossible to conduct classes without.

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[14]H.J. Klausmeier, R.G. Morrow, and J.E.Walter, Individually Guided Education in the Multiunit Elementary School: Guidelines for Implementation (Chicago: University Press, 1965)

The respondent was to circle that number which best represented his evaluation as to the importance of the category in terms of an individualized program. (See Appendix A)

Forty-four questionnaires were distributed. Of these thirty were returned completed, eight were returned partially completed with the marked items included in the total and seven forms were not returned. This compares favorably with the thirty-nine Webster respondents on the repeat survey in 1976. The same survey distributed to the forty-five elementary teachers in three of the four elementary schools had a completed return of 37 and 39 respectively. The fourth school is a small five-teacher facility located in the country and was not included because of the inconvenience and communication problems involved. A verbal explanation to a representative group in each school as to the purpose, equipment and material selection, interpretation of rating values, and answering general questions preceded each distribution of the questionnaire.

Because of these exchanges, interview was included as an instrument of inquiry. The oral responses were not tabulated but became a part of the interpretation of the desires and needs of teachers in individualizing materials for their students.

The same is true for observation as an inquiry tool. Responsibilities for scheduling the video tape recorder

presented frequent opportunities for the observation of various techniques and methods of audiovisual utilization. Questions, explanations, and discussions led to an understanding of the uniqueness of the role that audiovisual materials play in individualizing lessons.

Although the teacher preference survey served as an aid in the selection of some original equipment the real test of importance has to be usage. This is why the tabulation of student and teacher withdrawal of media materials has more validity in determining the relevance of audiovisual instruments as learning tools.

A record is kept of all media withdrawn from the IMC. A tabulation of this daily chronicle over a two year period became the heart of this study. A count was made of the equipment withdrawals and recorded in monthly totals to illustrate that from year-to-year unipacs receive different emphasis and total usage of audiovisual equipment does not remain constant.

The survey tools as they were applied may be considered crude but one must take into consideration the "pathfinder" aspect of the study. Schools experimenting with individualizing at the upper grade levels are becoming more common but schools completely structured for this type of education are still rare and unique.

CHAPTER IV

RESULTS

This study attempted to determine the dependence on specific media materials by teachers and students at Webster Transitional School. Its purpose was to demonstrate particular needs unique to individualized education and provide an evaluation study of audiovisual materials.

In order to establish the extent of media usage questionnaires were sent to the teachers of Webster after a year of individualizing and to three elementary feeder schools in their fifth year in the program. To probe for reliance changes a repeat survey was distributed to the same schools in 1976, two years later. The result of these inquiries (Tables III,IV,V,VI) suggest only subtle changes in teacher attitudes.

In the elementary program a higher dependence on media was indicated overall. Both levels selected reproduction equipment including thermal and photo copiers, mimeographs, and spirit duplicators as most vital to the program. Thirty-nine of the forty-five elementary respondents rated reproduction equipment a "must". The Webster teachers were equally strong in their response with eighty-eight per cent giving this category its highest rating. Webster's 1976-1977 paper

TABLE III

EVALUATION OF AUDIO-VISUAL MATERIALS
BY TEACHERS OF CEDARBURG ELEMENTARY SCHOOLS*
IN 1973-1974 AND 1975-1976 SCHOOL YEARS

Materials	1973-1974	1975-1976
Audio Recordings	4.7	4.3
Transparencies	4.5	3.8
16mm Films	3.3	3.3
8mm Films	2.2	1.5
35mm Filmstrips	4.6	4.2
2 x 2 inch Slide Prints	3.5	2.3
Photographic Prints	4.1	2.3
Video tape**	2.7	1.5

Values:

1 - Seldom useful
2 - Fairly useful
3 - Often useful
4 - Very useful
5 - Needed

* Parkview, Thorson, and Westlawn were the elementary schools surveyed.

** In 1974 only Parkview had video recorder. In 1976 only Westlawn did not have video tape equipment.

TABLE IV

EVALUATION OF AUDIO-VISUAL MATERIALS
BY TEACHERS OF WEBSTER TRANSITIONAL SCHOOL
IN 1973-1974 AND 1975-1976 SCHOOL YEARS

Materials	1973-1974	1975-1976
Audio Recordings	3.1	3.6
Transparencies	2.9	3.5
16mm Films	3.1	4.0
8mm Films	2.5	3.0
35mm Filmstrips	3.0	2.2
2 x 2 inch Slide Prints	2.3	2.5
Photographic Prints	2.1	1.6
Video Tape	2.4	2.5

Values:

1 - Seldom useful
2 - Fairly useful
3 - Often useful
4 - Very useful
5 - Needed

TABLE V

EVALUATION OF AUDIO-VISUAL EQUIPMENT
BY TEACHERS OF CEDARBURG ELEMENTARY SCHOOLS*
IN 1973-1974 AND 1975-1976 SCHOOL YEARS

Equipment	1973-1974	1975-1976
Display Equipment	2.7	3.1
Graphic Equipment	3.7	2.6
Primary Typewriter	3.9	3.2
Magnetic Tape Equipment	4.4	4.4
Opaque Projector	2.8	2.2
Overhead Projector	4.4	3.9
Phonograph	4.6	3.6
Reproduction Equipment	4.9	4.8
2 x 2 inch Slide Projector	3.2	3.2
Video Tape Recorder with Camera**	2.4	1.7
Video Tape Recorder with Monitor**	2.2	1.7

Values:

1 - Seldom useful
2 - Fairly useful
3 - Often useful
4 - Very useful
5 - Needed

* Parkview, Thorson, and Westlawn were the elementary schools surveyed.

** In 1974 only Parkview had video recorder. In 1976 only Westlawn did not have video tape equipment.

TABLE VI

EVALUATION OF AUDIO-VISUAL EQUIPMENT
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IN 1973-1974 AND 1975-1976 SCHOOL YEARS

Equipment	1973-1974	1975-1976
Display Equipment	2.4	1.8
Graphic Equipment	2.3	2.3
Primary Typewriter	2.8	3.2
Magnetic Tape Equipment	3.6	3.1
Opaque Projector	1.8	1.8
Overhead Projector	3.8	3.7
Phonograph	3.0	2.8
Reproduction Equipment	4.2	4.6
2 x 2 inch Slide Projector	2.4	3.2
Video Tape Recorder with Camera	1.6	2.9
Video Tape Recorder with Monitor	2.4	3.2

Values:

1 - Seldom useful
2 - Fairly useful
3 - Often useful
4 - Very useful
5 - Needed

budget includes one thousand white and two hundred colored reams of duplicating paper and seven hundred fifty reams of mimeograph paper further illustrating reliance on reproduction facilities. With the great need for unipacs, testing, individual lessons, and information sheets teacher aides find over seventy-five per cent of their time used in typing and reproducing teaching materials.

On their second most important choice the two educational groups disagreed. Elementary teachers tended to rely more heavily on magnetic tape recorders and players whereas the secondary teachers indicated overhead projectors. Longer participation in the individualized program allowed elementary teachers to develop more audiovisual-tutorial or mediated self-instruction lessons on tape. Further discussion will disclose a heavy emphasis on cassette tape by the secondary personel as well. The high rating of the overhead projector can be attributed to its year-long use by the math department in introductory and explanatory roles. Another important use is as a magnification tool in social studies and science for the preparation of maps, drawings of digestive, nervous, and circulatory systems and bulletin board displays.

It should be pointed out that Webster has three eight grade pods and six six-seven multi-grade combinations and although all subject areas are guided by stated behavorial objectives and concepts each team has the perogative to

select its own methodology. Therefore it is conceivable that two different teams teaching the same material may use media differently, hence a different dependence evaluation. In addition the multigrade facet which requires a two-year curriculum sequence further complicated this inquiry.

The elementary-secondary equipment preference study rated 16mm film and 35mm filmstrip very high with Webster respondents showing a strong increase in their dependency over the two-year period. In discussing the increased use the teachers noted more large-group presentations and the film's ability to hold the interest of large groups so as to release other team members for work with individuals.

Beyond these materials which received affirmative acceptance by both levels a difference in media values due to differences in teaching techniques and pupil maturity occurs. Display equipment important at the lower level held little interest for upper grade teachers. Video tape equipment was utilized much more at the secondary level as was 8mm film. Foreign language and social studies used home films of foreign countries in their classes quite regularly. A science teacher produced 8mm nature films for use in an earth science unit and some students have made ecology films as science projects. From the type of rating given by elementary teachers and the age of their students one might surmise that this type of activity does

not occur at that level.

Photographic materials fell from favor among the elementary teachers due partially to the loss of several sets of "Old Cedarburg" prints. These were used by all four-five multi-grade combinations in their study of Cedarburg and were considered invaluable to the unit. Because they were not in use the past two years teachers who had given this category a high rating in the first survey down-graded it in the second.

The various examples of usage are not to examplify correct application but rather to illustrate the diversified role played by audiovisual materials. It continues to be the teacher's right of choice as to what and how media is to be used and it is being used.

A questionnaire study by Fronzena[12] further confirms this. In his canvass of 120 teachers from forty-six Wisconsin middle schools he found 96 per cent dependent on media to compliment their teaching. Over eighty per cent incorporated audiovisual material as an integral part of each unit, made assignments requiring the use of media materials and incorporated existing audiovisual materials into units.

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[12]Steven Michael Fronzena, "The Dependence of Wisconsin Middle School Teachers on Audio-Visual Materials." Unpublished Master's seminar paper, University of Wisconsin-Oshkosh, 1974.

Reasons given for the usage suggested that more class assignments were possible, acted as an aid to individualized programs, allowed movement away from textbook orientated lessons and to a lesser degree use of materials saved time. Ausiovisual materials conveyed concepts that otherwise would be difficult to teach, made it easier to teach and resulted in better teaching. The respondents felt that the students expected media materials in their units and teachers felt they were using more each year. It was interesting to note that most teachers, eighty-four per cent, felt that an adequate variety of audiovisual materials were available in their schools.

The teachers of Webster also feel that the audiovisual equipment at their disposal (Table VII) to be adequate although another video tape recorder has been requested the past two years only to be cut from the budget. Additional filmstrip viewers and microfische readers have been ordered for next year. These additions were budgeted because records indicated a need beyond which the existing equipment could provide. These records which tabulate withdrawals from the media center indicate which audiovisual equipment is in greatest demand. It is believed that these accountings may serve as indicators for other media centers of schools developing individualized educational programs.

TABLE VII

MEDIA EQUIPMENT INVENTORY 1975-1976
WEBSTER TRANSITIONAL SCHOOL

Item	Number
Battery Tester	1
Calculator	
Electric	17
Electronic Printer	1
Camera (Still)	
35mm Mamiya	1
126mm GAF	1
Polaroid	1
Chart and Stand	6
Controlled Reader	16
Ektograph Visual Maker	1
Globes	37
Graphics	
Dry Mount Press	1
Tacking Irons	2
Timer	1
LeRoy Lettering Set	1
Listening Centers	15
Magnetic Tape	
Card and Cassette	1
Cassette Bulk Eraser	1
Cassette Player	39
Cassette Recorder	37
Cassette Duplicator	1
Reel to Reel Recorder	13
Splicer	1
Maps	45
Metal Engraver	2
Microfische	
Reader	2
Reader and Printer	1
Microphone	7
Paper Cutter	3

Item	Number
Projector	
Film - 16mm	6
Film Loop	2
Film Loop/Sound	1
Filmstrip	21
Microscope	2
Opaque	2
Overhead	17
Overhead/Activator	1
Slide	
Carousel	2
Single Frame	2
Stack Loader	1
Radio - AM/FM	10
Reading Accelerator	2
Roving Rostrum	1
Scales	3
Screen (Lenticuler)	
Floor Tripod	4
Table Model	4
Wall	23
Typewriter	
Electric	7
Manual	18
Primary	1
Video - Cassette 3/4"	
Camera	1
Monitor	4
Recorder	1
Walkie Talkie Transceiver	2
Wireless	
Headsets	94
Recorder	4

Magnetic tape players and recorders proved to be the most popular equipment (Tables VIII,IX). Withdrawals of this type of equipment numbered over 2600 last year by the approximately 930 students and 55 staff members. The practice of issuing recorders when only players were needed was discontinued when it was discovered that students were dubbing in comments on cassette material found on the shelves. The 288 average monthly withdrawals does not indicate the true number using the equipment since headsets with the listening centers allow up to twelve learners to listen to the same tape at the same time. Because the use of headsets reduces the noise level in the media centers they are usually issued with most audio equipment. In addition if only listening is involved both media centers have wireless headset capability and over ninety students may listen to one tape or because the tape player has four channels a combination of four tapes may be selected. This large group listening capability is considered valuable and is often used in the teaching of reading and listening skills.

The second most often used audiovisual equipment is the filmstrip viewers and projectors (Tables X,XI) with nearly two thousand withdrawals. This like the magnetic tape equipment is not an accurate usage count since usually two or three pupils may be watching the same film at one time. Most of these assignments incorporate the use of

TABLE VIII

MONTHLY WITHDRAWALS OF CASSETTE RECORDERS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974-1975			1975-1976		
	S	T	Total	S	T	Total
Aug.			0		3	3
Sep.	17	18	35	20	19	39
Oct.	41	15	56	76	9	85
Nov.	81	11	92	13	20	33
Dec.	46	13	59	15	19	34
Jan.	22	22	44	7	51	58
Feb.	75	6	81	77	87	164
Mar.	5	59	64	9	61	70
Apr.	32	20	52	36	85	121
May	56	14	70	25	18	43
June		8	8	3	9	12
Totals	375	186	561	281	381	662

TABLE IX

MONTHLY WITHDRALS OF CASSETTE PLAYERS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1075 - 1976		
	S	T	Total	S	T	Total
Aug.			0		13	13
Sep.	98	29	127	156	55	211
Oct.	72	27	99	102	31	133
Nov.	145	20	165	137	51	188
Dec.	183	5	188	177	94	271
Jan.	118	34	153	148	90	238
Feb.	163	31	194	145	93	238
Mar.	92	63	155	156	96	252
Apr.	152	59	211	144	147	291
May	73	69	142	61	61	122
June	3	40	43	9	31	40
Totals	1099	377	1476	1235	762	1997

TABLE X

MONTHLY WITHDRAWALS OF FILMSTRIP PROJECTORS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		7	7
Sep.		41	41	8	54	62
Oct.		13	13	3	47	50
Nov.	5	33	38	2	68	70
Dec.		37	37	4	47	51
Jan.	2	31	33	10	79	89
Feb.	2	54	56	3	74	77
Mar.	3	62	65	14	144	158
Apr.		56	56	2	121	123
May	6	51	57	7	76	83
June		27	27	5	19	24
Totals	18	405	423	58	736	794

TABLE XI

MONTHLY WITHDRAWALS OF FILMSTRIP VIEWERS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		5	5
Sep.	51	10	61	67	9	76
Oct.	53	33	86	66	11	77
Nov.	160	12	172	184	15	199
Dec.	155	7	162	146	12	158
Jan.	67	17	84	116	6	122
Feb.	116	27	143	122	32	154
Mar.	56	29	85	148	28	176
Apr.	76	23	99	128	31	159
May	86	39	125	38	5	44
June		4	4		2	2
Totals	820	201	1021	1016	155	1171

cassette tape either as descriptive film additives or as a tutorial device designed by the teacher. Again lessons utilizing projectors are usually teacher controlled and may include small and large group presentations.

Other media equipment have their own unique uses and provide specific learning situations or act as aides in developing particular concepts not easily taught in any other manner. As pointed out earlier the overhead projector (Table XII) is primarily used by students as a magnifying tool whereas teachers tend to use them in conjunction with transparencies or crayons. Opaque projectors (Table XIII) are often used by students to enlarge or trace printed material found in books. At Webster because of difficulty in darkening any particular area teachers seldom utilize the opaque projector.

The calculator (Table XIV) and the globe (Table XV) are two other instruments used normally by teachers in classrooms or small group instruction. Although students have access to calculators in the media centers permission is required from a teacher to prevent electronic drill work and ensure that the pupil has a need for the instrument. The count on globe withdrawal cannot be interpreted as times used since teachers may have globes in the classroom as a teaching tool for weeks at a time. Student withdrawal of globes can be interpreted as individual work in the media centers since

TABLE XII

MONTHLY WITHDRAWALS OF OVERHEAD PROJECTORS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		10	10
Sep.		6	6	12	28	40
Oct.		3	3	7	9	16
Nov.	3	5	8		13	13
Dec.	2	9	11	3	8	11
Jan.	6	8	14	1	16	17
Feb.	5	18	23	3	25	28
Mar.	10	13	23	1	28	19
Apr.		18	18	4	15	19
May	6	15	21	1	16	17
June		7	7		9	9
Totals	32	102	134	32	177	209

TABLE XIII

MONTHLY WITHDRAWALS OF OPAQUE PROJECTORS
BY STUDENENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0			0
Sep.	5	1	6	42	8	50
Oct.	3	1	4	20	11	31
Nov.	1	2	3	19	8	27
Dec.	6	7	13	27	6	33
Jan.	33	7	40	20	4	24
Feb.	37	12	49	21	10	31
Mar.	18	8	26	25	14	39
Apr.	3	29	32	14	12	26
May	8	11	19	7		7
June		2	2		1	1
Totals	114	80	194	195	74	269

TABLE XIV

MONTHLY WITHDRAWALS OF CALCULATORS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		2	2
Sep.	139	20	159	3	14	17
Oct.	43	14	57	7	49	56
Nov.	46	17	63	40	50	90
Dec.	63	5	68	11	44	55
Jan.	9	41	50	1	31	32
Feb.	7	14	21	36	75	113
Mar.	14	88	102	15	42	57
Apr.	15	51	66	10	51	61
May	22	25	47	23	22	45
June	4	5	9	2	14	16
Totals	362	280	642	148	394	542

TABLE XV

MONTHLY WITHDRAWALS OF GLOBES
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		4	4
Sep.	6	1	7	6	8	14
Oct.		1	1		3	3
Nov.	1	1	2		23	23
Dec.	1	2	3		1	1
Jan.		3	3		2	2
Feb.	12	8	20	2	10	12
Mar.		8	8	1	44	45
Apr.	1		1		18	18
May		3	3		9	9
June			0			0
Totals	21	27	48	9	122	131

teachers would provide globes within the classrooms as an aid to unit work.

Record players (Table XVI) prove to be more valuable in the minicourse program than in the academic area. Folk dancing, pantomime, music appreciation, cheerleading and pom-pon practice are some areas that still use records to a great extent. Most recorded material is now on cassette tape for phonographs.

The use of 16mm projectors (Table XVII) is by teachers or under teacher direction since film rental is too costly for student use in projects. Cameras capable of rendering 2 x 2 inch slide prints are more common and their use is becoming more popular. The demand for slide projectors doubled at Webster last year. If one were seeking the two pieces of equipment that best personifies the audio and visual in individualized programs they would be the cassette player and the slide viewer. Both allow the teacher to isolate concepts and present the material more directly to the learner. The work required in preparing and cataloging the slides may create some hesitancy on the part of media personel to become involved. Yet if one can envision the help that this media might provide to students having problems with particular concepts one can readily see that the extra work will be well rewarded. Viroqua Middle School has now converted much of their visual material into slides and

TABLE XVI

MONTHLY WITHDRAWALS OF RECORD PLAYERS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		2	2
Sep.	5	13	18	3	11	14
Oct.	5	12	17	10	15	25
Nov.		12	12	6	13	19
Dec.		17	17	15	19	34
Jan.	9	12	21	32	18	50
Feb.	12	5	17	33	14	47
Mar.	18	6	24	112	55	167
Apr.	4	8	12	13	34	47
May	22	16	38	23	19	42
June		12	12	21	11	32
	75	113	188	268	211	479

TABLE XVII

MONTHLY WITHDRAWALS OF 16mm FILM PROJECTORS
BY STUDENTS AND TEACHERS
FOR 1974-1975 AND 1975-1976 SCHOOL YEARS

	1974 - 1975			1975 - 1976		
	S	T	Total	S	T	Total
Aug.			0		12	12
Sep.		28	28		64	64
Oct.		62	62		59	59
Nov.		43	43		72	72
Dec.		27	27		37	37
Jan.		35	35		53	53
Feb.		43	43		46	46
Mar.		57	57		39	39
Apr.		31	31		54	54
May		33	33		28	28
June		7	7		8	8
	0	366	366	0	472	472

found them very helpful in teaching single concepts.

One piece of equipment that did not receive a high rating in the surveys but one that is recommended for any modern media program is the video tape recorder and camera (Table XVIII). The video recorder is relatively new to the Cedarburg schools and teacher dependence has not been established but it is growing especially in the field of English and to fit programs in preferred time slots.

There are some pieces of equipment that are seldom used and media directors may postpone purchasing these in favor of equipment that will be put to more advantageous use. Radios and reel-to-reel tape recorders have generally become obsolete. The music department may still record some things on the reel-to-reel recorder and radios may be used to establish musical atmosphere but neither warrant the inventory of thirteen reel-to-reel recorders and ten radios at Webster. Most of these were obtained before the adoption of the individualized curriculum and serve as a reminder to media purchasers that audiovisual equipment may become obsolete before it wears out.

The tabulation of audiovisual equipment withdrawals from the media center showed significant demands for cassette recorders and players and filmstrip viewers and projectors. Slides, film loops, video tape, and 16mm film are growing in popularity among the teachers. Some media such as models,

TABLE XIX

WITHDRAWAL OF MISCELLANEOUS AUDIOVISUAL EQUIPMENT
BY STUDENTS AND TEACHERS
DURING 1974-1975 AND 1975-1976 SCHOOL YEARS

Equipment	1974-1975	1975-1976
Camera, 126mm	23	26
Camera, 35mm	61	72
Ecktograph Visual Maker	27	23
Film Loop Projector	5	51
Radio, AM-FM	24	12
Reel-to-Reel Recorder	6	9
Roving Rostrum	5	53
Slide Print Projectors	41	91
Television	3	6
Video Tape Recorder with Camera	31	42
Video Tape Recorder with Monitor	78	83

microscope projectors, realia, maps, and charts is too specialized to be evaluated fairly. Use of film floop and slide projectors and photographic equipment will depend on their availability and the most determining factor of them all -- teacher preference.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

A curriculum emphasizing individualized learning requires that both teachers and students play new roles. In the traditional classroom, the teacher is the center of attention, as well as, the primary source of information. The teacher decides how much of the officially prescribed content is to be "covered" during each lesson, too often following faithfully the organization and content dictated by the textbook author, regardless of its appropriateness. For the traditional teacher media materials may be used occasionally as "aids" to illustrate or emphasize certain points during a lecture or demonstration, or to provide variety.

Individualizing infers self-directed study and requires much more effort and personal discipline on the part of the student. Instead of being a receiver of teacher tidbits of knowledge a student must search and evaluate, and work actively toward known goals. The program requires each student to accept more responsibility for his own intellectual and cultural growth. This means the teacher will select or suggest media materials available to the student

to meet specfic needs.

One might illustrate how magnetic tape would be used in an individualized program. On the tape, the teacher could direct the learner to various activities, questioned him, clarify important data gathered from various sources, direct him to reach conclusions from the data, and confirm or correct his responses. Each student, therefore, has the benefit of personal tutoring of the highest quality, identical in content to that received by every other student, but available to him when he needs it and self-paced at his own rate of progress.

That is individualization and the media director must provide the tools which will allow the teacher to prepare lessons that will permit the student to reach his maximum potential.

Conclusions

In determining which audiovisual tools will best serve in implementing an individualized program several questions must be answered.

1. Which audiovisual equipment will best serve the students?
2. Will the budget provide for a quanity that will make utilization feasible?
3. Are students and teachers capable of handling the equipment?
4. Are teachers adequately trained to incorporate these sensory materials into their lessons?
5. Will the equipment prove interesting to the students?
6. Does the equipment have long-term capabilities without becoming obsolete?

The research shows that cassette tape recorders and players are the most used pieces of equipment at Webster but the count does not begin to show the total number of students using them. Small group and headset facilities push the total number possibly three times the 2600 recorded. The uses as outlined in the summary and the recorded withdrawals demonstrate that if the tape player is not the most important tool its absence would certainly make individualizing a much more difficult task.

One might presume that by ranking the equipment according to total usage one would develop a rank-order of importance as well. This is not true. The second most often used equipment, the filmstrip projector and viewer, has reasons for its selection other than adaptability to individualizing education. Certainly it possesses properties that can apply but at Webster other influences play an equally important role in its selection. Availability of materials and equipment, convenience of shelving and handling, relatively low cost, simplified equipment operation, and teacher experience with the media all influence its selection as a teaching tool. Another reason and one that probably has the most over-riding effect is the media director's enthusiasm for filmstrips and seemingly lack of understanding of single-concept teaching.

Certainly the 35mm slide can do anything that the

filmstrip can do without the extraneous material so often prevalent in commercial materials that provide for the greatest numbers. An example of media director's influence is demonstrated by Webster's inventory of four pieces of equipment possessing slide-viewing capabilities as opposed to fifty-three instruments capable of viewing filmstrips. It must also be mentioned that even with additional slide equipment, storage facilities, and cataloguing, no guarantee of increased usage exists. Teacher-time to glean, choose, and write slide presentations into curriculum must also follow. However, many teachers concerned with their students would and all teachers should have the opportunity to use this valuable tool in any modern school.

At Webster video tape is an example of available material not being used. This is due primarily to lack of teacher training in ways of applying it to individualized learning. Too often video tape is looked upon as an alternate to 16mm film and is used accordingly. Since individualized learning requires media to be available at the students optimal time and not someone else's the using of video tape as an introductory or summarizing tool as one would 16mm film is most ineffective. Video tape quality does not compare with film nor are the title selections as numerous. One way to individualize video tape would be to place it in an IMC along with headsets so that a student

might select his tape as he would any other resource and be able to view and listen at a time of his own choosing.

"Students want various media available and used," according to Erickson, "not only because media is interesting and seems to make school time pass more quickly but because students are accustomed to the reality and immediacy of television and films in their everyday lives."[13]

Recommendations

This study began with an author's opinion that most schools beginning an individualized program would want to copy Webster. Since then it has become obvious that the same advantages that individualizing offers students applies to schools as well. Each school must adapt programs to meet its own particular needs, desires, and situation and existing plans can only offer suggestions that can be modified to aid the new schools in reaching their goals.

Some of Webster's short-comings lie in the area of insufficient audiovisual equipment. According to the 1970 Standards for School Media Programs,[14] established for

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[13]Carlton Erickson and David Carl, Fundamentals of Teaching with AV Technology, (New York: Macmillan, 1972)

[14]Standards for School Media Programs, American Library Association and National Education Association, (Chicago: American Library Association, 1970)

schools with individualized instruction and independent study, Webster only exceeds the minimum in AM-FM radios.

Purchasing a super 8mm camera and projector would provide for outdoor motion pictures not now possible and additional slide presentation equipment should be acquired. An additional video tape recorder or two are needed since the preparation of tapes for individualized study will require equipment to be available much like a carrel. General funding and a ten thousand dollar grant received last year has provided much softwear but film loop single-concept films are still lacking.

Teacher-time for the preparation of programmed learning materials is limited and a full-time media person with responsibility for aiding teachers in the selection and preparation of audiovisual materials is needed as is a district person to coordinate and centralize administration and provide innovative leadership.

Individualized instruction methods are here to stay. Reliance on media to provide a stimulus for students to teach themselves fundamental skills and concepts is justified. Perhaps students can teach themselves far more than anyone now realizes at the same time harvesting rich dividends of discovery and self confidence. Webster teachers feel the students should be given that chance.

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APPENDIX A

Rate the following equipment and materials as to their importance in terms of the IGE philosophy.

Ratings:

1 - Seldom useful, could probably get along without
2 - Fairly useful, just the thing needed several times a year
3 - Useful often, used often and would be missed if not available
4 - Very useful, would have to improvise if not available
5 - Needed, nearly impossible to conduct classes if not available

a. Opaque projector	1 2 3 4 5
b. Display equipment (Magnetic-felt display boards, easel, etc.)	1 2 3 4 5
c. Graphics (Lettering equipment, dry mounting, etc.)	1 2 3 4 5
d. Slide prints equipment (Projector, viewer, carousel, etc.)	1 2 3 4 5
e. Primary typewriter	1 2 3 4 5
f. Phonographs	1 2 3 4 5
g. Magnetic tape equipment (Recorder, player, duplicator, splicer)	1 2 3 4 5
h. Overhead projector	1 2 3 4 5
i. Reproduction equipment (Spirit duplicator, thermofax, mimeograph)	1 2 3 4 5

a. Audio Recordings (Records and tapes)	1 2 3 4 5
b. 16mm film (Rented and purchased)	1 2 3 4 5
c. Filmstrips (Purchased and prepared)	1 2 3 4 5
d. Transparencies (Purchased and prepared)	1 2 3 4 5
e. 2 x 2 inch Slide prints (Purchased and prepared)	1 2 3 4 5
f. Photographic prints (Photos, posters, etc.)	1 2 3 4 5
g. 8mm film (Purchased, prepared, film loop, etc.)	1 2 3 4 5
h. Video tape	1 2 3 4 5