

IDENTIFICATION OF TEACHER COMPETENCIES FOR USING EDUCATIONAL MEDIA
AND
SELECTED TECHNIQUES FOR THEIR DEVELOPMENT

by

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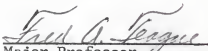
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INTRODUCTION

The use of educational media in classroom teaching is currently more prevalent than ever before. Educational media have continually met greater acceptance as important contributors to teaching and learning processes. The role of educational media has been continually expanding through greater knowledge of their contributions and the profusion of new technological developments.

Teacher education institutions have shown great interest for the recent educational media developments and the increased media usage. They have assumed more responsibility for preparing the prospective teacher to effectively communicate with educational media in learning situations.

Many teacher education institutions offer courses in educational media (commonly called audiovisual methods and materials). These courses have been designed as a basic survey encompassing media understandings and applications. Teacher education institutions have undertaken to provide such courses and programs which develop teacher competencies for using educational media in classroom teaching.

There is a need to identify teacher competencies necessary for using educational media and the learning experiences by which they may be attained so that this area of teacher education has purposeful direction. Individual educators and professional education groups have made attempts to identify the necessary competencies and learning experiences. There is a need to bring their ideas together so that this aspect of teacher education can be viewed

in its relationship to the total preparation of teachers.

Statement of the Problem

The purpose of the study was to identify teacher competencies necessary for using educational media in classroom teaching and to present selected techniques that have been used in teacher education institutions for developing such competencies.

Procedure of the Study

The study involved a description based on the findings of a review of literature in the Kansas State University library. Pertinent literature was identified and located with the use of such reference tools as Education Index and the selective, annotated bibliography Teacher Education and Media - 1964. Professional education journals, books on media and other reports and miscellaneous literature on media were reviewed. The findings from the literature reviewed were compiled and applied toward the solution of the problem of this study according to the following:

1. Sources describing necessary teacher competencies for using educational media were located.
2. The competencies and their descriptions were selected from the sources and listed.
3. The list of competencies and their descriptions were compared and major areas of agreement were found.
4. The competencies were grouped according to their major areas of agreement.
5. The grouped competencies were identified and were described according to their agreeing attributes.
6. Sources describing techniques followed to develop the competencies were located.

7. Descriptions of the techniques were selected from the sources and grouped into major categories of agreement.
8. The major categories of techniques followed to develop the competencies were generally described.
9. Specific examples of practices relating to each major category of techniques were presented.

Definition of Terms

Educational Media is used interchangeably with the term Audiovisual Methods and Materials to refer to the area of education in which all non-book materials and the equipment necessary for the use of the materials are used for teaching and learning purposes.

Teacher Competency refers to the knowledges and understandings and the skills and abilities needed by the teacher in the normal performance of his duties.

Teacher Competency in Educational Media refers to the knowledges and understandings and the skills and abilities needed by the teacher to use educational media in the teaching-learning processes.

Teacher Education Institutions are those institutions of higher education with a specific program of studies for preparing students for the teaching profession.

TEACHER COMPETENCIES FOR USING EDUCATIONAL MEDIA

The purpose of this section is to identify teacher competencies in educational media that were frequently reported in the literature reviewed. This section is based on the assumption that competencies frequently mentioned in the literature are competencies

which substantially contribute to the effective use of educational media in classroom teaching. The competencies have been grouped and listed in this section under the major competency headings of 'Background Competencies' and 'Implementation Competencies'.

Source of the Findings

The competencies identified were patterned after the briefly outlined competencies shown in the Summary Report of the 1958 Department of Audiovisual Instruction, Okoboji Report.¹ Participants of the Okoboji Conference who assisted in formulating a list of necessary teacher competencies for using educational media in classroom teaching included college and university teachers in teacher education and educational media, directors of public school media centers, state department of education personnel, and others involved in some way with education and educational media.

The results of a 1957 study by David Pascoe, an audiovisual consultant in the Bureau of Audiovisual Education of the California State Department of Education, were reflected in the summarized 1958 Okoboji Report.² Pascoe's study involved using the 1947 California State Department of Education Standards of Teacher Competency in Educational Media as basic criteria for constructing a questionnaire for audiovisual personnel to rank the teacher competencies.

¹"The Okoboji Report," Audiovisual Instruction, Volume 4, January, 1959, pp. 4-6.

²"The Pascoe Report," Audiovisual Instruction, Volume 4, January, 1959, pp. 6-7.

Other literature reviewed which reported teacher competencies in educational media included studies by William R. Fulton, Frederick A. White, and Walter J. Mars, all educators involved in educational media at universities. A conference on the 'Development of Cooperative State Leadership in Educational Media' held by the Association of Chief State School Audio-Visual Officers also outlined the teacher competencies necessary for using educational media.¹

Selected educational media textbooks and other studies in educational media were reviewed for further information on competencies. The media textbooks were written by James W. Brown and Kenneth D. Norberg²; A. J. Foy Cross and Irene Cypher³; Edgar Dale⁴; and James W. Brown, Richard B. Lewis, and Fred F. Harcleroad⁵, all professional educators in media education.

The literature reviewed set forth necessary teacher competencies either by listing competencies without description or by

¹Leonard J. Olsen, and John W. Burke, Fourth National Conference on Development of Cooperative State Leadership in Educational Media. Report on Association of Chief State School Audio-Visual Officers, (New Orleans: State Department of Public Instruction, 1966).

²James W. Brown and Kenneth D. Norberg, Administering Educational Media (New York: McGraw-Hill Book Company, 1965), 357 pp.

³A. J. Foy Cross and Irene F. Cypher, Audio-Visual Education (New York: Thomas Y. Crowell, 1961), 415 pp.

⁴Edgar Dale, Audio-Visual Methods in Teaching (Henry Holt and Company, Inc., 1959), 534 pp.

⁵James W. Brown, Richard B. Lewis, and Fred F. Harcleroad, AV Instruction (New York: McGraw-Hill Book Company, 1964), 592 pp.

listing competencies with a limited description. The competencies most frequently reported in the literature reviewed, and further augmentation of the identified competencies with information from significant studies in the field, are presented in this section.

Background Competencies

The background competencies set forth in the literature were those relating to knowledges and understandings necessary for the teacher to use educational media in classroom teaching.

The literature reviewed brought out the major teacher background competency necessary for using educational media in classroom teaching--knowing and understanding the place of media in education. The understanding of the process of integrating media into the educational background was pointed out in some of the literature.

The literature emphasized that the teacher should have knowledge and understanding of the nature, value and limitations of using educational media for classroom teaching. The teacher should be aware of how and why learning can be enhanced through the use of educational media. Further, a more thorough knowledge and understanding of the variety of media was pointed out.

The major background competency was divided into more basic competencies in the literature. These were: learning theory and communication theory underlying educational media communication; growth and development of educational media; and research in the area of educational media.

Learning theory and communication theory underlying media utilization. Knowing and understanding the basic psychology and philosophy underlying the successful use of educational media were most frequently set forth in the literature as a necessary teacher competency. The basic psychology and philosophy were reported as learning theory and communication theory underlying the use of educational media.

Knowledge and understanding of learning theory was emphasized in the literature. The teacher should understand that learning is the heart of the educational process and that the major teaching task is the management and direction of learning in a way that brings about certain desired results or outcomes. The teacher should understand basically how and why changes in behavior occur to determine what can be done to bring about desired changes.

Carpenter emphasized the necessity of an understanding of the basically minimum elements which constitute learning theory--the stimulus, the organism, and the response and their ascribed functions.¹ That each element (stimulus, organism, response) has variables which act as determinants either resulting in learning, no learning, or in changes of the organism which inhibit or prevent learning, should be an understanding. The teacher should know and understand the many variables of learning that can be arranged,

¹C. R. Carpenter, "Boundaries of Learning Theory and Mediators of Learning," AV Communication Review, Volume 10, November-December, 1962, p. 299.

regulated, controlled, and manipulated. Mars brought out that teacher knowledges and understandings in learning theory should include that of the potential of such concepts as motivation, creativity, reinforcement, information giving, repetition, attitudes, dependence, independence, and psychomotor skills.¹

Carpenter said that there should be knowledge and understanding of the techniques of offering learning opportunities in sequences which correspond to schedules of the individual's maturation.² Knowledge and understanding that social patterns and cultural climates which provide patterns for learning and set limits on learning possibilities was reported by Carpenter as part of the teacher's necessary background competency.³

Carpenter emphasized that there should be knowledge and understanding that learned communicative behavior is basic to the functioning of the total communication system of society and that learning itself is a consequence of the operation of the system.⁴ The teacher should know and understand that students are exposed to stimulation by the mass media and by informal communication systems and that this exposure may extend, reinforce, or may restrict, reshape, or even extinguish formal learning.

¹Walter J. Mars, "Developing Appropriate Media Competencies," Journal of Teacher Education, Volume 17, Winter, p. 5.

²C. R. Carpenter, op. cit., p. 302.

³ibid., p. 296.

⁴ibid., p. 296.

A knowledge and understanding, according to Fearing, should be that of the following general characteristics and principles of communication situations which are significant to learning:¹

1. They are situations in which human beings enter into certain strategic relationships with each other or with their environment.
2. They are situations the central characteristics of which is the production and utilization of signs, symbols, and symbolic acts.
3. They are situations which provide a maximal opportunity through the use of signs and symbols for the sharing of experience, achievement of goals, gaining of insight and in general, mastering one's environment.
4. The sign or symbol material used in these situations is subject to the perceptual processes of the individual involved.

The literature reviewed generally emphasized that the teacher should know and understand that learning theory and communication theory offer the basic concepts for further understanding of communication by educational media. The limitations and strengths of the present knowledge and theory in the fields of learning and communication, especially that knowledge or theory which is applicable to communication by educational media, should constitute a teacher background competency.

Communication by educational media should be understood by the teacher to be concerned primarily with designing and using educational content and meaning to control the learning process,

¹Franklin Fearing, "Human Communication", AV Communication Review, Volume 10, September-October, 1962, p. 82.

according to Ely and others.¹ The teacher should understand the major elements in educational media communication which are: structured and systemized content and meaning, materials and devices, personnel controlling or assisting the presentation, methods and techniques required for effective presentations, and the environment controls or requirements of the given conditions within the instructional situation.

Ely brought out that there should be knowledge and understanding of the unique and relative strengths and weaknesses of both pictorial and nonrepresentational information to be transmitted which may be employed in the learning process for any purpose.² The teacher should understand that media functions most directly and predominantly in the stimulus component of the stimulus-organism-response pattern of learning. Also, that media devices are basically the means or mechanisms for recording, storing, distributing, and presenting stimulus materials to those who would learn, should be understood by the teacher.

Growth and development of educational media. A background competency reported in the literature as necessary for the teacher was the knowledge and understanding of the historical growth and development of media and its impact upon education currently. The teacher should understand that the past has some relation to

¹Donald P. Ely, "The Changing Role of the Audiovisual Process in Education: Definition and a Glossary of Related Terms," AV Communication Review. Volume 11, January-February, 1963, p. 23.

²ibid., p. 19.

the present and future of educational media growth and development. The teacher should know that communication with media in education is part of a natural and logical development the consequence of a long and continuing search into the field.

A basic understanding of the early use of communication media up to and including the modern development of mass communication media is necessary according to the literature. Early types and uses of visual materials, the growth and development of projected pictures, photography, audio recording devices, and more recent technological innovation should be understood in respect to educational applications.

The teacher should have knowledges and understandings of the recent acceleration in technological developments and changing financial patterns in education. According to the literature the teacher should have knowledge of the growth and development since the end of World War II of the use of such devices and systems as television, programed learning, and multimedia approaches. Also the teacher should understand how the growth of financial assistance from local, state, and federal government, and private foundations has caused further growth and development in educational media.

Research in educational media. A teacher background competency less frequently reported in the literature was knowing and understanding the results of educational media and learning research studies. This knowledge and understanding pertains to the research in the teaching field of the teacher and its implication for instruction.

This competency was pointed out as necessary because of the immense and diverse quantity of knowledge in education. It was also implied in the literature that the teacher should understand that the implications of existing research were not yet highly developed or widely disseminated.

The teacher should understand the methodology of research and the techniques of evaluating research findings. Further, the literature indicated that the teacher should know and understand the techniques of adapting pertinent research findings concerning the use of educational media in his own field of teaching.

This background competency implies that an implementation competency (although not reported in the literature) be identified in research techniques in media and learning studies. The teacher should have the skill and ability to locate, collect, evaluate and put into action pertinent research findings concerning media in his own teaching field.

Implementation Competencies

The literature emphasized that the ultimate competency was the effective utilization of every method and medium of communication by the teacher which contributed to the development of the learner's full potential. The teacher should be able to put into practice the knowledges and understandings of media in education.

The literature generally agreed that the teacher should have the skill and ability to: select, locate, and evaluate educational materials, operate media instructional devices, produce materials,

appropriately use educational media in the existing or new physical facilities of the school, and finally to evaluate the results following the use of media in the learning process and modify and improve future use of media.

Selecting, locating and evaluating educational materials. The literature reviewed was in agreement that a necessary teacher competency was the skill and ability to select, locate and evaluate educational materials. The teacher should know what materials are available in his own subject area and grade level of teaching, how to determine their usefulness in the teaching and learning processes, and where they may be found.

Competency in selecting materials was further described in the literature. The teacher should have the ability to choose appropriate materials to meet the students' needs and the purposes of instruction. At the implementation stage the teacher relies on background competencies and knows how media relates to teaching and learning processes. From the background knowledges and understandings the teacher is able to establish criteria for selecting educational materials and likely make a more appropriate choice.

The teacher should be able to use the school library, media center, and other resource centers as a source of materials. The literature emphasized that the teacher should be able to locate and use other local sources as well as district, state, national and international sources of materials. The teacher should be able to locate and use media catalogs, professional education journals and

other printed sources of information about materials. Also, the teacher should be skillful in selecting and using both commercial and free materials in education.

The teacher should be skillful in evaluating materials according to the literature reviewed. Dale reported that the teacher should be able to follow such evaluation procedures as:¹

1. Preliminary information searching
2. Previewing, auditioning, or reviewing
3. Testing through actual classroom tryouts
4. Recording appraisals or evaluating for later and more general use

The teacher should be able to critically appraise characteristics and qualities of materials. Ability to determine the educational soundness, technical satisfaction, suitability for age, intelligence and experience of learners, and commercial aspects of materials should be a teacher competency.

Fulton and White specified materials which the teacher should be able to select, locate, and evaluate.² These materials included slides, pictures, recordings, films, filmstrips, posters, charts, maps, globes, television, radio, and community resources.

¹Edgar Dale, Audio-Visual Methods in Teaching (New York: Henry Holt and Company, Inc., 1959), p. 75.

²William R. Fulton and Frederick A. White, "What Constitutes Teacher Competence in Audio-Visual Communication?," Phi Delta Kappan, Volume 40, January, 1959, p. 159.

Operating media instructional devices. The literature reviewed was in agreement that a competency needed by a teacher was skill and ability to operate media instructional devices. The general statement made in the literature was that the teacher should be able to operate such devices with efficiency and confidence.

The teacher should be confident that he can operate the media devices without mechanical failure leading to disruption of the learning experience and a loss of the students' respect and confidence of the teacher. The teacher should also become skilled in implementing proper sound equipment and projection equipment principles in media instructional device operations.

The report of the Association of Chief State School Audio-Visual Officers National Conference specified the following types of instructional devices as those which a teacher should be competent in operating:¹

16mm sound film projectors	opaque projectors
filmstrip projectors	educational television
2 x 2" slide projectors	receivers
record players	projection screens
tape recorders	individual viewers
overhead projectors	headphones

Producing materials. Frequently reported in the literature was the teacher competency of skill and ability to produce simple materials. The teacher should be able to design and produce some of the simpler types of materials appropriate to the age level and

¹Olsen and Burke, op. cit., p. 19.

subject field with which the teacher works. There should be skill and ability to produce materials that meet specific needs and that are not available commercially. There should be skill in producing materials that have inherent educational value.

The teacher should be skillful in combining production activities for producing a great variety of materials. Basic activities in which the teacher should be skilled were reported by Faris and Moldstad as illustration, mounting, lettering, coloring, photography and duplicating.¹ The literature specified materials which the teacher should be skillful in producing. Most frequently reported were charts, posters, graphs, bulletin boards, and other displays and exhibits, mounted study prints, and overhead transparencies. Other teacher-produced materials less frequently reported were photographic slides and pictures, and collections of relia.

Using the physical facilities. A teacher competency in media less frequently brought out in the literature was the skill and ability to appropriately use the existing or new physical facilities of the school. The background competency of knowledge and understanding of the environment factors in communication with educational media provides a basis for this implementation competency.

The teacher should know what physical conditions are essential to good classroom use of media. He should be able to provide and

¹K. Gene Faris and John A. Moldstad, "Organizing a Program For Creating Instructional Materials," Bulletin of the School of Education, Indiana University, Volume 42, May, 1966, p. 35.

arrange the best physical conditions possible for using media in the learning processes. Some of the tasks the teacher should be competent to carry out were reported by Brown and Norberg as:¹

- controlling and varying light
- controlling sound
- controlling projection situations
- controlling ventilation and heating
- controlling seating and activity spaces
- displaying instructional materials
- storing media

Evaluating results of using educational media. The last teacher competency set forth in the literature as necessary for using media in classroom instruction was the skill and ability in evaluating results following the use of educational media in the teaching and learning processes. The teacher should be able to evaluate the effectiveness of both himself as a teacher using media and the media as a means of communication. The teacher should have the skill and ability to determine his strengths and weaknesses in using educational media in the teaching and learning processes and in improving its future use.

It appears important that such evaluations be made in terms of observable student learning behaviors resulting from or associated with the use of educational media. As such, the teacher evaluates both the media and his use of the media in relation to the extent to which students learned in instructional activities where media were used.

¹James W. Brown and Kenneth D. Norberg, Administering Educational Media (New York: McGraw-Hill Book Company, 1965) p. 58.

TECHNIQUES FOR DEVELOPING TEACHER COMPETENCIES

The purpose of this section is to present selected techniques used by teacher education institutions to develop the media understandings and utilization competencies identified in the preceding section. Such techniques include the use of traditional educational media courses, multimedia approaches, self-learning laboratory approaches, self-study and televised courses, packaged media programs, and completely integrated approaches.

Upon entering teacher education programs prospective teachers have already had a wide variety of experiences with communication media in both their school and home life. They, therefore, enter the teacher education program with some communication media understandings but are limited in their ability to apply them to classroom teaching and learning processes. They need to greatly expand their understandings in educational media and to further develop skills for media utilization in classroom teaching.

Traditional Educational Media Course

Most teacher education institutions have approached the problem of developing pre-service teacher competence in utilization of educational media by establishing formal educational media (audiovisual methods and materials) courses. Formal educational media courses generally consist of a basic survey encompassing many aspects of media instruction.

The content of the courses generally includes instruction in communication and learning theory, characteristics of audiovisual

materials, the role of and methods of utilizing different types of audiovisual materials in teaching, and an introduction to the characteristics and use of newer media such as television and programmed learning.

Laboratory experiences, which are generally a part of educational media courses, include the development of equipment operation skills and limited experience in the development and production of audiovisual materials. Besides laboratory experiences, lectures and demonstrations by the teacher using different kinds of media are the common means of presenting the course content.

Teacher education institutions have achieved varying degrees of success in using formal educational media courses to develop competencies in the utilization of educational media. The presentation of educational media content and experiences has often been well organized with reasonably sufficient time to achieve course objectives. There have, however, been difficulties in adapting the course to the wide range of students' interests and needs. Often institutions have not had the wide range of materials needed in providing professional audiovisual courses. Likewise, equipment operation and materials production skills have been difficult to develop because of limited equipment, student time and laboratory instructors.

Teacher education institutions have sought other means of providing for the development of teacher competencies in the utilization of educational media. This has been due largely to

the fact that in many institutions the formal educational media course has not adequately provided for the development of these competencies. As a result many experiments dealing with different ways of providing for the development of educational media utilization competencies have been conducted.

The selected newer techniques brought out in the literature reviewed are presented in this section. There is no doubt that many of the newer techniques are not now included in the literature. The accelerated rate by which such newer techniques have developed has made it impossible for all of them to be included in the literature. The literature does, however, contain descriptions of several types of newer techniques, and these have been selected for review in this section.

Multimedia Techniques

According to the literature reviewed one newer technique used in presenting educational media courses at some institutions was the multimedia approach. This approach required special arrangements of materials for presentation with special adaptations in the physical aspects of the audiovisual facility.

The multimedia technique employed a wide range of interrelated materials to present the audiovisual course content. Carefully planned and prepared audiovisual materials were used in combinations. The audiovisual facility commonly had one or more projectors that were operated one at a time or simultaneously. There were varied types of sound equipment, closed circuit television, and centralized

teacher controls of the media and room lighting.

The teacher would supplement lectures with multimedia presentations. Live televised demonstrations were frequently used. The students in the educational media courses presented with multimedia techniques were provided the opportunity to acquire understandings of media as well as to acquire first-hand understandings of the technological and communication potential in the multimedia approaches to learning.

One of the institutions involved in teacher education that used multimedia techniques in the presentation of educational media course content was the University of Southern California.¹ The University experimented with integrating the potentialities of multimedia learning into the existing course.

The educational media lesson were presented with a variety of media and media applications including television, large group graphics and simultaneous projection of materials. Students in the course were given the opportunity to acquaint themselves with educational television and to operate television equipment. They also were required to give a five-minute teaching demonstration over a closed-circuit television system using the audiovisual materials which they made in the course.

¹Paul V. Robinson, "Two Rooms With a View," Audiovisual Instruction, Volume 6, February, 1961, p. 46.

Self-Learning Laboratories

One of the more common newer techniques reported was the self-learning or programmed equipment operation laboratory. Many teacher education institutions have devised such laboratories for developing audiovisual equipment operation skills within the educational media course.

These self-learning laboratories were generally established with the rationale that given specially prepared materials, equipment, and proper facilities, pre-service teachers could develop the competency in audiovisual equipment operation without benefit of an instructor. This self-learning occurred in a laboratory which was commonly described as a facility where the students could acquire, in their own time, and at their own speed, competency in the operation of the most common audiovisual devices.

The self-learning laboratory was most often described in the literature reviewed as having individual student stations equipped with audiovisual devices and programs or instructions for each device. The student followed step-by-step instructions which were stated in clear and non-technical terms. The student's action of following instructions built up to and culminated in the operation of the device. In most cases the student had almost immediate knowledge of whether he was correct or incorrect depending on whether or not the device functioned properly. Usually the student began with the simplest devices and proceeded to the most difficult.

The self-learning laboratories reported in the literature

generally used printed materials, flip charts, charts, posters, filmstrips, 2 x 2" slides, 16mm films, 8mm film cartridge loops, and sound recordings as the medium of providing instructions to the student. In some cases programed textbooks were used to carry the total laboratory instruction. The most common types of equipment or devices with which the pre-service teacher was expected to become competent in operating were 16mm projectors, combination slide-filmstrip projectors, tape recorders, record players, opaque projectors, and overhead projectors. Other devices less frequently reported were cameras and splicing equipment.

Hunter College in New York City was one of the teacher education institutions reported as having developed a self-learning audiovisual equipment operation laboratory to augment their educational media course instruction.¹ This laboratory was somewhat typical of the other self-learning laboratories reported in the literature reviewed.

The Hunter College laboratory procedure consisted of a six week series of one-hour classes with approximately eight students per class learning at four operation stations. The laboratory procedure began with the simplest devices and proceeded to the more difficult with the reasoning that operating techniques used for one machine carried over to the next one.

¹Maxine Haleff, "Learning in an AV Equipment Laboratory," Educational Screen and Audiovisual Guide, Volume 42, October, 1963, p. 564.

Large labeled pictures of each device covered in the laboratory aided in identifying parts. A slide and synchronized tape sequence was used to explain the operation of the slide and filmstrip projector. The laboratory used a special 16mm film on timing and motion with sections of blank film projected long enough to give the student sufficient time to complete the same action. Also, a problem 16mm film introduced the student to such common problems as loss of loop, broken film, scratches, and silent film running at sound speed.

Although many of the reported self-learning laboratories were similar in nature to the Hunter College example, some variations existed. Wayne State University used a series of programs produced in a slide-tape format.¹ The 2 x 2" slides showed the various steps of operation of audiovisual devices and an audio tape narration explained each illustrated operation. Wayne State University also had a newly developed program in the educational media course. It was produced in programed text form and dealt with descriptions and uses of media and the sources of materials for these media.²

The University of Connecticut School of Education was one of the institutions reported using the self-learning laboratory for developing skill in equipment operation.³ Besides using 2 x 2"

¹Frederick G. Knirk and Gary L. McConeghy, "Education in Media," Audiovisual Instruction, Volume 9, October, 1964, p. 527.

²ibid., p. 542

³David H. Curl, "Automated Equipment Operation Training," Audiovisual Instruction, Volume 10, September, 1965, p. 564.

slides, their laboratory employed 8mm films to demonstrate the process to be performed.

The opportunity to achieve skill in audiovisual materials production was also provided in the self-learning laboratory at the University of Connecticut. Picture mounting, stencil and scribe lettering, and production of overhead transparencies were programed into self-learning units.

Arizona State University was another institution reported in the literature which provided a self-learning laboratory for developing teacher competencies within the basic educational media course.¹ Both audiovisual equipment operation skills and materials production skills were taught by the self-instructional system.

The heart of the Arizona self-learning laboratory was the 8mm film cartridge projector with a rear-projection screen. Projected moving pictures of the 8mm cartridge films supplemented with printed instruction manuals provided the directions for the student to operate devices and produce materials.

Many other institutions educating teachers including the University of Oklahoma, Pennsylvania State University, Arkansas State Teachers College, and Syracuse University were reported using the self-learning laboratories. Most of the institutions used combinations of audiovisual devices and materials, programed or

¹Vernon S. Gerlach, "Self-Instruction in the AV Laboratory," Audiovisual Instruction, Volume 11, February, 1966, p. 96.

otherwise arranged in step-by-step learning increments, to give the opportunity to the prospective teacher for achieving skill and ability in equipment operation and materials production.

Self-Study and Televised Educational Media Courses

Other techniques which have undergone experimentation include the self-study and the televised approach to teaching audiovisual courses. These approaches involved the presentation of course content to individuals by placing the responsibility almost solely on the student for viewing and following the lessons.

The two techniques as reported by the literature were characterized by lessons presented solely by a mass media communication tool (television) or by other specially prepared materials. After each lesson the student was responsible for completing a correspondence or program-type follow-up exercise and returning it to an evaluation center. The student also completed self-learning equipment operation lessons similar to those previously described in the preceding section.

The Pennsylvania State University experimented with a self-study audiovisual course.¹ The course was presented to students in an entirely self-instruction fashion. The students were led step-by-step through the course content and the operation of equipment.

¹G. M. Torkelson, "An Experimental Study of Patterns For Improving the Preparation of Pre-Service Teachers in the Use of Audiovisual Materials and of Effects on Pupils," Title VII, Project Number 079, N.D.E.A. 1958, (University Park, Pennsylvania: Pennsylvania State University, 1965), p. 22.

Specially prepared materials including the traditional media plus kinescopes were used.

The kinescopes produced for use in the self-study course dealt with the subjects of communication theory, classification of media, role-playing, still pictures, and demonstration techniques. Other media presented course content which led to the development of media competencies in understanding and utilization.

The University of Wisconsin experimented with a televised audiovisual course.¹ The television was used to widely distribute the educational media course lessons to both pre-service and in-service teachers at various geographical locations. The course content was similar to the traditional educational media course. The televised course was presented by a team of teachers.

The students viewed the lessons on television receivers. Student feedback was provided by completed correspondence-type follow-up exercises after the telecast. These were returned to an evaluation center. The development of competence in audiovisual equipment operations was accomplished by self-study methods either at a university audiovisual laboratory or in a public school where equipment was available.

Packaged Media Education Programs

One of the techniques reported as being largely experimental

¹Walter A. Wittich, "The AV/TV Course," Audiovisual Instruction, Volume 6, February, 1961, p. 54.

in nature was the packaged media education program. The media education package or kit consisted of a variety of printed instructional guides and audiovisual materials for use in pre-service and in-service media education.

The purpose of the package or kit approach to media education was to acquaint prospective and in-service teachers with the instructional potentials of various media available to them. The package purposely contained a variety of media so that examples of uses would incorporate applications representative of a range of media. The packages or kits were generally divided into sections or areas that could be presented in a sequential order or as individual sections in any order. The presentation time for the sections was kept at a minimum. The materials were generalized and did not cover educational media in great depth.

An example of a packaged media education program was the media presentation kit developed by two educators involved in media education, Jerrold E. Kemp and Richard B. Lewis.¹ Their kit consisted of three sections. The first section was centered around an overview film which provided an introduction or orientation to the range and roles of a variety of media applicable to the teaching-learning processes. The next section consisted of materials illustrating characteristics of individual media and utilization practices

¹Jerrold E. Kemp and Richard B. Lewis, Kit For Presentations On Educational Media, U. S. Office of Education, Title VII-B Contract No. OE-5-16-013, (San Jose, California: San Jose State College, 1967), p. 1.

and were specifically prepared for depth study of specific types of educational media demonstrated. The final section of the kit consisted of materials which brought out the use of instructional materials in actual teaching situations and consisted of materials relating to several specific subject areas and grade levels.

Completely Integrated Approach

The completely integrated approach involves presenting media understandings and utilization practices within more general areas of the teacher education program. Learning theory might be presented in the educational psychology courses, selection and evaluation of audiovisual materials in the curriculum development courses, use of educational media in teaching methods courses and other competencies would be similarly developed in other professional education courses.

Fulton and White state that 'theoretically, the integrated approach is most desirable, but is also the most difficult to perfect'.¹ Ideally all the prospective teachers would be reached by this approach and it would be closely related to their interests and needs. The requirement of a high degree of teamwork among the professional education instructors and the high level of media competency required of the instructors would likely be difficult to achieve. A demanding requirement of the integrated approach would be in providing sufficient class time to cover all aspects

¹W. R. Fulton and Frederick A. White, "What Constitutes Teacher Competence in Audio-Visual Communication?" Phi Delta Kappan, Volume 39, January, 1959, p. 158.

of educational media utilization and laboratory practices to develop operational skills and application competencies.

SUMMARY AND CONCLUSIONS

The purpose of the study was to identify teacher competencies necessary for using educational media in classroom teaching and to present selected techniques used by teacher education institutions to develop such competencies. The study involved a description based on the findings of a review of literature in the Kansas State University library. The literature reviewed consisted of professional education journals, books on educational media, and reports and other miscellaneous studies written or edited by college and university educators involved in the media education of prospective teachers.

The necessary teacher competencies for using educational media in classroom teaching were identified under the headings of 'Background Competencies' and 'Implementation Competencies'. Background competencies are those general knowledges and understandings the teacher should have of the nature, value, and limitations of using educational media. Most frequently identified as the major background competencies were knowledges and understandings of learning theory and communication theory underlying educational communication media, growth and development of educational media and research in the area of educational media.

Implementation competencies are the skills and abilities to put the knowledges and understandings of using media into practice.

The implementation competencies most frequently brought out were the skills and abilities to select, locate and evaluate materials, operate media instructional devices, produce materials, appropriately use educational media in the existing or new physical facilities of the school, evaluate the results following the use of media in learning processes and modify and improve the future use of media.

Teacher education institutions commonly provided opportunities for developing teacher competencies for using educational media through a formal educational media course. The content of the course generally included communication and learning theory, characteristics of audiovisual materials, the role of and methods of utilizing different types of audiovisual materials in teaching and an introduction to the characteristics and use of newer media.

The course generally had provisions for some limited laboratory experience with audiovisual equipment operations and materials production. The course content was usually presented through laboratory experiences, lectures and demonstrations.

The formal educational media course approach usually had the advantages of a well-organized content and sufficient time to achieve the course objectives. Difficulties in adapting the course to the wide range of students interests and needs and providing an adequate range of materials were often the cause of teacher education institutions trying newer techniques for more effective teaching and learning.

Some of the techniques presented were multimedia approaches, self-learning laboratories, self-study and televised courses, packaged media programs and integrated approaches. The multimedia approach required some special arrangement of materials for presentations with special adaptations in the physical facilities. This technique was used to provide a stimulating learning experience through media combinations and was used to supplement traditional lecture-demonstration techniques.

The self-learning laboratory involved developing audiovisual equipment operation and materials production skills. The student was given specially prepared materials, audiovisual equipment and specifically designed facilities. The student followed step-by-step instructions at his own learning rate without the benefit of an instructor. He ultimately reached the point where he learned to operate the equipment or produced materials.

The self-study and televised courses involved presenting the audiovisual course content through media which the student was solely responsible for viewing or controlling in some manner. After a lesson the student was responsible for completing a correspondence or program-type follow-up exercise which was then returned to an evaluation center.

The packaged media education program was designed to present examples of media applications along with information pertaining to the characteristics of media. The package commonly consisted of a variety of printed instructional guides and audiovisual

materials which were to be presented to the pre-service or in-service teacher. The materials in the package were very general in nature and needed supplementing for a more thorough understanding of media.

Briefly mentioned were integrated approaches to the development of competencies in the use of educational media. The integrated educational media approach generally involved the inclusion of educational media understandings and applications within the total teacher education program.

It is concluded that there is further need to identify and more specifically state teacher competencies necessary for using educational media and the learning experiences designed to attain them. Knowledgeable educators have reached agreement on many competencies that a teacher should possess for using educational media in classroom teaching. They stressed knowledge and understanding of the relationship of communication and learning theory to classroom teaching and educational media as well as the mechanical and technical aspects of using educational media.

It appears that teacher education institutions have not been satisfied with the traditional educational media course in developing teacher competencies. Experimentation and research have been conducted in an effort to determine how to gain more efficiency in the development of the media competencies.

Based on the findings from the literature it appears that the audiovisual equipment operation skills may be achieved with

self-instructional programmed materials in a laboratory-type situation. It is likely that audiovisual materials production skills can also be achieved by the same technique.

Further, it appears that teacher education institutions should provide courses that not only describe the role of media but use the media to provide more meaningful experiences. There is a need for real and simulated experiences that will provide an opportunity for the prospective teacher to analyze the reasons for the utilization of media and to demonstrate their own competencies in using media. Simulation techniques and video tape recorders offer many possibilities in these areas. The practical use of educational media in elementary and secondary classrooms would be ideal but difficult to accomplish. It appears, therefore, that specific devices and techniques could effectively be used to represent classroom situations.

There were insufficient findings on the other techniques of developing teacher competencies to arrive at any generalization or conclusion. Attempts to program the whole educational media course could possibly produce significant new techniques for developing competencies. There is great need for further experimentation and innovation in the media education program for prospective teachers. The challenges of wider educational media usage and newer developments in educational media remain as strong stimuli in this area.

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IDENTIFICATION OF TEACHER COMPETENCIES FOR USING EDUCATIONAL MEDIA
AND
SELECTED TECHNIQUES FOR THEIR DEVELOPMENT

by

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AN ABSTRACT OF A MASTER'S REPORT

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The purpose of the study was to identify teacher competencies necessary for using educational media in classroom teaching and to present selected techniques that have been used in teacher education institutions for developing such competencies. The study involved a description based on the findings of a review of professional education journals, books, reports and miscellaneous literature on educational media in the Kansas State University library.

The findings culminated in a descriptive list of teacher competencies in educational media taken from the literature. The competencies were compared and grouped according to their major areas of agreement. The grouped competencies were identified in the study and described according to their agreeing characteristics. Selected techniques followed to develop the competencies were located and taken from the literature, grouped into major categories of agreement, described in general terms, and illustrated with specific examples.

The necessary teacher competencies for using educational media in classroom teaching were identified under the headings of 'Background Competencies' and 'Implementation Competencies'. Background competencies are those general knowledges and understandings the teacher should have of the nature, value, and limitations of using educational media. Most frequently identified as the major background competencies were knowledges and understandings of learning theory and communication theory underlying utilization of educational communication media, the growth and development of educational media and research in the area of

educational media.

Implementation competencies are the skills and abilities to put the knowledges and understandings of using media into practice. The implementation competencies most frequently mentioned in the literature were the skills and abilities to select, locate and evaluate educational materials, operate media instructional devices, produce materials, appropriately use educational media in the existing or new physical facilities of the school, evaluate the results following the use of media in learning processes, and modify and improve the future use of media.

Teacher education institutions commonly provided opportunities for developing teacher competencies for using educational media through a formal educational media (audiovisual instruction) course. The formal course usually had the advantages of a well-organized content and sufficient time to achieve the course objectives, but there were generally difficulties in adapting the course to the wide range of students' interests and needs and providing an adequate range of materials, equipment and laboratory instructors.

The inadequacy of the more traditional techniques for developing teacher competencies in educational media understandings and applications has spurred many teacher education institutions to experiment with different techniques of instruction. The selected techniques included multimedia approaches, self-learning laboratories, self-study and televised courses, packaged media

programs and integrated approaches.

It was concluded that knowledgeable educators had reached agreement on many of the competencies that a teacher should possess for using educational media in classroom teaching and that many different learning experiences designed to attain such competencies had been used by teacher education institutions. Knowledges and understandings of the relationship of communication and learning theory to classroom teaching and educational media as well as the mechanical and technical aspects of using educational media were frequently agreed upon as the major teacher competencies. The findings indicated that the technique involving self-instructional laboratories was frequently used to achieve audiovisual equipment operation skills and materials production skills. Many of the other techniques were less frequently mentioned in the literature although there was little doubt that they were widely used on experimental bases by teacher education institutions.

It was concluded that there is further need to identify and more specifically state teacher competencies necessary for using educational media and the learning experiences designed to attain them. There is a need for real and simulated experiences that will provide an opportunity for the prospective teacher to analyze the reasons for the utilization of media and to demonstrate their own competencies in using media. Simulation techniques and video tape recorders were briefly mentioned as offering possibilities in these areas. It was finally concluded that there is a great need for further experimentation and innovation in the media education program for prospective teachers.