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SMITH, LOTSEE PATTERSON
A STUDY OF PERCEIVED MEDIA COMPETENCIES OF SCHOOL LIBRARIANS IN THE STATE OF NEW MEXICO.

THE UNIVERSITY OF OKLAHOMA, PH.D., 1979

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A STUDY OF PERCEIVED MEDIA COMPETENCIES OF SCHOOL LIBRARIANS IN THE STATE OF NEW MEXICO

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

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BY

LOTSEE PATTERSON SMITH

Norman, Oklahoma

1979

A STUDY OF PERCEIVED MEDIA COMPETENCIES OF SCHOOL LIBRARIANS IN THE STATE OF NEW MEXICO

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ABSTRACT

A Study of Perceived Media Competencies of School Librarians in the State of New Mexico

This study examined the relationship between media competencies in the areas of Organization and Administration, Selection and Acquisition, Production, Instructional Design, Evaluation and Research and the professional attributes of Years of Experience, Number of Audiovisual Credit Hours, Recency of Training and ALA Degree Status.

Data was gathered by surveying all New Mexico certified school librarians using a set of competencies developed for this study. The canonical correlation analysis of the data showed that the six areas of competency were significantly related to the four independent variables. The multiple regression analysis showed that the only individual dependent variables that were significantly related to the independent variables were Production and Evaluation. The only independent variable that was not significantly related to any specific competency area or to the total competency was Years of Experience.

The results of this study suggest that the most competent librarians have graduated from ALA accredited library schools, have taken a number of audiovisual courses and have had recent training.

ACKNOWLEDGMENTS

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CHAPTER I

INTRODUCTION

Need for the Study

Educational technology has brought a new era to school libraries. Today most school libraries house not only print materials but also audiovisual equipment and a variety of non-print items, ranging from games to sophisticated audio, video and computer retrieval systems. As their collections have changed, so have their functions. No longer are they passive repositories of enrichment materials, but rather now are an integral part of the instructional process, a catalyst for educational change and innovation.

Although educational technology was the primary force which caused this educational revolution, it was not the only one. Technological advances had resulted in improved hardware, but it was federal monies resulting from several pieces of significant legislation that made the acquisition and utilization of this hardware and its accompanying software a reality for every school system. The federal acts, spurred by the appearance of Russia's Sputnik, included the National Defense Education Act (NDEA) of 1958

and the Elementary and Secondary Education Act (Title II) of 1965. The acts provided millions of dollars for both print and non-print materials, for personnel and in many schools provided the impetus for the establishment of a "media center" or for the expansion from traditional library to "media center."

This influx of improved hardware and the provision of suitable software had a great deal to do with overcoming teacher reluctance to incorporate media into the instructional process. Instructional strategies were developed which encouraged the expanded use of media. The emphasis in curriculum changed from being textbook oriented, teacher centered, to one that stressed individualized instruction and independent study. Appropriate resources and formats were chosen to match students' learning styles and ability levels. This new approach was stated in an Alabama document:

> The new school is not organized around fixed numbers of students appearing for fixed amounts of time in a traditional classroom, but rather around the requirements of the task to be accomplished. These tasks will be spelled out in behavioral terms and multi-media (multi-sensory) approaches or tracks will be utilized. The student will approach the task as an individual being guided by the teacher and the media specialist.[1]

As a result of this wide acceptance of educational media as an essential element in the educational process, the concept of the librarian as an integral part of the

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[1]William E. Hug and Thomas E. Miller, eds., The Big M in Education, Media Specialists: A Role Defined (Montgomery, Alabama: Committee for the Preparation of Educational Media Specialists, 1970), p. 9.

teaching/learning process emerged. Just as the new concept brought about a renaming of the library, it also has brought about a renaming of the librarian. The library was no more just a place with books, and it was renamed to reflect its new function, i.e., media center, learning resource center, learning materials center. The librarian was no longer merely a person whose function was the acquisition and preservation of print materials. The librarian became a media specialist, implying a new role.

The new role created a need for new kinds of training for a new kind of professional. It also created a conflict between the traditional roles of the librarian and the audiovisual specialists. Both groups agreed, however, that certain knowledge and specific skills were essential in the professional education of librarians, audiovisual specialists and others who had a primary responsibility for instructional training if they were to remain as managers of the media center.

This need for new skills has been pointed out by leading authorities and by recent studies. One of these was the School Library Manpower Project, which, after completing Phase I of its nationwide study, concluded: "innovations in education have changed the role and functions of librarians, thus a new approach to education for school librarianship is needed."[2] The study supported the

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[2]American Association of School Libraries, School Library Personnel Task Analysis Survey (Chicago: American Library Association, 1969), p. 7.

development of new occupational definitions and recognized the valuable contributions from other disciplines.

The 1960 ALA Standard stated that:

> In light of the significance of the instructional materials specialist to the total educational program, it is necessary that there by a definition of responsibilities, of required competencies and of the means by which these competencies can best be developed.[3]

A concern over the failure of practicing librarians to update their skills led one author to investigate the factors which motivate or deter librarians in various professional development activities. One factor Stone found which was a major deterrent to the librarians participating in formal course work to enhance their professional development was the inferior quality of the course work itself. She made the following suggestion for future research projects stemming from her study.

> It is important to identify, clarify and delineate the knowledge, skills and attitudes that are essential to library service and that make one truly a professional. Such knowledge would be of great value in building library school curricula and provide valuable criteria in developing continuing education programs.[4]

Swarthout, in studying the implications of the instructional role of school librarians, indicated that development of instructional practice consistent with the

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[3]American Library Association, Standards for School Library Programs (Chicago: American Library Association, 1960), p. 62.

[4]Elizabeth W. Stone, Factors Related to the Development of Librarians (Metuchen, N.J.: The Scarecrow Press, Inc., 1969), p. 225.

educational position required certain professional competencies.[5] She discussed the competencies in general terms, but did not give specific ones she believed were inherent in achieving this instructional role.

These studies and similar ones indicated new competencies must be attained by practicing school librarians in order for them to function effectively in today's schools. The identification of appropriate competencies was one of the bases for doing this study.

Statement of the Problem

The problem was to determine the extent of the relationships between librarians' self-perceptions of selected media competencies thought to be essential for effective organization and utilization of modern school libraries and the variables of: years of experience, number of audio-visual credit hours, recency of training, and ALA degree status that might affect a high level of competency.

More specifically, this required:

(1) the identification of selected media competencies thought to be essential;

(2) a survey to determine the extent to which librarians in New Mexico perceive themselves as possessing these competencies; and

(3) an analysis and interpretation of the data.

Major directional hypotheses were:

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[5]Charlene R. Swarthout, The School Library as Part of the Instructional System (Metuchen, N.J.: The Scarecrow Press, Inc., 1967), p. 94.

H_1: There is a positive relationship between all four independent variables and their interactions and the six areas of perceived media competencies;

H_2: There is a positive relationship between perceived media competencies and the number of audiovisual credit hours;

H_3: There is a positive relationship between perceived media competencies and years of experience;

H_4: There is a positive relationship between perceived media competencies and recency of training; and

H_5: There is a positive relationship between perceived media competencies and ALA degree status.

The dependent variables were:

(1) the total perceived competency score for each librarian; and

(2) the specific perceived competencies, including

(a) organization and administration,

(b) selection and acquisition,

(c) production,

(d) instructional design,

(e) evaluation, and

(f) research.

The independent variables were:

(1) the number of audiovisual credit hours;

(2) the years of experience;

(3) the recency of training; and

(4) ALA degree status (graduation from an ALA-accredited school).

New Mexico, like many other states, is considering competency certification for school librarians. A task force has been established by the State School Superintendent, Dr.

Leonard De Layo, to investigate and to make recommendations for direction and action to be taken on competency-based certification. The New Mexico State Department of Education has committed itself to designing a competency-based certification recertification plan.[6] In view of this fact, there is a need to know the extent to which New Mexico's school librarians possess these identified competencies.

The results of this study will be used to make recommendations to the New Mexico State Department of Education for revision in certification requirements consistent with the competency-based recertification plan.

Recommendations will further be made to the Colleges of Education in the state and others who are interested as to the competencies that should be included in a library training program to assure the students' attainment of the competencies specified in the proposed recertification plan.

Recommendations will also be made for the development of a continuing education program for librarians who want to be recertified under the new plan or who want or need to learn additional competencies and to update their skills. Continuing education of librarians in the southwestern United States has been identified as having the highest priority of need among librarians by the Southwestern Library Association. A report by this

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[6]Competency Based Certification Task Force, Competency Based Certification (Interim Report, Santa Fe, January 1, 1973), p. 2.

organization indicates that limited continuing education opportunities are available throughout the region, and there is no related planning or goals for such in any of the six states in the region.[7]

Scope and Limitations

This investigation was limited to certified public school librarians in the state of New Mexico. Privately supported schools and those operated by the federal government were not included.

This study is correlational in nature, which implies certain limitations. In experimental studies, subjects can be randomly assigned to an experimental treatment. In correlational studies, however, there is no experimental treatment. Instead, the variables studied tend to be attribute variables. In this study, for example, a New Mexico school librarian either graduated from an ALA accredited school or she/he did not. Thus, graduation from an ALA accredited school is not a manipulable variable. Because of its attribute nature, causal statements cannot be made. Instead, statements about the relationship or lack of it between an attribute variable and a dependent variable are tested.

The survey instrument (the Competency Checklish) has the inherent weakness of any rating scale.

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[7]Southwestern Library Association, Continuing Education for Library Staffs in the Southwest: A Survey with Recommendations, (unpublished report, Southwestern Library Association, Dallas, Texas, 1973).

> Ratings are limited by the characteristics of the human rater -- his inevitably selective perception, . . . and in the case of self-ratings, the well established tendency to put his best foot forward, to perceive himself in a more favorable perspective than others do . . . In the absence of a better or more acceptable measuring device, ratings are often used to measure judgments, particularly evaluative judgments . . .[8]

The instrument in this study measures perceived self-competencies, not behavioral competencies.

In addition, when doing a survey, the researcher often has little control over the return rate or the useability of the data that is returned.

Definition of Terms

Competency: The ability to perform a fundamental task. Possession of a desired skill. Possession of a particular competency will be assumed if the person responding indicates that she/he can perform a specified task without difficulty.

Librarian: A public school staff member who has been endorsed by the New Mexico State Department of Education as having met the requirements for employment as a school librarian.

Educational Media: All materials, both print and non-print, equipment, services and techniques traditionally described as audiovisual and all so-called newer media, such as television and computer assisted instruction.

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[8]H. H. Remmers, "Rating Methods in Research on Teaching," in Handbook of Research on Teaching, ed. by N. L. Gage (Chicago: Rand McNally and Company, 1963), p. 329-330.

Library: A place where various formats of educational media are housed for use by students and school personnel. The term library, learning resource center, instructional materials center, media center and like terms are used synonymously throughout the study.

Media Competencies: Competencies which combine both library science and audiovisual skills.

Media Specialist: One who is qualified to administer the entire development and utilization program of the media center and serves as a specialist in instructional support, providing expertise in the selection and utilization of instructional materials, both print and non-print.[9]

Technology: Devices, techniques and processes that are used to store and present resources in a variety of formats and environments to learners.

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[9]Illinois Association of School Librarians, "Standards for Educational Media Programs in Illinois," Illinois Libraries 54:525 (September 1972).

CHAPTER II

REVIEW OF RELATED LITERATURE

Although several major studies have been conducted which analyzed the duties or tasks performed by media personnel, few have attempted to delineate a set of specific competencies that should be possessed by such personnel in order to be effective in a modern school library. As a result, related literature tends to be devoted primarily to four areas: (1) roles and functions of school media personnel; (2) education of school media personnel; (3) competency-based education; and (4) certification of media personnel. A review of these areas is necessary to understand the current status of media competencies.

Role and Function of Media Personnel

The role and function of media personnel have been the subject of intensive discussion by two main professional groups (librarians and audiovisualists) for nearly 20 years. These discussions and debates arose as a natural outcome of the events of the late 1950s. The emphasis given to the use of educational media in the schools had placed librarians and audiovisualists in new roles.

In 1960 the Department of Audiovisual Instruction (DAVI) sponsored a seminar on the Education of AV Communication Specialists which gave serious consideration to the matter of role identification for individuals associated with the audiovisual field. A short time later a DAVI task force formulated a general statement regarding the role of media and media specialists. The statement called for:

> . . . a technological leap forward in education and for increased application of 'a new technology for instruction that has been developed and proved through research and practice'.[10]

Perhaps most importantly, it stressed that:

> . . . a new kind of professional will be required to provide leadership in design, implementation, and evaluation of programs of education which make the fullest use of new media. The functions performed by this leader and the resources he brings will be among the essential determinants of success or failure in tomorrow's schools.[11]

In 1963 the changing role of the librarian was enunciated by Kenneth Williams, President of Florida Atlantic University:

> Tomorrow's librarian is going to have to assume a more aggressive role toward the problem of utilization of what he supplies the learner. Simply directing a student to the book, journal, or other source of information will not be enough. The concern of the librarian must be extended to the use to be made of the information. The librarian is going to have to guide the learner in his independent study processes. There will have to be a team approach with the classroom instructor

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[10] James W. Brown, PEMS Committee Report, Report to the Professional Education of Media Specialists Commission of the Association of Educational Communications and Technology (Philadelphia, March, 1971), p. ix.

[11] Ibid.

> and librarian working closer than ever to vitalize the learning process.[12]

As a result of this changing role in some school systems, the librarian was placed in competition with audiovisual personnel: competition for control and utilization of funds, support personnel, materials, etc.

Both librarians and audiovisualists frequently asserted that the other was not qualified to perform certain functions. This newly discovered common ground based on mutual interest and purpose sometimes led to a vying for dominance as well as to some duplication of effort. Reasons for this controversy over control of the library, or instructional materials center as it was sometimes called, are typified in this discussion:

> The evaluation of the IMC concept brought about the controversy of location. Librarians naturally viewed the IMC idea as an extension of library services, and expanded library services today are often labeled 'instructional materials centers.' Audiovisual specialists also used the term 'instructional materials centers' when they referred to the expanded services they provided. This is especially true today with programmed instruction included in the domain of audiovisual instruction. Both groups -- the librarians and AV specialists -- felt that the instructional materials center belonged in their domain.[13]

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[12] Kenneth Williams, "Capsules, Carrels, and Computers," in Current Issues in Higher Education: Critical Decisions in Higher Education, ed. by G. Kerry Smith (Washington, D.C.: Association for Higher Education, 1963), p. 138.

[13] Phillip J. Sleeman and Robert Goff, "Instructional Materials Center: Dialogue or Discord?" AV Communication Review, XV (Summer, 1967), p. 161.

The authors continued the discussion by pointing out that, judging from the changing role of the person involved in the supervision of the instructional materials center (IMC), it was evident that neither the librarian nor audiovisualist was trained satisfactorily. They recommended that, due to the change in responsibilities of individuals who supervised the IMC:

> . . . this person must not only have the foresight and readiness to accept new roles for instructional materials in the teaching learning process, but must also be acceptable to new roles for himself, roles involving planning, curriculum design, public relations, and innovation. He must truly function as a change agent in our educational society . . . Librarians know about literature, cataloging, indexing, budgeting, and the general and specific resources in their field. Audiovisualists know about the processes of communication, equipment, materials availability, budgeting, inservice needs, plant design, among other areas. But these are presently separate fields of specialization. Rare is the person who combines the talents of both fields into one general area.[14]

In addressing the issue of differences between librarians and audiovisualists, a government report comments:

> It is evident and perhaps inevitable that the two areas -- AV and librarianship -- have attracted (and may continue to attract) people with different personalities, different interests, and different basic capabilities.[15]

Traditionally, the former field has attracted men and the latter women. The report concludes that "a 'media

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[14] Ibid., pp. 162-163.

[15] U. S. Office of Education, The Education Profession 1971-72: Part IV A Manpower Survey of the School Library Media Field, Annual Report (DHEW Publication no. (OE) 73-12001 report completed for U. S. Office of Education by Social, Educational Research and Development, Inc. of Washington, D. C., 1973), p. 21.

specialist' is viewed as the result of metamorphosis -- a retrained individual accustomed to a multimedia setting."[16]

Other reasons for differences are given by B. J. Kittilson in a research study he conducted:

> Because of their public library roots school librarians tended to work with individual students rather than with teachers, while audiovisualists . . . reached the students indirectly by working with teachers. School librarians are but a segment of a larger professional group with a long history, whereas audiovisualists have developed their professional group almost entirely within the educational field and for the most part during the last forty years.[17]

The need for integration of the two fields was recognized as early as 1958, when the national library and audiovisual organizations issued a joint statement:

> Because of the broad variety of media now available and the rapid increase of production within each medium, teachers are faced with a vast reservoir of instructional materials from which to choose. This means the teachers require more and more help from specialists to locate, evaluate, select, produce, and use instructional materials to best advantage. In order to provide such help specialists need to have a working knowledge of the entire range of media, the potential contributions each can make to learning, and effective methods of use.[18]

But nearly ten years later the same plea was still being aired:

> The time has never been more propitious for us to remake the educational media field; to strike boldly

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[16]Ibid., p. 22.

[17]B. J. Kittilson, "School Librarians' and Audiovisualists' Conception of Media Programs" (unpublished Ph.D. dissertation, University of Minnesota, 1971), p. 6.

[18]American Library Association, Standards for School Library Programs, p. 60.

> out toward integration; to offer a combined, comprehensive educational media service that heretofore has been only a dream which we really never believed could be achieved.[19]

Since the early 1960s a gradual merger of the two fields has been occurring, but the need for new professional expertise for school librarians was again given national recognition with the publication in 1969 of a new set of standards. These standards, developed jointly by members of the American Library Association and the National Education Association's Department of Audiovisual Instruction in cooperation with representatives of many other professional associations, pointed to the necessity for combining skills of the librarian and the audiovisual specialist:

> Media specialists . . . make unique and vital contributions to the total educational program of the school . . . Personnel qualified to implement the many diverse services are essential for the selection, organization, and effective use of a wide spectrum of educational media . . . Media specialists make instructional decisions . . . and supply appropriate leadership in the educational process.[20]

However, it is apparent that merger of the two fields is far from complete. A chairman of the Association of Educational Communications and Technology's Plans Committee recently asked the question:

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[19] James W. Brown, "AV and Library: Complement or Merge?" Educational Screen and Audiovisual Guide, (January, 1967), p. 22.

[20] American Library Association and National Education Association, Standards for School Media Programs (Chicago, Washington: American Library Association and National Educational Association, 1969), p. 7.

> The proliferating uses of many forms of media in society in general have created more and more jurisdictional disputes over 'ownership' of the media field. What should be the posture and program of AECT in this situation?[21]

In an attempt to answer this perplexing question, several major studies have been conducted to obtain an empirical base for the redefinition of librarians' roles. Dozens of reports, position papers and official commentaries have addressed themselves to media professional's functions. The most notable of the studies has been generated by the professional organizations -- the American Library Association (ALA) and the Association of Educational Communications and Technology (AECT).

In 1970 three of the most comprehensive studies were conducted almost concurrently. These were the Media Guidelines Project (AECT), the Jobs in Instructional Media Study-JIMS (AECT), and the School Library Manpower Project-SLIMP (ALA).

The Media Guidelines Project, funded by the U. S. Office of Education's Bureau of Research and conducted by the Teaching Research Division of Oregon's State System of Higher Education, was concerned with the quality and effect of media training programs. Sometimes known as the Hamreus-Edling report, it was an extension of previous AECT efforts to address the issue of job definition and function

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[21] G. M. Torkelson, "AECT Reorganization Working Paper" (paper presented at annual meeting of the Association of Educational Communications and Technology, Dallas, Texas, March, 1975), p. 3.

within the media profession.

> The purpose of the project was to produce guidelines and other information for planning media training programs and evaluating media related training proposals and training program outputs. The ultimate purpose is to help insure that present and prospective training programs produce the competencies that will be required five and more years from now.[22]

Job activities data were derived from more than one hundred interviews with librarians from all types of libraries. These job activities descriptions produced nearly 3,000 separate statements. These were refined into job clusters which led to the development of a three-dimensional matrix which conceptualized the media domain. The three dimensions were: (1) institutional settings; (2) functions people perform; and (3) responsibilities people hold in their jobs.

The project reported that the effort to provide some systematic basis for planning of media training programs was a difficult one.

> The problem of identifying the competencies needed by media specialists in performing their jobs has been found to be a difficult task. Many jobs are performed at various levels of complexity and in a variety of situations.[23]

The Jobs in Instructional Media Study (JIMS) was undertaken by the Association for Educational Communications

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[22] Dale G. Hamreus, Media Guidelines: Development and Validation of Criteria for Evaluating Media Training, Volume II Guidelines Manual, Final Report, Monmouth, Oregon, June, 1970, p. i.

[23] Ibid., p. II-1.

and Technology under a grant from the U. S. Office of Education in 1969-70.[24] It set out to analyze what a media person does. Jobs were broken down into tasks; tasks were analyzed by direct observation of media personnel in both library and nonlibrary situations through the process of Functional Job Analysis. The concluding effort was a data bank of 2,200 task statements which were clustered under functions. The study is not as useful to library educators as others because of its emphasis on paraprofessional level media personnel.

The School Library Manpower Project (SLIMP) was conducted by the American Association of School Librarians' division of the American Library Association and funded by the Knapp Foundation. Phase I of the five-year project was completed in 1970. One of the goals of this Phase was:

> . . . to ascertain the kinds of school library personnel required to carry out the ever-changing functions of school library media centers. The unified concept and the educational movement toward competency-based certification mandated . . . a restatement of the competencies necessary to perform within the emerging functional patterns . . .[25]

The project's attempts to define the competencies required in the training of the library-media specialists resulted in the establishment of seven major areas of

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[24] C. James Wallington, et al., Jobs in Instructional Media (Washington, D.C.: Association for Educational Communications and Technology, 1970).

[25] Robert N. Case, Behavioral Requirements Analysis Checklist: A Compilation of Competency-Based Job Functions and Task Statements for School Library Personnel (Chicago: American Library Association, 1973), p. vii.

competencies essential to the position of school library media specialist. Each major area of competency was supported by a series of behavioral objectives and suggested curriculum content. The seven major areas of competencies for education of the school library media specialist were: (1) media; (2) human behavior; (3) learning and learning environment; (4) professionalism; (5) planning and evaluation; (6) management; and (7) research.

The study was similar to the Jobs in Instructional Media study in that it relied upon a task analysis of professional functions and it generated different task lists. This is partially explained by the fact that the list of tasks was formulated as a result of opinions expressed by library professionals.

A summary of the three major studies reveals an overlap of from two-thirds to three-fourths of the competencies listed by all three.

In a comparison of four documents (Jobs in Instructional Media, School Library Manpower Project, Media Guidelines Project, and the joint Standards for School Media Programs), Oglesby commented that in all documents there was a clear delineation of job levels, and ". . . there was unquestionably a commonness of terminology and a grouping into three levels: the media professional, the technician, and the aide."[26] The documents also revealed,

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[26]William Oglesby, "A Reason for Peace," Audiovisual Instruction, XVI (June/July, 1971), p. 72.

he added, occupational definitions for the media specialist that were practically the same. He then posed the question: ". . . would it not seem reasonable to accept the fact that our fields are converging?"[27]

Other noteworthy studies have been conducted by the Association of Educational Communications and Technology and the Illinois Library Association.

The Illinois Library Association conducted a study entitled A Task Analysis of Library Jobs in the State of Illinois in 1970. It covered all types of library personnel. It identified 1,615 tasks performed in 18 libraries. The results provided a description of essential tasks performed in all types of libraries by all levels of personnel.[28]

The Professional Education of Media Specialists Commission (PEMS) of the Association of Educational Communications and Technology had four committees which studied media professionals' concerns in the areas of: (1) certification; (2) manpower; (3) professional education; and (4) support personnel. Among the observations and recommendations made by this Commission were these:

> The media field seems about ready to move toward reconciling some of the remaining differences in position titling and functions developed through the recent manpower studies . . . These studies seem to suggest

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[27] Ibid.

[28] Social, Educational Research and Development, Inc., A Task Analysis of Library Jobs in the State of Illinois, Report submitted to Thomas M. Brown, Chairman, Ad Hoc Committee on Manpower Training and Utilization, Illinois Library Association, Chicago, May 29, 1970.

> the desirability of moving toward a media manpower structure that takes into account the nature of several common functions . . . Sufficient data (and expert opinion) also seem to be available to warrant moving ahead without further delay, to the tasks of refining personnel and performance criteria . . .[29]

A paper prepared for an annual meeting of the Association of Educational Communications and Technology (AECT) provided a general outline of competencies in the field of instructional technology. Based on the Jobs in Media study and the Media Guidelines Project study, competencies were listed under nine functions: (1) organization management; (2) personnel management; (3) research-theory; (4) design; (5) production; (6) evaluation-selection; (7) utilization; (8) utilization-dissemination; and (9) support-supply. The document warns that the competencies are limited in scope and that they stress what technologists do and neglect much of what technologists need to know.[30]

These studies provided information needed to begin reconciling some of the differences in position titling and position function. They, along with others, provided data and background which enabled the professional organizations to proceed with refining personnel and performance criteria, to make recommendations about competencies needed in training

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[29]Brown, PEMS Committee Report, p. 4x.

[30]Association of Educational Communications and Technology, "The Domain of Instructional Technology" (paper prepared for The Curriculum Development Institute, annual meeting, AECT, Philadelphia, March 20-21, 1971) p. 1.

programs, and to project needed revision of certification standards.

Education of School Media Personnel

A frequent target of the criticism directed at the lack of competent media professionals has been library/media education. Although the need for appropriate training has been recognized for some time, as pointed out in the preceding pages, a discrepancy still exists between actual job performance requirements and training programs offered at institutions of higher education. Part of the problem lies in the traditional ways in which librarians and audiovisualists have been trained. Walch and Brumbaugh offer this insight:

> Prior to 1954 there was no established program for training media specialists. Most so-called 'school librarians' received their training at institutions offering undergraduate programs in library science, of which the majority emphasized school librarianship. Some 'school librarians' received their training from accredited graduate schools of library science. Conversely, 'audiovisual specialists' were trained in programs at either the undergraduate or graduate level.[31]

The adequate education and training of the librarian remains a prime concern of institutions of higher education today. As Wesley Meierhenry stated the problem in an address to his colleagues:

> The type of individual who is responsible for the learning center also has much to do with its utilization and development. Increasingly, educational

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[31]David B. Walch and W. Donald Brumbaugh, "Toward Professionalization in the Media Field," School Media Quarterly, IV (Fall, 1977), 27.

> institutions are looking for individuals who are knowledgeable about both print and non-print fields. Most training programs do not include these two areas sufficiently so that there are problems in locating appropriate staff to serve the variety of roles required by the learning center. It is evident that the training problem is one of the major stumbling blocks to the more rapid development of learning centers in all types of educational institutions.
>
> Along with the training program is the problem of certification at the elementary and secondary levels. A number of states are now moving to the development of certification requirements for the media or learning center specialist. Such certification requirements should go beyond the traditional courses in either library and/or audiovisual but should include an integrated approach of all learning resources. Certification and accreditation procedures must receive attention if the schools are to move to the development of media programs.[32]

This failure of college and university training programs is confirmed in an Audiovisual Task Force Survey which recognized that:

> Training programs responsible for career preparation of librarians and audiovisual service personnel . . . were inadequately preparing people to conduct (school) library media programs.[33]

In a comparative study of the roles and functions of professional media personnel with preparation programs, a Pennsylvania researcher concluded:

> College and university departments of audiovisual education were not found to be preparing media personnel to meet the needs expressed by employers. Curriculums

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[32] Wesley Meierhenry, "Integrating Learning Centers into the Curriculum," in What Are We Learning About Learning Centers, ed. by Marshall Gunselman (Oklahoma City: Eagle Media, 1971), pp. 50-51.

[33] Eli Ginsberg and Carol Brown, "Manpower for Library Services," in The Education Profession 1971-72: Part IV, U. S. Office of Education (Washington, D.C., 1973), p. 23.

> tended to stress competencies considered unimportant by employers or competencies capable of being performed by para-professional personnel. It was concluded that these departments must undertake a re-evaluation of their existing programs.[34]

Another report makes this accusation:

> . . . students have demonstrated through their ineptitude that many higher education curricula are both inefficient and unrelated to their goals. The college curriculum may be out-of-date because service agencies have changed their expectations of personnel or colleges may be too withdrawn to inform themselves about the actual requirements of the working environment.[35]

Part of the lack of a unified (both library and audiovisual skills) training program at the higher education level is explained in the federal study of the field which concluded:

> At the training institution level, for the most part, overall there tends to be nonexistent or minimal relationships between schools of education or instructional technology which normally train the audiovisual person and schools of library science which train the school librarian . . .[36]

This lack of unified training programs has led to a shortage of true media specialists. Citing this lack of qualified people to fill existing job vacancies, William King, Director of Audiovisual Education with the New Jersey

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[34] Melvin Harold Samuels, "A Comparison of Roles and Functions Desired by Prospective Employers of Professional Media Personnel with Current Professional Media Preparation Programs in Pennsylvania" (unpublished Ed.D. dissertation, University of Pittsburgh, 1971).

[35] Anne T. Reid, Issues in Planning and Developing an Undergraduate Library Education Curriculum (Linthicum, Maryland: Maryland State Department of Education, 1974), p. 10.

[36] U. S. Office of Education, The Education Profession 1971-72: Part IV, p. 5.

State Department of Education, posed the following question: "Where are instructional materials specialists going to acquire the skills needed today? . . . We find that our schools are ahead of our teacher education institutions."[37]

This attitude is not universally shared according to a government study. It reported that not only were institutions of higher education showing inertia in modernizing training programs, but school systems were equally lethargic in implementing new staffing patterns to reflect modern approaches to learning. It concluded that ". . . the school library media field is making only tentative steps toward joining the two functions traditionally performed by librarians and by audiovisual specialists."[38] It also recommended that in view of the trends in the field and the demand for a continued supply of persons trained in media approaches, that a series of systematic studies by conducted focusing on the training of media specialists.

A possible solution to the lack of relevant curricula in institutions of higher education is suggested by Reid:

> In order to be relevant, curriculum should be based in part on performance requirements formulated in collaboration with administrators and other personnel in operating services. Once performance requirements of specific agencies are examined, some generalized competencies may be developed. Use of these generalized

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[37]William King, "The Emerging Role of the Instructional Materials Specialists," Audiovisual Instruction, XIV (September, 1969), 28.

[38]U. S. Office of Education, The Education Profession 1971-72: Part IV, p. iii.

> competencies bring curriculum and assessment of student achievement closer to vocational needs and expectations.[39]

Unfortunately, even though the need for relevant curriculum is widely recognized, general consensus of authoritative sources indicates that training programs in institutions of higher learning have not adequately met this need either by revising course work, offering new courses, or through an interdisciplinary approach.

In spite of testimony from practitioners and educators, the situation had apparently not made any great impact on colleges and universities by 1970, because in that year Barbara Myatt conducted a survey of library programs, comparing them to those of 1955, only to find:

> If the university/college catalog course descriptions are any indication of current library programs, then the preponderance of them are fifty years behind the times. As these course titles and descriptions relate to the preparation of libraries for schools, the evidence of a lack of understanding of the 1970 approach to Materials for public education is woefully apparent.[40]

Ms. Myatt concludes: "It appears, then, that school librarians are being prepared for obsolescence."[41]

Competency-Based Education

Although the issue of improving education is a continuing one, pressures for change and reform in education were intensified after the startling appearance of Russia's

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[39]Reid, Issues in Library Education, p. 10.

[40]Barbara Myatt, "Course Descriptions in Library Science," American Libraries, I (October, 1970), 865.

[41]Ibid., p. 866.

sputnik. Competency-based education is an attempt to respond to these pressures.

It began to develop nationally in the late 1960s and was given impetus when the federal government's Office of Education pronounced competency-based education (CBE) as the panacea for educational ills.

Competency-based education has its roots in the systems management era of the late 19th century, but two researchers believe:

> It is the logical culmination of recent trends involving behavioral objectives, programmed instruction, criterion-referenced testing, mastery learning, computer assisted instruction, and systems theory. Under one roof it combines them all into systematic approaches toward the development of instruction to meet specific needs.[42]

Some states picked up on the competency approach long before it became a national rage.

> Although the diffusion of scientific management techniques in education suffered a setback with the great depression of the 1930's, the movement to find a competency base for teacher education picked up again in California in the late 1940's. Beginning in 1949 the state officially adopted a policy of competency-based teacher education as the basis for establishing certification requirements.[43]

Hamilton defines the competency approach as:

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[42]Kathleen Kollasch and James R. Daines, "Looking for CBE in Graduate Media Programs," Audiovisual Instruction, XXII (January, 1977), 14.

[43]Phyllis D. Hamilton, Competency-Based Teacher Education, (research memorandum, Educational Policy Research Center, Office of Planning, Budgeting and Evaluation, U. S. Office of Education, Washington, D.C., July, 1973), p. 42.

> . . . one which specifies objectives in explicit form and holds prospective teachers accountable for meeting them . . . measures for evaluating them are made known in advance of instruction.[44]

Two characteristics of competency-based education are the identification of knowledge and skills (competencies) and an assessment process. Competency statements are usually derived from a task analysis of the role of practitioners or from the consensus of media professionals. They are organized into categories under broad topics. A recent publication explains:

> The concepts underlying CBE are relatively straightforward. Competency statements are derived from the role of the practicing professional, explicitly stating what the learner is to demonstrate for successful completion of the program, and made public in advance of instruction. While such competencies may include cognitive objectives (what the prospective professional knows), the primary emphasis is on performance (what the prospective professional can do), and consequence objectives (what the effect of the prospective professional is on his clients).[45]

Early efforts to specify competencies were directed toward teacher training both pre-service and in-service. However, as early as 1950 criteria for media services were published in a Department of Audio-Visual Instruction's study entitled Evaluative Criteria for Audio-Visual Instructional Materials Services. By implication, at least, it subscribed to a need for upgrading teacher competency in

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[44]Ibid., p. 3.

[45]W. Robert Houston and Howard Jones, Three Views of Competency-Based Teacher Education: II University of Houston (Bloomington, Indiana: Phi Delta Kappa, 1974), p. 7.

audiovisual use by urging adequate facilities and materials.[46]

Many studies on teacher use of media have reported that even when a wide range of audiovisual materials and equipment was available, only a few teachers took advantage of its potential.

Traditionally, library education stressed acquisition of knowledge, but more recently has been concerned with the ability to apply it. The emphasis on the application of knowledge rather than just acquisition has resulted in the need to assess certain behaviors and skills. A further need to identify these competencies led the profession to undertake the major studies discussed in the preceding narrative and ultimately to produce a Certification Model for Professional School Media Personnel.[47] It is too early to predict what influence this product will have on either library education or certification.

Only a few publications have dealt with the topic of competency-based education for media personnel.

Chisholm and Ely authored a work in which they attempted to identify the competencies in the media field and to classify them into categories called functions. The

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[46]G. M. Torkelson, "Competencies Needed by Teachers in the Use of Newer Media and Various Approaches to Achieving Them," in Media Competencies for Teachers, ed. by W. C. Meierhenry. Lincoln, Neb., 1966, p. 173. (Mimeographed)

[47]Committee on Certification of School Media Specialists, Certification Model for Professional School Media Personnel (Chicago: American Library Association, 1976).

ten functions they identified are: (1) organization management; (2) personnel management; (3) design; (4) information retrieval; (5) logistics; (6) production; (7) instruction; (8) evaluation; (9) research; and (10) utilization. The 59 competencies listed under these categories they state are:

> . . . derived from special projects concerned with the professional education of media professionals conducted by the two major national associations in the field; the American Association of School Librarians and the Association for Educational Communications and Technology.[48]

The Chisholm/Ely book is an asset to the media education profession because it can be used as a text for training media personnel.

It is apparent from a recent study that competency-based programs are not widely used in graduate school programs in the education of media professionals. The survey showed that "Approximately one-third of the schools indicated that they used CBE to some extent."[49]

Problems are inherent in competency-based education (and certification). There is lack of agreement on what constitutes the necessary competencies. The assessment process is another point of contention.

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[48]Margaret E. Chisholm and Donald P. Ely, Media Personnel in Education: A Competency Approach (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976), p. v.

[49]Kollasch and Daines, Looking for CBE in Graduate Media Programs, p. 14.

Some educators are hesitant to accept the competency-based approach. They argue that evaluation instruments are inadequate to measure competence, particularly in the affective domain, which defies precise measurement.

Humanists and behaviorists are engaged in a philosophical debate over the competency-based approach to education. Humanists take the position that to derive a set of competencies and then train a person to perform is too mechanistic, and further, that desirable learning is not only that which can be observed or demonstrated.

Organized opposition has been voiced by the National Education Association: "The emphasis accountability places on measureable skills such as reading and math ignores the important objectives of personality development, creativity and socialization."[50]

Others are concerned with the pressures from legislatures and state education agencies which are mandating competency-based education seeking to make educators accountable for student performance. Joel Burdin, Associate Director, American Association of Colleges for Teacher Education, warns:

> Although the evidence for C/PBTE is very thin in several respects, particularly in assessment of techniques, many states are moving toward C/PBTE or mandating it be installed either as the statewide approach or at least as one alternative. Under pressures to move rapidly and extensively, educators may be merely changing form without changing substance, cutting and pasting curricular materials and providing new headings for old concepts. Even though they may

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[50] Education Daily, January 10, 1973, p. 2.

> use accepted jargon, educators may find the approach conflicts with their own teaching style.[51]

Certification of Media Personnel

Although separate certification for school librarians and audiovisual personnel still exists, there have been recent efforts by some states to merge the two into one certificate, which is usually titled "media specialist."

Librarians have been certified much longer and more universally than audiovisualists. A study by Louis Shores in 1956 revealed that ". . . forty states and the District of Columbia certificate school librarians. Four of these states also certificate audio-visualists."[52] At the time of his study Mr. Shores made a plea for unity and a single certification. The most recent figures available show that by 1974 thirty-eight states provided a certification for media specialists.[53]

Many modern library educators are urging joint certification. Carl Cox expressed his position:

> Recent developments in school media programs make it imperative that we consider the certification of media specialists. The separatism of the audiovisual and library certification programs must give way to a

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[51] Joel L. Burdin, Three Views of Competency-Based Teacher Education: I Theory (Bloomington, Indiana: Phi Delta Kappa, 1974), p. 18.

[52] Louis Shores, Library Education (Littleton, Colorado: Libraries Unlimited, 1972), p. 128.

[53] Ann Y. Franklin, "School Library Certification Requirements: 1974 Update," Library Journal, (December 15, 1974), 3242-3245.

> merger which recognizes the interrelated and supportive roles of the two fields.[54]

Cox proposes a certification plan which encompasses three related education experiences: (1) a fundamental element consisting of basic teacher certification; (2) a core element of five areas of concentration (learning theory, curriculum design, selection principals, organization of collections and management science); and (3) a specialization element which he perceives as being one of the following: research, instruction, production, storage and retrieval, educational television, systems design, or instructional systems management.

Not only are many states merging their certifications, they are also following the trend toward competency-based certification.

By 1973, seventeen states had passed legislation or gave administrative support to the competency-based education doctrine.[55] By 1974, thirty-one states had provided legislative or state department of education support for investigation or action related to support for the movement.[56] The two national professional organizations

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[54]Carl T. Cox, "The Certification of Media Specialists," School Media Quarterly, I (Spring, 1973), 201.

[55]A. Schmieder, "Competency-Based Education: The State of the Scene," American Association of Colleges for Teacher Education, Washington, D.C., p. viii (February, 1973).

[56]Edgar Kelley, Three Views of Competency-Based Teacher Education: III University of Nebraska (Bloomington, Indiana: Phi Delta Kappa, 1974), p. 8.

representing the librarians and the audiovisualists (or educational technologists, as many of them prefer to be called) have initiated activities related to competency-based certification.

Realizing the conflict over domain with librarians, members of the Association of Educational Communications and Technology (AECT) began to express concern over their professional identity. Believing that certification and standards would help identify a career field, the Association published Guidelines for Certification of AV Personnel in 1969. The need for a rationale on which to base a certification plan for the field continued to receive a high priority, and in December of 1971 AECT President Robert Heinich appointed two task forces to work on certification of educational communications and technology personnel and accreditation of media programs.

The Task Force on Certification set as their objectives the identification of: (1) roles, jobs, and functions by the needed personnel; (2) competencies, skills, qualities, levels of expertise needed to do the jobs, roles, and functions; and (3) programs of experiences designed to produce the desired product. Meeting periodically during 1972-1973, the Certification Task Force deliberated on the following concepts: (1)persons to be certified in educational media are primarily specialists and technicians; (2) educational media specialists and technicians may be certified by the national professional organization (AECT)

and/or state and national governmental agencies according to skill development; (3) AECT guidelines for certification might recognize at least three levels of skills or competencies (the aide, the technician and the specialists); (4) competencies for specific areas of responsibilities need to be identified at minimum levels; and (5) competency-based models for certification of educational media specialists and technicians should be developed and tested.

In their report to the AECT Board of Directors the Certification Task Force made these recommendations:

I. There should indeed be certification of educational media specialists and technicians, possibly competency-based;

II. A certification program that would encompass the following three areas should be developed:
   A. Instructional Media Manager;
   B. Media Product Developer;
   C. Instructional Program Developer;

III. Public school personnel should be certified by State Boards/Departments of Education in accordance with recommended guidelines and standards established by AECT. AECT should issue a certificate or license as recognition from the national professional organization. Non-public school personnel should be certified or licensed by AECT in order to identify and insure the quality and level of personnel preparation in

educational communication and technology;

IV. The Certification Task Force effort should be continued;

V. Special attention should be given to a standardized and acceptable definition, including the following terms: Certification; License; Recognition; Endorsement; Competency; Profession; Professional; Specialist.[57]

A year later (1974) the Certification Task Force presented to the Board of Directors some guidelines for the certification of educational communications and technology personnel employed in schools and colleges. The guidelines were competency based and defined three levels of competencies: (1) entry or aide positions; (2) middle or technician positions; and (3) advanced or specialist positions. Within each specialization they identified nine basic media functions: (1) organization management; (2) personnel management; (3) research theory; (4) design; (5) production; (6) evaluation/selection; (7) support/supply; (8) utilization; and (9) utilization/dissemination.

In this report, the Task Force included a section entitled "Rationale for Competency-Based Certification" in which they stated:

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[57] AECT Task Force of Certification, Report to AECT Board of Directors, meeting March 1-4, 1973, in Washington, D.C. (Memorandum)

> Of major concern to the professional preparation and certification of personnel in the field of educational communications and technology has been the establishment of a theoretical frame of reference within which the proper personnel preparation and certification could occur.
>
> During the last several years personnel competencies in educational communications and technology have been the center of attention in the study of the instructional process and the preparation and certification of personnel employed in educational/instructional systems.[58]

This most recent set of guidelines produced by AECT is unique in that they represent an effort at quality control and they relate certification to competencies.

The American Library Association (ALA), through its American Association of School Librarian's Division, began work in 1974 on a model for media professionals' certification. The competency-based model was completed two years later. Noting that ". . . the relevance and validity of current practices are constantly being challenged" and emphasizing that

> A wide variety of competencies are needed by media professionals so that they may satisfy the demands placed upon the school media program. They need competencies derived from educational programs in general education, professional education, and media specialization.[59]

the model contains seven areas of competencies. These areas are: (1) Relation of Media to Instructional Systems;

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[58]William F. Grady, Certification Task Force, Report to the AECT Board of Directors, Atlantic City, New Jersey, March 17-22, 1974 (Washington, D.C.: Association for Educational Communications and Technology).

[59]Certification of School Media Specialists Committee, Certification Model for Professional School Media Personnel (Chicago: American Library Association, 1976), p. 1.

(2) Administration of Media Programs; (3) Selection of Media; (4) Utilization of Media; (5) Production of Media; (6) Research and Evaluation; and (7) Leadership and Professionalism.

Summary

This chapter has briefly described the origins and development of the conflict between school librarians and audiovisualists. Evidence was presented to demonstrate the differences as well as the commonalities.

Evidence was also presented which points out the inadequacy of the training and/or education of media personnel for the new approaches in public school education. The literature indicates that, although training institutions have been criticized for some time for their lack of up-dating courses and irrelevant curriculum, little has been done to improve the situation.

Critics have been hopeful that the introduction of competency-based education would induce higher education institutions to produce a new kind of media professional: one who would meet the requirements of today's schools.

Evidence that state departments of education and professional organizations are trying to achieve a new level of professionalism that integrates both library and audiovisual skills among media persons also was presented.

These considerations (the conflict between librarians and audiovisualists, the accusations of inadequate

training programs, the interest in competency-based education, and the move toward unified and competency-based certification) prompted this investigation.

CHAPTER III

METHODS AND PROCEDURES

This chapter describes the development of the survey instrument, the selection of a panel of judges, the selection of the sample, the gathering of the data, and the treatment of the data.

Development of the Media Competency Checklist and Professional Data Form

The first step in developing the survey instrument, which consisted of a Media Competency Checklist and the Professional Data form, was to identify and locate existing lists or sets of competencies. Some of these have been cited in the previous chapter. Other lists or documents were obtained primarily from various state committees that were in the process of developing them. These included material from the states of Maryland, Utah, North Carolina, Washington, Oregon, Connecticut, Wisconsin and Texas. All of these states have or were working on media certification which was based on a set of competencies. While all had overlapping competencies, none was the same. Some states, such as Wisconsin and Connecticut, listed competencies for

three levels of media professionals. The degree to which the given competencies were refined varied greatly from state to state. But all of the documents provided valuable insight into the current trend of competency-based media certification and gave a good perspective as to competencies commonly cited.

This investigator was a member of the New Mexico "Committee for Developing an Integrated Competency-Based Media Certification Program" which met regularly for more than a year to draft a set of competencies to be submitted for approval under New Mexico's mandate for a comprehensive competency certification plan. This experience aided in refining the final choice of competencies selected for this study.

Two other sources were also consulted. They were AECT's Guidelines for Certification of Media Specialists[60] and a set of media course materials from the Department of Library and Audiovisual Education at Minnesota's St. Cloud State College. Both of these items gave detailed listings of competencies in various areas.

After careful study and synthesis of the available literature and documents, a set of competencies was developed. Those chosen for inclusion in the final list were

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[60]Association for Educational Communications and Technology, Guidelines for Certification of Media Specialists: Extended Version (Washington, D.C.: Association for Educational Communications and Technology, 1972).

those that appeared most frequently in the documents cited and that the researcher believed could be understood by a typical New Mexico school librarian.

A Professional Data form was constructed to solicit information necessary to determine to what extent the four independent variables affected the competency score of each librarian. Additional information related to size, level and number of schools served, amount of time served in library capacity and interest in additional course work was obtained through the use of the Professional Data form. This additional information will be used to make recommendations to the New Mexico State Department of Education related to certification standards, as well as to institutions of higher education in the state regarding library/media education (for both library certification and continuing education programs), and will be available to other persons and associations that express an interest.

After determining the final sample to be used in this study coefficient alpha was used to obtain an estimate of reliability on the Checklist. Nunnally advises that this basic formula for determining reliability based on internal consistency should be applied to all new measurement methods.[61] A coefficient alpha was calculated for each of the six competency categories as well as the total score. Only those subjects who responded to all of the questions within that

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[61]Jum Nunnally, Psychometric Theory (New York: McGraw-Hill, Inc., 1967).

category with 1, 2, or 3 were used. Results of the reliability estimate were as follows:

CHECKLIST CATEGORY	NUMBER OF ITEMS	ALPHA	NUMBER OF SUBJECTS IN ALPHA
Organization and Administration	20	.81	34
Selection and Acquisition	6	.60	91
Production	17	.91	54
Instructional Design	6	.28	80
Evaluation	3	.81	92
Research	5	.91	87
Total Score	57	.92	27

All of the categories and the total score have good reliabilities except for Instructional Design. Selection and Acquisition is moderate in terms of reliability.

Selection of the Panel of Judges

A second step in the development of the survey instrument was to obtain experts' opinions regarding the adequacy of the Media Competency Checklist. To accomplish this, a panel of judges was selected to evaluate the Checklist and make suggestions for changes. Panelists selected met one or more of the following criteria:

1. a person who has been or is involved in a public school library program;
2. a person who has been or is an administrator of a public school;
3. a person who has held or currently holds academic rank in an institution of higher education and is or has been associated with library/media education;
4. a person who has a professional knowledge and understanding of both the audiovisual and library fields; and

5. a person who is recognized by his peers as an authority in the educational media field.

On the basis of these criteria five persons were chosen to serve as the panel of judges. An alphabetical list of panelists appears in Appendix A.

The Checklist was sent to these five persons for their appraisal. It was then revised consistent with their suggestions.

The Sample

This study was an investigation to determine the relationship between selected perceived media competencies and the variables of years of experience, number of audiovisual credit hours, recency of training, and ALA degree status. Because of New Mexico's competency-based recertification plan, this state was chosen as the site for the study. The names and addresses of all certified school librarians in New Mexico were obtained from the State Department of Education. These names were cross checked with those in Libraries in New Mexico: Directory and Statistics to determine which ones were currently employed in a school system in a library position. A final list of 246 persons representing currently certified and practicing New Mexico school librarians was compiled and used as the sample for this study.

Gathering the Data

A survey instrument consisting of the Media Competency Checklist and Professional Data form along with a

cover letter was sent to the total sample of 246 New Mexico school librarians. After six weeks, follow-up phone calls were made to some of those who had not responded and follow-up letters were sent to others. A total of 129 instruments were returned. Twelve of these had to be rejected, due primarily to the respondents' failure to complete the survey instrument correctly. A final sample of 117 was used for purposes of this study. Thirty-one people in this sample were eliminated from the analysis due to missing responses on their Professional Data form. Thus, 86 subjects with complete data were used in this analysis.

Analysis of the Data

The data gathered from the Professional Data form and the Media Competency Checklist were analyzed by computer using the Statistical Package for the Social Sciences.[62]

Complete descriptive statistics were computed for all variables for all 86 subjects. Dependent variable scores were computed in the following manner. The Competency Checklist produced six separate scores, one for each of the selected media competencies; these competencies included: organization and administration, selection and acquisition, production, instructional design, evaluation, and research. Scores were added for each competency that the subject

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[62]Norman H. Nie, C. Hadlai Hull, Jean G. Jenkins, Karin Steinbrenner, and Dale H. Bent, SPSS: Statistical Package for the Social Sciences, second edition (New York: McGraw-Hill Book Company, Inc., 1975).

responded to with: 1 (cannot presently do this, 2 (might be able with some instruction), or 3 (definitely can do this). Each subject was given an average score, ranging from 1 to 3, on each competency derived from the items in which they indicated their skill level. Items given a 4 (job does not give me a chance to perform this) were eliminated from the analysis. Therefore, a high score in each competency indicated a self-reported high level of skill with a low score indicating a self-reported low level of skill.

Canonical correlation was chosen as the form of analysis because this procedure calculates the relationship between a set of independent variables involving measurement with both continuous and categorical scales, and a set of dependent variables. A post hoc multiple regression analysis was employed to identify and explain the sources of variance found in each dependent variable.

Multiple regression with canonical variates was used to show the correlation between the total competency score as the dependent variable and the independent variables. Multiple regression analysis can be used for two major purposes: (1) separating and testing factors and interactions for their significance in accounting for variance in a dependent variable and (2) predicting a dependent variable from one or more independent variables. Although regression is generally associated with prediction, in this study it was used for variance explanation. This was necessary because three of the independent variables are

continuous: number of audiovisual hours, years of experience, and recency of training. Multiple regression, as opposed to analysis of variance, was the appropriate univariate statistical technique to use.[63]

Canonical correlation was employed to determine what relationship existed among the variables and multiple regression was employed to determine the relationship between individual criterion (dependent) variables and sets of predictor (independent) variables).

The independent variables for this study were: years of New Mexico certification, which represents years of experience; number of AV hours, which represents hours in audiovisual course work; years of degree, which represents recency of training; and ALA degree, which represents graduation from an American Library Association accredited school. The dependent variables are: organization and administration competencies; selection and acquisition competencies; production competencies; instructional design competencies; evaluation competencies; and research competencies. These two sets of variables were used in the canonical correlation analysis as well as in the multiple regression analyses. Interaction terms were formed from the four independent variables.

In addition, a total competency score for each subject was derived. This consisted of the linear combination

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[63]Fred N. Kerlinger and Elazar J. Pedhazur, Multiple Regression in Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1973), p. 22.

of the six dependent variables that were most highly related to the independent variables and their interactions, derived by computing the canonical variate score for each subject.

Multiple regression analysis was employed to examine the relationships between independent variables and their interactions and the six dependent variables and the total competency score.

The multivariate test of significance for both the canonical correlation tests and the multiple regression tests are based upon Harris' test of the greatest characteristic root.[64] An alpha level of .05 was chosen for all multivariate tests of statistical significance since this is the first study of these particular relationships and it is desirable to detect all possible relationships.

The alpha level for univariate analyses was set at .01 to reduce the probability of falsely rejecting null hypotheses, since the univariate tests were predicated on a significant multivariate canonical correlation.

The first series of multiple regression analyses tested the hypotheses associated with each of the six dependent variable competencies. These involved testing the significance of the total regression equation (all main

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[64]Richard Harris, A Primer of Multivariate Statistics (New York: Academic Press, 1975), pp. 101-106, 132-154.

effects and all interactions) for each of the six dependent variables as well as testing the significance of the interactions of the main effects. Additionally, after the above tests were performed, each main effect was tested for significant relationships with dependent variables.

The second series of multiple regression analyses followed the form of the first series. But these used canonical variate scores, which represented the total competency for each subject as the dependent variable. Following the results of the canonical correlation analyses and the procedures used in the first series of multiple regression analyses, the significance of the total regression equation and the main effect were tested.

The results of these analyses are discussed in the following chapter.

CHAPTER IV

ANALYSIS OF THE DATA AND RESULTS

This chapter presents the results of the multivariate and univariate analyses of the data gathered by the Professional Data form and the Media Competency Checklist. A descriptive summary of the data will be presented first, followed by the canonical correlation analysis, and then the multiple regression analyses. The entire analysis that follows is based on the 86 subjects for whom complete data were collected.

Descriptive Statistics

The average subject had nearly eight years of experience as a New Mexico certified librarian, had taken a little over seven credit hours of audiovisual course work, was granted a degree in late 1961, and was not graduated from an ALA accredited program. But there was rather large variation among subjects within any category. The average subject was most competent in selection and acquisition, followed by instructional design, organization and administration, evaluation, research, and least competent in production.

Table I presents the means and standard deviations for the 86 subjects on each of the four independent variables and the six specific competency dependent variables.

TABLE 1

MEANS AND STANDARD DEVIATIONS: INDEPENDENT VARIABLES (MAIN EFFECTS) AND DEPENDENT VARIABLES (SPECIFIC COMPETENCIES)

Variable	Mean	Standard Deviation
Independent:		
Years of Experience	7.83	6.47
Number of AV Hours	7.27	6.16
Recency of Training	61.67	11.33
ALA Degree	0.34	0.47
Dependent:*		
Organization and Administration	2.76	0.23
Selection and Acquisition	2.94	0.14
Production	2.42	0.47
Instructional Design	2.90	0.15
Evaluation	2.62	0.46
Research	2.52	0.53

* The possible range for each competency score is 1-3.

An inspection of each scattergram for each possible combination of independent variables with each dependent variable showed that the independent variables and the dependent variables were linearly related. Thus, the rest of the analyses are linear.

Canonical Correlation Analysis

The canonical correlation analysis of all the independent variables (all main effects and interactions) and all the dependent variables (the six competencies) resulted in a canonical correlation coefficient of 0.67. This is

significant at a probability level less than or equal to the .05 level. The two sets of variables shared 44.43 percent of their variance, a significant and meaningful percentage.

Table 2A presents the summary of canonical correlation analysis of the main effects and interactions with the six competencies. Table 2B presents the canonical coefficient for each variable for the significant greatest characteristic root in this canonical correlation analysis.

TABLE 2A

CANONICAL SUMMARY TABLE: MAIN EFFECTS AND INTERACTIONS

Root	Canonical Correlation	Degrees of Freedom			Greatest Characteristic Root
		s	m	n	
1	0.67	6	4	31.5	0.44*
2	0.60	5	4	31.5	0.37
3	0.53	4	4	31.5	0.29
4	0.49	3	4	31.5	0.24
5	0.36	2	4	31.5	0.13
6	0.21	1	4	31.5	0.04

*Multivariate significance: $\alpha = .05$, $R^2c\ (0.44) \simeq \theta c_1\ (0.44$ estimated) for the first root.

TABLE 2B

CANONICAL SUMMARY TABLE: MAIN EFFECTS AND INTERACTIONS

Variables	Canonical Coefficient For Significant Greatest Characteristic Root
Independent Variables:	
Years of Experience	2.16
Number of AV Hours	2.71
Recency of Training	1.03
ALA Degree	-4.74
Years of Experience and AV Hours	-1.22
Years of Experience and Recency of Training	-1.99
Years of Experience and ALA Degree	-4.58
AV Hours and Recency of Training	-2.60
AV Hours and ALA Degree	2.93
Recency of Training and ALA Degree	2.82
Years of Experience and AV Hours and Recency of Training	1.16
Years of Experience and AV Hours and ALA Degree	4.27
Years of Experience and Recency of Training and ALA Degree	5.32
AV Hours and Recency of Training and ALA Degree	-1.58
Years of Experience and AV Hours and Recency of Training and ALA Degree	-4.99
Dependent Variables:	
Organization and Administration	-0.34
Selection and Acquisition	-0.36
Production	0.48
Instructional Design	0.22
Evaluation	0.48
Research	0.26

The specific competencies that contributed most to the canonical correlation are Evaluation and Production. Research and Instructional Design contributed least to the relationship between the competencies and the independent variables. The competencies of Organization and Administration, and Selection and Acquisition have negative coefficients and are intermediate in magnitude. The negative signs indicate that they form one group of dependent variables and relate to the independent variables in an opposite direction from the other four competencies, which form a second group. Thus, low scores on the two competencies with negative coefficient signs and high scores on the four coefficients with positive signs show the strongest relationship to the independent variables and their interactions.

Multiple Regression Analysis

In the analysis that follows, the results of regressing each dependent variable on the independent variables and their interactions will be presented. Following this, the results of the regression analysis using the canonical variate scores or competency scores as the dependent variable will be presented.

None of the following regression analyses were multivariately significant. The results of all aspects of the multiple regression analysis for the dependent variable Organization and Administration were not univariately significant. See Table 3.

TABLE 3

REGRESSION SUMMARY TABLE:
DEPENDENT VARIABLE ORGANIZATION AND ADMINISTRATION

Source	ss	df	Proportion of Variance	F
Total Regression	1.39	15	0.32	2.19
Residual	2.97	70	0.68	
All Interactions Regression	0.71	11	0.17	1.64
Residual	3.35	70	0.82	
All Main Effects Regression	0.63	4	0.14	3.40
Years of Experience	0.34	1	0.01	0.81
Number of AV Hours	0.19	1	0.05	4.54
Recency of Training	0.09	1	0.02	2.08
ALA Degree	0.09	1	0.02	2.01
Residual	3.74	81	0.86	
Total	4.07	85		

In addition, all aspects of the regression of the dependent variable Selection and Acquisition were not univariately significant. See Table 4.

TABLE 4

REGRESSION SUMMARY TABLE:
DEPENDENT VARIABLE SELECTION AND ACQUISITION

Source	ss	df	Proportion of Variance	F
Total Regression	0.36	14	0.21	1.23
Residual	1.37	70	0.79	
All Interactions Regression	0.20	11	0.12	0.94
Residual	1.53	70	0.88	
All Main Effects Regression	0.16	4	0.09	2.04
Years of Experience	0.00	1	0.00	0.45
Number of AV Hours	0.07	1	0.04	3.62
Recency of Training	0.00	1	0.00	0.57
ALA Degree	0.06	1	0.03	2.98
Residual	1.57	81	0.91	
Total	1.73	85		

The regression of the dependent variable Production on all the independent variables, including interactions, was statistically significant univariately at an alpha of .01. Thus, all main effects and their interactions are statistically significantly related to this dependent variable in a univariate sense; the shared variance is 34 percent. The interactions were not significant, univariately. The regression equation for all of the main effects was statistically significant univariately at an alpha of .01, accounting for 17 percent of the variance in Production. The only individual independent variable which was significantly related to

Production was the Number of Audiovisual Hours ($p < .01$). The two were positively related; the more audiovisual hours reported, then the higher the competency score. These two variables shared seven percent of their variance. None of the other main effects were significant univariately. See Table 5.

TABLE 5

REGRESSION SUMMARY TABLE:
DEPENDENT VARIABLE PRODUCTION

Source	ss	df	Proportion of Variance	F
Total Regression	6.36	15	0.34	2.34*
Residual	12.43	70	0.66	
All Interactions Regression	3.24	11	0.17	1.66
Residual	15.56	70	0.83	
All Main Effects Regression	3.12	4	0.17	4.04*
Years of Experience	0.01	1	0.00	0.40
Number of AV Hours	1.38	1	0.07	7.14*
Recency of Training	0.31	1	0.02	1.58
ALA Degree	0.70	1	0.04	3.62
Residual	15.67	81	0.83	
Total	18.79	85		

*Univariate significance: $p < .01$

The results of all aspects of the multiple regression analysis for the dependent variable Instructional Design were not univariately significant. See Table 6.

TABLE 6

REGRESSION SUMMARY TABLE:
DEPENDENT VARIABLE INSTRUCTIONAL DESIGN

Source	ss	df	Proportion of Variance	F
Total Regression	0.51	15	0.27	1.72
Residual	1.38	70	0.73	
All Interactions Regression	0.38	11	0.20	1.77
Residual	1.51	70	0.80	
All Main Effects Regression	0.13	4	0.07	1.46
Years of Experience	0.02	1	0.01	1.06
Number of AV Hours	0.01	1	0.01	0.66
Recency of Training	0.06	1	0.03	2.53
ALA Degree	0.11	1	0.06	4.85
Residual	1.77	81	0.93	
Total	1.90	85		

The regression of the dependent variable Evaluation on all of the independent variables, including their interactions, was statistically significant univariately at an alpha of .01. Thus, all main effects and their interactions are statistically significantly related to this dependent variable; the shared variance is 38 percent. The interactions were not significant univariately. The regression equation for all of the main effects was statistically significant univariately at an alpha of .01, accounting for 18 percent of the variance in Evaluation. None of the individual

main effects were univariately significantly related to Evaluation. See Table 7.

TABLE 7

REGRESSION SUMMARY TABLE:
DEPENDENT VARIABLE EVALUATION

Source	ss	df	Proportion of Variance	F
Total Regression	6.78	15	0.38	2.87*
Residual	11.03	70	0.62	
All Interactions Regression	3.62	11	0.20	2.09
Residual	14.20	70	0.80	
All Main Effects Regression	3.16	4	0.18	4.37*
Years of Experience	0.11	1	0.01	0.62
Number of AV Hours	0.77	1	0.04	4.25
Recency of Training	1.14	1	0.06	6.33
ALA Degree	0.88	1	0.05	4.89
Residual	14.65	81	0.82	
Total	17.81	85		

*Univariate significance: $p < .01$

The results of all aspects of the multiple regression analysis for the dependent variable Research were not significant univariately. See Table 8.

TABLE 8

REGRESSION SUMMARY TABLE: DEPENDENT VARIABLE RESEARCH

Source	ss	df	Proportion of Variance	F
Total Regression	5.32	15	0.22	1.35
Residual	18.37	70	0.77	
All Interactions Regression	2.87	11	0.12	1.00
Residual	20.82	70	0.88	
All Main Effects Regression	2.45	4	0.10	2.33
Years of Experience	0.07	1	0.00	0.25
Number of AV Hours	0.00	1	0.00	0.02
Recency of Training	1.73	1	0.07	6.61
ALA Degree	0.43	1	0.02	1.64
Residual	21.25	81	0.90	
Total	23.70	85		

Multiple Regression Analysis with Canonical Variates

In the analyses that follow the total competency score, formed from the canonical coefficients, is the dependent variable. The canonical variate formed from the set of dependent variables is that linear combination of the dependent variables that shows the strongest correlation with a linear combination of the set of independent variables. In other words, if the dependent and independent variables are related in any manner, then the canonical variate formed from the dependent variables should show this relationship. Thus, it reflects a total competency score.

The regression of the total competency score on all of the independent variables and their interactions was statistically significant univariately at an alpha of .01. Thus, all main effects and their interactions are statistically significantly related to this total competency dependent variable; the shared variance is 44 percent, as the original canonical analysis indicated. The interactions were not significant univariately. The regression equation for all of the main effects was statistically significant univariately at an alpha of .01, accounting for 31 percent of the variance in total competency scores. The main effects of Recency of Training and ALA Degree were statistically significant univariately at an alpha of .01. Recency of Training accounted for six percent of the variance in the total competency scores; ALA Degree accounted for 16 percent of the variance in the total competency scores. Both significant main effects were positively related to the dependent variable; that is, the more recent the training, then the more competent the subject reported him/herself; if the subject graduated from an ALA accredited library school, then the more competence was reported by the subject. None of the other main effects were significant univariately. See Table 9.

TABLE 9

REGRESSION SUMMARY TABLE: DEPENDENT VARIABLE CANONICAL VARIATE SCORE FROM CANONICAL CORRELATION OF MAIN EFFECTS AND INTERACTIONS

Source	ss	df	Proportion of Variance	F
Total Regression	37.77	15	0.44	3.73*
Residual	47.24	70	0.56	
All Interactions Regression	11.34	11	0.13	1.53
Residual	73.67	70	0.87	
All Main Effects Regression	26.43	4	0.31	9.13*
Years of Experience	0.06	1	0.00	0.09
Number of AV Hours	3.81	1	0.04	5.26
Recency of Training	5.33	1	0.06	7.37*
ALA Degree	13.78	1	0.16	19.05*
Residual	58.59	81	0.69	
Total	85.01	85		

*Univariate significance: $p < .01$

Interpretation and discussion of these data are in the following chapter.

Summary

Hypothesis 1 was supported. There is a strong positive relationship between all four independent variables and their interactions and the six areas of perceived competencies.

Hypothesis 2 was supported only for the competency area of Production. It was not supported for the other five competency areas, or for total competency. The number of Audiovisual Credit Hours has a positive relationship on perceived competencies only in the area of Production.

Hypothesis 3 was not supported. There is no relationship between perceived media competency and Years of Experience.

Hypotheses 4 and 5 were supported only for total competency, not for any of the six competency areas. There is a positive relationship between the total perceived media competency and Recency of Training and ALA Degree Status.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Educational media have in recent years become essential elements in the educational process. Consequently, the traditional role of the school librarian is no longer appropriate. The school librarian has been required to become a media specialist, and this new role has required the acquisition of additional competencies. The media specialist must not only perform the tasks of a traditional librarian but must also possess skills formerly attributed to audiovisual personnel. The skills and functions of this new professional, the media specialist, have increasingly been studied by both the library and audiovisual fields. Many studies in the two areas have had very similar results: they have identified desirable competencies for the school media specialist. Surprisingly, however, none of the studies attempted to identify factors that affected the acquisition of the desired competencies.

The purpose of this study was to attempt to identify some of these factors, factors which aid the media specialist

in acquiring needed skills. More specifically, the purpose of this study was to examine the relationship between (1) selected media competencies identified in the literature as essential for effective organization and utilization of modern school libraries and (2) four variables believed by the researcher to be important factors in the acquisition of media competencies. The media competencies (dependent variables) included were Organization and Administration, Selection and Acquisition, Production, Instructional Design, Evaluation and Research; factors (independent variables) included were Years of Experience, Number of Audiovisual Credit Hours, Recency of Training, and ALA Degree Status.

The four independent variables were selected to determine their relationship to the librarians' perceived competencies. (1) Years of Experience was examined to determine if librarians who had been working for longer periods of time had increased their competencies while on the job by learning skills required by newer technology. In other words, to determine if they had responded to needs by acquiring additional skills on their own initiative. (2) Number of Audiovisual Hours was used as a variable to assess the relationship of the amount of formal audiovisual course work to perceived competencies. (3) Recency of Training was included to determine whether or not more recent graduates perceived themselves as possessing more competencies. A positive relationship might also indicate

the training institutions are responding to the demand for more relevant curriculum. (4) The variable of the ALA Degree was introduced to determine whether or not there was a relationship between ALA degree status and perceived media competencies. Professional positions in school libraries do not typically require that the employee hold a degree from a school accredited by the American Library Association (ALA). Since ALA accredited programs are expected to be of the highest quality, it was of interest to assess the relationship between ALA degree status and perceived media competencies.

Results

The subjects rated themselves on the Competency Checklist as quite competent in all six media competency areas, especially in Selection and Acquisition and in Instructional Design. All six media competency areas had average self-reported responses indicating at least moderate perceived competency in the six media areas based on self-reported scores: (1) = I can't do this; (2) = I might be able to do this; and (3) = I can do this.

The canonical correlation analysis showed that the six competency areas (Organization and Administration, Selection and Acquisition, Production, Instructional Design, Evaluation, and Research) were significantly related to the four independent variables (Years of Experience, Number of Audiovisual Hours, Recency of Training, and ALA Degree

Status), thus supporting Hypothesis 1. These two sets of variables shared 44 percent of their variance; that is, the set of independent variables and their interactions have a relationship with the set of dependent variables such that there was a 44 percent overlap in the variance.

The multiple regression analysis showed that the only individual dependent variables that were significantly related to the independent variables were Production and Evaluation. For Production, the number of Audiovisual Hours was positively related to the self-reported competency in Production, sharing 7 percent of the variance. Thus, Hypothesis 2 was supported only for one of the competency areas. For Evaluation, all of the independent variables taken together were significantly related, sharing 18 percent of the variance.

The multiple regression analysis performed on the total competency score, formed from the canonical coefficients, showed that the total competency score was significantly related to all the independent variables and their interactions, with a shared variance of 44 percent. Total completency was significantly related to the four main effects, sharing 31 percent of the variance. Total competency was significantly related to Recency of Training, sharing 6 percent of the variance, and ALA Degree Status, sharing 16 percent of the variance. Thus, the more recent a librarian's training, then the more likely the librarian to have reported higher total competency. Likewise, if a

librarian had received a degree from an ALA accredited school, the librarian was more likely to have a self-reported high total competency score. Therefore, Hypotheses 4 and 4 were supported only for total competency score.

The only independent variable that was not significantly related to any specific competency or to the total completency was Years of Experience, as measured by the number of years a librarian had New Mexico library certification. Thus, Years of Experience did not account for a significant or meaningful percentage of the variance in its relationships with any of the six specific competencies or the total competency score; Hypothesis 3 was not supported.

Conclusions

Before discussion of the results certain limitations inherent in this study should be examined. It is ex post facto and therefore prohibits active manipulation of the independent variables. The study should be viewed as an attempt to examine things as they are and as an effort to sort out and examine some variables which may affect competency.

Since no previous studies can be located which examined relationships among school librarians' competencies and the variables of Years of Experience, ALA Degree Status, Number of Audiovisual Hours and Recency of Training, this study can provide future researchers with at least an indication that some relationships may exist. While analysis

of the data showed that a significant relationship does exist between perceived competency and three of the variables, it may not be safe to state that there is a causal connection.

Another limitation of the study is the Competency Checklist. Since it was developed for this study and even though the estimate of reliability resulted in a 92 percent overall score, it also showed a wide reliability variation among the categories. The category of Instructional Design, for example, showed the lowest reliability estimate with a score of 28 percent. This suggests that some categories of the Checklist need revision. Scrutiny of the individual Checklist items also reveals that some are general in nature (Instructional Design, item 5: Apply learning theories and the psychology of human growth and development in assisting faculty and students), while others are more specific (Production, item 15: Operate video equipment). This lack of parallelism makes inferences about actual competence and self-report less possible than they might otherwise be.

Self-reported measures always present a problem with the validity of the reported results. A person's self-perception of skills is not always completely consistent with the person's behavioral performance of those skills. Therefore, conclusions and recommendations in this study bear this limitation in mind: that is, conclusions are stated as hypotheses.

Given the above limitations, the following conclusions can be drawn:

Although the New Mexico school librarians reported quite high competencies in all six areas, they reported that they were least competent in the area of Production. It may then be hypothesized that production skills are low among New Mexico librarians. Other evidence which can support this hypothesis includes the fact that the need for librarians to hold production skills is of fairly recent origin. Many librarians received their training before the present era; the average New Mexico school librarian received her/his training in the early 1960s. It can also be pointed out that some skills, either from a lack of facilities or because of the organizational structure (which separates library and audiovisual personnel) do not afford the librarian the opportunity to function in production. In addition, certification requirements for librarians in New Mexico currently include only one audiovisual course; consequently, there is no strong impetus to acquire more than a minimum of production competencies. The findings in this study affirm that New Mexico school librarians need to gain competencies in the area of Production if they are to attain a level of media competencies believed necessary to manage modern school libraries.

Librarians in this study did not acquire additional perceived media competency through experience. One of the

assumptions of this investigator was that librarians, if not formally trained in certain competency areas, would learn these on the job. This is apparently not the case, judging from this sample of librarians. One of the implications of this finding is that if it is indeed advantageous to the school system in the state to have librarians who are competent in media skills, some formalized method of requiring them to up-date their skills will have to be employed. This could be accomplished through the state's certification program, either through revision of the current requirements or by instituting a competency-based assessment of their skills for recertification.

The higher level of total competency of ALA graduates might be accounted for simply by pointing out that the ALA degree requires a minimum of thirty-two hours of course work, whereas a librarian may be certified in New Mexico by acquiring as little as eighteen hours of library science course work. Another factor, however, may be that all of the ALA graduates had master's degrees, while that was not true of the others. This aspect should be taken into consideration and built into any future studies. If this result is verified, it might have serious implications for employers who screen prospective employees.

A reason for the positive effect of Recency of Training upon competency level may be that curriculum in both library schools and in other training institutions has

changed within the past five to ten years to include more audiovisual courses, thus reflecting the needs of modern school libraries. If this is so, it would mean institutions are responding to current needs and some of the criticism of earlier studies is not now valid.

The results of this study suggest that the librarians who perceive themselves as most competent have graduated from ALA schools, have taken a number of audiovisual courses, and have had recent training. On the basis of these findings it is apparent that revised certification requirements (by requiring additional audiovisual courses and refresher courses) could positively affect school librarians' competencies.

This finding is consistent with the librarians' own expression of interest indicated by their responses on the Professional Data forms which revealed that many of them wanted short courses and workshop-type courses to upgrade their skills, especially in the Production area. The self-awareness of lack of appropriate competencies in Production was consistent with the statistical analysis of the Competency Checklists which showed that Production was the greatest area of need.

The relationship of ALA degree status and competency deserves more study. This study merely showed there was a positive relationship; the reasons for this should be explored. If the relationship is substantiated by further research, it will support the professional association's

standards for library education and enhance ALA graduates' opportunities in the job market.

Recommendations for Further Study

As technology continues to change the educational environment, the need for new skills will always be present. This study undertook to identify those skills believed presently needed to manage school libraries and to examine the relationship of four variables to those skills. A number of other variables await examination. The following are recommendations for further study: (1) revision and refinement of the Media Competency Checklist to improve its internal consistency with particular attention given to the category of Instructional Design and to keeping items parallel; (2) replication of the study in other states with the improved instrument; (3) determination of the quality of school media training programs in institutions of higher education in relation to desired media competencies; (4) a study to examine the relationship of ALA degree and actual competency of school librarians; (5) additional research to determine other independent variables affecting school librarians' media competencies; and (6) replication of the study using behavioral measures of skills as well as the self-reported skills.

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APPENDICES

APPENDIX A

MEMBERS OF THE PANEL OF JUDGES

Dr. David Bender, Assistant Director
Division of Library Development and Services
Maryland State Department of Education
Baltimore, Maryland

Dr. Margaret Chisholm, Vice President
University Relations and Development
University of Washington
Seattle, Washington

Dr. Donald Ely, Director
Center for the Study of Information and Education
Syracuse University
Syracuse, New York

Dr. Tom Hart, Associate Professor
School of Library Science
Florida State University
Tallahassee, Florida

Dr. Norman Higgins, Chairman
Department of Educational Technology and Library Science
Arizona State University
Tempe, Arizona

APPENDIX B

University of New Mexico
College of Education, Room 221
Albuquerque, New Mexico 87131
May 8, 1975

Dear Librarian:

As you know, competency certification is being considered for implementation in New Mexico. The State Department of Education has committed itself to designing a competency based certification recertification plan for 1975. As one of the library educators in this state, this is of major interest to me as it has implications for the initial training and/or retraining of librarians. If implemented, it may mean the restructuring of courses and of the development of an extensive program of continuing education for librarians in order for them to update or acquire certain skills.

As part of my doctoral dissertation at the University of Oklahoma, I have developed a set of competencies believed to be essential for the effective operation of modern libraries (Resource Centers, Media Centers, or whatever you choose to call them). These competencies were taken from lists of competencies which are currently required in other states and from lists developed by professional librarians and audiovisualists. I would like to ask your cooperation in completing the enclosed material: (1) the Professional Data sheet; and (2) the Competency Checklist.

Please return them to me as soon as possible. No names of respondents will be identified with the Competency Checklist so that when data are compiled, no person's name can be associated with any particular Checklist. Information will be compiled for statistical purposes only.

Results of the study will be made available to library educators and other interested persons. Please be as objective as possible when you indicate your judgement of your ability to perform the task specified.

Thank you very much for taking the time and trouble to assist in this project. I hope it will result in better library education programs and opportunities for you and for future librarians.

Sincerely,

Lotsee Smith, Assistant Professor
Educational Foundations

APPENDIX C

PROFESSIONAL DATA

1. Name _____

2. Home Address _____

3. Do you currently hold New Mexico School Library Certification? ☐ Yes ☐ No

4. Number of years you have held School Library Certification: _____

5(a). Level of school in which you serve as Librarian. Elem ☐ Middle ☐ Jr. Hi ☐ High ☐

(b). Number of students enrolled in this school: _____

6(a). Level of school in which you serve as Librarian (if you serve more than one). Elem ☐ Middle ☐ Jr. Hi ☐ High ☐

(b). Number of students enrolled in this school: _____

7. If you serve in some capacity other than as a building level librarian, for example a supervisor for a school system or part-time teacher, please specify:

_____
(Title)

8. What is the total number of audiovisual credit hours you have taken?
_____
(Hours in AV courses)

9. What is the total number of library science credit hours you have taken?
_____
(Hours in Lib. Sc. courses)

10. What is your highest degree? ☐ Bachelors _____ year obtained

☐ Masters _____ year obtained

11. Did you graduate from an ALA accredited Library School? ☐ Yes ☐ No

12. If yes, name of school: _____

13. Would you like to take any additional library science or audiovisual training? ☐ Yes ☐ No

14. If yes, please rank the type of training you would prefer, ranging from one (first choice) to ten (last choice). For example: Correspondence Courses 3
Extension Courses 1
In-Service Training 8

(a) Correspondence Courses _____
(b) Extension Courses _____
(c) In-Service in own district _____
(d) Night classes on main campus of institution of higher education _____
(e) Saturday classes on main campus _____
(f) Self instructional -- for example, packaged AV programs _____
(g) Seminars of 1-3 days' duration _____
(h) Short course during annual teacher's convention _____
(i) Summer classes _____
(j) Workshops (1-2 weeks' duration) _____
(k) Other (Specify) _____
_____
_____
(l) No preference _____

15. If yes, please list the kinds of skills or competencies you would like.

_____ _____
_____ _____
_____ _____

16. Any additional comments that you think are helpful or relevant:

APPENDIX D

MEDIA COMPETENCY CHECKLIST

Directions:

This checklist consists of six categories of competencies. The items under these categories describe some of the things librarians do as they use educational media and manage libraries. Before each item are four numbered spaces, each of which represents a way in which you might judge yourself as being able to do or not to do the task specified in the item. The meaning of each number on the scale is reproduced below; they also appear at the top of each page for convenient reference.

Be as objective as possible as you judge your ability in regard to each item. Remember that your individual responses are not to be evaluated in any way. Mark only one numbered space for each item, but be sure you check one space for every item.

Code for Checking Items:

[1]	I cannot presently do this.
[2]	I might be able to do this with some instruction.
[3]	I definitely can do this.
[4]	My job doesn't give me a chance to perform this competency.

Sample:

[1] [2] [X] [4] 1. Set up and operate a 16mm projector.

I. ORGANIZATION AND ADMINISTRATION

[1] [2] [3] [4] 1. Assess the status of the media center in terms of state and national guidelines.

[1] [2] [3] [4] 2. Establish goals and objectives to meet assessed needs.

[1] [2] [3] [4] 3. Establish procedures for effective and efficient acquisition, distribution and maintenance of materials and equipment.

1	I cannot presently do this.
2	I might be able to do this with some instruction.
3	I definitely can do this.
4	My job doesn't give me a chance to perform this competency.

1 2 3 4 4. Write a procedural manual for the media center.

1 2 3 4 5. Initiate, develop and implement policies and procedures for the operation of the media center.

1 2 3 4 6. Write a handbook for library users.

1 2 3 4 7. Determine staff requirements for the media center.

1 2 3 4 8. Write job descriptions for all media center personnel including student assistants.

1 2 3 4 9. Develop performance criteria for evaluating personnel.

1 2 3 4 10. Conduct in-service training activities.

1 2 3 4 11. Prepare and justify a budget for the media center.

1 2 3 4 12. Identify and interpret relevant state and federal legislation.

1 2 3 4 13. Write projects and proposals for the acquisition of special state or federal funds.

1 2 3 4 14. Assist in the planning and designing of new or remodeled media facilities.

1 2 3 4 15. Plan a public relations program which communicates to students, teachers, administrators, parents and the public the vital contribution of the media program to learning.

1 2 3 4 16. Coordinate and plan media program activities within the instructional program.

1	I cannot presently do this.
2	I might be able to do this with some instruction.
3	I definitely can do this.
4	My job doesn't give me a chance to perform this competency.

1 2 3 4 17. Provide instruction in the use of the media center and its resources.

1 2 3 4 18. Maintain performance and/or repair and maintenance records of AV equipment.

1 2 3 4 19. Compile and tabulate information for statistical reports.

1 2 3 4 20. Prepare periodic reports for appropriate administrators which effectively record and interpret the media program.

II. SELECTION AND ACQUISITION

1 2 3 4 1. Develop selection policy consistent with school goals and philosophy.

1 2 3 4 2. Develop policies and procedures for the review, evaluation and selection of materials and equipment.

1 2 3 4 3. Locate reviews and other sources of information needed for selection of print, nonprint materials and equipment.

1 2 3 4 4. Identify and use basic selection tools for all types of media.

1 2 3 4 5. Catalog and classify print and nonprint materials using the Dewey Decimal System.

1 2 3 4 6. Evaluate and weed the collection in terms of curricular, informational and recreational needs.

1	I cannot presently do this.
2	I might be able to do this with some instruction.
3	I definitely can do this.
4	My job doesn't give me a chance to perform this competency.

III. PRODUCTION

1 2 3 4	1.	Establish and apply criteria for decision-making concerning the desirability of locally produced material versus commercially produced material.
1 2 3 4	2.	Produce media for specified learning objectives.
1 2 3 4	3.	Prepare a storyboard.
1 2 3 4	4.	Letter instructional material using mechanical aids such as wrico pens.
1 2 3 4	5.	Construct instructional materials such as felt boards, bulletin boards, displays, etc.
1 2 3 4	6.	Design and produce overhead transparencies using a heat transfer method.
1 2 3 4	7.	Design and produce overhead transparencies using diazo method.
1 2 3 4	8.	Record and edit audio tapes.
1 2 3 4	9.	Duplicate audio tapes.
1 2 3 4	10.	Photograph still pictures using a copy stand technique.
1 2 3 4	11.	Design and produce a slide/tape presentation.
1 2 3 4	12.	Design and produce a multi-media presentation using synchronization.
1 2 3 4	13.	Develop film using a darkroom or black bag.

1	I cannot presently do this.
2	I might be able to do this with some instruction.
3	I definitely can do this.
4	My job doesn't give me a chance to perform this competency.

[1] [2] [3] [4] 14. Photograph and edit an 8mm film for instructional purposes.

[1] [2] [3] [4] 15. Operate video equipment.

[1] [2] [3] [4] 16. Produce a video program.

[1] [2] [3] [4] 17. Produce programmed material.

IV. INSTRUCTIONAL DESIGN

[1] [2] [3] [4] 1. Participate, as a member of the educational team, in the design and development of the curriculum.

[1] [2] [3] [4] 2. Assist teachers in the selection and utilization of appropriate media to achieve specific instructional objectives.

[1] [2] [3] [4] 3. Locate and evaluate available resources for user needs.

[1] [2] [3] [4] 4. Work with staff and teachers in the design and production of instructional materials.

[1] [2] [3] [4] 5. Apply learning theories and the psychology of human growth and development in assisting faculty and students.

[1] [2] [3] [4] 6. Use reference sources to meet informational needs of students and teachers.

V. EVALUATION

[1] [2] [3] [4] 1. Determine quantitative and qualitative criteria for evaluating the media center and media program.

1	I cannot presently do this.
2	I might be able to do this with some instruction.
3	I definitely can do this.
4	My job doesn't give me a chance to perform this competency.

1 2 3 4 2. Identify and apply appropriate evaluation methods or instrument.

1 2 3 4 3. Analyze and interpret information gathered from evaluation.

VI. RESEARCH

1 2 3 4 1. Identify and define research needs related to the media program.

1 2 3 4 2. Design and conduct a research study related to the media program.

1 2 3 4 3. Analyze and interpret information gathered in research study.

1 2 3 4 4. Locate and interpret findings of existing, related research.

1 2 3 4 5. Apply research findings to improve the media program.