Guidelines for Certification of Media Specialists.

This certification model, which is a refined version of the 1974 AECT Certification Model, is directed to the needs of educational media specialists, their employers and educators, and to certifying and accrediting agencies that approve programs preparing educational media specialists. Included in the document are reports on accreditation and certification of audiovisual, educational media, and library personnel. Appendices detail guidelines for the certification of personnel in educational communications and technology, including a list of competencies for specialists and technicians in media management, media product development, and instructional program development. This report is designed to serve the professional needs of all educators concerned with the effective utilization of instructional resources. (JEG)
Guidelines
For Certification
Of Media Specialists

Minaruth Galey
Chairperson, AECT Certification Committee

William F. Grady
AECT President

APRIL 1977
ASSOCIATION FOR EDUCATIONAL COMMUNICATIONS AND TECHNOLOGY
Concern with certification of the media professional has a long history. The present development of certification standards can be traced to the early 1930s when Charles F. Hoban, then Pennsylvania's Director of Visual Education in the State Department of Public Instruction, was instrumental in obtaining state legislation that required students in teacher education programs to acquire some media competence. Later, California enacted a similar requirement. The large scale introduction of media and technology into education following World War II greatly increased the concern with the quality of preparation and performance of the educators involved. The educational utilization of media and technology began to be recognized as an area of special expertise. In the view of many in education, the specialty in media and technology holds the most hope for the future of American education.

Much of the language in this latest contribution to the development of certification practices reflects the turmoil in terminology that has existed for some time in this professional field. The "field" has been forming in part from the coming together of school librarianship and audiovisual specialties into an emerging general educational specialty. Efforts have been made over the last two decades to describe and define the field. The "joint standards" (Standards for School Media Programs, published in 1969; the revision, Media Programs: District and School, published in 1974) developed through the cooperation of the "library" and "audiovisual" communities demonstrate that some agreement is possible. The most recent revision uses the terms media professional and media specialist. These terms are not universal or consistently used in the states at the present time. Considerable variation is found in the state certification documents.

It is the hope of the Association for Educational Communications and Technology that the move toward a common language will continue. The user of this book is urged to help us with progress in that area. While efforts of many professionals in our field are reflected in this document, a special debt of gratitude is owed to William F. Grady and Mina-ruth Galey for organizing this current work.

Howard Hitchens
Executive Director, AECT
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The function of certification in educational media is to ensure selection of persons who are fully qualified to initiate, implement, and direct a media program in the elementary and secondary schools. The availability of media and technology have attracted a large number of people whose media skills and experiences range from those of the talented amateur, to the skilled enthusiast, to the professional employee in education. Certification is the means of reliably identifying those persons who have the academic preparation, knowledge, and competencies to function as educational media specialists.

The AECT Certification Model was originally published in the November 1974 issue of Audiovisual Instruction and included the full report of the National Certification Task Force. The Model presented in this publication has been refined through the efforts of members of the original task force and the current certification committee chairperson. This document is directed to the needs of the following five publics:

1. Educational media specialists;
2. Employers of educational media specialists;
3. Educators who teach educational media specialists;
4. Agencies that certify educational media specialists;
5. Accrediting associations that approve programs preparing educational media specialists.

The concerns of these publics vary.

First, educational media specialists must have a clear view and understanding of their responsibilities and areas of activity if they are to achieve the purposes of the educational media program. This document provides a strong foundation for specifying the appropriate activities and competencies for the educational media specialists in (1) media management, (2) media product development, and (3) instructional program development.

Second, employers of educational media specialists (superintendents, for example) may not be fully prepared in the field of educational technology and therefore look for guidance in identifying the workers who are qualified as educational media specialists. This document provides assistance to this end. In addition, the model identifies assignments, assignments, and roles that are.

Third, those who teach aspiring educational media specialists need a clear statement of the competencies required of the students. The achievement of these competencies is the goal of the professional preparation program. With competencies clearly defined, the design of an appropriate set of learning activities is more readily accomplished. The AECT Model provides a firm basis for the selection of learning activities designed to prepare the professional educational media specialist.

Fourth, those responsible for certifying educational media specialists require a realistic statement of the characteristics of the qualified candidate. The ideal statement is appropriate for use by state agencies whether the issuance of a certificate is based on competencies, on program approval, or on transcript analysis. The standards for state certification can be designed with relative ease from the AECT model with stated competencies in media management, media product development, and instructional program development.

Fifth, accrediting associations utilizing evaluation guidelines for approving programs that prepare educational media specialists can employ this model as the basis for their evaluations. The model specifies competencies that should be produced by programs that prepare educational media specialists. The credentials of the faculty, the learning experiences of the students in the programs, and the procedures for advising, as well as the facilities and instructional resources, are best examined and evaluated in reference to what graduates should be capable of doing as a result of the professional preparation program.

This document was developed in response to professional needs. It is provided in the hope and expectation of serving those needs for all educators concerned with the effective utilization of instructional resources.

This new publication is intended to increase the availability of the Model. It is of special interest here that the AECT Certification Model published in 1974 has already been widely implemented as evidenced by the results of the 1976 nationwide survey of certification. The results of that survey are reported in Chapter III.

Minaruth Galey, Chairperson Certification Committee
The Certification Model lists more competencies than any one media specialist can be expected to achieve. Nevertheless, every professional media specialist can be expected to acquire some competencies in all three areas of responsibility and in each type of function, even though an individual may have emphasized one particular area in his or her preparation program or on the job.

The form of the Certification Model presented here is a summary of AECT's Certification Model first published in the November 1974 issue of Audiovisual Instruction. That very detailed model was a result of the report developed by the National Task Force on Certification.

In 1975, Bergeson and Grady conducted a survey of reactions to the model and its implementation. Results indicated that the model had been widely disseminated and several states were in the process of revising their state certification programs. However, results also indicated a need for a shorter version of the model that would subsume some of the detail under more general categories. A 1976 survey conducted by Galey, chairperson of AECT's Certification Committee, and open hearings held at the AECT national convention in 1977 confirmed the need for a presentation format that would make the Certification Model easier to work with on a day-to-day basis.

It was to this end that the model presented in this chapter was developed. It is based on a field test involving reactions from 80 persons across the country (personnel in state departments of education, faculty in colleges of education, and practitioners in the field), the results of two open hearings on certification, and the editorial work of a panel of three writers.

As mentioned earlier, the Certification Model is intended to serve several different publics. Since the shorter version will not adequately meet the needs of all those concerned with certification, the full model is also included (Appendix, page 25). The detailed task lists of the 1974 version are particularly useful to those who are designing programs of study to prepare educational media specialists.
### Media Management Competencies

**Organization Management Function**
- Set goals for the media program
- Organize and reorganize organizational structure to meet goals
- Plan IMC operation for coming year
- Coordinate facilities planning
- Plan management program/projects
- Initiate agency-funded projects
- Formulate policy for procedure and equipment changes for the media program
- Monitor and change operation of the media program
- Administer IMC
- Administer/direct project
- Administer media program
- Design financial structure
- Prepare annual budget
- Supervise cooperative purchasing
- Purchase instructional materials

**Personnel Management Function**
- Staff projects
- Staff media program
- Conduct in-service training of new staff on general office procedures
- Set up in-service workshops
- Improve communications among personnel in the IMC
- Supervise personnel in the media program
- Supervise various subunits
- Supervise student workers
- Rate and evaluate personnel

**Research-Theory Function**
- Conceptualize theoretical management models
- Conduct management research project
- Analyze management research data
- Improve standards of management research projects
- Perform feasibility studies on new equipment
- Conduct surveys of media usage

### Media Product Development Competencies

**Personnel Management Function**
- Staff projects
- Staff media program
- Conduct in-service training of new staff on general office procedures
- Set up in-service workshops
- Improve communications among personnel in the IMC
- Supervise personnel in the media program
- Supervise various subunits
- Supervise student workers
- Rate and evaluate personnel

**Research-Theory Function**
- Conceptualize theoretical production models
- Conduct product research project
- Analyze product research data
- Improve standards of product research projects
- Research learning strategies for media products

### Instructional Program Development Competencies

**Personnel Management Function**
- Staff instructional development projects

**Research-Theory Function**
- Conceptualize theoretical development models
- Conduct program development research projects
- Analyze program development research data
- Improve standards of program research projects
- Research learning strategies for media programs
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<td>Coordinate design of in-service activities</td>
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<td><strong>Production Function</strong></td>
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<td>Coordinate photography on location</td>
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<td></td>
<td>presentation</td>
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<td></td>
<td>Prepare materials for TV</td>
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<td></td>
<td>Produce/direct motion pictures and TV</td>
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<td>Coordinate production of audiotapes</td>
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<td>Coordinate production of slide</td>
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<td>Coordinate production of materials</td>
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<td>Coordinate mass production of course</td>
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<td></td>
<td>Improve production standards</td>
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<td>Write computer programs for CAI</td>
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<td>Coordinate production of TV programs</td>
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<td>Lead in previewing and selecting</td>
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<td>Lead in evaluating instructional</td>
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<td>Operate pilot projects for prototype</td>
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<td>instructional materials</td>
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</table>
MEDIA MANAGEMENT COMPETENCIES

Support-Supply Function
- Improve acquisition procedures for instructional materials
- Improve cataloging procedures
- Catalog materials
- Improve distribution systems
- Locate curriculum materials

Utilization
- Monitor individualized instruction/self-instructional media projects
- Monitor instructional facilities
- Help in instructional materials utilization
- Orient students to use of media materials

Utilization-Dissemination Function
- Maintain professional status/keep up in the field
- Report to management
- Provide information on IMC
- Explain special instructional projects to visitors

MEDIA PRODUCT DEVELOPMENT COMPETENCIES

Support-Supply Function
- Maintain professional status/keep up in the field
- Report to management
- Provide information on IMC
- Explain special instructional projects to visitors

Utilization
- Help students and teachers identify learning interests and select objectives
- Help students and teachers select learning activities to meet objectives
- Help students and teachers prepare to use learning activities
- Help teachers follow up student work on learning activities
- Help students and teachers to use reading, listening, and viewing experiences
- Arrange media presentations for large student groups
- Act as resource for individual/group directed learning activities
- Facilitate group learning process
- Facilitate tutoring of individual students with learning difficulties

Utilization-Dissemination Function
- Maintain professional status/keep up in the field
- Report to management
- Develop dissemination strategies for teacher preparation project
- Consult on media use and design
- Promote increased use of instructional media
- Inform teachers on media
- Consult with teachers regarding teaching behavior
- Facilitate fullest use of program resources
- Assist content specialist in developing materials
- Teach media courses
- Help teachers improve their teaching skills

INSTRUCTIONAL PROGRAM DEVELOPMENT COMPETENCIES

Support-Supply Function
- Maintain professional status/keep up in the field
- Report to management
- Provide information on IMC
- Explain special instructional projects to visitors

Utilization
- Help students and teachers identify learning interests and select objectives
- Help students and teachers select learning activities to meet objectives
- Help students and teachers prepare to use learning activities
- Help teachers follow up student work on learning activities
- Help students and teachers to use reading, listening, and viewing experiences
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- Help teachers improve their teaching skills

[11]
This report is developed from a series of four nationwide studies (1968, 1970, 1972, 1976) concerning certification of educational communications and technology personnel. It contains a summary of the data presented in the first three studies and introduces the findings from the 1976 nationwide survey.

Historical Background

Standards for the certification of audiovisual personnel were established by the Association for Educational Communications and Technology (then DAVI, hereinafter referred to as AECT) in a document entitled Guidelines for the Certification of AV Personnel published in November 1969. The Certification Committee of the PEMS Commission had concentrated its major effort since the 1968 AECT Convention in Houston, Texas toward developing these guidelines. The document was presented to the Delegate Assembly at the 1969 AECT Convention in Portland, Oregon; further revised by William R. Fulton; and accepted by the Executive Committee, AECT Board of Directors, in November 1969.

The Certification Committee at the 1969 AECT Convention in Portland decided, in order to provide a historical touchstone regarding certification for audiovisual personnel, to conduct a nationwide survey of certification programs for audiovisual personnel in existence in the various states at the time the Guidelines for Certification of AV Personnel was published. The survey was conducted and then reported to the AECT Convention in Detroit in April 1970.

At the 1971 AECT Convention in Philadelphia, the Certification Committee decided to conduct another nationwide survey on the same topic—certification for audiovisual personnel in existence in the United States. The results were reported to the 1972 AECT Convention in Minneapolis, Minnesota, as the second nationwide status report.

In each nationwide study, the investigation was designed to identify and provide information concerning Certification in those states:

1. That currently have a certification program in effect for AV personnel.
2. That do not currently have a certification program in effect for AV personnel.
3. In which no plans are being made for the certification program for AV personnel at this time.
4. In which plans are being made for certification programs for AV personnel that will become effective within the next one to three years.

The 1968 Study

A nationwide survey conducted by William F. Grady in 1968 showed seven states with a certification program for audiovisual personnel. Those states were Indiana, Iowa, Minnesota, North Carolina, Pennsylvania, Utah, and Wisconsin.

In 1968, there were 10 states that indicated they were working on a certification program for audiovisual personnel and hoped to have it established in one to three years. Those states were Arizona, Arkansas, Florida, Hawaii, Idaho, Nebraska, Ohio, Oklahoma, Vermont, and Washington.

The 1970 Study

By 1970, 14 states indicated they had certification programs for audiovisual personnel. Those states were Connecticut, Idaho, Indiana, Iowa, Minnesota, Montana, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Utah, and Wisconsin.

In 1970, there were 22 states that indicated they were working on a certification program for audiovisual personnel and hoped to have it established in one to three years. Those states were Arizona, Arkansas, Colorado, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Kansas, Louisiana, Maryland, Michigan, New Hampshire,
New Mexico, Oregon, Rhode Island, South Dakota, Texas, Vermont, Washington, and West Virginia.

The 1972 Study

By 1972, there were 22 states indicating they had certification programs for audiovisual personnel. These states were Arkansas, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Massachusetts, Minnesota, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Utah, Wisconsin, and Wyoming.

Nineteen states indicated they were working on certification and hoped to have a program in one to three years. Those states were Alabama, Arizona, Colorado, District of Columbia, Georgia, Kentucky, Louisiana, Maine, Maryland, Mississippi, New Hampshire, New Mexico, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, Washington, and West Virginia.

There were 10 states that did not have certification programs and were not working toward adoption of such at that time. Those states were Alaska, California, Delaware, Kansas, Michigan, Missouri, Montana, Nebraska, Nevada, and New Jersey.

Seven states indicated that professional preparation in the combined areas of audiovisual and library science was either required or strongly recommended. Those states were Florida, Illinois, North Carolina, North Dakota, Oregon, South Dakota, and Texas.

The 1976 Study

Because of the emergence in 1972 of combined preparation in print and nonprint areas and an apparent change in the terminology being used for certificates, the investigators in 1976 decided to include "educational media personnel" and "library personnel" as terms in the nationwide survey instrument. It was thought that from the use of these terms, in addition to the term "audiovisual personnel" used in the 1968, 1970, and 1972 studies, appropriate data could be collected from which a more accurate report could be compiled.

In 1976 there were eight states indicating they had a total of eleven certificates for AV personnel. These certificates did not include provisional or temporary certificates. These states were Illinois, Indiana, Minnesota, North Dakota, Oklahoma, Vermont, Wisconsin, and Wyoming.

There were 24 states that provided 39 certificates for educational or instructional media personnel, not including temporary or provisional certificates. These states were Alabama, Arkansas, Colorado, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Utah, and Vermont.

Two states, Missouri and Texas, used the title "learning resources personnel" on their certificates.

There were 34 states that provided a total of 54 certificates for school librarians, not including temporary or provisional certificates. These states were Alabama, Alaska, Arizona, Arkansas, California, Connecticut, District of Columbia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming. The titles of some certificates indicated a combined preparation. Maryland and North Dakota provided four certificates for AV-library personnel. Massachusetts provided one certificate for AV-media personnel.

Nine states provided eighteen certificates for personnel in media/library or library/media or library/learning resources. Those states were Delaware, Georgia, Iowa, Kentucky, Mississippi, Nevada, New York, Washington, and Wisconsin.

The authors express their appreciation to G. Gardner Snow of Brigham Young University for his assistance in obtaining information from all 50 states.

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<td>School Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>Media, Library, Learning Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td>Library</td>
<td>for Media</td>
<td></td>
</tr>
<tr>
<td>Nebraska</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nevada</td>
<td>Library/Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>Library</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>School Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Dakota</td>
<td>Audiovisual, Library, Media, Library/AV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Library, Media</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Oregon</td>
<td>Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Media, Library</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rhode Island had no plans to require certification in Media.

Note: Since no states reported "No Certification Program Effective Now" in the 1976 survey, that column heading—which appeared in similar tables in previous Certification reports—is not included in this table.

A comparison of the titles of the certificates with the preparation requirements revealed a wide variation. For example, it is possible to obtain a Library/Media certificate with preparation only in librarianship. Table 2 summarizes the data on the preparation requirements and the titles of the certificates.

### SUMMARY OF PREPARATION REQUIREMENTS FOR CERTIFICATES

<table>
<thead>
<tr>
<th>TITLE OF CERTIFICATE</th>
<th>TOTAL NO. OF CERTIFICATES</th>
<th>NO. OF CERTIFICATES W/NO LIBR REQ</th>
<th>NO. OF CERTIFICATES W/LIBR &amp; MED REQ</th>
<th>NO. OF CERTIFICATES W/NO MEDIA REQ</th>
<th>NO. OF CERTIFICATES W/NO SPECIFIED REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audiovisual Personnel</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Library Personnel</td>
<td>54</td>
<td>0</td>
<td>8</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Ed. Media Personnel</td>
<td>39</td>
<td>9</td>
<td>20</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Learning Resources Personnel</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>AV Library Personnel</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>AV Media Personnel</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Media/Library Personnel</td>
<td>17</td>
<td>0</td>
<td>12</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Totals</td>
<td>128</td>
<td>15</td>
<td>45</td>
<td>34</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 3 (page 1b) presents the characteristics of the currently existing state certification programs for educational communications and technology personnel.
In every state there is certification for personnel who work in some aspect of educational communication and technology. These certificates may be entitled "audiovisual," "educational media," "library," "learning resources," or some combination of these terms.

Of the 39 available library certificates that specify requirements, 29 (82%) have no media requirements. Seven (18%) have media design and production requirements. Of the 29 available certificates for educational media personnel that specify requirements, 26 (93%) have no library requirements. Twenty (69%) have both library and media requirements. Of the 17 certificates with combination titles that specify requirements, 14 (82%) have some preparation in both library and media. Certificates for personnel with the title "learning resources" have requirements in both library and media.

Of the 24 educational media certificates that require teaching experience as a prerequisite for the issuance of an educational media certificate, nine (38%) require less than one year of teaching experience, and student teaching is usually the experience designated. The remaining 82% require one year or more with one certificate requiring one year, four requiring two years, nine requiring three years, and one requiring five years.

Of the 29 library certificates that require teaching experience as a prerequisite for the issuance of a librarian certificate, 22 (76%) require less than one year of experience and student teaching is usually the experience designated. The remaining 24% require one year or more with four certificates requiring three years, one requiring four years, and two requiring five years. Those that require more than one year of experience are usually supervisory, advanced, professional, or director types of certificates.

Several conclusions can be drawn from the 1976 survey:

1. Certification continues to be an issue of concern in a majority of the states.

2. Certificates for educational media specialists typically identify workers with competencies in the three areas of media management, media product development, and instructional program development.

3. While certificates with combination titles reflect professional preparation in both library and educational media, at this time the preparation in library is considerably more extensive than preparation in educational media.

4. Certificates for librarians typically identify workers as specialists with competencies in media management inasmuch as 82% of the certificates require no media product or program development competencies.

5. It appears that educational media specialists and librarians are different kinds of workers. Librarians have specialized competencies concentrated in media management, in terms of the AECT Certification Model, and educational media personnel are in media product development, instructional development, and media management.

6. An analysis of the professional preparation requirements listed in the educational media certification documents that specify library science competencies reveals that the majority of those competencies are in the areas of selection, utilization, evaluation, classification, and cataloging of learning resources at the minimal entry level.

7. An analysis of the professional preparation requirements listed in those seven library certification documents that specify educational media competencies reveals that the competencies are in the areas of media design, production, and utilization at the minimal entry level.

8. Based on the years of teaching experience required for an educational media certificate (62% require one or more years in the classroom), it appears that the role of the educational media specialist continues to be directly related to instructional support and classroom instructional activities.
<table>
<thead>
<tr>
<th>STATE</th>
<th>NAME OF CERTIFICATE</th>
<th>DEGREE</th>
<th>CERTIFICATE REQUIRED</th>
<th>EXPERIENCE (YEARS)</th>
<th>NUMBER OF HOURS IN EDUCATIONAL MEDIA</th>
<th>NUMBER OF HOURS IN LIBRARY SCIENCE</th>
<th>NUMBER OF HOURS IN RELATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Educational Media</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Library Science</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>Type A, Regular Certificate</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td></td>
<td>10 hrs recommended</td>
<td></td>
</tr>
<tr>
<td></td>
<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type C, Special Services Certificate, Library</td>
<td>Bacc.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Arizona</td>
<td>School Librarian (K-12) LEN (Library endorsement)</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td>18 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arkansas</td>
<td>Media Specialist (K-12)</td>
<td>Bacc.</td>
<td>teacher</td>
<td>12 sh</td>
<td>18 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Librarian (K-12)</td>
<td>Bacc.</td>
<td>teacher</td>
<td>12 sh</td>
<td>18 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>Library Services Credential</td>
<td>Bacc.</td>
<td>teacher</td>
<td>12 sh</td>
<td>24 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
<td>12 sh</td>
<td>24 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>Educational Media Specialist</td>
<td>Masters or higher</td>
<td>teacher</td>
<td>3 yrs teaching and/or school media experience</td>
<td>combined</td>
<td></td>
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</tr>
<tr>
<td>Connecticut</td>
<td>Special Subject or Field Library Endorsement</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td>18 sh</td>
<td>17 sh</td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>Library/Media Specialist Standard Certificate</td>
<td>Bacc.</td>
<td>teacher (or 15 sh in Education)</td>
<td></td>
<td>Teacher Education program in LS or Masters in School Librarianship or 24 sh and 6 sh practicum or 1 yr experience - 6 sh</td>
<td>18 sh</td>
<td>17 sh</td>
</tr>
<tr>
<td>STATE</td>
<td>NAME OF CERTIFICATE</td>
<td>DEGREE</td>
<td>CERTIFICATE REQUIRED</td>
<td>EXPERIENCE (YEARS)</td>
<td>NUMBER OF HOURS IN EDUCATIONAL MEDIA</td>
<td>NUMBER OF HOURS IN LIBRARY SCIENCE</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------</td>
<td>--------</td>
<td>----------------------</td>
<td>--------------------</td>
<td>---------------------------------------</td>
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</tr>
<tr>
<td>District of Columbia</td>
<td>School Librarian</td>
<td>MLS</td>
<td>teacher</td>
<td>practice teaching</td>
<td>Masters</td>
<td></td>
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<tr>
<td></td>
<td>Senior</td>
<td>MLS</td>
<td>teacher</td>
<td>practice teaching</td>
<td>18 sh</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Elementary</td>
<td>BA</td>
<td>teacher</td>
<td>practice teaching</td>
<td>18 sh</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Junior</td>
<td>BA</td>
<td>teacher</td>
<td>practice teaching</td>
<td>Masters</td>
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<tr>
<td></td>
<td>Vocational</td>
<td>MLS</td>
<td>teacher</td>
<td>practice teaching</td>
<td>Masters</td>
<td></td>
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<tr>
<td>Florida</td>
<td>Educational Media Specialist (K-12)</td>
<td>Bacc.</td>
<td></td>
<td></td>
<td>24 sh combined</td>
<td></td>
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<tr>
<td>Georgia</td>
<td>Associate Library Media Specialist</td>
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<td>teacher</td>
<td></td>
<td>20 sh</td>
<td></td>
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<tr>
<td></td>
<td>T-5 Career Library Media Specialist</td>
<td>Masters</td>
<td>teacher</td>
<td></td>
<td>25 ch combined</td>
<td>10 ch</td>
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</tr>
<tr>
<td>Hawaii</td>
<td>School Library Specialist</td>
<td>Bacc.</td>
<td></td>
<td>student teaching</td>
<td>21 sh</td>
<td>18 sh</td>
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</tr>
<tr>
<td></td>
<td>Basic Specialist</td>
<td>Bacc.</td>
<td></td>
<td>or 1 yr</td>
<td>9 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional Specialist</td>
<td>Bacc. + 30 sh</td>
<td>student teaching</td>
<td>or 1 yr</td>
<td>9 sh</td>
<td>21 sh</td>
<td>24 sh</td>
</tr>
<tr>
<td></td>
<td>Media Specialist</td>
<td>Bacc.</td>
<td></td>
<td>student teaching</td>
<td>21 sh</td>
<td>9 sh</td>
<td>18 sh</td>
</tr>
<tr>
<td></td>
<td>Basic Specialist</td>
<td>Bacc.</td>
<td></td>
<td>or 1 yr</td>
<td>9 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional Specialist</td>
<td>Bacc. + 30 sh</td>
<td>student teaching</td>
<td>or 1 yr</td>
<td>21 sh</td>
<td>9 sh</td>
<td>24 sh</td>
</tr>
<tr>
<td>Idaho</td>
<td>Educational Media Generalist</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td>24 sh</td>
<td></td>
<td>6 sh</td>
</tr>
<tr>
<td></td>
<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td>15 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>Instructional Media Specialist</td>
<td>Bacc.</td>
<td>teacher</td>
<td>student teaching</td>
<td>12 sh (AV)</td>
<td>15 sh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
<td>student teaching</td>
<td>18 sh</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Audiovisual Coordinator</td>
<td>Bacc.</td>
<td>teacher</td>
<td>student teaching</td>
<td>18 sh (AV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Media Specialist</td>
<td>Bacc.</td>
<td>teacher or standard special with media endorsement</td>
<td>student teaching</td>
<td>32 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>School Library Specialist</td>
<td>Bacc.</td>
<td>teacher or standard special with school librarian endorsement</td>
<td>student teaching</td>
<td>32 sh</td>
<td></td>
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</tr>
<tr>
<td>STATE</td>
<td>NAME OF CERTIFICATE</td>
<td>DEGREE</td>
<td>CERTIFICATE REQUIRED</td>
<td>EXPERIENCE (YEARS)</td>
<td>NUMBER OF HOURS IN EDUCATIONAL MEDIA</td>
<td>NUMBER OF HOURS IN LIBRARY SCIENCE</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------</td>
<td>--------</td>
<td>----------------------</td>
<td>--------------------</td>
<td>--------------------------------------</td>
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<td>----------------------------------</td>
</tr>
<tr>
<td>Illinois</td>
<td>Audiovisual Specialist</td>
<td>Bacc.</td>
<td>teacher or standard AV special endorsement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Media Supervisor or Director</td>
<td>Bacc.</td>
<td>supervisory or standard special w/media or general endorsement</td>
<td></td>
<td></td>
<td></td>
<td>32 sh combined</td>
</tr>
<tr>
<td>Indiana</td>
<td>School Media Services</td>
<td>Basic</td>
<td>Bacc.</td>
<td>36 UG sh combined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional</td>
<td>basic</td>
<td></td>
<td>6 UG sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audiovisual Services</td>
<td>Basic</td>
<td>Bacc.</td>
<td>24 UG sh combined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional</td>
<td>basic</td>
<td></td>
<td>6 UG sh, 6 G sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Instructional Supervision in School Media Services</td>
<td>Basic</td>
<td>Bacc., teacher</td>
<td>advanced combined</td>
<td></td>
<td></td>
<td>15 G sh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional</td>
<td>basic</td>
<td>3 yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Library Services</td>
<td>Basic</td>
<td>Bacc.</td>
<td>24 UG sh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional</td>
<td>basic</td>
<td>6 UG sh</td>
<td></td>
<td></td>
<td>6 G sh (AV)</td>
</tr>
<tr>
<td>Iowa</td>
<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
<td>student teaching</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Director, Library Services</td>
<td>Masters</td>
<td>teacher</td>
<td></td>
<td></td>
<td></td>
<td>6 sh</td>
</tr>
<tr>
<td></td>
<td>Library/Learning Resources Specialist</td>
<td>Masters</td>
<td>teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Educational Media Specialist</td>
<td>Masters</td>
<td>teacher</td>
<td>major</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher-Librarian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 sh</td>
</tr>
<tr>
<td>Kansas</td>
<td>Secondary School Librarian</td>
<td></td>
<td>teacher</td>
<td></td>
<td>15 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>fewer than 500</td>
<td></td>
<td>teacher</td>
<td></td>
<td>15 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>more than 500</td>
<td></td>
<td>teacher</td>
<td></td>
<td>24 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elementary School Librarian</td>
<td></td>
<td>teacher</td>
<td></td>
<td>15 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATE</td>
<td>NAME OF CERTIFICATE</td>
<td>DEGREE</td>
<td>CERTIFICATE REQUIRED</td>
<td>EXPERIENCE (YEARS)</td>
<td>NUMBER OF HOURS IN EDUCATIONAL MEDIA</td>
<td>NUMBER OF HOURS IN 'LIBRARY SCIENCE'</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>-------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Kentucky</td>
<td>School Media Librarian</td>
<td>Bacc.</td>
<td>Standard</td>
<td>1</td>
<td>30 sh combined</td>
<td>6-15 sh</td>
<td>12 sh</td>
</tr>
<tr>
<td></td>
<td>School Media Specialist</td>
<td>Masters</td>
<td>Provisional SML</td>
<td>3 yrs</td>
<td>15-21 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Media Supervisor</td>
<td>60 G sh</td>
<td>Standard SMS</td>
<td>3 yrs</td>
<td>6-9 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>School Library Service Supervisor of School Libraries</td>
<td>Masters</td>
<td>Teachers</td>
<td>5 yrs, library</td>
<td>18 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supervisor of Parish or City Materials and/or Media Centers</td>
<td>Advanced degree</td>
<td>Type A</td>
<td>5 yrs</td>
<td>12 6 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>School Librarian</td>
<td>Bacc., in school library or teachers certificate</td>
<td>Provisional</td>
<td>4 yrs</td>
<td>18 UG sh</td>
<td></td>
<td></td>
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<tr>
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<td>Professional</td>
<td>Bacc. + 30 sh</td>
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<td>4 yrs</td>
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<tr>
<td>Kentucky</td>
<td>Ed Media (AV/Library)-</td>
<td>Bacc.</td>
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<tr>
<td></td>
<td>Associate Level I</td>
<td>Masters or</td>
<td>Master of Arts</td>
<td>3 yrs, library</td>
<td>18 sh</td>
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<td></td>
<td>Generalist Level II</td>
<td>Masters or</td>
<td>Generalist</td>
<td>3 yrs media, library</td>
<td>12 6 sh</td>
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<tr>
<td>Maryland</td>
<td>Ed Media Specialist in Level II</td>
<td>Masters or</td>
<td>Practicum</td>
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<td>(competency based)</td>
<td>Ed Media (AV/Library) Administrator Level III</td>
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<td>Generalist Level II</td>
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<td></td>
<td>Librarian</td>
<td>Bacc. + 18 sh</td>
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<tr>
<td></td>
<td>Elementary</td>
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<td></td>
<td>Secondary</td>
<td>supervised ob-</td>
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<td>librarian</td>
<td>school library or</td>
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<td>NUMBER OF HOURS IN LIBRARY SCIENCE</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
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<td>Maryland</td>
<td>Supervisor of School Libraries</td>
<td>MLS</td>
<td>elem or sec school librarian</td>
<td>3 yrs school library</td>
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<td>School Librarian</td>
<td>Bacc. + 20 sh</td>
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<td>teacher</td>
<td>2 yrs teaching</td>
<td>10 sh</td>
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<td></td>
<td>Media Generalist</td>
<td>Bacc.</td>
<td>teacher</td>
<td>2 yrs teaching</td>
<td>35 sh</td>
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<td></td>
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<td>Masters</td>
<td>media generalist</td>
<td>3 yrs media</td>
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<td>Class AAA</td>
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<td>Class AA</td>
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<td>Class A</td>
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<td>Masters</td>
<td>elem or sec teacher</td>
<td>2 yrs as media/</td>
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<td>elem or sec teacher</td>
<td>tional media</td>
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<td></td>
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<td>NUMBER OF HOURS IN RELATED AREAS</td>
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<td>Nevada</td>
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<td>Bacc.</td>
<td>or teacher library/media + 8 sh</td>
<td>20 sh combined</td>
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<td>library media specialist</td>
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<td>Media Generalist</td>
<td>Bacc.</td>
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<td>2 years</td>
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<td>Masters</td>
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<td>Associate Educational Media Specialist</td>
<td>Bacc.</td>
<td>teacher</td>
<td>18 sh combined</td>
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<td>teacher</td>
<td>30 G sh combined</td>
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<tr>
<td>New Mexico</td>
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<td></td>
<td>18 sh</td>
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<tr>
<td>New Mexico</td>
<td>Secondary Librarian</td>
<td>sec teacher</td>
<td></td>
<td>18 sh</td>
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<td>All-level Librarian</td>
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<td>New York</td>
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<td>36 sh combined</td>
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<td>School Media Specialist (Ed Communications)</td>
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<td>practicum</td>
<td>36 sh combined</td>
<td>12 sh</td>
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<td>Provisional School Media Specialist</td>
<td>Bacc.</td>
<td>pracicum</td>
<td>36 sh combined</td>
<td>12 sh</td>
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<td>Permanent School Media Specialist</td>
<td>Bacc.</td>
<td>pracicum</td>
<td>36 sh combined</td>
<td>12 sh</td>
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<tr>
<td>North Carolina</td>
<td>Media Coordinator</td>
<td>Masters</td>
<td></td>
<td>combined--competency-based</td>
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<td>North Carolina</td>
<td>Media Specialist</td>
<td>Sixth Year</td>
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<td>North Dakota</td>
<td>Library only</td>
<td>Bacc.</td>
<td>teacher</td>
<td>classroom teaching recommended</td>
<td>16 sh minor</td>
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<td>North Dakota</td>
<td>Audiovisual only</td>
<td>Bacc.</td>
<td>teacher</td>
<td>classroom teaching recommended</td>
<td>12 sh combined</td>
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<tr>
<td>STATE</td>
<td>NAME OF CERTIFICATE</td>
<td>DEGREE</td>
<td>CERTIFICATE REQUIRED</td>
<td>EXPERIENCE (YEARS)</td>
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<td>NUMBER OF HOURS IN LIBRARY SCIENCE</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
</tr>
<tr>
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<td>North Dakota (cont'd)</td>
<td>Library/Audiovisual Combination</td>
<td>Bacc.</td>
<td>teacher</td>
<td>classroom teaching recommended</td>
<td>10 sh</td>
<td>16 sh</td>
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<td>Media Director</td>
<td>Masters</td>
<td>teacher, library/AV combination</td>
<td>classroom teaching recommended</td>
<td>12 sh</td>
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<td>Ohio</td>
<td>Educational Media</td>
<td>Bacc.</td>
<td>teacher</td>
<td>student teaching</td>
<td>30 sh combined</td>
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<td>Educational Media (Elementary School only)</td>
<td>Bacc.</td>
<td>elem teacher</td>
<td></td>
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<tr>
<td>Oklahoma</td>
<td>Professional School Librarian</td>
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<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>16 sh</td>
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<td>Librarian (public school)</td>
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<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Standard Certificate</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Provisional</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Temporary</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Audio Visual Specialist</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<tr>
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<td>Provisional</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Temporary</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Basic Educational Media</td>
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<td>teacher</td>
<td>3 years</td>
<td>18 sh</td>
<td>12 sh</td>
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<td>Standard Educational Media</td>
<td>Masters or Bacc. + 45 qh</td>
<td>basic</td>
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<td>Pennsylvania</td>
<td>Library Science (K-12)</td>
<td>Bacc.</td>
<td>teacher</td>
<td>practicum in library &amp; classroom</td>
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<td>teacher</td>
<td>practicum with young children</td>
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<td>Bacc. + 45 qh</td>
<td>perm teacher</td>
<td>2 yrs teaching</td>
<td>18 sh</td>
<td>18 sh</td>
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<td>Bacc.</td>
<td>teacher</td>
<td>practice teaching (2 yrs in classroom)</td>
<td>18 sh</td>
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<td>3 yrs library</td>
<td>24 sh</td>
<td>18 sh</td>
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<tr>
<td></td>
<td>Professional</td>
<td>Bacc. + 36 sh or Masters</td>
<td></td>
<td>3 yrs library</td>
<td>24 sh</td>
<td>18 sh</td>
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<td>NUMBER OF HOURS IN EDUCATIONAL MEDIA</td>
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<td>Teaching Librarian</td>
<td>Bacc.</td>
<td>(Nat'l Tchr's Exam)</td>
<td></td>
<td>18 sh</td>
<td>18 sh</td>
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<td>Bacc.</td>
<td>(Nat'l Tchr's Exam)</td>
<td></td>
<td>24 sh</td>
<td>18 sh</td>
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<td>School Librarian</td>
<td>Bacc.</td>
<td>teacher</td>
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<td>3 yrs teaching</td>
<td>9 UG sh, 27 G sh combined</td>
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<td>Masters or SS sh</td>
<td>teacher</td>
<td>3 yrs as educator. incl 1 yr media</td>
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<td>Masters or 5th year</td>
<td>teacher</td>
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<td>competencies + 15 sh</td>
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<td>competencies + 15 sh</td>
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<td>State Board Policy pp. 93-94</td>
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<td></td>
<td>consortium-based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Librarian</td>
<td></td>
<td>student teaching</td>
<td></td>
<td></td>
<td>21 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio-Visual Director</td>
<td>Bacc.</td>
<td>teacher</td>
<td>3 yrs teaching</td>
<td>12 sh</td>
<td>3 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AV Building Coordinator</td>
<td>Bacc.</td>
<td>teacher</td>
<td></td>
<td>5 sh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Librarian</td>
<td></td>
<td>student teaching</td>
<td></td>
<td></td>
<td>22 sh combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Library Supervisor</td>
<td>Masters + 3 courses</td>
<td></td>
<td></td>
<td>5 yrs library</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATE</td>
<td>NAME OF CERTIFICATE</td>
<td>DEGREE</td>
<td>CERTIFICATE ON/RISD</td>
<td>EXPERIENCE (YEARS)</td>
<td>NUMBER OF HOURS IN EDUCATIONAL MEDIA</td>
<td>NUMBER OF HOURS IN LIBRARY SCIENCE</td>
<td>NUMBER OF HOURS IN RELATED AREAS</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>--------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>--------------------------------------</td>
<td>-----------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Audiovisual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Initial</td>
<td>Bacc.</td>
<td></td>
<td>1 yr teaching</td>
<td>12 sh</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard</td>
<td></td>
<td></td>
<td>teacher + initial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>Masters, AV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>Initial</td>
<td>Bacc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard</td>
<td></td>
<td></td>
<td>teacher + initial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>Masters with 50% library science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Terminology on the chart is taken directly from certification documents published by the states and, as is evident, varies from state to state.

The following abbreviations are used in Table 3: sh - semester hour; qh - quarter hour; Bacc. - baccalaureate, bachelors degree; A/V - audiovisual; G - graduate; UG - undergraduate.
This appendix presents the background and rationale underlying the certification model presented in chapter 2. The Competency and Task List, from which the current model is derived, is also included. These materials were originally published in the November 1974 issue of Audiovisual Instruction, which is now out of print. The information reprinted here is useful for a full understanding of the origin and structure of the certification model.

The Competency and Task List was adapted from the Final Report: Jobs in Instructional Media Study by Hyer, et al. The list is not intended to be all inclusive. Rather, it is representative of the competencies and tasks associated with the nine functions identified in the Silber Domain of Instructional Technology Model, as shown in Figure 1 of the articles by William C. Prigge (page 29).

The Worker Instruction Level for each task is indicated by the number preceding the task statement. For the "specialist," levels 5—8 are shown. For "technicians," levels 3—5 are listed. In some instances, tasks have not been assigned a level because the specialist or technician may not be responsible for actually performing the activity, but must be familiar with it.
Since AECT’s inception as an organization, its members have expressed concern about the preparation of new personnel in the field of educational communications and technology. This concern led to questions about preparation programs and it focused on the need to identify qualified personnel once they started operating in schools.

The intensity of this concern prompted AECT President Robert Heinich (in December 1971) to appoint two task forces: one to work on problems pertaining to certification of educational communications and technology personnel, and the other to develop recommendations regarding problems in the accreditation of educational communications and technology preparation programs. Those named to work on these two task forces were as follows:

Certification Task Force
- James Brown
- William Grady (Chairman)
- Roland Mergener

Accreditation Task Force
- Clarence Bergeson (Chairman)
- Gerald LaMarsh
- William Prigge

In the execution of their assignments, the two task forces conducted an intensive three-year research and study effort. While the two task forces worked together on problem areas of mutual concern, each pursued its own separate and discrete assignment.

Review of Literature
A review of all available literature and research findings related to the certification of personnel and the accreditation of programs was made. This literature included AECT’s Guidelines for the Certification of AV Personnel; USOE’s Jobs in Instructional Media Study; USOE’s Curriculum Guidelines for Library Technical Assistants; the Media Guidelines Project: AECT’s Guidelines for Certification of Media Specialists; and ALA’s School Library Manpower Project, including the Behavioral Requirements Activity Checklist (BRAC) publication. Works and publications of the former Professional Education of Media Specialists (PEMS) Commission and the current Committee on Definition and Terminology were used. Also reviewed were applicable writings of Hoban, Finn, Heinich, Hyer, and Silber.

Working Sessions
During the three-year study, the two task forces held 15 working and open hearing sessions involving more than 700 educators from public and private schools (K-12 and university) as well as industry, government, and commerce. Ten specific working sessions were held to plan, to synthesize collected data, to review drafts and working papers, and to rewrite. These working sessions were held in May 1972 at the National Convention in Minneapolis, Minnesota; in October 1972 in San Jose, California; in January 1973 at the Northeast Regional Leadership Conference in Newport, Rhode Island; in March 1973 in Washington, D.C.; in April 1973 at the National Convention in Las Vegas, Nevada; in October 1973 in Kerhonkson, New York; in November 1973 in Washington D.C.; in January 1974 in Washington D.C.; in March 1974 at the National Convention in Atlantic City, New Jersey; and in August 1974 in Washington D.C.

Open Hearings
Five special open hearing sessions designed specifically to solicit reactions and feedback from both selected individuals and AECT’s membership at large were conducted. One of these sessions was held in San Jose in October 1972, and was attended by 20 persons selected because of their recognized expertise in educational media. The at-
tendees were representatives of educational settings ranging from public schools (K-12) to colleges and universities, along with representatives from industry, commerce, and government on the west coast.

A second special session, conducted on the east coast in March 1974, was attended by 40 persons. The selection of these individuals was based on their recognized expertise in the field, the educational setting in which they were currently employed, and the geographic location of their place of employment. Special effort was made to obtain a group broadly representing the total membership of AECT. Three weeks before the meeting those to attend received working drafts of the guideline documents for their critical review and analysis. They then met in an all-day Saturday seminar in Atlantic City.

Three sessions to solicit feedback and reactions from the membership at large were conducted. The first was held at the Northeast Regional Leadership Conference in January 1973 in Newport, Rhode Island, with 80 persons in attendance. The second was held at the National Convention in April 1973 in Las Vegas, with 240 persons in attendance. The third and final meeting was held at the National Convention in March 1974 in Atlantic City, with 320 persons in attendance.

Written Responses

Additional feedback and reactions from the membership were forthcoming as a result of action taken by the Board of Directors at the Convention in Las Vegas. An interim report was made, and it was accepted by the Board with the directive to continue the task forces for another year. This report was subsequently published in the May 1973 issue of AIVL, and written responses were received by the respective chairmen of the two Task Forces.

Continuing Concerns

Three documents were developed by the two task forces as a result of these deliberations. Joint deliberations resulted in the development of a usable frame of reference. (See page 28.) This framework provided a base for each of the task forces as they formed guidelines for the certification of personnel by state departments of education (see page 35).

The task forces did not determine that the acceptance of these guidelines would satisfy all of AECT's concerns in the areas of certification and accreditation. Rather, it was felt that ongoing study and effort was needed.

The Certification Task Force saw a need to monitor the effect guidelines would have on the field and the impact future changes in the field might have on Certification Guidelines. Several areas of certification had to be left unresolved. Among these were the certification of personnel from two-year college programs, the certification of aides, and the question of whether or not there is a role for technicians in the instructional program development area. Finally, but certainly of major importance, the Certification Task Force voiced a need for future efforts at implementing these guidelines at the state department of education level throughout the country.

The Accreditation Task Force also felt a concern about the impact Accreditation Guidelines might have in the field, and therefore saw a need to monitor the use and the usefulness of such guidelines. One area of accreditation requires further study. Two-year programs are developing in many community colleges and other higher educational institutions. The possibility for accreditation of such programs needs investigation, and appropriate recommendations about such programs ought to be developed. Finally, the application of guidelines to advanced higher education programs, and the use of a frame of reference such as that presented here highlight the possibilities of a guide to curricular development in the field of educational communications and technology. Future development of such a guide was recommended and approved by the Board of Directors.

The products of the two task forces are presented in the following sections. The frame of reference is explained in detail. Guidelines for Certification are then presented, followed by Accreditation Guidelines for Advanced Programs in Educational Communications and Technology. Finally, a list of competencies and tasks appropriate to the areas and levels of responsibility in this field are provided.

William F. Grady is chairman, Division of Educational Communications, College of Education, Temple University, Philadelphia, Penna. Clarence O. Bergeson is professor of Educational Communications, State University of New York at Albany.
What is the field of educational communications and technology? What do workers in the field do? What tasks are performed? How should workers for the field be prepared? Should these workers be certified? How? How does one judge the adequacy of the preparation programs? These and similar questions have been the topic of discussion for the last 20 years by members of AECT.

In December 1971, then AECT President Robert Heinich appointed two task forces—a Task Force on Certification and a Task Force on Accreditation. These task forces were charged to develop basic guidelines for the certification of educational communications and technology personnel, and to develop guidelines for the accreditation of programs for the preparation of such personnel.

It became immediately apparent to the members of the task forces that before they could develop such guidelines a basic frame of reference or rationale had to be established. What follows is the frame of reference developed by the two task forces.

How are jobs in the field of instructional technology performed?

Two major studies, the Jobs in Instructional Media Study (JIMS), and the Library Manpower Study, have attended to this question. In order to look at media jobs, as they are performed, the JIMS examined two major aspects simultaneously—what the worker does and what gets done.

The Domain of Instructional Technology, as shown in Figure 1, was used by JIMS as a way of looking at what gets done in the field. The technique of Functional Job Analysis (FJA), was adopted to study what the worker does. Of primary interest to this frame of reference is the Scale of Worker Instructions (WI) as shown on page 32.

JIMS decided that it was logical to classify personnel into three levels which they labeled as Entry, Middle, and Advanced. Originally the three levels were labeled as Aide, Technician, and Specialist. This was consistent with job classifications in the field. However, there was and is some confusion as to the meaning of “technician.” For purposes of this discussion, “technician” refers to middle-level personnel (WI 3-5)*, and not to a highly skilled person such as a broadcast engineer, graphic designer, cinemaphotographer, or television producer-director.

To further clarify the situation, the following definitions from the JIMS are presented:

ENTRY: (Aide) (WI 1-3)

Entry Level personnel have specific instructions about the tasks they perform. The task may be only part of a process, the other parts of which the worker cannot or does not control. Entry Level personnel can be trained for a task in a relatively short period of time, since almost everything they need to know is con-*WI refers to Scale of Worker Instructions as shown in the table on page 32.
LEARNING RESOURCE DEVELOPMENT FUNCTIONS

Organization Management

Research & Theory

Design

Production

Evaluation & Selection

Support & Supply

Utilization

Utilization - Dissemination

LEARNING RESOURCES

Message

Man

Material

Device

Technique

Setting

FIGURE 1

FIGURE 2

tained in the task. They are not required to solve problems external to the task. If something happens which is not covered by the instructions, the Entry Level worker asks for help and cannot be held responsible for solving the problem.

MIDDLE: (Technician) (WI 3-5)

Middle Level personnel have instructions which deal more with a cluster of tasks leading to a specified output or outcome. They have a broader view of the situation and are expected to generalize more from task to task than personnel at the Entry Level. The Middle Level worker is responsible for the product as long as all of the routines necessary to reach the output have been specified and made available to him.

ADVANCED: (Specialist) (WI 5-8)

Advanced Level personnel do not have tasks specified. They are responsible for solving a general problem and must determine what the product should be as well as how to achieve it. Having defined the goals, they are often forced to develop the routines of tasks necessary to achieve the goals. They deal with a broad process approach.

After careful study of the preceding definitions, it becomes apparent that the various functions, as shown in Figure 1, can be clustered into three major areas of responsibility. These are: media management, media product development, and instructional program development. Also three levels of complexity, based on the definitions used, can be identified as aide, technician, and specialist.

What competencies should workers in the field of educational communications and technology possess?

A number of publications have attempted to answer this question. The AECT Guidelines for Certification of Media Specialists, the Jobs in Instructional Media Study (including tasks from the Media Guidelines Project), the School Library Manpower Project, the Behavioral Requirements Activities Checklist, and the USOE curriculum guidelines for Library Technical Assistants all present lists of competencies and lists of tasks performed by media personnel. None of...
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>DEFINITION</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>To generate and test knowledge, theory and research methodology, relate to the LR and to learners.</td>
<td>To conceptualize theoretical models. To conduct research projects. To analyze research data.</td>
</tr>
<tr>
<td>Purpose:</td>
<td>Knowledge which can act as an input to the other functions.</td>
<td>To generate new ideas. To run reality test of model. To test hypothesis.</td>
</tr>
<tr>
<td>Activity:</td>
<td>Seeking information, representing, analyzing, testing, analyzing test results.</td>
<td>Needs proposal. Compares models to known data. Formulates specific hypotheses.</td>
</tr>
<tr>
<td>Design</td>
<td>To translate general theoretical knowledge into specific LR specifications.</td>
<td>To design programed instruction materials. To develop instructional packages for individualized instruction. To design equipment systems.</td>
</tr>
<tr>
<td>Purpose:</td>
<td>Specifications for production of LR, regardless of form.</td>
<td>To write general objectives. To determine media. To describe technical systems.</td>
</tr>
<tr>
<td>Activity:</td>
<td>Analyzing, synthesizing, and writing objectives, learner characteristics, task analysis, learning conditions, instructional events, media specifications.</td>
<td>Analyzes objectives. Synthesizes objectives; sequence content, media. Arranges materials in sequence.</td>
</tr>
<tr>
<td>Production</td>
<td>To translate LR specifications into specific, concrete LR.</td>
<td>To produce audiotapes. To produce direct motion picture. To write computer programs for computer-assisted instruction.</td>
</tr>
<tr>
<td>Purpose:</td>
<td>Specific products in the form of prototypes, final versions, or mass-produced versions.</td>
<td>To make slides into filmstrips. To decide on music/sound effects. To match audio and visuals.</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>To assess acceptability of produced LR in terms of criteria set by other functions, and to develop models for this assessment.</td>
<td>To pilot test prototype instructional materials. To preview and select instructional materials. To develop evaluation models and techniques.</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>To make LR available for other functions.</td>
<td>To have equipment ready as needed. To provide delivery service. To catalog materials.</td>
</tr>
</tbody>
</table>
### Outcome: Ordered, stored, classified, cataloged, assembled, scheduled, distributed, operated, maintained, and repaired LRs.

#### Activity:
Ordering, storing, classifying, cataloging, assembling, scheduling, distributing, operating, maintaining, repairing LRs.

#### Utilization
- **Purpose:** To cross-index materials.
- **Examples:** To locate materials for delivery, to maintain repair history, to repair filmstrip projector.

##### Examples
- To thread movie projector.
- Assigns code from accession list.
- Plans new scheduling system.

### Purpose: To locate materials for delivery.

#### Activity: Assigning, preparing learner for, presenting, assisting, and following up LRs.

- **Utilization—Dissemination**
  - **Purpose:** To bring learners into contact, whether formal or informal, with LRs.
  - **Examples:** To help student use learning activity, to monitor individualized and self instruction, to help student select learning activities and to meet objectives.

- **Outcome:** Facilitation and assessment of student learning.
- **Activity:** Discusses with student, compares activities/learning style, compares pre- and post-tests.

#### Purpose: To monitor and change operation of center.

- **Activity:** Reviews purchase orders, designs new organizational model, analyzes problems in project.

### Purpose: To bring learners into contact, whether formal or informal, with information about instructional technology.

#### Activity: Taking in and giving out information about instructional technology.

- **Utilization—Dissemination**
  - **Purpose:** To consult on media use and design.
  - **Examples:** To maintain professional status in the field, to explain individualized instruction project to visitors.

- **Outcome:** Dissemination of information about instructional technology.
- **Activity:** Demonstrates movie projector operation, discusses with teacher, defines media services available.

### LEARNING RESOURCES MANAGEMENT FUNCTIONS (LRMF)

Functions which have as their purpose the guiding, facilitating, or controlling of the Learning Resources Development Functions (LRDF) or of other LRMFs to ensure their effective operation.

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>DEFINITION</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization Management</strong></td>
<td>To determine, modify, or execute the objectives, philosophy, policy, structure, budget, internal and external relationships, and administrative procedures of an organization performing one or several of the LRDFs, or the LRMFs.</td>
<td>To prepare report list, to identify organization needs, to ascertain jobs to be done.</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td></td>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>Outcome:</strong></td>
<td>Policy, budget, plans, coordinated activities, administrative operations.</td>
<td><strong>Examples:</strong></td>
</tr>
<tr>
<td><strong>Personnel Management</strong></td>
<td>To interact with and/or to supervise the people who perform the functions.</td>
<td>To oversee personnel in graphics unit, to improve communications between technicians and artists, to staff projects.</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td></td>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>Outcome:</strong></td>
<td>Interpersonal interaction, discussion, supervision, employment, and personal development.</td>
<td><strong>Examples:</strong></td>
</tr>
<tr>
<td><strong>Activity:</strong></td>
<td>Discussing with and speaking to other people.</td>
<td><strong>Examples:</strong></td>
</tr>
</tbody>
</table>
### Scale of Worker Instructions

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inputs, outputs, tools, equipment, and procedures are all specified. Almost everything the worker needs to know is contained in his assignment. He is supposed to turn out a specified amount of work or a standard number of units per hour or day.</td>
</tr>
<tr>
<td>2</td>
<td>Inputs, outputs, tools, and equipment are all specified, but the worker has some leeway in the procedures and methods he can use to get the job done. Almost all the information he needs is in his assignment. His production is measured on a daily or weekly basis.</td>
</tr>
<tr>
<td>3</td>
<td>Inputs and outputs are specified, but the worker has considerable freedom as to procedures and timing, including the use of tools and equipment. He has to refer to several standard sources for information (handbooks, catalogs, wall charts). Time to complete a particular product or service is specified, but this varies up to several hours.</td>
</tr>
<tr>
<td>4</td>
<td>Output (product or service) is specified in the assignment, which may be in the form of a memorandum or a schematic (sketch or blueprint). The worker must work out his own ways of getting the job done, including selection of tools and equipment, sequence of operations (tasks), and obtaining important information (handbooks, etc.). He may either carry out work himself or set up standards and procedures for others.</td>
</tr>
<tr>
<td>5</td>
<td>Same as 4 above, but in addition the worker is expected to know and employ theory so that he understands the whys and wherefores of the various options that are available for dealing with a problem and can independently select from among them. He may have to do some reading in the professional and/or trade literature in order to gain this understanding.</td>
</tr>
<tr>
<td>6</td>
<td>Various possible outputs are described that can meet stated technical or administrative needs. The worker must investigate the various possible outputs and evaluate them in regard to performance characteristics and input demands. This usually requires his creative use of theory well beyond referring to standard sources. There is no specification of inputs, methods, sequences, sources, or the like.</td>
</tr>
<tr>
<td>7</td>
<td>There is some question as to what the need or problem really is or what directions should be pursued in solving it. In order to define it, control and explore the behavior of the variables, and formulate possible outputs and their performance characteristics, the worker must consult largely unspecified sources of information, and devise investigations, surveys, or data analysis studies.</td>
</tr>
<tr>
<td>8</td>
<td>Information and/or direction comes to the worker in terms of needs (tactical, organizational, strategic, financial). He must call for staff reports and recommendations concerning methods of dealing with them. He coordinates both organizational and technical data in order to make decisions and determinations regarding courses of action (outputs), for major sections (divisions, groups, etc.) of his organization.</td>
</tr>
</tbody>
</table>

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These, however, attempts to classify the competencies and tasks by the area of responsibility and level of difficulty. The members of the Task Forces on Accreditation and Certification did classify each competency by area of responsibility. For the first time, as a result of this procedure, a profile can be drawn for each area of responsibility at each level of difficulty. Profiles for “aides” are not presented at this time. To further clarify the profiles, a list of competencies can be found in Appendix page 35.

Task force tabulations showed that in the area of media management, primary competencies for the specialist level should be in the functions of organization management, personnel management, and in utilization-dissemination; and secondary competencies in the functions of research & theory, utilization-dissemination, and personnel management. (See Figure 4.)

In the area of media product development, primary competencies for the specialist level should be in design and production; and secondary competencies should be in the areas of research & theory, utilization dissemination, and personnel management. (See Figure 5.)

For the area of media product development at the technician level, the primary competencies are in the functions of personnel management, utilization dissemination evaluation & selection, research & theory, and utilization. (See Figure 6.)

In the area of media product development, primary competencies for the specialist level should be in design and production; and secondary competencies should be in the areas of research & theory, utilization dissemination, and personnel management. (See Figure 5.)

For the area of media product development at the technician level, the primary competencies are in the functions of personnel management, utilization dissemination evaluation & selection, research & theory, and utilization. (See Figure 4.)
### COMPETENCIES OF SPECIALISTS IN MEDIA MANAGEMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>17</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>10</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>6</td>
</tr>
<tr>
<td>Design</td>
<td>4</td>
</tr>
<tr>
<td>Production</td>
<td>1</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>7</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>5</td>
</tr>
<tr>
<td>Utilization</td>
<td>4</td>
</tr>
<tr>
<td>Dissemination</td>
<td>10</td>
</tr>
</tbody>
</table>

**FIGURE 3**

### COMPETENCIES OF SPECIALISTS IN MEDIA PRODUCT DEVELOPMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>2</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>2</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>6</td>
</tr>
<tr>
<td>Design</td>
<td>13</td>
</tr>
<tr>
<td>Production</td>
<td>14</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>0</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>0</td>
</tr>
<tr>
<td>Utilization</td>
<td>2</td>
</tr>
<tr>
<td>Dissemination</td>
<td>8</td>
</tr>
</tbody>
</table>

**FIGURE 5**

### COMPETENCIES OF TECHNICIANS IN MEDIA MANAGEMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>5</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>3</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>0</td>
</tr>
<tr>
<td>Design</td>
<td>0</td>
</tr>
<tr>
<td>Production</td>
<td>0</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>3</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>22</td>
</tr>
<tr>
<td>Utilization</td>
<td>4</td>
</tr>
</tbody>
</table>

**FIGURE 4**

### COMPETENCIES OF TECHNICIANS IN MEDIA PRODUCT DEVELOPMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>2</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>1</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>0</td>
</tr>
<tr>
<td>Design</td>
<td>0</td>
</tr>
<tr>
<td>Production</td>
<td>13</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>2</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>0</td>
</tr>
<tr>
<td>Utilization</td>
<td>0</td>
</tr>
<tr>
<td>Dissemination</td>
<td>0</td>
</tr>
</tbody>
</table>

**FIGURE 6**
## Competencies of Specialists in Instructional Program Development

<table>
<thead>
<tr>
<th>Function</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>(6)</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>(1)</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>(9)</td>
</tr>
<tr>
<td>Design</td>
<td>(14)</td>
</tr>
<tr>
<td>Production</td>
<td>(4)</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>(7)</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>(0)</td>
</tr>
<tr>
<td>Utilization</td>
<td>(9)</td>
</tr>
<tr>
<td>Utilization/Dissemination</td>
<td>(14)</td>
</tr>
</tbody>
</table>

**Figure 7**

## Competencies of Technicians in Instructional Program Development

<table>
<thead>
<tr>
<th>Function</th>
<th>Number of Competencies</th>
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</thead>
<tbody>
<tr>
<td>Organization Management</td>
<td>0</td>
</tr>
<tr>
<td>Personnel Management</td>
<td>1</td>
</tr>
<tr>
<td>Research &amp; Theory</td>
<td>2</td>
</tr>
<tr>
<td>Design</td>
<td>3</td>
</tr>
<tr>
<td>Production</td>
<td>0</td>
</tr>
<tr>
<td>Evaluation &amp; Selection</td>
<td>3</td>
</tr>
<tr>
<td>Support &amp; Supply</td>
<td>0</td>
</tr>
<tr>
<td>Utilization</td>
<td>0</td>
</tr>
<tr>
<td>Utilization/Dissemination</td>
<td>4</td>
</tr>
</tbody>
</table>

**Figure 8**

Primary competencies are in the function of production, and the secondary competencies are in evaluation & selection and organization management. (See Figure 6.)

In the area of instructional program development, primary competencies at the specialist level should be in the areas of design, utilization dissemination, research & theory, and utilization, with secondary competencies in the areas of evaluation & selection, organization management, and production. (See Figure 7.)

In the area of instructional program development at the technician level, the data showed only a few scattered competencies across many of the functions. It is, therefore, questionable if technicians can be in the area of instructional program development. (See Figure 8.)

The frame of reference developed above can be summarized as follows:

1. The field of instructional technology can be defined as: "(1) the organization and (2) the application of (3) resources—men, materials, ideas, procedures—in a systematic manner in order to solve instructional problems." (Hyer, 1971, p 44.)

2. Workers in the field of educational communications and technology assume responsibilities in three major areas, namely media management, media product development, and instructional program development.

3. Workers in the field of educational communications and technology can be classified as aides, technicians, or specialists, depending upon the level of complexity of the tasks which they perform.

4. Identifiable competencies and tasks can be clustered according to the nine functions of the D.I.T. model and by their complexity as judged by the Scale of Worker Instructions.

Based on the definition of the field presented above, based on the concept of three major areas of responsibility, and based on the clustering of tasks and competencies associated with the nine functions of the D.I.T. model, the Task Forces developed guidelines for a competency-based certification program and developed guidelines for the accreditation of programs for the preparation of educational communications and technology personnel. These guidelines are presented on the following pages.

**Reference**


William C. Prigge is dean, Instructional Improvement & Delivery, Madison College, Harrisonburg, Va.
The three major areas of responsibility of personnel in educational communications and technology are:

- Media management
- Media product development
- Instructional program development

Within each area of responsibility, there are two levels of complexity—technician and specialist—and certificates may be issued on each level in each area.

The figure illustrates the relationship between the major areas of responsibility and the two levels of complexity. This interrelationship indicates six areas in which certification may be developed. Within each major area of responsibility, and on each level of complexity, there are nine functions:

1. Organization management
2. Personnel management
3. Research & theory
4. Design
5. Production
6. Evaluation & selection
7. Support & supply
8. Utilization
9. Utilization/dissemination

Within each of these nine functions, competencies/tasks exist on two levels—technician and specialist. For a list of these competencies/tasks and their levels of complexity, see Appendix page 36

Media Management—Technician
A candidate seeking certification on the technician level in Media Management should present the following:

A. Competency: page 62
B. Degree: Associate Degree
C. Experience: Three semester hours of supervised practicum, or internship, or six months of work experience in the field.

Media Management—Specialist
A candidate seeking certification on the specialist level in Media Management should present the following:

A. Competency: page 36
B. Degree: Baccalaureate, and certification as a teacher.
C. Experience: Two years of experience as an educator.

Media Product Development—Technician
A candidate seeking certification on the technician level in Media Product Development should present the following:

A. Competency: page 70
B. Degree: Associate Degree
C. Experience: Three semester hours of supervised practicum, or internship, or six months of work experience in the field.

Media Product Development—Specialist
A candidate seeking certification on the specialist level in Media Product Development should present the following:

A. Competency: page 45
B. Degree: Master's, and certification as a teacher.
C. Experience: Two years of experience in media product management.

Instructional Program Development—Technician
No certificate currently available for the technician level in this area.

Instructional Program Development—Specialist
A candidate seeking certification on the specialist level in Instructional program development should present the following:

A. Competency: page 51
B. Degree: Doctorate, and certification as a teacher.
C. Experience: Three years classroom teaching experience; two years experience in instructional program development.
TO PLAN IMC OPERATIONS FOR COMING YEAR

Analyze service requests to identify service needs
Calls departments to clarify service needs
Writes memo to departments to clarify service needs
Analyzes service needs to propose new service operation
Discusses with departments to propose new service operation

TO COORDINATE FACILITIES PLANNING

Counts number of staff members to ascertain facilities needs
Analyzes number and type activities to ascertain facilities needs
Reads floor plan to examine current facilities
Reads budget to discover fiscal resources
Examines work of organization to identify how facilities can help
Examines staff communication interaction to identify how facilities can help
Synthesizes factors to develop facilities use plan
Negotiates with planners to obtain needed space on campus
Analyzes on-campus space obtained to ascertain need for additional space
Speaks to realtors to seek additional space off campus
Examines facilities/monetary ratio to select best facilities
Analyzes on/off-campus space to ascertain need for additional space
Translates need for additional space to decide to build own facilities
Writes notice to publicize decision to build
Listens to architects who call to evaluate architects' ideas
Selects three architects to discuss facilities in depth
Speaks to architects in person to explain facilities needs
Listens to architects to evaluate proposed designs
Selects best general plan to hire architect
Explains work of organization to give architect design specifications
Explains how facilities aid work to give architect design specifications
Explains communication interaction needs to give architect design specifications
Explains special needs of staff to give architect design specifications
Explains financial constraints to give architect design specifications
Persuades architect to meet staff to ensure staff input
Reads architect's plans to evaluate proposed facility design
Compares plans and needs to evaluate proposed facility design
Discusses plans with architect to suggest revisions in plans
Reads revised plans to re-evaluate proposed design
Compares revised plans and needs to re-evaluate proposed design
Reads final plans to approve proposed facility design
Reads architect's budget to ascertain proposed cost
Negotiates with architect to obtain lower cost
Negotiates with chancellor to obtain approval for facilities
Analyzes organization activities to ascertain equipment needs
Listens to staff to ascertain equipment needs
Reads current equipment inventory to identify equipment on hand
Compares equipment on hand and needs to identify equipment to be bought
Reads equipment order to approve for purchase

TO PLAN PROGRAMS/PROJECTS

Reads project reports to identify current work
Discusses projects' money with staff to identify future priorities
Speaks to staff to identify project interests
TO FORMULATE POLICY FOR PROCEDURE & EQUIPMENT CHANGES IN CENTER

5 Discusses with course writers to increase course illustrations
6 Reads work plans to inform of work in progress
6 Identifies areas of work to anticipate developments
7 Conceptualizes plans to anticipate developments
6 Researches electronic illustrating to coordinate production unit
6 Designs long-range plans to coordinate production unit
6 Proposes information gathering to provide models for management
5 Discusses with technical experts to design new organizational model
6 Designs new organizational model to improve organization
6 Persuades management to hire additional personnel
5 Makes field trips to observe new hardware systems
5 Evaluates new equipment to assess compatibility
6 Persuades management to purchase new hardware
6 Evaluates organizational structure to determine need for new model

TO IMPROVE COMMUNICATIONS IN CENTER

5 Speaks to colleagues to become involved in new ventures
6 Compares interests with organization philosophy to ensure compatibility
5 Reads newsletters, financial statements, to identify possible funding sources
6 Synthesizes discussion to propose department programs/projects
6 Writes paper to present department programs/projects
5 Talks with staff to evaluate programs/projects paper
6 Identifies constraints on programs to decide on program feasibility
6 Selects programs/projects for department to plan work for year

TO INITIATE AGENCY-FUNDED PROJECT

5 Reads assigned outline to clarify general idea of project
5 Asks questions to clarify general idea of project
5 Writes to agency to request guidelines for proposal
5 Reads previous proposals to obtain background information
5 Analyzes proposal guidelines to write text of proposal
6 Writes draft proposal to request agency funds
6 Rewrites proposal to align with organization interest
5 Analyzes staff needs to determine staff salary needs
5 Analyzes pay schedules to compute staff budget
5 Identifies appropriate staff to staff proposed program
5 Assesses equipment needs to compute equipment budget
Assesses materials needs to compute materials budget
Operates adding machine to compute total budget
Submit proposal to contracts office to acquire overhead figures
Writes up budget to support proposal
Circulates proposal to acquire appropriate signatures
Submit proposal to administration to approve for submission
6 Discusses with agency personnel to negotiate details of changes
5 Writes brochure to describe proposed program

TO MONITOR AND CHANGE OPERATIONS OF CENTER

5 Talks with staff to evaluate programs/projects paper
6 Identifies constraints on programs to decide on program feasibility
6 Selects programs/projects for department to plan work for year

TO ADMINISTER/DIRECT PROJECT

7 Conceptualizes idea for project to meet program goals
7 Rereads contract to define desired outcomes
5 Analyzes goals of project to define needed activities/products
5 Speaks to technical workers to ascertain amount of time needed
5 Speaks to technical workers to ascertain jobs to be done
5 Speaks to technical workers to ascertain workers needed
5 Assesses cost restraints to determine limits of project
5 Writes tentative work plan to design project
6 Assigns staff to project to meet goals
5 Analyzes relations of activities to develop PERT schedule
5 Analyzes time for each activity to develop PERT schedule
5 Analyzes project limits to develop PERT schedule
5 Assigns completion dates to design project deadlines
5 Writes chart to formalize PERT schedule
5 Speaks to technical workers to explain PERT chart
Speaks to technical workers to inform of deadlines
5 Speaks to technical workers to review progress periodically
5 Observes staff work/products to evaluate work performed
5 Listens to outside input to improve product
5 Reviews work in progress to keep self informed
5 Discusses with staff to solve problems re product
5 Compares product/activities with goals to evaluate project performance
6 Analyzes problems in project to plan changes in project direction
6 Makes decision to terminate project to minimize wasted effort
5 Reviews project progress to present report to management/customer
5 Translates technical language to describe project to management/customer
5 Speaks to management and customer to present project progress
5 Writes report on project to present progress to management/customer
5 Compares product/activities with goals to assess quality of work
5 Compares product/activities with goals to suggest improvements
5 Writes final report on project to disseminate findings
5 Edits report on project to disseminate findings

TO ADMINISTER/DIRECT PROJECT
TO ADMINISTER TRAINING COURSE

5 Writes announcements to publicize course
5 Schedules classrooms to reserve for course
5 Identifies teaching personnel to assign to course
5 Discusses with teaching personnel to clarify teaching assignments
5 Evaluates teaching to assess work of teaching personnel
5 Discusses with teaching personnel to evaluate success of course

TO DEVELOP MODEL FOR ECONOMIC ANALYSIS OF TRAINING

6 Researches approaches to identify most appropriate
6 Analyzes cost factors in training to develop list of training costs
6 Compares employee worth to cost to compute ratio of training costs
6 Designs system to determine value of training
6 Estimates changes in training to improve value of training

TO DESIGN FINANCIAL STRUCTURE

7 Reads history of organization to identify organization needs
7 Reads board requirements to identify organization needs
7 Reads bookkeeping department procedures to identify organization needs
6 Analyzes how to get financial information to identify organization needs
6 Analyzes decisions based on finances to identify organization needs
6 Analyzes needed controls on finances to identify organization needs
6 Synthesizes several need factors to define structure parameters
5 Discusses with auditor to identify fiscal regulations
5 Discusses with auditor to identify feasible structures
5 Discusses with auditor to identify acceptable structures
6 Analyzes acceptable structures to match with parameters
6 Compares structure/parameter matches to select financial structure

TO ESTIMATE MEDIA CENTER BUDGET

6 Analyzes past performance to determine revisions needed
5 Analyzes center inventories to list staff/equipment/materials
5 Analyzes program projections to determine additions needed
5 Lists staff time and rates to determine staff budget
5 Lists equipment needs and costs to determine equipment budget
5 Lists materials needs and costs to determine materials budget
5 Totals costs to determine total budget
5 Gives instructions to secretary to have budget typed
5 Checks typed budget to ensure correct

TO PREPARE ANNUAL BUDGET

5 Reads state legal requirements to identify budgeting calendar
5 Writes memo to subordinates to require budget submissions
5 Analyzes budget submissions to identify operational requirements
5 Analyzes budget submissions to identify new programs
5 Compares past and present budgets to approve/disapprove budget
5 Compares budget and past performance to approve/disapprove budget
5 Compares sub-budgets to develop budget draft

TO SUPERVISE COOPERATIVE PURCHASING

6 Meets with district purchasing agents to determine changes in policy
6 Sends order forms to districts to initiate purchasing cycle
6 Receives forms from district to compile county totals
5 Supervises analysis of forms to compile county totals
5 Reads maintenance reports to select brands of AV equipment
5 Reads new product reports to select brands of AV equipment
5 Compares different brands to select brands of AV equipment
5 Writes bid forms for contractors to obtain bids on equipment
5 Supervises sending of bid forms to obtain bids on equipment
5 Compares bids from contractors to obtain bids on equipment
5 Opens bids in public to obtain bids on equipment
6 Compares bids to select equipment/materials vendors
6 Lays out samples to select equipment/materials vendors
6 Compares samples to select equipment/materials vendors
6 Analyzes product/cost relationship to select equipment/materials vendors
6 Recommends to committee to select equipment/materials vendors
5 Writes report to board of education to indicate vendor selections
5 Reads notification from board to approve vendor selections
5 Supervises secretary to prepare purchase orders
5 Supervises personnel to receive equipment/materials
5 Supervises personnel to store equipment/materials
5 Supervises personnel to redistribute equipment/materials
5 Supervises secretary to bill districts
5 Supervises bookkeeper to credit district accounts

TO PURCHASE AV MATERIALS

5 Discusses with principals to determine needs
5 Checks budget to determine money available
5 Assesses requests for new equipment/materials to determine purchase priority
5 Writes letters to manufacturers to request catalogs
5 Analyzes purchase requests to determine which catalog to search
5 Searches catalogs to identify appropriate materials
5 Compares list prices to determine unit price
5 Calls producer to ascertain correct title
5 Arranges materials requested to group order list
5 Lists materials/equipment costs to compile order list for purchase
5 Operates typewriter to type order list
5 Submits order list to management to get approval
5 Assigns purchase order number to assure payment
5 Informs secretary to order materials for purchase
5 Fills out order form to order materials
5 Mail order form to manufacturer to place materials order
5 Calls manufacturer to assure rush order
5 Calls unit ordering materials to inform of manufacturer delay
5 Files purchase orders to keep track of those not received
5 Writes letters to manufacturers to remind of back orders
5 Makes decision to notify manufacturer to cancel late orders
5 Writes letter to manufacturer to cancel late orders
5 Compares new materials with invoice to check that order complete
5 Writes letters to manufacturers to correct wrong orders
PERSONNEL MANAGEMENT FUNCTION.

TO STAFF PROJECTS
6. Analyzes goals of project to define activities to be done
5. Analyzes budget to determine resources available
4. Translates project activities to develop job descriptions
3. Estimates staff needs to fill described jobs
2. Calls placement agency to inform of staff needs
1. Calls colleagues to inform of staff needs

5. Reads resumes to select applicants for interview
4. Selects short list of applicants to do initial interviewing
3. Calls applicants to set time and place for interview
2. Describes project and company to initiate job interview
1. Questions applicant to ascertain qualifications

6. Evaluates applicants to make staff selection
5. Calls selected applicant to notify of selection
4. Writes form letter to inform applicants of rejection
3. Tells secretary to transmit letter to applicants
2. Evaluates recommendations to determine best trainer
1. Calls unit head to ask recommendations on trainer

TO STAFF TRAINING CENTER
7. Identifies area of work to define staff need
6. Analyzes budget to determine resources available
5. Writes memos to describe need for new position
4. Writes position description to get job classification
3. Writes description of position to advertise the vacancy
2. Reviews application forms to select applicants for interview
1. Interviews job applicants to select most suitable

5. Winter memos to advise hiring
4. Calls personnel department to speed application processing

TO CONDUCT TRAINING OF NEW STAFF ON GENERAL OFFICE PROCEDURES
Gathers office procedures information to determine goals of training
5. Writes paper to set up goals of training
4. Reviews procedural manual to inform new employees
3. Writes memos to describe need for new position
2. Translates problem statement to identify solution parameters
1. Discussed with supervisor to determine validity of reports

TO SET UP ON-JOB TRAINING SEMINARS
5. Analyzes unit request to determine need for training
4. Writes position paper to set goals of training
3. Calls unit head to determine accuracy of goals
2. Calls unit head to ask recommendations on trainer
1. Evaluates recommendations to determine best trainer

5. Evaluates applications to determine trainees
4. Attends training session to determine progress/relevance
3. Conducts seminar to encourage discussion

TO IMPROVE COMMUNICATIONS BETWEEN TECHNICIANS AND ARTISTS
5. Chooses subject matter to encourage seminar discussion
4. Selects time and place to hold seminar
3. Writes notice to publicize seminar
2. Designs art kit to demonstrate technical details
1. Conducts seminar to encourage discussion

TO IMPROVE COMMUNICATIONS BETWEEN STAFF PROJECTS AND ARTISTS
Designs art kit to demonstrate technical details

TO STAFF TRAINING CENTER
TO SUPERVISE PERSONNEL IN TRAINING CENTER
6. Discusses with new staff to develop performance criteria
5. Discusses with staff to evaluate work performed
4. Evaluates employee performance to assess employee progress
3. Evaluates employee performance to write evaluation report
2. Writes recommendations to suggest promotions and awards
1. Negotiates with personnel department to suggest promotions and awards

5. Discusses with staff to revise work plans
4. Assesses work to be performed to approve requests for leave
3. Conducts staff meetings to relay administration directives

TO SUPERVISE GRAPHICS UNIT
5. Reviews job applications to make recommendations
4. Makes recommendations to director to assist in hiring
3. Assesses staff work to write performance reports
2. Writes performance reports to inform supervisor
1. Evaluates work load with staff to determine assignments

5. Assigns work to staff to meet goals of unit
4. Supervises staff to ensure work is completed
3. Discusses with staff to relay/interpret administration regulations
1. TO SUPERVISE STUDENT WORKERS
5. Discusses with staff to determine work assignments
4. Conveys with students to assign work areas
3. Demonstrates equipment operation to train student workers
2. Computes time worked to determine payment
1. Evaluates student performance to write evaluation report

TO FIRE PERSONNEL
5. Reviews worker evaluation reports to determine acceptability of work
4. Discusses with supervisor to determine validity of reports
3. Discusses with worker to determine validity of reports
2. Discusses with peers to determine validity of reports
1. Makes decision to continue employment

RESEARCH-THEORY FUNCTION.

TO CONCEPTUALIZE THEORETICAL MODELS
Perceives problem in field to identify general research problem
5. Analyzes general problem to identify specific problem areas
4. Selects problem areas to limit specific problem
3. Analyzes problem areas to define specific problem
2. Determines specific problem factors to make concise problem definition
1. Translates problem statement to identify solution parameters

5. Reads problem/solution parameters to brainstorm solutions
4. Discusses problem with colleagues to brainstorm solutions
3. Combines ideas to generate new ideas
2. Translates ideas to other forms to generate new ideas
1. Seeks out research information to support negate alternative ideas

5. Seeks out research information to generate new ideas
4. Compares solutions/information to evaluate proposed solutions
3. Compares solutions/information to generate new solutions
2. Synthesizes proposed solutions to converge on tentative model
1. Discusses model with colleagues to run reality test of model

5. Compares model with known data to run reality test of model
4. Analyzes reality test results to revise model
3. Compares solutions/information to evaluate proposed solutions
2. Compares solutions/information to generate new solutions
1. Synthesizes proposed solutions to converge on tentative model

5. Discusses model with colleagues to run reality test of model
4. Compares model with known data to run reality test of model
3. Analyzes reality test results to revise model
2. Compares solutions/information to evaluate proposed solutions
1. Synthesizes proposed solutions to converge on tentative model
TO CONDUCT RESEARCH PROJECT

1. Identifies general problem to provide basis for study
2. Read journals to identify appropriate funding sources
3. Contacts colleagues to identify appropriate funding sources
4. Writes proposal to obtain funds for research study
5. Formulates specific hypothesis to conduct research study
6. Describes methodology to test hypothesis
7. Reads proposal to identify project objectives
8. Analyzes objectives to define project activities
9. Analyzes activities to determine time for each activity
10. Combines times to develop project timeline
11. Develops budget to support research project
12. Transmits proposal to funding to obtain funds for research study
13. Negotiates with funding source to clarify details of proposal
14. Reads resumes of current staff to identify possible project staff
15. Speaks to current staff to identify possible project staff
16. Compares capabilities with needs to select project staff
17. Matches staff to activities to identify gaps in staff
18. Reads file of prospective staff to attempt to fill staff gaps
19. Speaks with prospective staff to evaluate qualifications
20. Compares applicants to select staff
21. Hires personnel to staff research project
22. Explains project to staff to train staff
23. Explains tasks to be done to train staff
24. Contacts individuals or schools to obtain subjects for study
25. Develops treatment to create experimental conditions
26. Develops instruments to measure effects of treatments
27. Administrates treatment/instrument to collect data
28. Collates data to measure effects of treatments
29. Analyzes data to measure effects of treatments
30. Supervises personnel to ensure correct data collection
31. Supervises personnel to ensure correct data collation
32. Supervises personnel to ensure correct data analysis
33. Interprets data to evaluate validity of hypothesis
34. Listens to staff to solve project problems
35. States alternative solutions to solve project problems
36. Selects best solution to solve project problems
37. Writes progress reports to inform monitor of progress
38. Reads progress reports to evaluate project progress
39. Writes final report to disseminate research findings
40. Transmits report to funding source to disseminate research findings
41. Writes detailed specifications to describe system components
42. Analyzes physical constraints to draw physical schematic
43. Analyzes physical constraints to identify alternate systems
44. Analyzes physical facilities to determine physical constraints
45. Analyzes physical constraints to determine financial constraints
46. Analyzes constraints to identify alternate systems
47. Analyzes constraints to use ity alternate formats
48. Analyzes technical systems to describe technical systems
49. Analyzes data to interpret meaning of data
50. Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

1. Defines basic/applied research to design guidelines for research
2. Designs standard test formats to design guidelines for research
3. Specifies resources available to design guidelines for research
4. Designs systematic procedures to design guidelines for research
5. Advises researchers to inform on psychological principles

TO PERFORM FEASIBILITY STUDY ON NEW EQUIPMENT

1. Analyzes idea for new equipment to develop method for feasibility study
2. Develops methodology to design feasibility study
3. Writes general specifications to design prototype equipment
4. Asks questions of engineers to determine technical specifications
5. Draws concrete plans to design prototype equipment
6. Demonstrates operation of prototype to get feedback on performance
7. Revises design plans to improve prototype
8. Calls production department to have prototype revised
9. Calculates potential market to develop product cost data
10. Calculates materials/labor costs to develop product cost data
11. Divides cost by market to determine unit product cost
12. Identifies similar products to determine competition
13. Compares unit product cost to determine product competitiveness
14. Analyzes market cost/competitiveness to make recommendation
15. Writes report to disseminate results of study

TO CONDUCT SURVEY OF MEDIA USAGE

1. Copies from inventory to list equipment and materials
2. Analyzes survey objectives to compile usage questions
3. Analyzes survey objectives to compile response categories
4. Copies information from list to address questionnaires
5. Checks list to note returned questionnaires
6. Prepares tally sheet to summarize data
7. Tallies responses to summarize data
8. Writes summary of data to report supervisor

DESIGN FUNCTION

TO DESIGN EQUIPMENT SYSTEMS

1. Analyzes goals of organization to determine communication needs
2. Translates communication needs to identify technical systems
3. Writes general specifications to describe technical systems
4. Analyzes other equipment systems to determine external constraints
5. Analyzes physical facilities to determine physical constraints
6. Analyzes monetary considerations to determine financial constraints
7. Analyzes constraints to identify alternate systems
8. Analyzes constraints to use ity alternate formats
9. Examines alternate systems to develop initial budget
10. Projects system growth to develop project budget
11. Discusses with engineer to determine interface of systems
12. Reads technical fliers to identify components of system
13. Reads technical fliers to determine electrical interface
14. Reads technical fliers to determine physical interface
15. Selects components to meet interface requirements
16. Analyzes physical constraints to draw physical schematic
17. Analyzes electrical details to draw wiring diagrams
18. Writes detailed specifications to describe system components
TO DESIGN IMPROVED TRAINING EQUIPMENT
5. Writes criteria for needed device to ensure compatibility with system
5. Translates criteria for device to develop technical specifications
5. Compares devices with technical specifications to choose most appropriate
5. Designs prototype device to meet technical specifications
5. Assembles prototype with test design feasibility
5. Performs cost analysis to evaluate cost per unit of device
5. Writes technical specifications for contract to initiate production of devices

TO DESIGN NEW FACILITIES
5. Analyzes work to be done to specify design needs
5. Analyzes equipment systems to determine space requirements
5. Examines current floor plans to determine space constraints
5. Analyzes budget to determine cost constraints
5. Examines physical construction to determine physical constraints
5. Analyzes equipment specifications to determine special requirements
5. Visits other facilities to get ideas for design
5. Reads brochures to identify best designs
5. Draws rough floor plan to communicate design needs
5. Discusses with architect to clarify design needs
5. Examines blueprints to suggest improvements

TO PLAN INSTRUCTIONAL SPACE
5. Discusses with teachers to identify instructional pattern
5. Analyzes instructional pattern to determine space needs
5. Draws floor plans to meet instructional pattern
5. Discusses with teachers to identify best floor plan
5. Submits chosen floor plan to get approval

TO PRODUCE AV BULLETIN
5. Selects articles on AV to compile library of materials
5. Reads information in files to choose suitable subjects
5. Compiles information from files to write short articles
5. Arranges materials on sheet to design layout
5. Gives instructions to have copies made

TO COLLECT, PROCESS, ANALYZE, AND INTERPRET EVALUATION DATA
5. Reads evaluation model/instrument to become aware of information needs
5. Reads evaluation model/instrument to identify sources for evaluation data
5. Calls school to arrange for evaluation data collection
5. Writes methodology to collect evaluation data
5. Formulates sampling procedure to collect evaluation data
5. Selects time schedule to collect evaluation data
5. Instructs personnel to collect evaluation data
5. Administers instrument to collect evaluation data
5. Records responses to instrument to collect evaluation data
5. Writes format to code evaluation data
5. Compares responses and answer key to score evaluation instruments
5. Calls computer center to arrange for data processing
5. Reads computer program library to select computer program
5. Supervises data processing to translate data to usable format
5. Reads evaluation model to select statistical procedure
5. Supervises data processing to analyze evaluation data
6. Translates results of analysis to interpret meaning of data
7. Compares data and objectives to provide answers to study questions
8. Translates answers to questions to indicate alternative action steps
9. Writes report to decision makers to transmit results/interpret action

TO PREVIEW AND SELECT INSTRUCTIONAL MATERIALS

5. Views material to do initial screening
6. Analyzes technical quality to reject poor quality items
7. Analyzes present curriculum needs to reject irrelevant items
8. Analyzes future curriculum needs to reject irrelevant items
9. Compares with teacher's needs to reject irrelevant items
10. Analyzes possible uses of material to select most appropriate
11. Compiles factors to eliminate obvious rejects
12. Examines evaluation methods to select best evaluation method
13. Writes list of titles to prepare evaluation committee preview list
14. Writes list of titles to prepare specialist preview list
15. Writes annotation to describe material
16. Compiles annotation and comment sheet to collect evaluations
17. Writes suggestions to lead evaluation session
18. Sends suggestions to producers to inform producers of needs
19. Compiles list of recommended equipment to inform field personnel

TO IMPROVE EQUIPMENT ACQUISITION PROCEDURES

5. Defines technical specifications for equipment to evaluate proposals of contractor
6. Designs basic parameters of device to specify for production
7. Writes guidelines to specify minimum specifications for equipment
8. Performs cost analysis to recommend equipment
9. Discusses with management to encourage purchase of equipment
10. Compiles list of recommended equipment to inform field personnel

TO IMPROVE CATALOGING PROCEDURES

Discusses with salesmen to identify new cataloging techniques
Evaluates use of microfiche to design automated system
Evaluates use of microfilm to design automated system
Analyzes engineering demands to design automated system
Analyzes equipment standards handbook to recommend standard definitions
Lists recommended definitions to standardize definitions
Discusses with management to recommend standard definitions
Writes proposal to recommend verifying course card

TO CATALOG MATERIALS

- Assigns sequential control number to catalog new materials
- Compares title with catalog to determine if already catalogued
- Assigns code from accession list to identify materials
- Assigns subject headings to classify materials
- Reviews film to write catalog description
- Writes short description of film to catalog film
- Reads review of materials to write catalog description
- Determines standard notation to prepare to catalog
- Checks classification list to cross-index materials
- Reads review of materials to cross-index materials
- Cross-indexes materials to facilitate location
- Reads curriculum guides to classify materials in curriculum areas
- Analyzes areas to identify curriculum topics
- Groups curriculum topics to assign to grade levels
- Adapts commercial catalog cards to catalog to local needs
- Checks catalog notation to insure accuracy
Alphabetizes catalog cards to prepare for filing
Removes out of date cards to keep catalog files current
Lists new materials in catalog to update catalog
Operates typewriter to type catalog

TO IMPROVE DISTRIBUTION SYSTEM
Analyzes flow to identify major steps
Discusses with workers to identify major problems
Examines forms used to identify needed improvements
Designs new forms to improve record keeping
Plans new scheduling system to improve scheduling
Examines current routing lists to identify major problems
Plans new routing list to improve circulation
Analyzes circulation records to compute usage figures
Adds up times equipment used to compute usage figures
Analyzes usage figures to project equipment needs
Lists projected equipment needs to provide budget information

TO LOCATE CURRICULUM MATERIALS
Reads fliers and magazines to identify curriculum materials
Files references by subject area to compile materials file
Discusses with teacher to determine needs and objectives
Analyzes materials file to select references
Discusses with teacher to evaluate materials available
Discusses with teacher to explain reference sources
Advises teachers to inform of materials available
Reads curriculum materials to inform of materials available

UTILIZATION FUNCTION.

TO HELP STUDENT IDENTIFY LEARNING INTERESTS AND SELECT OBJECTIVES
Travels to school building to make self available to students
Listens to student to initiate conversation
Reads student records to identify relative education achievement
Probes student to identify interest and talent
Reads student records to identify social-ethnic difference
Reads student records to identify interest attitude
Converses with student to identify interest and talent
Responds to student to encourage learning interests
Makes suggestions to student to identify interest and talent
Reads student records to identify past learning in area
Reads student records to identify learning difficulties in area
Discusses with student to review past learning and problems in area
Discusses with student to identify implication of past for present
Analyzes with student to narrow interest based on past precedent
Analyzes with student to translate interest to broad objectives
Speaks with student to provide input on broad objectives
Analyzes with student to narrow broad objectives
Analyzes with student to translate broad interest to behavior objectives
Evaluates behavioral objectives with student to select objectives of immediate interest
Analyzes with student to develop learning sequence for objectives

TO HELP STUDENT SELECT LEARNING ACTIVITIES TO MEET OBJECTIVES
Administers tests to student to test student learning style
Reads test results to analyze student learning style
Instructs student to explain learning style
Discusses with student to explain idea of learning preference
Reads listing of learning activities to identify pre-packaged activities in system
Reads listing to identify learning activities related to objective
Compares student and activity objectives to select activities relevant to student
Discusses with student to explain different activities
Analyzes learning activities to identify human/media mix
Analyzes learning activities to identify individual/group mix
Compares activities/learning style to identify matches
Discusses with student to identify student learning preference
Combines activity/style preference to make learning activity suggestions
Discusses with student to evaluate suggested activities
Listens to student feedback to identify problems with current learning activity
Combines different activities to generate new sets of activities
Discusses with student to evaluate combined activities
Listens to feedback from student to identify activity problems not solved
Discusses with student to identify student ideas for learning activity
Consults with student to help design individual learning activities

TO LECTURE/MAKE MEDIA PRESENTATIONS TO LARGE STUDENT GROUPS
Speaks to students to identify objectives of presentation
Speaks to students to explain importance of objectives
Discusses with students to identify group expectations for presentation
Speaks to students to present lecture information
Speaks to students to explain special media techniques
Operates media equipment to present information
Discusses with students to ask student questions
Analyzes questions/answers to evaluate student understanding
Analyzes questions answers to evaluate presentation effectiveness
Observes student behavior to evaluate presentation effectiveness
Translates evaluation to change presentation
Listens to students to respond to student questions
Speaks to students to respond to student questions

TO MONITOR INDIVIDUALIZED INSTRUCTION/SELF-INSTRUCTIONAL MEDIA
Writes on student record to note student attendance
Writes on student record to note learning activity used
Checks materials for learning activity to check if ready for student
Calls center to obtain missing components
Observes students using materials to identify problems in handling materials
Discusses with student to explain handling of materials
Observes students using materials to identify problems in understanding
Observes students using materials to identify problems in performing activities
Discusses with student to ascertain if problem
Discusses with student to solve problem if simple
Discusses with student to recommend tutor to solve problem
Calls tutor to arrange for student session

5
UTILIZATION-DISSEMINATION FUNCTION.

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD

6 Reads books/journal articles to learn issues/new knowledge
5 Joins professional associations to learn issues/new knowledge
6 Joins professional associations to develop professional contacts
6 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
6 Writes articles/convention papers to disseminate new ideas
6 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
5 Discusses with colleagues to study issues in field
5 Discusses with colleagues to study institutional needs
5 Discusses with colleagues to study institution needs
5 Analyzes institutional needs to identify staff needs
5 Analyzes dissemination materials to identify institutional needs
5 Analyzes dissemination materials to identify institutional needs
5 Analyzes institutional needs to identify institutional needs
5 Analyzes dissemination materials to identify institutional needs
5 Translates materials to list benefits to institution
5 Analyzes methods of involvement to involve institutional process
5 Analyzes methods of involvement to involve institutional process
5 Analyzes methods of involvement to involve institutional process
5 Examine institution influence patterns to identify dissemination flow
5 Synthesizes benefits of involvement to develop dissemination plan
5 Discusses with colleagues to evaluate dissemination plan
5 Speaks with interested institution to field test dissemination plan
5 Administrators plan to field-test dissemination plan
5 Examines increased use of materials to evaluate dissemination plan
5 Speaks with other institutions to operationalize dissemination plan

TO DEVELOP DISSEMINATION STRATEGIES FOR TEACHER TRAINING PROJECT

5 Reads teacher training materials to identify target audience
5 Reads target audience to identify key geographical areas
5 Reads target audience to identify key demographics
5 Reads target audience to identify key needs
5 Analyzes dissemination materials to identify social institution needs
5 Analyzes dissemination materials to identify social institution needs
5 Analyzes dissemination materials to identify social institution needs
5 Analyzes dissemination materials to identify social institution needs
5 Translates materials to list benefits to institution
5 Analyzes methods of involvement to involve institutional process
5 Analyzes methods of involvement to involve institutional process
5 Examine institution influence patterns to identify dissemination flow
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TO EXPLAIN INDIVIDUALIZED INSTRUCTION PROJECT TO VISITORS

Speaks to visitor of superior to receive request for information
5 Talks with visitor to get acquainted/discover needs
5 Operates slide projector to make presentation on project
5 Discusses with visitor to explain project
5 Listens to visitor to identify questions re project
5 Discusses with visitor to answer questions re project
5 Instructs visitor to summarize project characteristics
5 Discusses visit to school to observe project in operation
5 Instructs visitor to describe layout of classroom
5 Observes class with visitor to see project in action
5 Discusses with visitor to identify characteristic activities
5 Listens to visitor to identify questions re project
5 Discusses with visitor to indicate activities answering questions
5 Guides visitor tour to keep visitor out of teacher's way
5 Speaks with students-teachers to arrange for discussions with visitor
5 Lets visitor student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize project
5 Collates project literature to give materials to visitor

TO PROVIDE INFORMATION ON AV CENTER

Defines media services available to prepare for brochure
5 Groups media services available to prepare for brochure
5 Estimates cost per item to prepare price list
5 Gives instructions to have brochure designed
5 Analyzes clients of center to define potential audience
5 Gives instructions to have copies of brochure mailed
5 Designs briefings to describe center operation
5 Writes briefing guide to provide briefing guidelines
5 Conducts briefings to describe center operation
5 Uses telephone to answer questions
5 Talks with visitors to describe services available
5 Talks with visitors to describe cataloging system
5 Talks with visitors to assist in locating materials
5 Operates AV production equipment to demonstrate operation

TO CONSULT ON MEDIA USE AND DESIGN

5 Advises outside personnel to improve use of media techniques
5 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multi-media presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements
5 Selects design materials to improve training center
5 Serves on committees to disseminate information on media

TO PROMOTE INCREASED USE OF INSTRUCTIONAL TELEVISION (ITV)

5 Discusses with content specialists to identify appropriate parts of course
5 Designs model to clarify method/media decisions
5 Analyzes research on ITV to identify relevant factors
5 Analyzes cost effectiveness to demonstrate advantages of ITV
5 Discusses hardware systems to evaluate effectiveness
5 Examines hardware systems to evaluate effectiveness
5 Discusses hardware systems to improve effectiveness
5 Writes report to management to propose installation of ITV

TO REPORT TO MANAGEMENT

5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time output budget to support work plans
5 Writes progress report to describe work performed

TO INFORM TEACHERS ON MEDIA

Discusses with teachers to inform on materials and equipment
5 Assesses teaching needs to suggest appropriate materials
5 Circulates information to inform on materials and equipment
5 Plans workshops to demonstrate AV services
5 Writes notice to announce demonstration
5 Operates AV equipment to demonstrate operation
5 Gives multimedia presentation to inform on AV services
5 Gives information on library procedures
5 Gives instruction to inform on CAI programming
TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET

5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS

Identifies company products to inform educators
6 Resolves usage problems to assist educators
6 Conducts workshops on products to assist educators
6 Identifies need to produce pamphlet on product
6 Writes pamphlet to describe application of product
   Discusses with salesmen to inform on company products

TO TEACH BASIC AV COURSE

6 Shows filmstrip to teach behavioral objectives
5 Describes approach to teach behavioral objectives
6 Conducts simulated task analysis to provide active learning
5 Encourages writing of objectives to teach through active learning
5 Encourages writing of tests to teach through active learning
6 Describes media requirements to teach use of media in instruction
6 Describes group size contingencies to teach use of media in instruction
5 Advises students to assist in teaching with media
5 Advises students to assist in multi-media presentations
      Operates equipment to demonstrate equipment operation
5 Teaches over CCTV to instruct in media production
5 Teaches over CCTV to instruct in graphics techniques
      Operates TV camera to record session for iTV
5 Advises students to inform on graphics techniques
       Operates movie camera to demonstrate to students
5 Advises students to assist in making film
5 Administers pre- and post-tests to reinforce teaching
      Administers media skills test to evaluate student performance
5 Advises students to better master teacher relations
5 Advises students to inform on courses to take
5 Gives multi-media presentation to demonstrate use of media
       Operates movie projector to show exemplary films
5 Discusses with students to clarify media principles

COMPETENCIES FOR SPECIALISTS IN MEDIA PRODUCT DEVELOPMENT

ORGANIZATION MANAGEMENT FUNCTION.

PERSONNEL MANAGEMENT FUNCTION.

TO IMPROVE COMMUNICATIONS BETWEEN TECHNICIANS AND ARTISTS

5 Chooses subject matter to encourage seminar discussion
   Selects time and place to hold seminar
   Writes notice to publicize seminar
5 Designs art kit to demonstrate technical details
5 Conducts seminar to encourage discussion

TO SUPERVISE GRAPHICS UNIT

5 Reviews job applications to make recommendations
   Makes recommendations to director to assist in hiring
5 Assesses staff work to write performance reports
   Writes performance reports to inform supervisor
5 Discusses work load with staff to determine assignments
   Assigns work to staff to meet goals of unit
   Supervises staff to ensure work is completed
5 Discusses with staff to relay/interpret administrative regulations

RESEARCH-THEORY FUNCTION.

TO CONCEPTUALIZE THEORETICAL MODELS

Perceives problem in field to identify general research problem
7 Analyzes general problem to identify specific problem areas
6 Selects problem areas to limit specific problem
6 Analyzes problem areas to define specific problem
5 Combines specific problem factors to make concise problem definition
6 Translates problem statement to identify solution parameters
6 Reads problem/solution parameters to brainstorm solutions
6 Discusses problem with colleagues to brainstorm solutions
7 Combines ideas to generate new ideas
7 Translates ideas to other forms to generate new ideas
6 Seeks out research information to support/negate alternative ideas
7 Seeks out research information to generate unthought-of ideas
5 Compares solutions/information to evaluate proposed solutions
6 Compares solutions/information to generate new solutions
6 Synthesizes proposed solutions to converge on tentative model
5 Discusses model with colleagues to run reality test of model
5 Compares model with known data to run reality test of model
5 Analyzes reality test results to revise model
6 Writes paper to describe model

TO CONDUCT RESEARCH PROJECT

7 Identifies general problem to provide basis for research study
5 Reads journals to identify appropriate funding sources
5 Contacts colleagues to identify appropriate funding sources
TO IMPROVE STANDARDS OF RESEARCH PROJECTS

5 Defines basic/applied research to design guidelines for research
6 Designs standard test formats to design guidelines for research
7 Specifies resources available to design guidelines for research
8 Designs systematic procedures to design guidelines for research
9 Advises researchers to inform on psychological principles

6 TO RESEARCH LEARNING STRATEGIES FOR CAI

5 Reads research literature to select relevant learning theories
6 Selects experimental CAI materials to run learning strategy experiment
7 Reads CAI materials to identify computer's part
8 Speaks to students to arrange for lesson simulation
9 Operates tape recorder to record lesson simulation
10 Asks questions from CAI lesson to try out lesson
11 Writes student responses to try out lesson
12 Analyzes mistakes to identify need for tutorial help
13 Formulates strategy to help student to correct mistakes
14 Talks with students to try out tutorial strategy
15 Analyzes students' responses to determine success of strategy
16 Formulates another strategy to correct mistakes
17 Talks with students to try out second strategy
18 Analyzes students' responses to determine success of strategy
19 Speaks to student to end lesson simulation
20 Listens to tapes of student sessions to summarize tutorial strategies
21 Analyzes tutorial strategies to identify common elements
22 Analyzes tutorial strategies to identify successful elements
23 Analyzes common/successful elements to derive general rules
24 Analyzes research literature/tutor behavior to derive specifications for CAI tutor system
25 Translates tutor system specifications to develop decision model
26 Translates decision model to develop programming flowchart
27 Translates programming flowchart to write computer program
28 Operates computer terminal to print out tutorial strategy
29 Reads print-out to check program
30 Speaks to students to arrange for lesson simulation
31 Observes students interaction with lesson to try out lesson
32 Observes effect of tutorial strategies to try out lesson
33 Analyzes student errors to evaluate lesson/tutor strategies

DESIGN FUNCTION.

TO DESIGN INSTRUCTIONAL MATERIALS FOR COURSE

46 Discusses with instructors to define training problem
47 Describes critical incidents to define training program
48 Specifies tasks to identify terminal behavior
49 Defines objectives for course to identify terminal behavior
50 Writes overall design for course to organize content
51 Prescribes content area of course to organize content
52 Defines entry behavior of students to determine content
53 Writes technical draft to define training problem
54 Discusses with instructors to identify teaching strategy
55 Rewrites technical draft to improve training program
56 Designs pre- and post-tests to evaluate effectiveness of program
57 Evaluates extant materials to identify suitable content
58 Selects appropriate materials and media to organize course
59 Researches literature to locate examples of simulation
60 Designs role plays to meet training need
61 Teaches course to evaluate effectiveness of materials

TO ANALYZE RESEARCH DATA

50 Speaks with researcher to understand data to be analyzed
51 Reads research proposal to understand type of data collected
52 Reads research proposal to understand study objectives
53 Translates objectives to define categories or responses
54 Reads data to determine if categories fit
55 Classifies each response to put responses into categories
56 Counts responses in each category to summarize data
57 Analyzes objectives/data type to select statistical formula
58 Reads formula to define computation sequence
59 Translates data into formula to perform statistical analysis
60 Operates calculator to perform statistical analysis
61 Reads statistical tables to perform statistical analysis
62 Compares data analysis with tables to determine significance of data
63 Examines objectives/data analysis to interpret meaning of data
64 Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

5 Defines basic/applied research to design guidelines for research
6 Designs standard test formats to design guidelines for research
7 Specifies resources available to design guidelines for research
8 Designs systematic procedures to design guidelines for research
9 Advises researchers to inform on psychological principles

TO DESIGN PROGRAMED INSTRUCTION MATERIALS

5 Discusses with client to define problem area
6 Questions client to delimit problem area
7 Reads client's current materials to research problem area
8 Analyzes subject matter to identify segments for programming
9 Discusses with client to define target population
10 Analyzes potential audience to state assumptions about learners
11 Discusses with client to define general objectives
12 Calculates subject matter to state broad objectives
13 Performs task analysis to organize content
14 Restates task analysis to design flow chart
15 Analyzes flow chart to write behavioral objectives
TO WRITE INSTRUCTORS GUIDE FOR INSTRUCTIONAL MATERIALS
5 Analyzes objectives to restate more fully
5 Assesses time spent in pilot to indicate time for items
5 Analyzes content and time to write schedule
5 Analyzes unprogrammed segments to write lesson plans
5 Analyzes objectives to write pre-test
5 Analyzes objectives to write practice exercises
5 Analyzes objectives to write role plays

TO COORDINATE DESIGN OF AUTOMATED PRESENTATIONS
5 Identifies field personnel to select program developers
5 Evaluates written program to suggest improvements
5 Asks clarifying questions to suggest improvements
5 Analyzes step size to evaluate written program
5 Suggests revisions to improve written program
5 Discusses with producer to clarify production details
5 Analyzes script to assign pauses and tape stops
5 Examines draft visuals to assess correlation with script
5 Analyzes program to assess logical development
5 Chooses subjects to test out prototype program
5 Schedules testing session to test out prototype program
5 Evaluates results from test to test out prototype program

TO DEVELOP INSTRUCTIONAL PACKAGES FOR INDIVIDUALIZED INSTRUCTION (II)
Negotiates contract with customer to initiate project development
5 Instructs customer in II to define problems in process
5 Instructs customer in II to define changed concepts of instruction
5 Instructs customer in II to define effects on curriculum
5 Instructs customer in II to define new role of testing
5 Consults with client to determine client roles
5 Consults with client to determine company roles
5 Instructs customer in logistics to define work/money/time relationships
5 Questions client to define wants/needs and their relationship
5 Consults with client to feedback goals for project
5 Analyzes instructional setting to define learning environment
5 Analyzes project goals to define criterion performance
5 Translates criterion performance to define learning objectives
5 Analyzes current content to decide if teaches to objectives
5 Analyzes current content to determine procedures learner must do
5 Analyzes current content to define alternative procedures
5 Synthesizes objectives/content to define needed new content
5 Extrapolates from content/objectives to define teaching strategies
5 Translates teaching strategies to make media selections
5 Coordinates materials procurement to provide needed audio and visuals
5 Reads final script to edit content/sequence/ambiguity
5 Writes introduction to materials to describe materials utilization
5 Plays role of student to field test materials
5 Speaks to client to set up review panel
5 Shows materials to client to obtain review and comments
5 Translates suggestions to make revisions
5 Sends materials to client to fulfill contract

TO DESIGN MATERIALS FOR INSTRUCTOR TRAINING COURSE
5 Analyzes task list to group in logical clusters
5 Analyzes task groups to expand into objectives
5 Writes behavioral objectives to organize unit content
5 Analyzes behavioral objectives to select method of instruction
5 Designs content of unit to fulfill components of objectives
5 Writes instructor activities to clarify and expand course content
5 Decides on use of visuals to illustrate content
5 Writes summary of lesson to clarify lesson content
5 Teaches pilot lesson to time length
5 Writes supplementary handbook to assist in teaching course
5 Designs evaluation sheets to elicit student reaction to materials
5 Pilot tests to evaluate effectiveness of materials
5 Analyzes evaluation sheets to assess student reaction
5 Revises instructional materials to improve quality
5 Gives instructions to have materials distributed

GIVES INSTRUCTIONS TO HAVE MATERIALS DISTRIBUTED

TO DESIGN CONTENT FOR INSTRUCTOR TRAINING COURSE
5 Discusses with client to refine behavioral objectives
5 Discusses with client to identify essential objectives
5 Listens in meeting to understand political aspects
5 Discusses with content experts to understand content
5 Discusses with client to reconcile conflicts in data
5 Discusses with client to revise behavioral objectives
5 Analyzes objectives/flow chart to write content outline
5 Wipes brief draft of program to organize content
5 Analyzes content outline to select appropriate media
5 Analyzes content outline to select model/paradigm
5 Reviews content to sequence presentation
5 Analyzes content to determine units and frames
5 Translates objectives/content to write program frames
5 Revises draft of program to reduce step size
5 Analyzes objectives to write pre- and post-tests
5 Locates technical information to design visual chart
5 Analyzes technical information to design visual chart
5 Organizes pilot test to try out program
5 Evaluates pilot performance to evaluate program effectiveness
5 Revises program to improve quality

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TO WRITE INSTRUCTORS GUIDE FOR INSTRUCTIONAL MATERIALS
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5 Assesses time spent in pilot to indicate time for items
5 Analyzes content and time to write schedule
5 Analyzes unprogrammed segments to write lesson plans
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TO DEVELOP INSTRUCTIONAL PACKAGES FOR INDIVIDUALIZED INSTRUCTION (II)
## TO DESIGN MULTI-MEDIA PRESENTATIONS

<table>
<thead>
<tr>
<th>6</th>
<th>Looks at organization projects to find production opportunity</th>
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<tbody>
<tr>
<td>5</td>
<td>Identifies projects related to idea to find production opportunity</td>
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<tr>
<td>5</td>
<td>Identifies amenable project directors to find production opportunity</td>
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<tr>
<td>5</td>
<td>Speaks to project directors to persuade to produce presentation</td>
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<tr>
<td>5</td>
<td>Discusses with project director to ascertain audience/objective</td>
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<tr>
<td>5</td>
<td>Calls associate to obtain design assistance</td>
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<td>7</td>
<td>Examines meaning of idea to clarify presentation subject</td>
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<tr>
<td>7</td>
<td>Considers philosophy behind idea to clarify presentation subject</td>
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<tr>
<td>6</td>
<td>Considers ways of presenting to clarify presentation subject</td>
</tr>
<tr>
<td>6</td>
<td>Considers media involved to clarify presentation subject</td>
</tr>
<tr>
<td>6</td>
<td>Analyzes presentation subject to write general objectives</td>
</tr>
<tr>
<td>5</td>
<td>Breaks down general objectives to define behavioral objectives</td>
</tr>
<tr>
<td>6</td>
<td>Translates objectives/treatment to define behavior</td>
</tr>
<tr>
<td>6</td>
<td>Translates objectives/treatment to determine sequence</td>
</tr>
<tr>
<td>6</td>
<td>Translates objectives/treatment to determine content</td>
</tr>
<tr>
<td>5</td>
<td>Synthesizes objectives/sequence/content/media to determine presentation outline</td>
</tr>
<tr>
<td>5</td>
<td>Synthesizes objectives/sequence/content/media to determine needed visuals</td>
</tr>
<tr>
<td>5</td>
<td>Synthesizes objectives/sequence/content/media to determine needed audio</td>
</tr>
</tbody>
</table>

## TO DESIGN EQUIPMENT SYSTEMS

<table>
<thead>
<tr>
<th>5</th>
<th>Analyzes goals of organization to determine communication needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Translates communication needs to identify technical systems</td>
</tr>
<tr>
<td>5</td>
<td>Writes general specifications to describe technical systems</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes other equipment systems to determine external constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes physical facilities to determine physical constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes monetary considerations to determine financial constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes constraints to identify alternate systems</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes constraints to identify alternate formats</td>
</tr>
<tr>
<td>5</td>
<td>Examines alternate systems to develop initial budget</td>
</tr>
<tr>
<td>5</td>
<td>Projects system growth to develop projected budget</td>
</tr>
<tr>
<td>5</td>
<td>Discusses with engineer to determine interface of systems</td>
</tr>
<tr>
<td>5</td>
<td>Reads technical flyers to identify components of system</td>
</tr>
<tr>
<td>5</td>
<td>Reads technical flyers to determine electrical interface</td>
</tr>
<tr>
<td>5</td>
<td>Reads technical flyers to determine physical interface</td>
</tr>
<tr>
<td>5</td>
<td>Selects components to meet interface requirements</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes physical constraints to draw physical schematic</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes electrical details to draw wiring diagrams</td>
</tr>
<tr>
<td>5</td>
<td>Writes detailed specifications to describe system components</td>
</tr>
</tbody>
</table>

## TO DESIGN IMPROVED TRAINING EQUIPMENT

<table>
<thead>
<tr>
<th>5</th>
<th>Writes criteria for needed device to ensure compatibility with system</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Translates criteria for device to develop technical specifications</td>
</tr>
<tr>
<td>5</td>
<td>Compares devices with technical specifications to choose most appropriate</td>
</tr>
<tr>
<td>5</td>
<td>Designs prototype device to meet technical specifications</td>
</tr>
<tr>
<td>5</td>
<td>Assembles prototype to test design feasibility</td>
</tr>
<tr>
<td>5</td>
<td>Assigns prototype to field center to test design feasibility</td>
</tr>
<tr>
<td>5</td>
<td>Performs cost analysis to compute cost product data</td>
</tr>
<tr>
<td>5</td>
<td>Writes technical specifications for contract to initiate production of devices</td>
</tr>
</tbody>
</table>

## TO DESIGN NEW FACILITIES

<table>
<thead>
<tr>
<th>5</th>
<th>Analyzes work to be done to specify design needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Analyzes equipment systems to determine space requirements</td>
</tr>
<tr>
<td>5</td>
<td>Examines current floor plans to determine space constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes budget to determine cost constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes physical construction to determine physical constraints</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes equipment specifications to determine special requirements</td>
</tr>
<tr>
<td>5</td>
<td>Visits other facilities to get ideas for design</td>
</tr>
<tr>
<td>5</td>
<td>Reads literature to identify best designs</td>
</tr>
<tr>
<td>5</td>
<td>Draws rough floor plan to communicate design needs</td>
</tr>
<tr>
<td>5</td>
<td>Discusses with architect to clarify design needs</td>
</tr>
<tr>
<td>5</td>
<td>Examines blueprints to suggest improvements</td>
</tr>
</tbody>
</table>

## TO PLAN INSTRUCTIONAL SPACE

<table>
<thead>
<tr>
<th>5</th>
<th>Discusses with teachers to identify instructional pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Analyzes instructional pattern to determine space needs</td>
</tr>
<tr>
<td>5</td>
<td>Draws floor plans to meet instructional pattern</td>
</tr>
<tr>
<td>5</td>
<td>Discusses with teachers to identify best floor plan</td>
</tr>
<tr>
<td>5</td>
<td>Submits chosen floor plan to get approval</td>
</tr>
</tbody>
</table>

## PRODUCTION FUNCTION

### TO SHOOT PHOTOGRAPHS ON LOCATION

- Selects appropriate equipment to perform photographic assignment
- Selects appropriate film to perform photographic assignment
- Loads camera to prepare for photography
- Loads equipment in car to deliver to location
- Drives to location to deliver equipment
- Discusses with client to clarify assignment
- Sets up tripod and camera to prepare for shooting
- Tests light level to set camera
- Operates camera to photograph
- Writes information on assignment to keep record

### TO PRODUCE VISUALS FOR PRESENTATION

<table>
<thead>
<tr>
<th>5</th>
<th>Reads script to develop overall view</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Discusses with author to clarify details of presentation</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes script to identify major ideas</td>
</tr>
<tr>
<td>5</td>
<td>Rough sketches images to convey message of script</td>
</tr>
<tr>
<td>5</td>
<td>Discusses with author to get approval of storyboard</td>
</tr>
<tr>
<td>5</td>
<td>Evaluates script to identify needed visuals</td>
</tr>
</tbody>
</table>

### TO PREPARE MATERIALS FOR TV

<table>
<thead>
<tr>
<th>5</th>
<th>Edits film footage to produce final film</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Operates movie projector to show film</td>
</tr>
<tr>
<td>5</td>
<td>Uses stopwatch to record running time of film</td>
</tr>
<tr>
<td>5</td>
<td>Splices film to produce continuous footage</td>
</tr>
</tbody>
</table>

### TO PRODUCE/DIRECT MOTION PICTURE

<table>
<thead>
<tr>
<th>5</th>
<th>Analyzes script to write shot breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Organizes shot breakdown to provide shot sequences</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes production details to write production plan</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes production plan to develop production budget</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes production plan to determine equipment needs</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes production plan to determine talent/crew needs</td>
</tr>
<tr>
<td>5</td>
<td>Analyzes shot sequences to determine needed location</td>
</tr>
<tr>
<td>5</td>
<td>Searches in tile to select suitable location</td>
</tr>
<tr>
<td>5</td>
<td>Calls appropriate agency to schedule location</td>
</tr>
<tr>
<td>5</td>
<td>Makes arrangements to transport crew/talent to location</td>
</tr>
</tbody>
</table>
TO COORDINATE PRODUCTION OF FILMSTRIP

5 Surveys location to revise shot breakdown
5 Gives instructions to sound crew to direct audio recording
5 Gives instructions to camera crew to direct shots to be taken
5 Gives instructions to talent to direct action for shots
5 Observes run-through to suggest improvements in film
5 Evaluates take to accept or reject film
  Checks shot sequence to ensure all taken
5 Gives instructions to have artwork produced
5 Discusses with film editor to explain film concepts
5 Advises film editor to suggest improvements
5 Views sequences of film to approve rough cut
5 Discusses with specialists to have rough cut approved
5 Surveys market potential to decide on number of copies
5 Gives instructions to lab to have prints produced

TO COORDINATE PRODUCTION OF AUDIOTAPES

Discusses with writers to improve audio standards
Edits script to improve quality
Analyzes script to assign pauses
Operates tape recorder to produce scratch tape
Reads script aloud to produce scratch tape
Revises scratch tape to improve quality
Operates stopwatch and recorder to time scratch tape
Transmits script to narrator to have tape produced
Schedules preview session to play back audiotape
Makes arrangements to produce duplicates of tape

TO COORDINATE PRODUCTION OF SLIDE PRESENTATION

Interviews client to clarify presentation details
Writes standard production order to coordinate production
Writes time schedule to assign completion dates
Reads material provided to separate into major ideas
Rough sketches visuals to illustrate content outline
Writes summary of major ideas to organize content
Selects appropriate media to match media to content
Chooses colors and styles to give continuity to presentation
Writes instructions re color etc. to inform production units
Arranges storyboard cards by main ideas to assign frame numbers
Arranges storyboard cards by label to assign work to production units
Discusses storyboard cards to clarify production details
Searches stock files to choose existing slides
Removes poor quality slides to improve production quality
Operates camera to photograph complicated visuals
Arranges slides in sequence to organize in prescribed order
Operates slide projector to show raw presentation to client
Reads script and shows slides to show raw presentation to client
Discusses with client to determine revisions needed
Revises presentation to improve quality

TO COORDINATE PRODUCTION OF FILMSTRIP

5 Discusses with supervisors to determine curriculum needs
5 Visits locality to obtain background information
5 Writes learning objectives to coordinate filmstrip design
5 Analyzes learning objectives to write rough script
5 Discusses with photographer to determine pictures needed
5 Advises photographer to assist in location shooting
5 Analyzes slides to select suitable ones
5 Evaluates slides and tape to improve quality of material
5 Analyzes filmstrip to write teacher's manual
5 Analyzes catalogs and files to list related materials
6 TO COORDINATE PRODUCTION OF SOUND FILMSTRIP
7 TO COORDINATE PRODUCTION OF MATERIALS FOR COURSE

Interviews client to clarify presentation details
 Writes letters to past students to develop student profile
 Tabulates responses from letters to develop student profile
 Tabulates information to develop instructor profile
 Interviews client to develop list of subjects taught
 Questions client to list extant materials available
 Reviews extant materials to select appropriate ones
5 Arranges materials to organize into logical order
5 Writes rough outline of content to develop course content
 Sketches rough visuals to illustrate course outline
 Interviews client to get approval of storyboard
 Selects appropriate media to match media to content
 Estimates cost for each segment to develop cost analysis
 Adds estimated costs for segments to develop cost analysis
 Interviews client to get approval of basic content
 Writes time schedule to assign completion dates
 Defines PERT chart to assign completion dates

TO COORDINATE PRODUCTION OF SOUND FILMSTRIP

Reads assigned script to assess work to be done
Edits portions of script to reduce length and improve quality
Revises script to follow design specifications
Sequences slides using slide viewer to match concepts in script
Rewrites portions of script to match words to existing visuals
Operates tape recorder to produce scratch tape
Reads script aloud to produce scratch tape
Listens to scratch tape to match audio and visuals
Draws rough sketches to design title frames
Discusses with art department to assign color and lettering
Times scratch tape with stopwatch to assess length of tape
Schedules meeting with director to show raw presentation
Demonstrates scratch tape and slides to obtain director's evaluation
Discusses with director to determine revisions needed
Revises scratch tape to improve quality
Schedules meeting with writer to show raw presentation
Demonstrates scratch tape and slides to obtain writer's evaluation
Discusses with writer to determine revisions needed
Revises scratch tape to improve quality

TO COORDINATE PRODUCTION OF MOUTH FILMSTRIP

Schedules meeting with directors to discuss proposal
Recommends purchase of script to initiate production
Reads script to ensure correct grammar
Edits script to improve quality
Chooses subject matter consultant to ensure valid content
Asks subject matter consultant to have content validated
Checks pictures against script to insure all visuals present
5 Evaluates script to choose appropriate music and effects
Calls talent to request them to audition
Auditions talent to choose most suitable
Chooses appropriate narrator to obtain script narrator
Chooses appropriate music to match media to content
Calls sound studio to schedule time for recording
Evaluates narrator's reading to suggest improvements
Gives signals to technical staff to produce audio recording
Mixes narration tape and sound to produce finished tape
Uses styli to make acetate cut
Times recording with stop watch to determine length
Puts impulses on tape to produce pulsed tape
Lists to recording to insure complete and correct
Gives instructions to studio staff to have master made of tape
Assesses fee using union rates to pay narrator
Draws rough layout to design record sleeve

TO COORDINATE PRODUCTION OF MATERIALS FOR COURSE

Interviews client to clarify presentation details
 Writes letters to past students to develop student profile
 Tabulates responses from letters to develop student profile
 Tabulates information to develop instructor profile
 Interviews client to develop list of subjects taught
 Questions client to list extant materials available
 Reviews extant materials to select appropriate ones
5 Arranges materials to organize into logical order
5 Writes rough outline of content to develop course content
 Sketches rough visuals to illustrate course outline
 Interviews client to get approval of storyboard
 Selects appropriate media to match media to content
 Estimates cost for each segment to develop cost analysis
 Adds estimated costs for segments to develop cost analysis
 Interviews client to get approval of basic content
 Writes time schedule to assign completion dates
 Defines PERT chart to assign completion dates
Arranges storyboard cards to assign work to production units
5 Discusses storyboard cards to clarify production details
5 Incorporates design elements to write text
5 Evaluates materials produced to correct poor quality
5 Arranges materials in sequence to organize in prescribed order
5 Interviews client to get approval of production
5 Gives instructions to have multiple copies produced
5 Designs evaluation forms to pilot test instructional materials
5 Requests teacher to have pilot test conducted
5 Collects responses from pilot to assess reactions to materials
5 Revises instructional materials to improve quality

TO BUILD CCTV STUDIO
5 Analyses program needs to write design specifications
5 Incorporates design specifications to draw floor plan
5 Incorporates design specifications to write equipment specifications
5 Calculates money available to compute budget
5 Observes equipment in operation to assess performance
5 Observes builders at work to ensure specifications are met
5 Builds soundproof ceiling to equip CCTV studio
5 Hooks up equipment to equip CCTV studio

TO WRITE COMPUTER PROGRAMS FOR CAI
5 Drives to schools to consult with teachers
5 Listens to teachers' description to understand concept
5 Asks questions to develop sequence for program
5 Suggests alternative approaches to define concept for program
5 Examines program outline to decide programming language
5 Designs flowchart to develop sequence for program
5 Analyzes steps in flowchart to translate into computer language
5 Tests program in computer to discover errors
5 Rewrites program to eliminate errors
5 Operates computer terminal to store program in memory

TO IMPROVE PRODUCTION STANDARDS
5 Collects information on visual materials to develop guidelines
5 Analyzes training materials to list weak areas in visuals
5 Writes visual standards to develop guidelines
5 Designs course to instruct in visual communications
5 Lists TV lighting requirements to write TV production manual
5 Describes TV camera techniques to write TV production manual
5 Describes placing of mikes to write TV production manual
5 Advises on filmmaking techniques to inform field personnel
5 Lists standards for audio to write audio production manual

TO CONSULT ON MEDIA USE AND DESIGN
5 Advises outside personnel to improve use of media techniques
5 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multimedia presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements
5 Serves on committees to disseminate information on media

TO REPORT TO MANAGEMENT
5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time/output budget to support work plans
5 Writes progress reports to describe work performed

TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET
5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS
5 Identifies company products to inform educators
5 Resolves usage problems to assist educators
5 Conducts workshops on products to assist educators
5 Identifies need to produce pamphlet on product
5 Writes pamphlet to describe application of product
5 Discusses with salesmen to inform of new products

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD
5 Reads books/journal articles to learn issues/new knowledge
5 Joins professional associations to learn issues/new knowledge
5 Joins professional associations to develop professional contacts
5 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
5 Writes articles/convention papers to disseminate new ideas
5 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
5 Discusses with colleagues to identify positions in field
5 Discusses with salesmen to become informed of new products
5 Circulates fliers to inform staff of new products
5 Maintains file of new equipment to become informed on technology

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5 Advises outside personnel to improve use of media techniques
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5 Serves on committees to disseminate information on media

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5 Discusses with colleagues to identify positions in field
5 Discusses with colleagues to identify positions in field
5 Discusses with salesmen to become informed of new products
5 Circulates fliers to inform staff of new products
5 Maintains file of new equipment to become informed on technology
TO TEACH PHOTOGRAPHY COURSE

1. Supervises use of camera to provide experience in development.
2. Develops negatives to demonstrate development.
3. Develops film to demonstrate film development.
4. Operates slide projector to show exemplary slides.
5. Discusses with students to clarify lenses/setting decisions.
6. Operates tape recorder to produce tape for presentation.
7. Develops film to demonstrate exposure.
8. Operates TV camera to record session for TV.
9. Operates movie camera to demonstrate to students.
10. Operates movie projector to show exemplary movies.
11. Discusses with students to clarify media principles.

TO TEACH BASIC AV COURSE

1. Shows filmstrip to teach behavioral objectives.
2. Discusses approaches to teach behavioral objectives.
3. Conducts simulated task analysis to provide active learning.
4. Encourages writing of objectives and tests to teach through active learning.
5. Describes media requirements to teach use of media in instruction.
6. Discusses group size contingencies to teach use of media in instruction.
7. Advises students to assist in teaching with media.
8. Advises students to assist in multi-media presentations.
9. Operates equipment to demonstrate equipment operation.
10. Operates TV camera to record session for TV.
11. Operates copy camera to make slides of equipment.
12. Operates camera to demonstrate exposure.
13. Operates copy camera to make slides of equipment.
14. Operates tape recorder to produce tape for presentation.
15. Operate a camera to demonstrate exposure.
16. Develops film to demonstrate exposure.
17. Develops negatives to demonstrate development.
18. Exposes contact prints in frame to demonstrate exposure.
19. Operates slide projector to show exemplary slides.
20. Discussion with students to clarify elements of composition.
21. Discusses with students to clarify lenses/setting decisions.
22. Supervises use of camera to provide experience in photography.
23. Discusses pictures to clarify composition setting.

TO PLAN PROGRAMS/PROJECTS

1. Evaluates course outline to identify coherent segments.
2. Discusses with content specialist to develop associated task list.
3. Gives instructions to content specialists to describe use of learning modes.
4. Drafts lesson plan to meet training problem.
5. Discusses with content specialists to assist in TV program design.
6. Evaluates draft programs to assess methodology used.

ORGANIZATION MANAGEMENT FUNCTION.

TO ORGANIZE AND REORGANIZE ORGANIZATION STRUCTURE TO MEET GOALS

1. Reads organization charter to identify organization goals.
2. Translates goals to identify broad objectives.
3. Speaks to colleagues to evaluate broad objectives.
4. Writes paper to identify new organization objectives.
5. Translates objectives to formulate organization functions.
6. Confers with colleagues to evaluate appropriateness of functions.
7. Analyzes relations between functions to develop functional matrix.
8. Confers with colleagues to evaluate inclusiveness of matrix.
10. Translates functional matrix to identify needed structures.
11. Analyzes current structures to compare with needed structures.
12. Translates current structures to determine weaknesses.
13. Formulates organizational strategies to overcome weaknesses.
14. Translates strategies to define new structures/operations.
15. Analyzes new structures/operations to determine if they facilitate functions.
16. Translates new structures/operations to formulate new structure matrix.
17. Analyzes budget to determine structure constraints.
18. Analyzes facilities to determine structure constraints.
19. Translates objectives to determine structure constraints.
20. Translates functional matrix to identify needed structures.
21. Compares structure and function matrices to evaluate structure matrix.
22. Confers with colleagues to identify new structures/operations.
23. Writes paper to revise structure matrix.
24. Reads matrix to define relations between dimensions.
25. Analyzes relations and functions to define duties of personnel.
27. Analyzes relations and functions to define structure constraints.
28. Writes paper to revise structure matrix.
29. Analyzes relations and functions defined if they facilitate functions.
30. Translates structure matrix to identify needed structures.
31. Writes paper to identify new organization objectives.
32. Speaks to colleagues to evaluate broad objectives.
33. Translates goals to identify broad objectives.
34. Reads organization charter to identify organization goals.
35. Confers with colleagues to evaluate broad objectives.
36. Operates copy camera to make slides of equipment.
37. Operates tape recorder to produce tape for presentation.
38. Operates a camera to demonstrate exposure.
39. Operates TV camera to record session for TV.
40. Operates movie camera to demonstrate equipment.
41. Operates camera to demonstrate exposure.
42. Operates copy camera to make slides of equipment.
43. Operates tape recorder to produce tape for presentation.
44. Operates a camera to demonstrate exposure.
45. Operates TV camera to record session for TV.
46. Operates movie camera to demonstrate equipment.
47. Operates copy camera to make slides of equipment.
48. Operates tape recorder to produce tape for presentation.
49. Operates a camera to demonstrate exposure.
50. Operates TV camera to record session for TV.
51. Operates movie camera to demonstrate equipment.
63
TO ANALYZE RESEARCH DATA

- Speaks with researcher to understand data to be analyzed
- Reads research proposal to understand type of data collected
- Reads research proposal to understand study objectives
- Translates objectives to define categories of responses
- Reads data to define if categories fit
- Classifies each response to put responses into categories
  - Counts responses in each category to summarize data
  - Analyzes objectives/data type to select statistical formula
  - Analyzes objectives/data type to define computation sequence
  - Translates data into formula to perform statistical analysis
  - Operates calculator to perform statistical analysis
  - Reads statistical tables to perform statistical analysis
  - Compares data analysis with tables to determine significance of data
  - Examines objectives/data analysis to interpret meaning of data
  - Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

- Defines basic/applied research to design guidelines for research
- Designs standard test formats to design guidelines for research
- Specifies resources available to design guidelines for research
- Designs systematic procedures to design guidelines for research
- Advises researchers to inform on psychological principles

TO RESEARCH LEARNING STRATEGIES FOR CAI

- Reads research literature to select relevant learning theories
- Selects experimental CAI materials to run learning strategy experiment
- Reads CAI materials to identify computer part
- Speaks to students to arrange for lesson simulation
- Operates tape recorder to record lesson simulation
- Asks questions from CAI lesson to try out lesson
evaluates student responses to try out lesson
- Analyzes mistakes to identify need for tutorial help
- Formulates strategy to help student to correct mistakes
- Talks with student to try out tutorial strategy
- Analyzes student responses to determine success of strategy
- Formulates another strategy to correct mistakes
- Talks with students to try out second strategy
- Analyzes students responses to determine success of strategy
- Speaks to student to end lesson simulation
- Listens to tapes of student sessions to summarize tutorial strategies
- Analyzes tutorial strategies to identify common elements
- Analyzes tutorial strategies to identify successful elements
- Analyzes common/successful elements to derive general rules
- Analyzes research literature/tutor behavior to derive specifications for CAI tutor system
- Translates tutor system specifications to develop decision model
- Translates decision model to develop programming flowchart
- Translates programming flowchart to write computer program
- Operates computer terminal to print out tutorial strategy
- Reads print-out to check program
- Speaks to students to arrange for lesson simulation
- Observes students' interaction with lesson to try out lesson
- Observes effect of tutorial strategies to try out lesson
- Analyzes student errors to evaluate lesson/tutor strategies

TO PERFORM RESEARCH ON EFFECTIVENESS OF ITV

- Analyzes current instructional pattern to identify ways of improvement
- Lists new instructional patterns to identify ways of improvement
- Selects ITV to improve learning process
- Lists characteristics of ITV to identify parameters
- Identifies parameters to identify effective use of ITV
- Writes research plan to test effectiveness of ITV
- Defines objectives to design research project
- Discusses with content specialist to adapt course to TV script
- Analyzes existing lesson to set objectives
- Analyzes existing test to design p-st test
- Analyzes script to design visuals for TV
- Discusses with artist to clarify visuals needed
- Rehearses presentation to direct VTR production
TO PERFORM FEASIBILITY STUDY ON NEW EQUIPMENT

6. Analyzes idea for new equipment to develop method for feasibility study
5. Develops methodology to design feasibility study
5. Writes general specifications to design prototype equipment
5. Asks questions of engineers to determine technical specifications
4. Draws concrete plans to design prototype equipment
5. Calls production department to have prototype produced
5. Demonstrates operation of prototype to get feedback on performance
5. Revises design plans to improve prototype
5. Calls production department to have prototype revised
5. Assesses potential market to develop product cost data
5. Calculates materials/labor costs to develop product cost data
5. Divides cost by market to determine unit product cost
5. Identifies similar products to determine competition
5. Compares unit product cost to determine product competitiveness
4. Analyzes market cost competition to make recommendation
4. Writes report to disseminate results of study

TO CONDUCT SURVEY OR MEDIA USAGE

5. Copies from inventory to list equipment and materials
5. Analyzes survey objectives to compute usage questions
5. Analyzes survey objectives to compute response categories
4. Copies information from list to address questionnaire
4. Checks list to note returned questionnaires
4. Prepares tally sheet to summarize data
4. Tallies responses to summarize data
4. Writes summary of data to report to supervisor

DESIGN FUNCTION.

TO DESIGN INSTRUCTIONAL MATERIALS FOR COURSE

5. Discusses with instructors to define training problem
5. Discusses critical incidents to define training problem
5. Specifies tasks to identify terminal behavior
5. Defines objectives for course to identify terminal behavior
5. Writes overall design for course to organize content
5. Prescribes content area of course to organize content
5. Defines entry behavior of students to determine content
5. Writes technical draft to define training program
5. Discusses with instructors to identify teaching strategy
5. Rewrites technical draft to improve training program
5. Designs pre- and post-tests to evaluate effectiveness of program
5. Evaluates extant materials to identify suitable content
5. Selects appropriate materials and media to organize course
5. Researches in literature to locate examples of simulation
5. Designs role plays to meet training need
5. Teaches course to evaluate effectiveness of materials

TO DESIGN PROGRAMED INSTRUCTION MATERIALS

5. Discusses with client to define problem area
5. Questions client to delimit problem area
5. Reads client’s current materials to research problem area
5. Analyzes subject matter to identify segments for programming
5. Discusses with client to define target population
5. Analyzes potential audience to state assumptions about learners
5. Discusses with client to define general objectives
5. Analyzes subject matter to state broad objectives
5. Performs backward design to organize content
5. Restates objectives to design flow chart
5. Analyzes flow chart to write behavioral objectives
5. Discusses with client to refine behavioral objectives
5. Discusses with client to identify essential objectives
5. Listens in meeting to understand political aspects
5. Discusses with content expert to understand content
5. Discusses with client to reconcile conflicts in data
5. Discusses with client to refine behavioral objectives
5. Analyzes objectives/flow chart to write content outline
5. Writes brief draft of program to organize content
5. Analyzes content outline to select appropriate media
5. Analyzes content outline to select model/paradigm
5. Reviews content to sequence presentation
5. Analyzes content to determine units and frames
5. Translates objectives/content to write program frames
5. Revises draft of program to reduce step size
5. Analyzes objectives to write pre- and post tests
5. Revises program to improve quality
5. Evaluates pilot performance to evaluate program effectiveness
5. Revises program to improve quality
TO DESIGN MATERIALS FOR INSTRUCTOR TRAINING COURSE

5. Analyzes task list to group in logical clusters
6. Analyzes task groups to expand into objectives
7. Writes behavioral objectives to organize unit content
8. Analyzes behavioral objectives to select method of instruction
9. Designs content of unit to fulfill components of objectives
10. Writes instructor activities to clarify and expand course content
11. Decides on use of visuals to illustrate content
12. Writes summary of lesson to clarify lesson content
13. Teaches pilot lesson to time length
14. Writes supplementary handbook to assist in teaching course
15. Designs evaluation sheets to elicit student reaction to materials
16. Pilot tests to evaluate effectiveness of materials
17. Analyzes evaluation sheets to assess student reaction
18. Revises instructional materials to improve quality
19. Gives instructions to have materials distributed

TO COORDINATE DESIGN OF INSTRUCTOR TRAINING COURSE

5. Discusses with director to outline course design
6. Identifies planning task force to develop task list
7. Plans conferences to develop task list
8. Discusses with course writers to develop behavioral objectives
9. Writes operations plan to organize course development
10. Estimates time factors to organize course development
11. Selects site for pilot test to evaluate effectiveness of course
12. Discusses with training officer to arrange for pilot test
13. Critiques draft course materials to improve quality
14. Discusses with publications to organize mass production
15. Estimates number of copies needed to inform publications
16. Writes memos to held personnel to inform on progress of course
17. Conducts briefings to inform on progress of course
18. Writes report to management to inform on progress of course
19. Designs evaluation forms to evaluate effectiveness of course

TO WRITE UNIT FOR INSTRUCTOR COURSE

5. Analyzes learning modes to list characteristics
6. Assigns modes to objectives to provide model for instruction
7. Analyzes lesson plan construction to list characteristics
8. Designs sample lesson plans to provide model for instruction
9. Analyzes text content to list characteristics
10. Designs sample tests to provide models for instruction

TO WRITE INSTRUCTORS GUIDE FOR INSTRUCTIONAL MATERIALS

5. Analyzes objectives to restate more fully
6. Assesses time spent in pilot to indicate time for items
7. Analyzes content and time to write schedule
8. Analyzes unplanned segments to write lesson plans
9. Analyzes objectives to write pre-test
10. Analyzes objectives to write practice exercises
11. Analyzes objectives to write role plays

TO COORDINATE DESIGN OF AUTOMATED PRESENTATIONS

5. Identifies held personnel to select program developers
6. Evaluates written program to suggest improvements
7. Asks clarifying questions to suggest improvements
8. Analyzes step size to evaluate written program
9. Suggests revisions to improve written program
10. Discusses with producer to clarify production details
11. Analyzes script to assign pauses and tape stops
12. Examines program to assess logical development
13. Chooses subjects to test out prototype program
14. Schedules testing session to test out prototype program
15. Evaluates results from test to test out prototype program

TO DEVELOP INSTRUCTIONAL PACKAGES FOR INDIVIDUALIZED INSTRUCTION (II)

5. Negotiates contract with customer to initiate project development
6. Instructs customer in II to define problems in process
7. Instructs customer in II to define changed concepts of instruction
8. Instructs customer in II to define effects on curriculum
9. Instructs customer in II to define new role of testing
10. Consults with client to determine client roles
11. Consults with client to determine company roles
12. Instructs customer in logistics to define work, money, time, relationships
13. Questions client to define wants needs and their relationships
14. Considers with client to feedback goals for project
15. Analyzes instructional setting to define learning environment
16. Analyzes project goals to define criterion performance
17. Analyzes current content to decide if teaches to objectives
18. Analyzes current content to determine procedures learner must do
19. Analyzes current content to define alternative procedures
20. Synthesizes objectives/content to define needed new content
21. Extrapolates from content/subjectives to define teaching strategies
22. Translates teaching strategies to make media selections
23. Coordinates materials procurement to provide needed audio and visuals
24. Reads final script to edit content/sequence ambiguity
25. Writes introduction to materials to describe materials utilization
26. Plays role of student to held-test materials
27. Speaks to client to set up review panel
28. Shows materials to client to obtain review and comments
29. Translates suggestions to make revisions
30. Sends materials to client to fulfill contract

TO DESIGN MULTI-MEDIA PRESENTATIONS

6. Looks at organization projects to find production opportunity
7. Identifies projects related to idea to find production opportunity
8. Identifies amenable project directors to find production opportunity
9. Speaks to project directors to persuade to produce presentation
10. Discusses with project director to ascertain audience/objective
11. Calls associate to obtain design assistance
12. Examines meaning of idea to clarify presentation subject
13. Considers philosophy behind idea to clarify presentation subject
14. Considers ways of presenting to clarify presentation subject
15. Considers media involved to clarify presentation subject
16. Analyzes presentation subject to write general objectives
17. Breaks down general objectives to define behavioral objectives
18. Conceived ways of meeting objectives to develop treatment
19. Translates objectives/treatment to determine sequence
20. Translates objectives/treatment to determine content
21. Translates objectives/treatment to determine media
22. Synthesizes objectives/sequence/content/media to develop presentation outline
5 Synthesizes objectives/sequence/content/media to determine needed visuals
5 Synthesizes objectives/sequence/content/media to determine needed audio
5 Synthesizes objectives/sequence/content/media to determine odors, tastes, touches
5 Completes needed sensory inputs to develop storyboard
5 Translates storyboard to develop presentation specifications
5 Transmits specifications to production function to have presentation produced

TO DESIGN IMPROVED TRAINING EQUIPMENT

6 Listens and watches professor to analyze teaching technique
6 Observes student behavior to analyze teaching technique
6 Operates tape recorder to record class procedures
6 Uses tape recorder and typewriter to make transcript of proceedings
6 Analyzes lecture to derive objectives for course
6 Discusses with professor to confirm validity of objectives
6 Analyzes derived objectives to define conditions for learning
6 Discusses with students to ascertain visuals needed
6 Rough sketches visuals to illustrate course content
5 Locates artifacts in museum to illustrate course content
5 Locates visuals in books to illustrate course content
5 Operates copy camera to make slides of visuals
5 Locates commercial materials to illustrate course content
5 Arranges materials in sequence to illustrate course content

TO DESIGN EQUIPMENT SYSTEMS

5 Analyses goals, organization to determine communication needs
5 Translates communication needs to identify technical systems
5 Writes general specifications to describe technical systems
5 Analyzes other equipment systems to determine external constraints
5 Analyzes physical facilities to determine physical constraints
5 Analyzes monetary considerations to determine financial constraints
5 Analyzes constraints to identify alternate systems
5 Analyzes constraints to identify alternate formats
5 Examines alternate systems to develop initial budget
5 Projects system growth to develop projected budget
5 Discusses with engineer to determine interface of systems
5 Reads technical fliers to identify components of system
5 Reads technical fliers to determine electrical interface
5 Reads technical fliers to determine physical interface
5 Selects components to meet interface requirements
5 Analyzes physical constraints to draw physical schematic
5 Analyzes electrical details to draw wiring diagrams
5 Writes detailed specifications to describe system components

TO DESIGN NEW FACILITIES

5 Analyzes work to be done to specify design needs
5 Analyzes equipment systems to determine space requirements
5 Examines current floor plans to determine space constraints
5 Analyzes budget to determine cost constraints
5 Analyzes physical construction to determine physical constraints
5 Analyzes equipment specifications to determine special requirements
5 Visits other facilities to get ideas for design
5 Reads literature to identify best designs
5 Draws rough floor plan to communicate design needs
5 Discusses with architect to clarify design needs
5 Examines blueprints to suggest improvements

TO PLAN INSTRUCTIONAL SPACE

5 Discusses with teachers to identify instructional pattern
5 Analyzes instructional pattern to determine space needs
5 Draws floor plans to meet instructional pattern
5 Discusses with teachers to identify best floor plan
5 Submits chosen floor plan to get approval

PRODUCTION FUNCTION

5 Interviews client to clarify presentation details
5 Writes letters to past students to develop student profile
5 Tabulates responses from letters to develop student profile
5 Interviews client to develop list of subjects taught
5 Questions client to list extant materials available
5 Reviews extant materials to select appropriate ones
5 Arranges materials to organize into logical order
5 Writes rough outline of content to develop course content
5 Sketches rough visuals to illustrate course outline
5 Interviews client to get approval of storyboard
5 Selects appropriate media to match media to content
5 Estimates cost for each segment to develop cost analysis
5 Adds estimated costs for segments to develop cost analysis
5 Interviews client to get approval of basic content
5 Writes time schedule to assign completion dates
5 Defines PERT chart to assign completion dates
5 Arranges storyboard cards to assign work to production units
5 Discusses storyboard cards to clarify production details
5 Incorporates design elements to write text
5 Evaluates materials produced to correct poor quality
5 Arranges materials in sequence to organize in prescribed order
5 Interviews client to get approval of production
5 Gives instructions to have multiple copies produced
5 Designs evaluation forms to pilot test instructional materials
5 Requests teacher to have pilot test conducted
5 Collects responses from pilot to assess reactions to materials
5 Revises instructional materials to improve quality

TO COORDINATE MASS PRODUCTION OF COURSE MATERIALS

5 Discusses with course developers to clarify details on product specifications
5 Requests course developers to obtain size and type of program
5 Evaluates list of contractors to select most appropriate
5 Calls contractor periodically to ensure product on time
5 Discusses with supervisor to define shipping arrangements
5 Observes packers to ensure product shipped safely
5 Calls producers to inform of mistakes in product
5 Calls producers to request replacement materials
5 Reads bill from producer to approve for payment

ERI C
TO WRITE ACTIVITY FRAMES

1. Analyzes script to choose key concepts
2. Selects key words to present to students to define
3. Selects topics to present for review and discussion
4. Selects topics to present for enrichment activity
5. Incorporates design elements into activity frames
   - Gives directions to art department to make slides into test print
   - Discusses with audio director to decide on music and sound effects

TO WRITE COMPUTER PROGRAMS FOR CAI

1. Drives to school to consult with teachers
2. Listens to teacher's description to understand concept
3. Asks questions to develop sequence for program
4. Suggests alternative approaches to define concept for program
5. Examines program outline to decide programing language
6. Designs flow chart to develop sequence for program
7. Analyzes steps in flow chart to translate into computer language
8. Tests program in computer to discover errors
9. Rewrites program to eliminate errors
10. Operates computer terminal to store program in memory

EVALUATION-SELECTION FUNCTION.

TO DEVELOP A CLIMATE SUPPORTIVE OF EVALUATION

1. Reads key educational journals to assess attitudes to evaluation
2. Talks to educators to assess attitudes to evaluation
3. Speaks to client group to identify special problems
4. Speaks with client group to develop rapport with group
5. Instructs client group to explain purposes of evaluation
6. Instructs client group to explain role of evaluator
7. Discusses with client group to answer questions regarding evaluation
8. Discusses with client group to emphasize questions regarding evaluation
9. Speaks with individual members to reduce specific inhibitions
10. Speaks with client group to invite participation in evaluation

TO PLAN AND FOCUS PROJECT EVALUATION

1. Reads project proposal to determine objectives to be evaluated
2. Analyzes project personnel/organization to determine decision makers
3. Speaks with decision makers to define decisions to be made
4. Translates project proposal/reports to specify project assumptions
5. Translates project proposal/reports to specify criteria for decision
6. Observes project in operation to learn project procedures
7. Speaks with project staff to learn project procedures
8. Translates objectives to specify student behaviors
9. Reads proposal to determine dates for evaluation reports
10. Translates research literature to identify similar evaluation projects
11. Synthesizes needs/evaluation knowledge to develop evaluation plans
12. Speaks to content: technical experts to obtain review of evaluation plans
13. Translates evaluation plans to identify specific evaluation activities
14. Analyzes activities to determine staff:time resources

TO DEVELOP EVALUATION MODELS AND TECHNIQUES

1. Discusses with client or associates to identify evaluation problem
2. Analyzes audience for information to determine characteristics
3. Analyzes evaluation problem to determine decisions to be made
4. Analyzes decisions to be made to determine information needs
5. Analyzes time limits to determine time constraints
6. Compares manageability of project to determine constraints
7. Analyzes study costs to determine money constraints
8. Translates information needs to identify values to be measured
9. Formulates value parameters to select behaviors reflecting values
10. Sets priorities among values to assign importance to behaviors
11. Selects appropriate indicators to measure values and behaviors
12. Translates indicators to develop criteria for evaluation instrument
13. Compares instruments criteria to select evaluation instrument
14. Translates criteria to develop needed evaluation instrument
15. Designs data collection strategy to obtain measures of indicators
16. Sets up data processing procedure to analyze data
17. Sets up data translation procedure to obtain answers from data
18. Translates model decisions to put in mathematical format
19. Translates model decisions to put in graphical format
20. Compares model and objectives to test model effectiveness
21. Compares model and client needs to test if model communicates
22. Analyzes cost of model to determine if feasible
23. Runs sample data through model to hold test for accuracy
24. Applies model to other projects to test whether generalizable

TO COLLECT, PROCESS, ANALYZE, AND INTERPRET EVALUATION DATA

1. Reads evaluation model instrument to become aware of information needs
2. Reads evaluation model instrument to identify sources for evaluation data
3. Calls school to arrange for evaluation data collection
4. Writes methodology to collect evaluation data
5. Formulates sampling procedure to collect evaluation data
6. Selects time schedule to collect evaluation data
7. Instincts personnel to collect evaluation data
8. Translates model decisions to put in graphical format
9. Sets up data translation procedure to obtain answers from data
10. Compares responses and answer key to score evaluation instruments
11. Calls computer center to arrange for data processing
12. Reads computer program library to select computer program
13. Supervises data processing to translate data to usable format
14. Reads evaluation model to select statistical procedure
15. Supervises data processing to analyze evaluation data
16. Translates results of analysis to interpret meaning of data
17. Compares data and objectives to provide answers to study questions
18. Translates answers to questions to indicate alternative action steps
19. Writes report to decision makers to transmit results interpret action

TO PREVIEW AND SELECT INSTRUCTIONAL MATERIALS

1. Views material to do initial screening
2. Analyzes technical quality to reject poor quality items
3. Analyzes present curriculum needs to reject irrelevant items
4. Analyzes future curriculum needs to reject irrelevant items
5. Compares with teacher's needs to reject irrelevant items
TO PILOT TEST PROTOTYPE INSTRUCTIONAL MATERIALS

6. Reads materials objectives to identify learner behaviors
5. Translates learner behaviors to develop prototype test
6. Compares test with objectives to insure test validity
6. Discusses test with author to insure test validity
5. Administers materials/test to student to try out test
5. Questions student regarding material to provide comparison
data
6. Compares test/verbal responses to check test validity
Ca. school to arrange for test audience
5. Supervises secretary to have tests typed/duplicated
6. Takes materials/tests to school to conduct pilot test
5. Gives instructions to students to orient them to pilot test
5. Distributes materials to class to conduct pilot test
5. Observes students using materials to identify problems with
materials
6. Observes reactions of students to assess non-verbal
response
5. Listens to student questions to identify problems with
materials
3. Performs item analysis of test to identify weak areas
5. Writes anecdotal data to interpret results of tests
6. Sends materials to designer to have materials revised

SUPPORT-SUPPLY FUNCTION.

UTILIZATION FUNCTION.

TO HELP STUDENT IDENTIFY LEARNING INTERESTS AND SELECT OBJECTIVES

Travels to school building to make self available to students
5. Reads student records to identify relative educational
achievement
5. Probes student to identify interest and talent
5. Reads student records to identify social/ethnic difference
5. Reads student records to identify interest/attitude
5. Converses with student to identify interest and talent
5. Responds to student to encourage learning interests
5. Makes suggestions to student to identify interest and talent
5. Reads student records to identify past learning in area
5. Reads student records to identify learning difficulties in area
5. Discusses with student to review past learning and problems
in area
5. Discusses with student to identify implications of past for
present
5. Analyzes with student to narrow interest based on past/present
5. Analyzes with student to translate interest to broad objectives
6. Speaks with student to provide input on broad objectives
6. Analyzes with student to narrow broad objectives
6. Analyzes with student to translate broad to behavioral
objectives
5. Evaluates behavioral objectives with student to select objective
of immediate interest
5. Analyzes with student to develop learning sequence for
objective
TO HELP STUDENT SELECT LEARNING ACTIVITIES TO MEET OBJECTIVES

Administers tests to student to test student learning style
5 Reads test results to analyze student learning style
5 Instructs student to explain learning preference
5 Discusses with student to explain idea of learning preference
5 Reads listing of learning activities to identify prepackaged activities in system
5 Reads listing to identify learning activities related to objectives
5 Compares student and activity objectives to select activities relevant to student
5 Discusses with student to explain different activities
5 Analyzes learning activities to identify human/media mix
5 Analyzes learning activities to identify individual/group mix
5 Compares activities/learning style to identify matches
5 Discusses with student to identify student learning preference
5 Combines activity/style/preference to make learning activity suggestions
5 Discusses with student to evaluate suggested activities
5 Listens to student feedback to identify problems with current learning activities
5 Combines different activities to generate new sets of activities
5 Discusses with student to evaluate combined activities
5 Listens to feedback from student to identify activity problems not solved
5 Discusses with student to identify student ideas for learning activities
5 Consults with student to help design individual learning activities.

TO MONITOR INDIVIDUALIZED INSTRUCTION/SELF-INSTRUCTIONAL MEDIA

Writes on student record to note student attendance
5 Writes on student record to note learning activity used
5 Checks materials for learning activity to check if ready for student
5 Calls center to obtain missing components
5 Observes student using materials to identify problems in handling materials
5 Discusses with student to explain handling of materials
5 Observes students using materials to identify problems in understanding
5 Observes students using materials to identify problems in performance activities
5 Discusses with student to ascertain problem
5 Discusses with student to solve problem if simple
5 Discusses with student to recommend tutor to solve problem
5 Calls tutor to arrange for student session

TO TUTOR INDIVIDUAL STUDENTS WITH LEARNING DIFFICULTIES

5 Listens to student to hear student perception of learning problem
5 Questions student to identify what student does understand
5 Questions student to identify parameters of learning problem
5 Reads student records to identify similar past learning problems
5 Reads student records to identify past learning successes
5 Reads student records to identify learning style
5 Reads student records to identify affective factors
5 Discusses with student to identify current peer/family relations
6 Synthesizes factors to formulate tentative approach
5 Discusses with student to have student evaluate tutor approach
5 Speaks to student to prescribe remedial learning activities
5 Asks student questions to probe understandings/problems
5 Performs activity to demonstrate activity
5 Speaks to student to explain in new way
5 Listens to student responses/questions to evaluate student learning
5 Speaks to student to answer questions
6 Analyzes student feedback to revise tutoring approach

TO FOLLOW UP STUDENT WORK ON LEARNING ACTIVITY

5 Discusses with student to obtain impression of learning experience
6 Administers post-test to ascertain student learning
5 Compares pre- and post-tests to determine if student met objective
6 Writes post-test score to add to student record
5 Speaks to student to explain post-test
5 Speaks to student to identify objectives not met
5 Listens to student to get student view of test/objective
5 Speaks to student to suggest recycle through process
5 Explains learning activity evaluation form to have student evaluate learning activity
6 Sends negative evaluations to materials evaluator to have learning activity revised/eliminated
5 Calls parent to arrange for meeting
5 Discusses with student/parent to explain student progress
5 Listens to parent to understand parent concerns
5 Discusses with parent/student to point out student concerns
5 Analyzes parent/student differences to resolve possible conflict
5 Discusses differences with parent/student to resolve possible conflict
6 Evaluates student/parent conference to write report
6 Writes report of student/parent conference to keep record of progress

TO DEVELOP DISSEMINATION STRATEGIES FOR TEACHER TRAINING PROJECT

5 Reads teacher training materials to identify target audience
5 Reads regarding to get audience to identify key geographical areas
5 Reads regarding target audience to identify key institutions
5 Reads regarding target audience to identify key individuals
5 Analyzes dissemination materials to identify time institution needs
5 Analyzes dissemination materials to identify staff institution needs
5 Analyzes dissemination materials to identify facilities institution needs
5 Analyzes dissemination materials to identify materials institution needs
5 Analyzes dissemination materials to identify sequence credit problems
6 Translates materials to list benefits to institution
5 Analyzes methods of involvement to involve institution in process
5 Analyzes methods of involvement to involve individuals in process
5 Examines institution influence patterns to identify dissemination flow
6 Synthesizes benefits/involvement/problems to develop dissemination plan
5 Discusses with colleagues to evaluate dissemination plan
5 Speaks with interested institution to field-test dissemination plan
5 Administers plan to field-test dissemination plan
5 Examines increased use of materials to evaluate dissemination plan
5 Speaks with other institutions to operationalize dissemination plan

TO EXPLAIN INDIVIDUALIZED INSTRUCTION PROJECT TO VISITORS

Speaks to visitor or supervisor to receive request for information
5 Talks with visitor to get acquainted/discover needs
5 Operates slide projector to make presentation on project
5 Discusses with visitor to explain project
5 Listens to visitor to identify questions regarding project
5 Discusses with visitor to answer questions regarding project
5 Instructs visitor to summarize project characteristics
5 Drives visitor to school to show project in operation
5 Instructs visitor to describe layout of classroom
5 Observes class with visitor to see project in action
5 Discusses with visitor to identify characteristic activities
5 Listens to visitor to identify questions regarding project
5 Discusses with visitor to indicate activities answering questions
5 Guides visitor tour to keep visitor out of teacher's way
5 Speaks with students/teachers to arrange for discussion with visitor
5 Listens to visitor/student-teacher discussion to provide help if needed
5 Discusses with visitor to summarize project
5 Collates project literature to give materials to visitor

UTILIZATION-DISSEMINATION FUNCTION.

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD

6 Reads br/ journal articles to learn issues/new knowledge
6 Joins professional associations to learn issues/new knowledge
6 Joins professional associations to develop professional contacts
6 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
6 Writes articles/convention papers to disseminate new ideas
6 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
5 Discusses with colleagues to identify positions in field
5 Discusses with colleagues to identify positions in field
6 Circulates fliers to inform staff of new products
6 Maintains file of new equipment to keep informed on technology
TO CONSULT ON MEDIA USE AND DESIGN
5 Advises outside personnel to improve use of media techniques
6 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multi-media presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements/evaluate
5 Serves on committees to disseminate information on media

TO PROMOTE INCREASED USE OF INSTRUCTIONAL TELEVISION (ITV)
5 Discusses with content specialists to identify appropriate parts of course
5 Designs model to clarify method-media decisions
5 Analyses research on ITV to identify relevant factors
5 Analyses cost effectiveness to demonstrate advantages of ITV
5 Discusses hardware systems to evaluate effectiveness
5 Observes hardware systems to evaluate effectiveness
5 Writes report to management to propose installation of ITV

TO REPORT TO MANAGEMENT
5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time output budget to support work plans
5 Writes progress report to describe work performed

TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET
5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS
5 Identifies company products to inform educators
5 Resolves usage problems to assist educators
5 Conducts workshops on products to assist educators
5 Identifies need to produce pamphlet on product
5 Writes pamphlet to describe application of product
5 Discusses with salesmen to inform on company products

TO ASSIST CONTENT SPECIALIST IN DEVELOPING MATERIALS
5 Discusses with content specialists to define training problem
5 Poses alternative responses to define training problem
5 Evaluates course outline to identify coherent segments
5 Discusses with content specialist to develop associated task list
5 Gives instructions to content specialist to describe use of learning modes
5 Drafts lesson plan to meet training problem
5 Discusses with content specialists to assist in TV program design
5 Evaluates draft programs to assess methodology used

TO TEACH BASIC AUDIOVISUAL COURSE
5 Shows filmstrip to teach behavioral objectives
5 Describes approach to teach behavioral objectives
5 Conducts simulated task analyses to provide active learning
5 Encourages writing of objectives and tests to teach through active learning
5 Describes media requirements to teach use of media in instruction
5 Describes group size contingencies to teach use of media in instruction
5 Advises students to assist in teaching, with media
5 Advises students to assist in multi-media presentations
5 Operates equipment to demonstrate equipment operation
5 Teaches over CCTV to instruct in media production
5 Teaches over CCTV to instruct in graphics technique
5 Operates TV camera to record session for ITV

TO INFORM TEACHERS ON MEDIA
Discusses with teachers to inform on materials and equipment
Assesses teaching needs to suggest appropriate materials
Circulates information to inform them on materials and equipment
Plans workshops to demonstrate AV services
Writes notice to announce demonstration
Operates AV equipment to demonstrate operation
Gives multimedia presentation to inform on AV services
Gives lectures to inform on library procedures
Gives lectures to inform on CAI programming
Gives lectures to inform on language laboratory operations

TO CONSULT WITH TEACHERS REGARDING IMPROVING TEACHING BEHAVIOR
6 Reads special project proposal to identify desired student-teachers' behavior
6 Speaks to teacher to receive request to consult
5 Writes on form to mark frequency-type student responses
5 Compares student form with desired responses to identify discrepancies
5 Analyzes teacher form behavior to identify what is causing student difficulties
5 Discusses with teacher to explain student behavior not being met
5 Discusses with teacher to explain teacher behavior causing problem
5 Listens to teacher to encourage suggested alternatives
5 Instructs teacher to suggest alternative behaviors
COMPETENCIES FOR TECHNICIANS IN MEDIA MANAGEMENT

TO TEACH INTERACTION ANALYSIS

5 Advises students to inform on graphics techniques
5 Operates movie camera to demonstrate to students
5 Advises students to assist in making film
5 Administers pre and post tests to reinforce teaching
5 Advises students to better master teacher relations
5 Advises students to inform on courses to take
5 Gives multi-media presentation to demonstrate use of media
5 Operates movie projector to show exemplary films
5 Discusses with students to clarify media principles

TO TEACH MICROTEACHING

5 Discusses with students to clarify issues
5 Discusses microteaching principles to prepare teacher for taping
5 Observes teaching episode to identify teacher behavior
5 Codes teaching behavior to provide model of behavior
5 Critiques videotape with teacher to point out teaching behavior
5 Discusses with teacher to suggest behavior improvements
5 Observes teacher reteaching to identify changes in behavior
5 Codes teaching behavior to provide model of new behavior
5 Discusses with teacher to identify behavior changes
5 Directs production of videotape to provide model for critique
5 Describes microteaching to inform student teachers
5 Operates videotape recorder to show teach/reteach to students

ORGANIZATION MANAGEMENT OUTCOMES.

KEEPING OF PURCHASE RECORDS/ACCOUNTS

Deducts amount of purchase to record current balance
Operates accounting machine to record purchase
Operates adding machine to total monthly expenditures
4 Specifies delivery time/place to prepare purchase orders
4 Estimates cost per item to prepare price list
4 Signs forms to prepare purchase orders
4 Supervises secretary to prepare purchase orders
5 Supervises bookkeeper to credit district accounts

KEEPING OF WORK RECORDS/PAYMENT RECORDS

4 Writes number of hours worked to provide record for payment
4 Computes and records payments to keep record
4 Computes time worked to determine payment
3 Assesses fee using fixed rates to pay narrator
3 Computes total hours worked to provide payment to operators

KEEPING OF STUDENT RECORDS

4 Makes mark in register to record student presence
4 Records errors and frame number to record student progress
4 Writes post-test score to add to student record
4 Writes on student record to note student attendance
5 Assigns letter grades to record student progress

KEEPING OF MISCELLANEOUS RECORDS

4 Lists number of recordings made to keep record of work
4 Checks list to note returned questionnaires
4 Analyzes circulation records to compute usage figures
4 Adds up time equipment used to compute usage figures
4 Writes information on film in log book to record receipt of film
4 Writes comments of audience to record recommendations
4 Writes date in log book to record preview data
4 Collects completed work orders to have record of operation
4 Compares extant list with previous to compile list of new materials
4 Writes information on assignment to keep record
4 Receives forms from district to compile county totals
5 Supervises analysis of forms to compile county totals

BILLING OF CLIENTS

4 Writes materials and time spent to provide record for billing
5 Supervises secretary to bill districts

FILING OF MATERIALS

Files broadcast log to maintain record
Files telex sheets to maintain record
Files used printing masters to keep records/files
Files purchase orders and vouchers to keep records/files
Files purchase orders to keep track of those not received
Operates typewriter to update file cards
Files new information to update files
Files order sheets in folder to keep records/files
3 Compiles information on new materials to add to files
   Alphabetizes check-out cards to prepare to file
   Arranges shelf list cards to prepare for filing
   Alphabetizes catalog cards to prepare for filing

MALLING/SHIPPING OF MATERIALS

3 Prepares film cartridge to mail to processor
4 Copies information from list to address questionnaire
4 Operates typewriter to type film mailing label
3 Gives instructions to have materials distributed
3 Tells secretary to transmit letter to applicants
4 Discusses with supervisor to define shipping arrangements

TYPING

3 Operates typewriter to type inventory
3 Operates typewriter to type order sheet
3 Operates typewriter to produce copy of business letter
3 Operates typewriter to type purchase orders
3 Operates typewriter to type equipment list
3 Operates typewriter to type repair request
3 Operates typewriter to type broadcast logs
3 Operates typewriter to type promotional material
3 Operates typewriter to type form request
3 Operates typewriter to type catalog
4 Uses tape recorder and typewriter to make transcript of proceedings

PERFORMANCE OF MINOR CLERICAL ACTIVITIES

3 Puts staples on folder to make storage envelopes
3 Operates spirit duplicator to make copies of inventory
3 Writes list of titles to prepare specialist preview list
3 Writes list of titles to prepare evaluation committee preview list
3 Supervises personnel to receive equipment/materials

ORDERING OF MATERIALS

3 Mails order form to manufacturer to place materials on order
3 Writes to producer to request materials for preview
3 Notes supplies needed to write requisition list
3 Fills out order form to order materials
3 Writes list of items and dates to order items for preview
3 Arranges materials requested to group order list
3 Lists materials/equipment costs to compile order list for purchase
4 Writes letters to manufacturers to remind of back orders
4 Writes letters to manufacturers to correct wrong orders
4 Talks with supervisor to report supply needs
3 Informs secretary to order film for purchase
3 Calls box manufacturer to order boxes
3 Calls designer to obtain copy for labels
3 Calls producer to obtain type style for labels
3 Calls printer to order labels
3 Calls unit ordering materials to inform of manufacturer delay
4 Calls manufacturer to confirm order
4 Checks level of supplies to determine need for orders

PURCHASING OF MATERIALS

3 Sends list to director to purchase materials
3 Sends order forms to district to initiate purchasing cycle
3 Assigns purchase order number to assure payment
5 Writes letter to manufacturer to cancel late orders
5 Reviews equipment order to approve for purchase
5 Compares list prices to determine best price
5 Makes decision to notify manufacturers to cancel late orders
5 Negotiates with management to institute open purchase account

ANALYSES OF ORGANIZATION COMPONENTS

4 Examines forms used to identify needed improvements
4 Examines current routing lists to identify major problems
4 Analyzes service requests to identify service needs
4 Writes memo to departments to clarify service needs
4 Analyzes project personnel/organization to determine decision makers
5 Analyzes manageability of project to determine constraints
5 Matches staff to activities to identify gaps in staff
5 Analyzes relations between functions to develop functional matrix
5 Reads project reports to identify current work
5 Analyzes budget submissions to identify new programs
5 Analyzes activities to determine staff/time/resources
4 Discusses with workers to identify major problems
4 Calls departments to clarify service needs

SCHEDULING MEETINGS/APPOINTMENTS

3 Selects meeting time and place to hold demonstration
3 Checks personal schedule to schedule time and date
4 Selects time and place to hold seminar
3 Checks calendar to set dates for evaluations
3 Calls auditorium coordinator to schedule evaluation sessions
3 Calls parents to arrange for meeting
4 Calls applicants to set time and place for interview
4 Calls building coordinator to arrange for room
4 Calls school to arrange for test audience
4 Discusses with training officer to arrange for pilot test
4 Contacts individuals or schools to obtain subject for study
5 Speaks to students to arrange for lesson simulation
5 Speaks to students to end lesson simulation
5 Seeks with students/teachers to arrange for discussions with visitor

DETERMINING FINANCES/FINANCIAL CONSTRAINTS

4 Analyzes budget to determine money available
4 Analyzes cost of model to determine if feasible
4 Analyzes budget to determine cost constraints
4 Reads budget to discover fiscal resources
4 Submits proposal to contracts office to acquire overhead figures
4 Analyzes study costs to determine money constraints
5 Analyzes monetary considerations to determine financial constraints
5 Seeks architect's budget to ascertain proposed cost
5 Analyzes staff needs to determine staff salary needs
5 Analyzes budget to determine resources available
4 Measures costs of instruction to compute money saved
4 Assesses requests for new equipment/materials to determine purchase priority

SEEKING FUNDS

3 Transmits proposal to funding to obtain funds for research study
4 Develops budget to support research project
4 Writes up budget to support proposal
PERSONNEL/PROCEDURES

4 Analyzes production plan to determine talent/crew needs
5 Analyzes center inventories to list staff, equipment and materials
5 Analyzes relations and functions to define duties of personnel
5 Examines work of organization to identify how facilities can help
5 Examines staff communications/interaction to identify how facilities can help
5 Analyzes organization activities to ascertain equipment needs
5 Assesses cost restraints to determine limits of project
5 Listens to staff desires to ascertain facilities needs
5 Listens to staff to ascertain equipment needs
5 Speaks to technical workers to ascertain jobs to be done
5 Speaks to technical workers to ascertain workers needed
5 Selects three architects to discuss facilities in depth

MAKING AVAILABLE EQUIPMENT/FACILITIES/PERSOUEL

4 Analyzes purchase requests to determine which catalog to search
4 Reviews new employee papers to determine size/number of sessions
4 Makes arrangements to transport crew/talent to location
5 Estimates staff needs to fill described jobs
5 Writes memos to advise hiring
4 Calls appropriate agency to schedule location
4 Calls warehouse to rent warehouse for storage
5 Selects personnel to fill key positions in structure
5 Speaks to realtors to seek additional space off campus

CHECKING FOR ACCURACY

Compares new materials with invoice to check that order is complete
Checks invoice with purchase order to ensure both are correct
4 Checks typed budget to ensure correct

DETERMINING AND ENFORCING TIME CONSTRAINTS/DEADLINES

3 Writes time schedule to assign completion dates
4 Defines PERT chart to assign completion dates
4 Analyzes time limits to determine time constraints
5 Analyzes activities to determine time for each activity
5 Calls contractor periodically to ensure product on time
5 Speaks to technical workers to ascertain amount of time needed
4 Measures time taken to compute time saved
5 Reads proposal to determine dates for evaluation reports

WRITING TIME/PERT CHARTS

4 Combines times to develop project timeline
4 Analyzes flow to identify major steps
4 Writes chart to formalize PERT schedule
5 Writes operations plan to organize course development
5 Estimates time factors to organize course development
5 Analyzes relations of activities to develop PERT schedule
5 Analyzes time for each activity to develop PERT schedule
5 Analyzes project limits to develop PERT schedule
5 Assigns completion dates to design project deadlines

SELECTION OF PERSONNEL/MATERIALS/EQUIPMENT AND PROCEDURES FOR MANAGEMENT

4 Writes form letter to inform applicants of rejection
4 Evaluates list of contractors to select most appropriate
4 Lays out samples to select equipment/materials vendors
5 Translates guidelines to select committee members
CLARIFICATION OF MANAGEMENT GOALS

5. Analyzes program projections to determine additions needed
4. Calls selected applicant to notify of selection
3. Speaks to client to set up review panel
2. Writes report to board of education to indicate vendor selections
1. Gathers employee information to distribute to new employees

ADMINISTRATION/COORDINATION OF PROJECTS

5. Analyzes program projections to determine additions needed
4. Calls selected applicant to notify of selection
3. Speaks to client to set up review panel
2. Writes report to board of education to indicate vendor selections
1. Gathers employee information to distribute to new employees

MONITORING/CHANGING OF ORGANIZATION STRUCTURE AND GOALS

5. Analyzes program projections to determine additions needed
4. Calls selected applicant to notify of selection
3. Speaks to client to set up review panel
2. Writes report to board of education to indicate vendor selections
1. Gathers employee information to distribute to new employees

WRITING OF WORK PLANS/MANAGEMENT REPORTS

5. Analyses production details to write production plan
4. Makes recommendations to director to assist in hiring
3. Reviews file of prospective staff to attempt to fill staff gaps
2. Reviews application forms to select applicants for interview
1. Reads resumes of current staff to identify possible project staff

PERSONNEL MANAGEMENT OUTCOMES

HIRING OF STAFF

5. Makes recommendations to director to assist in hiring
4. Reviews file of prospective staff to attempt to fill staff gaps
3. Reviews application forms to select applicants for interview
2. Reads resumes of current staff to identify possible project staff
1. Identifies field personnel to select program developers

EVALUATION/ASSESSMENT OF PERSONNEL OUTPUT

5. Supervises student aide to ensure correct performance
4. Reviews worker evaluation reports to determine acceptance of work
3. Discusses with teacher to praise improved performance
2. Speaks to technical workers to review progress periodically
1. Evaluates employee performance to assess employee progress

ASSIGNMENT OF WORK TO PERSONNEL/OUTSIDE CONSULTANTS

5. Assigns work on daily basis to schedule work loads
4. Uses telephone to call repairman
3. Calls talent to request them to audition
2. Identifies appropriate persons to ask them to preview films
1. Chooses appropriate narrator to obtain script narrator

ASSISTANCE IN COMMUNICATIONS BETWEEN MANAGEMENT AND STAFF

5. Operates telex machine to communicate with network
4. Maintains procedural manual to inform new employees
3. Writes recommendations to suggest promotions and awards
2. Conducts staff meetings to relay administrative directives
1. Talks with new employees to inform of procedures

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INTERACTION WITH INDIVIDUALS AND GROUPS

1. Interacts with educators to discuss new materials
2. Discusses with educators to identify effective techniques
3. Interacts with educators to recommend new products
4. Interacts with educators to identify potential improvements
5. Interacts with educators to develop new materials

ANALYSIS OF DATA

1. Analyzes data to identify common elements
2. Analyzes data to identify successful elements
3. Analyzes data to identify ineffective techniques
4. Analyzes data to identify areas for improvement
5. Analyzes data to identify areas for improvement

ANALYSIS OF DATA

1. Analyzes data to identify areas for improvement
2. Analyzes data to identify areas for improvement
3. Analyzes data to identify areas for improvement
4. Analyzes data to identify areas for improvement
5. Analyzes data to identify areas for improvement

INTERPRETATION OF DATA

1. Interprets analyzed data to identify most effective technique
2. Interprets analyzed data to identify most effective technique
3. Interprets analyzed data to identify most effective technique
4. Interprets analyzed data to identify most effective technique
5. Interprets analyzed data to identify most effective technique

DESIGN OUTCOMES.

PRODUCTION OUTCOMES.

EVALUATION-SELECTION OUTCOMES.

DIAGNOSIS OF EQUIPMENT DEFECTS

1. Tests equipment for defects
2. Tests equipment for defects
3. Tests equipment for defects
4. Tests equipment for defects
5. Tests equipment for defects

ASSESSMENT OF MATERIALS

1. Assems materials for use
2. Assems materials for use
3. Assems materials for use
4. Assems materials for use
5. Assems materials for use

ASSESSMENT OF DEVICES

1. Assems devices for use
2. Assems devices for use
3. Assems devices for use
4. Assems devices for use
5. Assems devices for use
SUPPORT-SUPPLY OUTCOMES.

MAINTENANCE OF EQUIPMENT/MATERIALS

4 Analyzes repair history to identify equipment operation problems
   Inspects returned materials to check for damage
   Inspects returned equipment to check for damage
   Cleans tenses on projectors to keep in working order
   Cleans AV equipment to keep in working order
   Replaces jackets on records to keep clean
   Operates air compressor to remove dust from projector
   Cleans off points and rollers to maintain film inspector
   Puts plastic jackets on books to protect materials
   Cleans and dusts materials to maintain condition
   Uses cotton swabs and alcohol to clean heads on videotape recorder
   Cleans and replaces diazo copier to maintain
   Refills printing solution to maintain offset machine
   Cleans work area to keep clean and organized
   Demagnetizes heads on recorders to keep in working order
   Sprays controls in console to clean
   Oils AV equipment to keep in working order
   Cleans language lab equipment to ensure good working order
   Changes projector bulbs and fuses to maintain in working order
   Cleans and dusts AV equipment to keep in working order
   Sprays controls in console to clean
   Cleans lenses on projectors to keep in working order
   Cleans lenses on projectors to keep in working order
   Inspects returned materials to check for damage
   Cleans and dusts AV equipment to keep in working order
   Sprays controls in console to clean
   Cleans lenses on projectors to keep in working order
   Operates air compressor to remove dust from projector
   Demagnetizes heads on recorders to keep in working order
   Sprays controls in console to clean

4 Maintains electrical systems to ensure working order

PICKING UP AND DELIVERY OF EQUIPMENT AND MATERIALS

Marks list of materials needed
Gives instructions to custodian to move heavy equipment
Calls custodian to have materials delivered
3 Calls supplies department to request table and screens delivery
Selects specified equipment to take to classroom
Loads van with equipment to deliver to location
Unloads truck to deliver equipment
Wheels truck to classroom to deliver equipment
Uses checklist to locate materials for delivery
Picks up and carries boxes to load in van
Packs filmstrips in mailing tube to prepare for delivery
Wheels dollies to deliver equipment
Carries equipment to classroom, to deliver to classroom
Loads equipment on cart to deliver to conference room
Pushes cart to deliver to conference room
Unloads equipment to deliver to conference room
Packages materials to prepare for delivery
Packs filmstrips in box to return to library
Packs up equipment to return to AV center
Carries film to viewing room to await showing
Drives to location to deliver equipment
3 Drives car to pick up defective equipment
3 Drives car to deliver repaired equipment

REPAIR OF EQUIPMENT

3 Calls repairman to request repair of equipment
4 Assigns work to assistants to have equipment repaired
   Selects new tubes to replace defective tubes
   Tests projector fan to ensure working order
   Uses tube tester to test tubes
   Replaces needle to restore working order
   Uses stroboscopic disc to check turntable speed
   Removes stuck copies in copier to restore operating condition
   Changes bulbs in overhead projector to restore working order
   Repairs lecterns to restore working order
   Replaces fuse to restore working order
   Replaces tubes to restore working order
   Operates equipment to test repair
   Operates equipment to test repaired malfunction

4 Repairs television receivers to restore working order
4 Repairs language lab console to restore working order
4 Repairs electrical systems to restore working order
4 Repairs CCTV studio equipment to restore working order
5 Repairs FM transmitter to restore working order

KEEPING OF REPAIR RECORDS

4 Writes data on repair form to keep record of repair
4 Writes information on card to keep record of repair
4 Writes information on card to record damaged materials
Lists equipment repaired weekly to keep weekly records
Lists equipment repaired daily to keep daily records
4 Writes information on card to record periodic maintenance
3 Writes information on each repair to maintain equipment history

REPAIR AND INSPECTION OF MATERIALS

Carries film to work area to prepare for inspection
Operates film inspector to inspect and repair film
Inspects returned materials to check for damage
Removes damaged materials to keep from circulation
Visually inspects tapes to check for breaks

KEEPING OF EQUIPMENT INVENTORY

Copies information on card to prepare inventory card
Copies information on card to prepare inventory card
Lists equipment received to compile new equipment inventory
Copies information from schedule cards to list equipment holdings
Compares holdings with inventory to check accuracy of inventory
Operates typewriter to list inventory of holdings
3 Copies from inventory to list equipment and materials

LABELLING OF EQUIPMENT AND MATERIALS

Copies information from file card to identify machines
Files card in equipment file to have record of machine
Replaces labels on equipment to insure identification
Stencils label on equipment to identify materials
Stamps ownership mark on materials to identify materials
Ties tag on machine to identify machine
Affixes code number on chart to identify
Affixes code number on chart to identify materials
Assigns code number to chart to keep record
Labels kits of materials to identify materials
Labels cartridges to identify for future use
Puts label on boxes to identify boxes

STORAGE OF EQUIPMENT AND MATERIALS

Writes shelf list cards to identify location of materials
4 Gives instructions to have old film destroyed
5 Supervises personnel to store equipment; materials
4 Analyzes extant materials to remove out-of-date materials
Places inspected films on shelves to store for future use
Carries equipment to room to store equipment
Unpacks returned filmstrips to return to storage
Sorts materials to prepare for shelving
Places materials on shelves to store for next use
Replaces equipment on shelves to store for future use
Carries boxes to store room to store boxes
VERIFICATION OF ORDERS/LISTS

4 Calls producer to ascertain correct title
3 Checks catalog notation to insure accuracy
  Compares equipment with purchase order to ensure order is correct
  Compares list with past list to check accuracy
  Reads catalog to verify citation of film
  Checks title and number of film to insure accuracy
  Checks student schedule to identify correct assignment
3 Uses reference books to check accuracy of film notation

COMPILING OF FILES/CHECKLISTS

3 Files references by subject area to compile materials file
5 Writes briefing guide to provide briefing guidelines
5 Selects articles on media to compile library of materials
5 Analyzes crucial operating factors to design readiness checklist
5 Lists equipment operation problems to list crucial operating factors
5 Analyzes catalogs and files to list related materials

TRANSMISSION OF VIDEOTAPES

5 Observes builders at work to ensure specifications are met
5 Operates videotape recorder to transmit programs from network
5 Schedules time and date to arrange for CCTV broadcast
3 Prepares VTR set-up to ready for playback
5 Operates VTR to playback recording

DISTRIBUTION/CIRCULATION OF MATERIALS

Reads daily schedule to identify materials needed
4 Coordinates materials procurement to provide needed audio and visuals
5 Supervises personnel to redistribute equipment/materials
5 Pastes date-due slips in books to prepare for circulation
5 Schedules time and date to arrange for student session
5 Sets up circulation desk daily to prepare for distribution
5 Pre-stamps date due cards to prepare for circulation
5 Checks films with order slips to assign film to requestor
5 Checks lists to determine if materials available
5 Locates requested materials to assist requestor
4 Plans new routing list to improve circulation

SCHEDULING OF MATERIALS/EQUIPMENT/FACILITIES

Files copy of schedule card to keep record
5 Writes work order to record operation needed
3 Schedules materials to reserve for use
5 Writes date scheduled to record date needed
5 Writes requester's name to reserve materials
5 Writes in time chart to schedule conference rooms
5 Copies information to worksheet to reserve projectionist
5 Files copy of work order to have record of operation
3 Schedules facilities to reserve for use
5 Discusses with requester to schedule preview time
5 Talks with requester to get information on materials needed
5 Calls room coordinator to schedule conference rooms
5 Calls tutor to arrange for student session
5 Calls sound studio to schedule time for recording
5 Locates schedule card to record date needed
5 Chooses alternate date to reserve materials
5 Checks schedule book to determine if materials available
3 Schedules bus and driver to reserve for field trip
3 Checks materials for learning activities to check if ready for student
4 Plans new scheduling system to improve scheduling
3 Schedules equipment to reserve for use

PREPARATION FOR UTILIZATION OF FACILITIES/EQUIPMENT

5 Visits presentation location to review physical facilities
3 Discusses with instructor to identify program need
4 Discusses with presenter to clarify presentation details
5 Discusses with instructor to determine room size and character
3 Designs cue sheet to assist projectionist and speaker
3 Surveys room to plan VTR setup
4 Organizes materials in groups to prepare for evaluation sessions
5 Sets up appropriate equipment to prepare for conference session
5 Arranges furniture to prepare for conference and preview
5 Loads projector to prepare for use
5 Lays out materials in lab to prepare for student use
5 Turns on equipment to prepare for student use
3 Sets up console to prepare for instructor

CATALOGING OF MATERIALS

5 Writes data in catalog to update catalog
5 Files catalog cards to keep record
5 Lists new materials in catalog to update catalog
4 Writes short description of film to catalog film
5 Compares title with catalog to determine if already catalogued
5 Determines standard notation to prepare to catalog
3 Assigns subject headings to materials to identify them
3 Assigns sequential control numbers to catalog new materials
3 Assigns subject headings to classify materials
3 Removes out-of-date cards to keep catalog files current
5 Adapts commercial catalog cards to catalog to local needs
5 Checks classification list to cross-index materials
5 Reads new materials to classify materials
4 Reads review of materials to cross-index materials
5 Reads curriculum guides to classify materials in curriculum areas

OPERATION OF COMPUTER TERMINAL

5 Operates computer terminal to print out tutorial strategy
5 Operates computer terminal to list messages received
5 Operates computer terminal to make program tapes
5 Operates computer terminal to delete old programs

INSTALLATION OF EQUIPMENT

3 Builds soundproof ceiling to equip CCTV studio
5 Hook-up equipment to install equipment
5 Unhooks equipment to prepare for installation
4 Reads physical schematic to determine equipment layout
4 Examines floor plan to determine location for components
4 Reads wiring diagrams to determine electrical layout
4 Reads specifications to determine contents and number

PREPARATION FOR MULTI-MEDIA PRESENTATION

5 Stands up screens to prepare for presentation
5 Places tables in position to prepare for presentation
5 Tapes extension cords to floor to prepare for presentation
5 Tests control device to prepare for presentation
3 Sets up equipment to prepare for multimedia presentation
3 Sets up control device to prepare for presentation
4 Analyzes physical facilities to determine placement of equipment and audience
4 Runs through presentation to check for technical accuracy
PRESENTATION OF INFORMATION

3 Discusses with student to arrange time for learning activity
3 Calls teacher/students to arrange for human components of learning activity
3 Calls instructional materials center to schedule materials for learning activity
3 Calls producer to obtain sample components
3 Calls equipment supplier to request equipment delivery and set up
4 Analyzes usage figures to project equipment needs
4 Analyzes equipment needs to plan equipment acquisition

LOCATION OF MATERIALS

5 Analyzes materials file to select references
5 Researches materials files to locate appropriate materials

ORDERING OF FILMS/MATERIALS/EQUIPMENT

Mails order sheets to order films
3 Discusses with student to arrange time for learning activity
3 Calls teacher/students to arrange for human components of learning activity
3 Calls instructional materials center to schedule materials for learning activity
3 Calls producer to obtain sample components
3 Calls equipment supplier to request equipment delivery and set up
4 Analyzes usage figures to project equipment needs
4 Analyzes equipment needs to plan equipment acquisition

TRANSMISSION OF RADIO BROADCASTS

Reads aloud to announce station identification
Reads aloud to make radio announcements
Observes audiometers to monitor broadcast signal
Operates broadcast console to switch program sources
Arranges tapes in rack to prepare to broadcast

UTILIZATION-DISSEMINATION OUTCOMES.

DISTRIBUTION OF INFORMATION

Mails copy of work order to inform instructor
Sorts incoming mail to distribute in boxes
Circulates flyers to inform staff of new products
Lists operating flaws in equipment to inform repair technician
Writes notifications to inform teacher of film arrival
Distributes information to get information to employees
3 Transmits report to funding source to disseminate research findings
3 Collates project literature to give materials to visitors
4 Writes notice to publicize demonstration
4 Compiles list of recommended equipment to inform staff
4 Lists recommended equipment per unit to inform staff
4 Lists recommended manufacturers to inform staff
4 Writes instructions to inform production units
5 Writes memos to field personnel to inform on progress of course
6 Writes memo to management to inform on progress of course
6 Assesses cost benefits of training to inform management
5 Translates technical language to describe project to management/customer
5 Writes report on project to present progress to management/customer
5 Edits report on project to disseminate findings
5 Develops new procedures to route information
5 Writes reports to disseminate findings
5 Conducts briefings to inform on progress of course
4 Writes summary of data to report to supervisor
Distributes messages received to inform staff
1 Sends notifications to reducer to inform of date scheduled
3 Sends reactions to producers to inform producers
3 Sends suggestions to director to inform director of needs
4 Circulates information to inform on materials and equipment

DISCUSSION (TWO-WAY INTERACTION)

4 Uses telephone to answer service questions
4 Converses with supervisor to discuss repair
5 Discusses with client group to answer questions regarding evaluation
5 Discusses microteaching principles to pre-care teacher for taping
5 Discusses with students to clarify issues
5 Discusses with visitor to answer questions
5 Listens to visitor/student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize activities
5 Discusses with students to clarify media principles
5 Discusses with student to explain different activities
5 Converes with teacher to point out teaching behavior
5 Observes teacher teaching to identify changes in behavior
5 Conducts seminar to encourage discussion

TEACHING (FORMAL INTERACTION)

5 Designs conference to inform management of changes
4 Gives instructions to students to orient them to project test
4 Discusses with students to clarify elements of composition
4 Discusses with students to clarify lenses/setting decisions
4 Supervises use of instamatic to provide experience in photography
4 Discusses camera pictures to clarify principles of composition/setting
5 Discusses with teacher to suggest behavior improvements
5 Speaks to management and customer to present project progress
5 Supervises training conferences to teach new teacher behaviors
Operates slide projector to make presentation on project

3 Schedules meeting with director to show presentation
3 Schedules meeting with writer to show presentation
Operates media equipment to present information
Operates slide projector to show presentation
Operates equipment to show multiscreen presentation
3 Reads script and shows slides to show raw presentation to client
5 Instructs students to explain concept/information
5 Speaks to group to provide input where appropriate
5 Speaks to students to present lecture information

4 Schedules meeting with writer to show presentation
4 Prearranges materials and equipment in lab to prepare for student use
4 Travels to school to be available to students

PREPARATION FOR LEARNING ACTIVITIES
| 4 | Gives directions to students to assist in equipment operation |
| 5 | Gives lectures to inform students |
| 5 | Teaches over CCTV to instruct in media production |
| 5 | Advises students to assist in making media production |
| 5 | Advises students to assist in multi-media presentations |
| 5 | Administers pre- and post-tests to reinforce teaching |
| 3 | Shows how to replace bulbs to inform aides |
| 3 | Explains operation of equipment to inform instructor |
| 4 | Teaches preventive maintenance to inform repairmen |
| 3 | Shows how to operate dictaphone to instruct students |
| 4 | Demonstrates equipment operation to train student workers |
| 5 | Describes microteaching to inform student teachers |
| 5 | Explains tasks to be done to train staff |
| 5 | Encourages writing of objectives to teach through active learning |
| 5 | Encourages writing of objectives and tests to teach through active learning |

**EXPLANATION (INFORMAL INTERACTION)**

- Writes date and name on card to inform requestor
- Uses telephone to answer routine questions
- Converses with assistants to advise on repairs
- Talks with teacher to inform of procedure
- Discusses with teacher to explain references sources
- Speaks to visitor or superior to receive request for information
- Calls producers to inform of mistakes in product
- Calls colleagues to inform of staff needs
- Calls placement agency to inform of staff needs
- Speaks to technical workers to inform of deadlines
- Discusses with client group to create non-threatening evaluation
- Discusses with student to explain logistic aspects of learning activity
- Discusses with student to explain unique components of learning activity
- Discusses with student to explain assessment procedures
- Discusses with student to explain handling of materials
- Discusses with student/parent to explain student progress
- Discusses with teacher to explain student behavior not being met
- Discusses with teacher to explain teacher behavior causing problem
- Discusses with principal to explain suggestions made to teacher
- Discusses with teacher to make further suggestions
- Discusses with product planners to inform of educational needs
- Speaks to technical workers to explain PERT chart
- Speaks to student to explain post-test
- Speaks to teacher to receive request to consult
- Speaks to architects in person to explain facilities needs
- Drives visitor to school to show project in operation
- Instructs group to explain facilitator role
- Instructs group to explain content/process difficulty
- Advises students to inform on courses to take
- Discusses with teachers to inform on materials and equipment
- Instructs client group to explain purposes of evaluation
- Instructs client group to explain role of evaluator
- Instructs customer in IL to define problems in process
- Instructs customer in IL to define changed concepts of instruction
- Instructs customer in IL to define effects on curriculum
- Instructs customer in IL to define new role of testing
- Instructs visitor to describe layout of classroom
- Serves on committees to disseminate information on media
- Instructs teacher to suggest alternative behaviors
- Instructs supervisor to explain use of material
- Advises teachers to inform of materials available
- Advises on film making techniques to inform staff

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**COMPELENCIES FOR TECHNICIANS IN MEDIA PRODUCT DEVELOPMENT**

**ORGANIZATION MANAGEMENT OUTCOMES.**

**ASSIGNMENT/COORDINATION OF WORK OF UNITS/PERSONNEL**

- Gives instructions to staff to have preview materials ordered
- Writes standard production order to coordinate production
- Writes time schedule to assign completion dates
- Writes memos to departments to request review of extant materials
- Transmits script to narrator to have tape produced
- Reads assigned script to assess work to be done
- Routes incoming correspondence to assign for action
- Estimates number of copies needed to order publications
- Writes memo to subordinates to require budget submissions
- Converse with supervisor to clarify assignment
- Gives instructions to secretary to have budget typed
- Calls contractor periodically to ensure product on time
- Analyzes activities to determine time for each activity
- Explains special needs of staff to give architect design specifications
- Explains communications/interaction needs to give architect design specifications
- Explains how facilities aid work to give architect design specifications
- Explains communications/interaction needs to give architect design specifications
- Explains special needs of staff to give architect design specifications
- Explains financial constraints to give architect design specifications
- Discusses with staff to determine work assignments

**DETERMINING AND ENFORCING TIME CONSTRAINTS/DEADLINES**

- Writes time schedule to assign completion dates
- Defines PERT chart to assign completion dates
- Analyzes time limits to determine time constraints
- Analyzes activities to determine time for each activity
- Calls contractor periodically to ensure product on time
- Speaks to technical workers to ascertain amount of time needed
- Measures time taken to compute time saved
- Reads proposal to determine dates for evaluation reports
PERSONNEL MANAGEMENT OUTCOMES.

HIRING OF STAFF
4 Makes recommendations to director to assist in hiring
4 Reads file of prospective staff to attempt to fill staff gaps
5 Reviews application forms to select applicants for interview
5 Adds resumes of current staff to identify possible project staff
4 Reads resumes to select applicants for interview
5 Selects short list of applicants to do initial interviewing
5 Evaluates applications to determine trainees
4 Reviews job applications to make recommendations
4 Calls personnel office to hire shipping personnel
4 Calls unit head to ask recommendations on trainer
4 Calls trainer chosen to notify of selection
5 Identifies field personnel to select program developers
5 Hires personnel to staff research project
5 Speaks with prospective staff to evaluate qualifications
5 Describes project and company to initiate job interview
5 Interviews job applicants to select most suitable
5 Evaluates recommendations to determine best trainer
5 Speaks to current staff to identify possible project staff
5 Questions applicant to ascertain qualifications
5 Identifies appropriate staff to staff proposed program

RESEARCH-THEORY OUTCOMES.

DESIGN OUTCOMES.

PRODUCTION OUTCOMES.

PRODUCTION OF OVERHEAD TRANSPARENCIES
Applies tape or hinges to mount transparencies
Assembles sheets of film on mount to produce overlays
Operates 3M machine to make transparency of hard copy
Operates diazo machine to make transparencies
Attaches adhesive color material to add color to master

PRODUCTION OF PHOTOGRAPHIC MATERIALS
3 Gives directions to art department to make slides into test print
4 Advises photographer to assist in location shooting
Uses sealing iron to mount slides
Uses slide mounts to mount slides
Inserts film cartridge to load camera
Operates copy camera to photograph copywork
Mixes chemicals to process film
Processes black-and-white film to develop film
Operates contact printer to make prints
Operates copy camera to make photographs
Inserts film to load camera
Operates camera to make photograph
Operates copy process camera to make halftone copy
Sets up tripod and camera to prepare for shooting
Tests light level to set camera
Processes color film to develop film
Selects appropriate equipment to perform photographic assignment
Selects appropriate film to perform photographic assignment
Chooses appropriate chemicals to process black-and-white film
5 Chooses appropriate chemicals to process film
5 Chooses appropriate paper to print film

PRODUCTION OF PRINTED MATERIALS
3 Gives instructions to have copies made
Operates adhesive coating machine to apply wax to materials
Operates spiral binding machine to bind materials
Applies labels to master to prepare master for printing
Operates copycat machine to prepare plates for offset
Operates offset press to print materials
3 Assembles materials on master to prepare copy for printing

PRODUCTION OF AUDIO RECORDINGS
3 Gives signals to technical staff to produce audio recording
4 Gives instructions to studio staff to have master made of audio recording
3 Operates stopwatch and recorder to time scratch tape
4 Makes arrangements to produce duplicates of tape
5 Gives instructions to sound crew to direct audio recording
3 Operates tape recorder to record lesson simulation
3 Operates tape recorder to record class proceedings
Operates magnetic erasing machine to erase audiotapes
Operates high speed duplicator to produce copies of audiotapes
Presses tone button on cue to put signal on tape
Watches meter to ensure appropriate volume
Operates tape recorder to produce recording
3 Operates tape recorders to make duplicate audiotapes
3 Operates tape recorder and record player to produce audiotapes from records
3 Operates tape recorder and TV to make tapes of TV programs
3 Operates movie projector and recorder to record audio from film
3 Operates tape recorder and projector to make synchronized audiotape
3 Sets up audio equipment to prepare for recording
3 Reads script aloud to produce scratch tape
3 Times scratch tape to assess length of tape
4 Mixes narration tape and sound to produce finished tape
Checks audio equipment to prepare for recording
4 Chooses record to be background music for tape
5 Evaluates script to choose appropriate music and effects

PRODUCTION OF TV RECORDINGS
Lifts and carries props to arrange set for taping
4 Operates TV camera to video record ITV lesson
3 Prepares videotape recorder set-up to ready for recording
3 Sets up videotape recorder to prepare for taping
Sets up mikes to prepare for taping
Sets up portable camera to prepare for taping
4 Operates videotape recorder to record production
Sets up lights to prepare for taping
4 Gives signals to talent and crew to direct production
4 Rehearses presentation to direct videotape recording production
4 Directs talent and crew to direct ITV production
3 Surveys classroom to determine set arrangement
4 Operates videotape recorder to record programs from network

PRODUCTION OF CAI MATERIALS
Operates computer terminal to store program in memory
5 Analyzes steps in flow chart to translate into computer language
PRODUCTION OF MOTION PICTURES

5. Gives instruction to camera crew to direct shots to be taken
5. Gives instructions to talent to direct action for shots
5. Discusses with film editor to explain film concepts
5. Operates motion picture camera to record action
5. Operates motion picture projector to preview raw footage
3. Splices film to produce continuous footage
3. Prepares camera to ready for shooting
3. Prepares sound equipment to ready for shooting
4. Organizes shot breakdown to provide shot sequences
5. Analyzes script to write shot breakdown
5. Edits film footage to produce final film

PRODUCTION OF CONTOUR MAP

5. Draws lines on fiberglass base to outline map
5. Cuts pieces of styrofoam to build contours
3. Glues pieces of styrofoam to build contours
3. Uses paintbrush and pain to paint in topographical features

GETTING APPROVAL OF MATERIALS

5. Discusses with specialists to have rough cut approved

DESIGN OF ARTWORK/LAYOUT

3. Discusses with artists to have brochure designed
4. Discusses with art department to assign color and lettering
3. Arranges letters and picture to produce artwork
3. Measures picture to produce scale drawing
3. Draws scale diagram to serve as blueprint
3. Traces lines on master to prepare illustrations
3. Uses color lift process to make visual
3. Lays out design on finished form to prepare to make chart
3. Masks tissue over visual to indicate image area
4. Uses compasses, paint and brushes to paint pictures
4. Draws rough sketches to design title frames
4. Designs layout to design record sleeve
4. Sketches rough visuals to illustrate course outline
4. Draws original cartoons to illustrate materials
3. Chooses appropriate colors to illustrate chart
4. Chooses colors and styles to give continuity to presentation

PRODUCTION OF PROTOTYPE DEVICES

5. Writes technical specifications for contract to initiate production devices
5. Designs basic parameters of device to specify for production
5. Writes guidelines to specify minimum specifications for equipment

PRODUCTION OF MULTIPLE COPIES/PROTOTYPE MATERIALS

4. Gives instructions to have multiple copies produced
4. Calls production department to have prototype produced
5. Gives instructions for producing artwork
5. Assesses draft training materials to make production decision

ORGANIZATION OF COMPONENTS

Arranges materials in sequence to organize in prescribed order
Arranges slides in sequence to organize in prescribed order
4. Analyzes script to assign pauses and tape stops
4. Arranges storyboard cards by main ideas to assign frame numbers
4. Reorders script to follow expectations
4. Sequences slides to match to script
4. Rewrites portions of script to words to existing visuals
3. Listens to scratch tape to check audio and visuals
5. Discusses with author to get approval of storyboard
5. Views sequences of film to approve rough cut

EVALUATION-SELECTION OUTCOMES.

MONITORING OF EQUIPMENT OPERATION

Tests equipment to ensure operating condition
Tests levels on microphones to ensure quality of sound
Tests levels on microphones to make adjustments in level
3. Monitors sound from location to check quality
3. Observes monitor to adjust set and camera
3. Observes screen on monitors to adjust set and lighting
4. Observes equipment in operation to assess performance
3. Operates each component to test working order

VERIFICATION OF INSTRUCTIONAL SYSTEM COMPONENTS

4. Calls unit head to determine accuracy of materials
4. Checks slides produced to insure order filled
4. Checks pictures against script to insure all visuals present
3. Listens to recording to insure accuracy
4. Proofreads copy to check for errors
3. Checks course materials to insure correct catalog notations
4. Checks shot segments to insure all taken
4. Reads printout to check program

SUPPORT-SUPPLY OUTCOMES.

UTILIZATION-DISSEMINATION OUTCOMES.
COMPETENCIES FOR TECHNICIANS IN INSTRUCTIONAL PROGRAM DEVELOPMENT

ORGANIZATION MANAGEMENT OUTCOMES.

PERSONNEL MANAGEMENT OUTCOMES.

INTERACTION WITH INDIVIDUALS AND GROUPS
3 Schedules meeting with directors to discuss proposal
4 Attends staff evaluation session to lead discussion
5 Summarizes points made by lead evaluation session
5 Writes suggestions to lead evaluation session
5 Chooses subject matter to encourage seminar discussion
5 Speaks with client group to develop rapport with group
5 Speaks with individual members to reduce specific inhibitions
5 Speaks to project directors to persuade to produce presentation
5 Listens to student to initiate conversation
3 Drives to schools to consult with teachers
5 Advises students to better master teacher relations
5 Explains material to evaluators to lead evaluation session
5 Shows materials to teachers to lead evaluation session

RESEARCH-THEORY OUTCOMES.

ANALYSIS OF DATA
1 Speaks with researcher to understand data to be analyzed
5 Supervises personnel to ensure correct data analysis
5 Compares test group with control to analyze effects of treatment
4 Operates calculator to perform statistical analysis
4 Reads statistical tables to perform statistical analysis
4 Computes money time saved to determine cost effectiveness
4 Divides cost by mark to determine unit production cost
5 Sets up data processing procedure to analyze data
5 Analyzes data to measure effects of treatments
5 Translates data into formula to perform statistical analysis
5 Analyzes content errors to evaluate lesson-tutor strategies
5 Analyzes test results to compute effectiveness of television
5 Performs statistical analysis on data to quantify teacher behavior
5 Performs statistical analysis to measure teacher attitude
5 Performs statistical analysis to analyze data

INTERPRETATION OF DATA
5 Compiles suggestions of educators to suggest new products
5 Compares data analysis with tables to determine significance of data
5 Compares solutions information to evaluate proposed solutions
5 Analyzes reality test results to revise model
5 Examines objectives data analysis to interpret meaning of data
5 Analyzes tutorial strategies to identify common elements
5 Analyzes tutorial strategies to identify successful elements
5 Compares observed behavior to model to identify teacher behavior problems
5 Interprets analyzed data to identify most effective technique
5 Identifies similar products to determine competition
5 Evaluates new product specifications to determine alignment
5 Evaluates changes in products to determine effect on educational application

DESIGN OUTCOMES.

ANALYSIS AND DESCRIPTION OF LEARNERS
4 Writes letters to past students to develop student profile
5 Discusses with client to define target population
5 Discusses with client to determine group size and character
5 Tabulates responses from letters to develop student profile
5 Tabulates information to develop instructor profile
5 Analyses potential audience to state assumptions about learners

ANALYSIS AND DESCRIPTION OF CONTENT
5 Discusses with content specialists to assist in instructional program design
5 Discusses with content experts to understand content
5 Discusses with client to reconcile conflicts in data
5 Discussed with content specialists to identify appropriate parts of course
5 Visits locality to obtain background information
5 Analyzes research on ITV to identify relevant factors
5 Reads material provided to separate into major ideas
4 Writes summary of major ideas to organize content
4 Defines entry behavior of students to determine content
4 Analyzes script to identify major ideas
4 Writes rough outline of content to develop course content
5 Analyzes objectives/flow chart to write content outline
5 Analyzes current content to decide if teachers to objectives
5 Evaluates current content to determine procedures learner must do
5 Evaluates course outline to identify coherent segments
5 Evaluates areas to identify curriculum topics

DESIGN OF PRE- AND POST-TESTS
5 Analyzes objectives to write pre and post tests
5 Analyzes test construction to list characteristics
5 Designs sample tests to provide models for instruction
5 Analyzes objectives to write pre-test

PRODUCTION OUTCOMES.

EVALUATION-SELECTION OUTCOMES.

ASSESSMENT OF PEOPLE
5 Observes teacher behavior to note improvements in teacher behavior
5 Codes student behavior to determine teaching effectiveness
5 Observes teacher behavior to determine training effectiveness
5 Compares old form/new responses to identify improved teacher behavior
ASSESSMENT OF MATERIALS

3 Selects time and date to preview presentation
4 Reads memos from teachers to determine materials needs
4 Calls teachers in one school to evaluate materials
4 Calls students' teacher in a class to evaluate materials
4 Asks questions to determine application/use
4 Discusses with staff to clarify materials needs
4 Requests content specialists to have them preview old films
4 Discusses with teacher to evaluate materials available
4 Discusses with teaching personnel to evaluate success of course
5 Asks students questions to determine if objectives are met
4 Analyzes technical quality to reject poor quality items
4 Reviews old films to evaluate physical condition
4 Analyzes produced visuals to evaluate quality
4 Reviews presentation to evaluate presentation
4 Listens to tape to evaluate sound quality
5 Analyzes present curriculum needs to reject irrelevant items
5 Analyzes future curriculum needs to reject irrelevant items
5 Compares with teachers' needs to reject irrelevant items
5 Combines factors to eliminate obvious rejects
5 Designs evaluation forms to evaluate effectiveness of course
5 Analyzes program to assess logical development
5 Evaluates slides and tape to improve quality of materials
5 Evaluates take to accept or reject film
5 Observes run-through to suggest improvements in film
5 Views material to do initial screening
5 Operates movie projector to preview film
4 Plays back videotape to check quality of recording
5 Pilot tests materials to evaluate effectiveness of materials
5 Teaches course to evaluate effectiveness of materials
5 Observes student behavior to evaluate presentation effectiveness
5 Analyzes question answers to evaluate presentation effectiveness

ASSESSMENT OF TECHNIQUES

5 Discusses with student to evaluate combined activities
5 Discusses with student to evaluate suggested activities
5 Evaluates pilot performance to evaluate program effectiveness
5 Designs pre- and post-tests to evaluate effectiveness of program
5 Evaluates draft program to assess methodology used

SUPPORT-SUPPLY OUTCOMES.

UTILIZATION OUTCOMES.

UTILIZATION-DISSEMINATION OUTCOMES.

DISTRIBUTION OF INFORMATION

Mails copy of work order to inform instructor
Sorts incoming mail to distribute in boxes
Circulates flyers to inform staff of new products
Lists operating flaws in equipment to inform repair technician
Writes notifications to inform teacher of film arrival
Distributes information to get information to employees
3 Transmits report to disseminate research findings
3 Collates project literature to give materials to visitor
3 Writes notice to publicize demonstration
4 Compiles list of recommended equipment to inform staff
4 Lists recommended equipment per unit to inform staff
Shows how to replace bulbs to inform aides
Explains operation of equipment to inform instructor
Teaches preventive maintenance to inform repairmen
Shows how to operate dictaphone to instruct students
Describes microteaching to inform student teachers
Explains tasks to be done to train staff
Encourages writing of objectives and tests to teach thru active learning

EXPLANATION (INFORMAL INTERACTION)

Writes date and name on card to inform requestor
Uses telephone to answer routine questions
Converses with assistants to advise on repairs
Talks with teacher to inform of procedure
Discusses with teacher to explain references sources
Speaks to visitor or superior to receive request for information
Calls producers to inform of mistakes in product
Calls colleagues to inform of staff needs
Calls placement agency to inform of staff needs
Speaks to technical workers to inform of changes
Discusses with client group to create non-threatening evaluation
Discusses with student to explain logistic aspects of learning ability
Discusses with student to explain unique components of learning ability
Discusses with student to explain assessment procedures
Discusses with student to explain handling of materials
Discusses with student/parent to explain student progress
Discusses with teacher to explain student behavior not being met
Discusses with teacher to explain teacher behavior causing problem
Discusses with principal to explain suggestions made to teacher
Discusses with teacher to make further suggestions
Discusses with product planners to inform of educational needs
Speaks to technical workers to explain PERT chart
Speaks to student to explain post-test
Speaks to teacher to receive request to consult
Speaks to architects in person to explain facilities needs
Drives visitor to school to show project in operation
Instructs group to explain facilitator role
Instructs group to explain content/ process difficulties
Advises students to inform on courses to take
Discusses with teachers to inform on materials and equipment
Instructs client group to explain purposes of evaluation
Instructs client group to explain role of evaluator
Instructs customer in II to define problems in process
Instructs customer in II to define changed concepts of instruction
Instructs customer in II to define effects on curriculum
Instructs customer in II to define new role of testing
Instructs visitor to describe layout of classroom
Serves on committees to disseminate information on media
Instructs teacher to suggest alternative behaviors
Instructs supervisor to explain use of material
Advises teachers to inform of materials available
Advises on film making techniques to inform staff