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ABSTRACT

This study was designed to determine the relationship between personal and environmental variables and the amount of reported instructional development done by media professionals at the K-12 level in the state of Alabama, as well as the effect of those variables on the reported performance of instructional development activities within each domain delineated by the AECT. The study also attempted to identify those factors which might lead to increased amounts of instructional development by K-12 media professionals. Conclusions revealed a positive relationship of competencies, attitude, budget, empathy, and non-supervisory time with reported performance of instructional development activities; however, it was found that volunteer assistance--students or parents--did not contribute to the amount of instructional development undertaken. Recommendations include competency testing for media professional preparatory program graduates, research into empathy training, and an increase in non-supervisory time for media professionals. A list of references is provided. (Author/RAO)

ENVIRONMENTAL & PERSONAL FACTORS AFFECTING INSTRUCTIONAL DEVELOPMENT BY THE MEDIA PROFESSIONAL AT THE K-12 LEVEL

by

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ABSTRACT

This study investigated the relationship of environmental and personal factors of K-12 media professionals in Alabama and the reported performance by this population of 28 instructional development activities. Conclusions revealed a positive relationship of competencies; attitude, budget, empathy, and non-supervisory time with reported performance of instructional development activities. Also concluded was a negative relationship of parent and student volunteers with the dependent variable. Recommendations include competency testing of media professional preparatory program graduates, research into empathy training, and an increase in non-supervisory time for media professionals.

INTRODUCTION

Instructional development is a systematic approach to the design, production, and utilization of complete systems of instruction (Association for Educational Communications and Technology, 1977: 172). Within this realm of instructional development, six sub-functions are delineated. These include Research-Theory, Design, Production, Evaluation-Selection, Logistics, and Utilization-Dissemination (AECT, 1977: 164).

The role of the K-12 level media professional as instructional developer has been explicated in textbooks for potential media professionals (Brown, Norberg, and Srygley, 1972: 1; Erickson, 1968: 10; Prostano and Prostano, 1971: 214-44; Davies, 1969: 41-58). A Delphi Study by Jetter (1972) predicted the assumption of the role of instructional developers as the major trend in the future for media professionals. Finally, the role of the K-12 media professional as instructional developer was formalized in Media Programs: District and School (American Library Association/AECT, 1975).

Studies have been undertaken attempting to determine the relationship of several variables analogous to instructional development and a wide range of independent variables. These include Schulzetenberge (1970): curriculum development activities with undergraduate major, similarity of interests between media specialists and teacher, and extroversion; Maudus (1975): curriculum involvement with teaching structures; Larsen (1971): role assignments with time, budget, and principal's perception; Leeper (1975): quality of media program with both the attitude of principal and media professional; Daniel (1974): allocation of responsibility to media

professional with submissiveness and accomodation on the part of the media professional; and Kerr (1977): acceptance of the role of instructional developer with role-taking ability.

The role of the media professional as instructional developer is a relatively recent phenomenon. While the role of instructional developer is promulgated by national organizations, the recency of a standard definition and description of activities involved in instructional development has precluded in-depth studies.

THE PROBLEM

The literature of library education and educational technology is replete with exhortations for the media professional to become involved in instructional development at the school level. A survey of the literature yields a series of personal and environmental factors that would logically be linked to instructional development. No study was located, however, which attempted to establish a relationship between personal and environmental data and the performance by the media professional at the K-12 level of the instructional development activities as delineated by the AECT definition.

Purposes of the Study

The purposes of the study were:

1. to determine the relationship between personal and environmental variables and the amount of reported instructional development.

2. to determine the effect of the variables on the reported performance of instructional development activities within each of the domains delineated by the AECT definition.

3. to identify the factors which may lead to increased amounts of instructional development by K-12 media professionals.

Limitations

This study was restricted in the following areas:

1. the population was restricted to media professionals employed at the K-12 level in the State of Alabama.

2. the personal and environmental factors were restricted to those covered on the instruments.

METHODOLOGY

This research utilized questionnaires as the data collection instruments. This method was chosen in order to collect a wide range of data on a large population.

Independent Variables

There were 38 independent variables drawn from the environmental and personal factors and combinations of these factors.

Dependent Variable

The dependent variable was the amount of reported instructional development undertaken by the media professional.

Subjects

The subjects were a sample of 300 drawn from K-12 media professionals in the State of Alabama as identified by the State Department of Education. The subjects were chosen through a random number process and represented a cross-section of grades served.

Instrumentation

Five instruments were used including:

1. Media Professional Background Data Questionnaire. This is an investigator-designed instrument which gathered personal information from the media professional. Variables measured by this instrument included:

a. age

b. sex

c. number of years of classroom experience

d. number of years of school library experience

e. number of years at present position

f. possession of bachelors, masters, and/or sixth-year degree

g. years since last coursework

h. number of design courses taken

i. number of traditional library courses taken

j. number of education courses taken

k. number of production courses taken

l. total number of above courses

m. self-rated competency in design of instruction

n. self-rated competency in traditional library skills

o. self-rated competency in education area

p. self-rated competency in production

q. total self-rated competency

2. Environmental Data Questionnaire. This investigator-designed instrument gathered information relating to factors in the working environment which could affect instructional development activity. Variables measured by this instrument included:

a. grade level served

b. number of hours assigned to library

c. amount of time each day not involved in the supervision of students

d. ratio of library media professionals to students

e. location of AV services

f. presence of a production area

g. print budget

h. production supply budget

i. commercial non-print budget

j. total budget

k. number of services provided by district central office

l. number of production equipment items available

m. number of professional journals read

n. amount of teacher planning time/day

o. teacher released time during year for course planning

p. number of paid aides

q. number of student assistants

r. number of parent volunteers

s. number of innovative teaching structures (team teaching, modular scheduling, open-space classrooms, etc.)

3. Empathy Scale. The respondent's empathy state was quantified using the Empathy Scale developed by Robert Hogan (1969). The long form of this instrument consists of 31 items from the California Psychological Inventory, 25 from the Minnesota Multiphasic Personality Inventory, and eight items from experimental testing forms. A test-retest reliability coefficient of .84 has been found, and internal consistency estimates of

.71 have been reported (Grief and Hogan, 1973). The conceptual validity of the scale has been demonstrated in several studies (Hogan and Mankin, 1970; Hogan, 1973, Kurtines and Hogan, 1972; Hogan and Dickstein, 1972).

The short form of the Empathy Scale, which consists of only those 31 items from the California Psychological Inventory, has routinely correlated above .90 with the 64 item version (Grief and Hogan, 1973: 281). The short form was used for this study. The author felt that the use of the simpler form would significantly increase return rate.

4. Media Professional Activities Checklist. This instrument was developed by the investigator and contained 28 activities drawn from the Task Analysis Survey Instrument (ALA, 1969), from other literature, and from correspondence with professionals in the field. The respondent checked a Likert-type scale ranging from 0 to 4 for each of the 28 activities. Anchors for these were "never" and "frequently." Total possible scores ranged from 0 to 112. Using the same instrument, the media professional was also requested to check a Likert-type scale to indicate the perceived importance of each task. Anchors for this scale were "little or no importance" and "very important."

The activities were selected to provide a continuum of activities within instructional development. In Educational Technology: Definition and Glossary of Terms, instructional development is divided into six functions including Research-Theory, Design, Production, Evaluation-Selection, Logistics, and Utilization-Dissemination (AECT, 1977: 164). Each of the 28 activities is subsumed by at least one of the instructional development functions, with all six functions being represented by at least one activity.

The instrument was sent to several media professionals for their comment, utilized in a pilot study (Turner and Martin, 1978), and revised on the basis of responses and data received. A reliability coefficient of .94 was established using the split-half method.

Construct validity was investigated through the use of the factor analysis of the 28 activities. Six factors were formed, four of which accounted for 91.3 percent of the variance and included 25 of the 28 activities. A review of the activities included within each factor permitted the assignment as factor constructs of four of the six functions of instructional development delineated in the AECT definition. These factor constructs included Evaluation-Selection, Design, Production, and Logistics. The grouping of activities within the Media Professional Activities Checklist mirrored, to a large extent, the theoretical groupings proposed in the AECT definition of instructional development.

5. Principal's Perception Checklist. This instrument consisted of the 28 activities found on the Media Professional Activities Checklist. The respondent indicated, using a Likert-type scale, the importance of each task being performed by the media professional in the school. Possible scores ranged from 0 to 112.

Procedures

A packet containing the instruments and two cover letters was sent to the principal of each school in the sample. The initial cover letter was from the State Department of Education explaining the importance of the study and requesting cooperation. The second letter, which was from the researchers, introduced and provided the rationale for the study as well as supplying directions for the principal. The principal was

requested to forward the instruments to be completed by the media professional and to see that all materials were returned. The media professional's materials were in a self-contained packet which was sealed before returning to the principal for mailing.

Data Collection

The responses from the instruments were tabulated with most of the responses being used in raw data form. A small percentage were translated into frequency counts. A total score was generated for the Empathy Scale, the Principal's Perception Checklist, and for each of the two parts of the Media Professional Activities Checklist. The other instruments were scored for each subsection.

Analysis of the Data

The variables for which dichotomous data were generated were analyzed by the use of chi-square tests of independence. To do this, the total score from the performance section of the Media Professional Activities Checklist was dichotomized around the mean into 0-66 and 67-112 categories. For the remaining independent variables, a simple correlation coefficient was generated against the independent variable.

The 28 activities of the Media Professional Activities Checklist were submitted to a factor analysis using the Varimax method of rotation. Factor scores were generated for each subject. Finally, the independent variables were run against the factor score variables in a stepwise multiple regression.

RESULTS AND ANALYSES

Two hundred and three questionnaires were returned. Of these, 187 were complete enough to be usable.

Dichotomous Data Analyses

Seven of the 40 variables yielded dichotomous data. These included grade levels of students served, student/media professional ratio, location of AV services in or out of the department, availability of a production area, released time for teachers to engage in extended planning, sex of, and degree(s) held by, media professionals. Of these variables, only the released time for teachers for extended planning yielded a significant difference at the .05 level. (See Table 1 for chi-square values.) Two of the remaining three variables were significant beyond the .1 level. These were the student/media professional ratio and availability of a production area.

TABLE 1

RESULTS OF CHI-SQUARE TESTS OF INDEPENDENCE

Variable	x^2	df
Grade levels served	4.716	7
Student/media professional ratio	15.20*	9
Location of AV services	0.38	2
Presence of AV production area	2.70*	1
Released time for teachers for extended planning	6.18**	1
Sex of media professionals	1.68	1
Type of degree (Bachelors, Masters, or Sixth-year)	1.02	5

*$p < .1$ **$p < .02$

As can be seen in Table 2, the significant difference generated by the teacher released time variable resulted in a greater number of instructional development activities reported by media professionals in schools where teachers were given time off during the year for planning. The presence or absence of a production area, as evidenced in Table 2, also resulted in a significant difference, although at the .1 level of significance, in the amount of instructional development reported. A greater proportion of the media professionals who had a separate production area reported that they performed instructional development than those without such facilities.

Results and Analyses of the Remaining Variables

A Pearson's r was calculated for each of the remaining variables to establish the relationship between these variables and the amount of instructional development reported. As can be seen in Table 3, four of the variables: hours assigned to the media center, number of student helpers, number of parent volunteers, and age of the media professional, were correlated negatively with the amount of instructional development activities reported. The correlations, however, are all low, with only the number of student helpers generating a significant relationship and that at the .1 level.

Of the 29 variables with positive relationships, 21 generated relationships significant at the .1 level or above. Variables significant at the .01 level or above included number of production equipment items, number of professional journals read, number of innovative teaching structures, all five of the competency variables, empathy, the principal's attitude toward the performance of instructional development by the media professional, and the media professional's attitude toward instructional development.

TABLE 2

CONTINGENCY TABLES FOR TEACHER RELEASED TIME AND AV PRODUCTION AREA VARIABLES

Teacher released time	Instructional Development 0-66	67-112	
Yes	6	17	23
No	69	54	123
	75	71	146

df 1

$x^2 = 6.18$

$p < .02$

AV Production Area	Instructional Development 0-66	67-112	
Yes	28	41	69
No	49	40	89
	77	81	158

df 1

$x^2 = 2.71$

$p < .1$

TABLE 3

MEANS AND STANDARD DEVIATIONS OF CONTINUOUS DATA INDEPENDENT VARIABLES AND r VALUES WITH REPORTED INSTRUCTIONAL DEVELOPMENT

Variable	Mean	SD	r with reported instructional development
Hours assigned in media center	6.65	1.32	-.0338
Time not assigned to supervisory tasks	1.40	1.74	-.0437
Enrollment	691.35	410.28	.0403
Budget for print materials	1983.40	1660.41	.1081*
Budget for production supplies	249.24	411.00	.1884**
Budget for non-print commercial materials	612.44	858.00	.1901**
Total budget	2356.16	2456.66	.1769**
Number of services provided by district	1.48	1.35	.0643
Number of production equipment items	1.93	1.45	.3656****
Number of professional journals read	3.16	1.63	.2204***
Amount of teachers' daily planning time (hours)	.83	.42	.0624

*p < .1
**p < .05
***p < .01
****p < .001

Table 3 continued

Variable	Mean	SD	r with reported instructional development
Amount of paid help (hours daily)	1.09	1.64	.1133*
Number of student helpers/hour	1.87	2.17	-.1084
Number of parent volunteers/hour	.05	.26	-.0824
Number of teaching structures	1.89	1.39	.1905***
Age of media professional	40.03	11.47	-.0960
Years of classroom experience	6.22	7.86	.0155
Years of library experience	8.53	6.22	.0680
Years at present position	6.56	5.37	.1029*
Years since coursework	3.71	3.94	.0333
Number of design courses	5.45	3.06	.1173*
Number of traditional courses (library)	4.26	1.20	.0895
Number of education courses	3.02	1.73	.1620**
Number of production courses	.52	.76	.1797**
Total number of courses	13.28	5.75	.1517**
Competency in design	22.74	7.03	.4031****
Competency in traditional library skills	17.42	2.87	.3218****

*p <.1 ***p <.01
**p <.05 ****p <.001

Table 3 continued

Variable	Mean	SD	r with reported instructional development
Competency in education	11.19	4.10	.3674****
Competency in production	2.64	2.05	.2285***
Total competency	53.64	12.83	.4483****
Empathy	15.87	3.69	.2224***
Principal's attitude toward media professional performance of instructional development	89.02	13.50	.3559****
Media professional's attitude toward the performance of instructional development	90.18	17.27	.4084****

*p < .1
**p < .05
***p < .01
****p < .001

Factor Analysis

A factor analysis of the Media Professional Activities Checklist utilizing the Varimax Method was undertaken. This analysis resulted in the formation of four factors including 25 of the 28 activities and accounting for 91.3 percent of the variance (See Table 4).

TABLE 4

FACTOR GROUPINGS OF INSTRUCTIONAL DEVELOPMENT ACTIVITIES

Factor 1	Evaluation-Selection
Verbally suggests titles of instructional materials to teachers	
Determines measurable objectives for media program	
Solicits feedback from teachers via forms and interviews about materials produced and purchased	
Validates the instructional materials purchased and produced by using observations of student behavior and matching these with instructional objectives	
Prepares lists of commercial materials in response to instructional objectives, learner characteristics, and other parameters	
Engages in research activities relative to the media center program	
Develops lists of titles of instructional materials in response to a specific topic given by a teacher	
Works with teachers in selecting materials to meet specific objectives	
Eigen Value 8.6965	Percentage of Variance 68.6

Factor	Design
Works with teachers in formulating instructional objectives	
Plans and discusses media center-related topics with teachers	
Participates in team-teaching activities.	

TABLE 4 continued

Observes classroom work to coordinate media center activities with instructional programs

Participates in curriculum development and revision

Plans jointly with faculty members to coordinate media center activities with curriculum programs, units, and textbooks

Conducts workshops for teachers in evaluation and selection of materials

Acts as part of an instructional team in designing instructional programs

Develops long-range plans cooperatively with teachers and administration

Assists individual teachers in curriculum planning

Conducts workshops for teachers in use of materials and/or equipment

Eigen Value 1.3094 Percentage of Variance 10.3

Factor 3	Production

Designs and produces instructional materials in response to a general topic given by a teacher

Designs and produces instructional materials in response to instructional objectives, learner characteristics, and other parameters

Produces instructional materials in response to a specific design given by the teacher. This design specifies the type of medium and content to be included

Eigen Value .8954 Percentage of Variance 7.1

Factor 4	Logistics

Arranges and conducts sessions to preview and evaluate materials

Gives instructions to students in use of materials and/or equipment

Maintains a source of curriculum guides and professional materials for use in planning

Eigen Value .6717 Percentage of Variance 5.3

Constructs taken from the sub-functions of instructional development as defined in Educational Technology: Definition and Glossary of Terms (AECT, 1977: 164) were assigned to these four factors. These included Evaluation-Selection, Design, Production, and Logistics. Factor-scores based on the four factors were generated for each subject.

Multiple Regression

Four stepwise regressions were run with each factor utilized as a dependent variable associated with the independent variables. These runs were set to limit the independent variables utilized to those that contributed at least two percent additional variance.

The first factor was assigned the construct Evaluation-Selection. The independent variables utilized in the equation, in order entered, were total competency, hours assigned, number of design courses, principal's attitude, number of education courses, classroom experience, amount of time not assigned supervisory tasks, and competency in traditional library skills (see Table 5). Two of the variables, number of design courses and amount of classroom experience, related negatively to the Factor 1 variable. The eight variables utilized accounted for 54 percent of the variance.

The second factor was assigned the construct of Design. The independent variables utilized in the multiple regression equation were total competency, principal's attitude, total budget, amount of time not assigned supervisory tasks, competency in design area, number of education courses, attitude of media professional, and competency in education courses (see Table 6). All of the relationships between the independent variables utilized and the factor-score were positive. The resulting equation accounted for 68 percent of the variance.

TABLE 5

MULTIPLE REGRESSION SUMMARY TABLE
FOR FACTOR 1 (EVALUATION-SELECTION)

Independent Variables	Multiple R	R Square	RSQ Change	Simple R
Total competency	.5176	.2697	.2697	.5167
Number of hours assigned to media center	.5665	.3209	.0530	.1792
Number of design courses	.6194	.3836	.0627	-.0268
Principal's attitude	.6627	.4392	.0555	.2972
Number of education courses	.6861	.4707	.0314	.1352
Classroom experience	.7033	.4947	.0239	-.0632
Amount of time not assigned supervisory duties	.7183	.5160	.0213	.0710
Competency in traditional library skills	.7387	.5456	.0295	.4456

TABLE 6

MULTIPLE REGRESSION TABLE
FOR FACTOR 2 (DESIGN)

Independent Variables	Multiple R	R Square	RSQ Change	Simple R
Total competency	.6274	.3936	.3936	.6274
Principal's attitude	.6884	.4739	.0803	.4190
Total budget	.7222	.5216	.0476	.3024
Amount of time not assigned supervisory duties	.7482	.5599	.0383	.1664
Competency in design	.7757	.6081	.0419	.5290
Number of education courses	.7956	.6329	.0311	.0937
Media professional's attitude	.8142	.6629	.0299	.1959
Competency in education area	.8276	.6849	.0220	.5432

The construct of Production was assigned to the third factor. Six independent variables were utilized in the multiple regression equation to explain 46 percent of the variance. The variables included total competency, number of parent volunteers, enrollment, amount of time not assigned supervisory tasks, competency in traditional library skills, and competency in production (see Table 7). Two of the variables, number of parent volunteers and enrollment, were associated negatively with the factor-score.

TABLE 7

MULTIPLE REGRESSION SUMMARY TABLE
FOR FACTOR 3 (PRODUCTION)

Independent Variable	Multiple R	R Square	RSQ Change	Simple R
Competency total	.4852	.2354	.2354	.4852
Parent volunteers	.5930	.3516	.1162	-.3052
Enrollment	.6274	.3937	.0420	-.0134
Amount of time not assigned supervisory tasks	.6447	.4157	.0219	.1709
Competency in traditional library skills	.6612	.4372	.0214	.3046
Competency in production	.6791	.4655	.0283	.3287

The fourth and final factor was assigned the construct of Logistics. Ten independent variables were entered into the equation resulting in the explanation of 62 percent of the variance. These included competency in the education area, number of production equipment items, years of classroom experience, production budget, amount of student help, amount of paid help, number of traditional library courses, hours assigned to the media

center, age, and years since last course work. Four of the variables were related negatively to the factor variable. These included years of classroom experience, amount of student help, age, and years since last coursework.

TABLE 8

MULTIPLE REGRESSION SUMMARY TABLE
FOR FACTOR 4 (LOGISTICS)

Independent Variable	Multiple R	R Square	RSQ Change	Simple R
Competency in education	.4385	.1923	.1923	.4385
Number of production equipment items	.5734	.3288	.1365	.3781
Years of classroom experience	.6248	.3904	.0615	-.1504
Production budget	.6528	.4332	.0428	.3343
Student help	.6822	.4653	.0321	-.2449
Number of traditional courses	.7317	.5379	.0254	.1147
Number of hours assigned to media center	.7474	.5615	.0236	.2773
Age	.7596	.5858	.0243	-.0571
Years since last coursework	.7872	.6237	.0379	-.0424

CONCLUSIONS

The leap from relationship to causality is a critical one and can only be justified when the methodology is valid and the instrumentation is accurate. Because this study enters terra incognita, the leap requires a large assist from faith as well as from logic. Some distinct patterns, however, have evolved out of this study, and these warrant elaboration.

The variables that stand out from the others in consistency and in strength of positive relationship to the amount of reported instructional development are four competency components taken singly: design, traditional library skills, education, production, as well as the sum total of these components. An immediate tendency exists to be skeptical about a high degree of correlation between two measurements when the raw data were self-reported. There is evidence, however, that indicates that use of the reporting form for competencies is not necessarily subject to a distortion caused by an inordinately favorable reporting of competency and performance. In a pilot study (Turner and Martin, 1978), utilizing a population with relatively homogeneous competencies, the competency variables did not prove to be significantly related to the amount of reported instructional development.

The first conclusion, therefore, is that the reported competencies of the media professional in the areas of design, traditional library skills, education, and production have the strongest relationship with reported instructional development. This conclusion is, of course, not surprising as one's competency in an area, especially in a predominantly elective sector such as instructional development, should certainly have a strong bearing on whether activities are undertaken or not. It would be difficult to envision a strong instructional development component within a K-12 media program if the media professional lacked competency in any of the above four areas.[1]

[1]The reading of professional journals, certainly a method of increasing competence, is also positively related to instructional development. This variable was also significant in the pilot study where continuing independent study was the main method of differentiation of competency for the population utilized.

The second conclusion is that a positive attitude by both the principal and the media professional toward the inclusion of instructional development in the role of the media professional increases the amount of instructional development undertaken. Once again, this is not a startling conclusion, being consistent with the findings of several previous studies (Larsen, 1971; Leeper, 1975). Since the performance of instructional development is so often elective, done beyond the normal routine, and often requires a change in administrative factors, a positive attitude by the media professional as well as the principal would obviously be beneficial.[1]

The third conclusion is based on the low but significant relationships of all four budget variables, as well as the moderate relationship evidenced with the number of production equipment items present. This conclusion is that the performance of instructional development requires a minimum financial support base. Since instructional development usually requires alternative materials and delivery systems, as well as the production of materials, this minimum base requirement is to be expected.

The fourth conclusion concerns the empathy variable. While the relationship between the empathy score and reported instructional development is low, it is significant and provides the basis for the conclusion that empathy is a positive attribute of the personality of the instructional developer at the K-12 level.

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[1] The availability of released time for teachers to engage in extended planning, a variable which could also be influenced by the principal's attitude, resulted in a significant difference in the chi-square analysis and lends weight to this conclusion.

The fifth conclusion is actually a corollary of the second in that the principal usually makes the general schedule, and the media professional generates the specific details. This conclusion is that in order to perform instructional development activities, the media professional must be assigned to the center with sufficient time to perform logistical support activities. More importantly, the media professional must be allowed time where he/she is not involved in direct supervisory activities in order to perform evaluation, selection, design, and production activities.

The sixth, and final, conclusion is based on the negative relationship found in this study and in the pilot study of the parent volunteer and student help variables to the reported amount of instructional development. This conclusion is that volunteer assistance in the form of either students or parents does not appear to contribute to the amount of instructional development undertaken. This rather surprising conclusion may be explained by the amount of time that is required to organize and administer volunteers. Rather than freeing the media professional to perform instructional development activities, energies appear to be channeled into supervisory activities.

RECOMMENDATIONS

Based upon the conclusions of this study, the following recommendations are offered:

1. The graduates of programs preparing media professionals for the K-12 level must be provided a reasonable level of competency in the areas of traditional librarianship, traditional education, design (learner analysis, specification of objectives, systems design, validation, etc.), and production. The decision as to whether a graduate has such competencies should not be based solely on the number of courses completed, but should be based on competency testing.[1]

2. The faculty of the programs that prepare K-12 media professionals should initiate programs of in-service training to upgrade the competencies of media professionals currently in the field.

3. Efforts must be made to foster a positive attitude in the building principal. This can be done through seminars at the meetings of school administrators' associations and through publishing in the literature that reaches these administrators.

4. Local, state, and national organizations must continue searching for funds to provide an adequate budget on which to base an instructional development program.

5. Further research should take place into the importance of an empathetic personality for the performance of instructional development and the efficacy of empathy training in affecting personality. Continued research should also take place in the area of empathy training.

6. The media professional should be provided with at least one period a day in which no supervisory tasks are required. Such a period would be analogous to the teachers' "planning" period.

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[1] It will be remembered that the number of courses had a much weaker relationship with instructional development than the competency variables.

7. Finally, K-12 media professionals should be provided training in personnel management to allow them to manage volunteers more effectively.

Continued work on the development of instruments to measure the amount and quality of instructional development performed at the K-12 level needs to be undertaken. Further studies should be performed which utilize observational as well as questionnaire methodologies. With the emergence of information pertaining to the characteristics of the successful instructional developer, perhaps the future will provide us with the realization of the promise held forth in the literature--each media professional working alongside other educators toward the facilitation of the curriculum.

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