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AN INVESTIGATION OF PRINTING EDUCATION OFFERED BY
SELECTED INSTITUTIONS OF HIGHER LEARNING

BY

ROBERT G. HACKER

A thesis submitted
in partial fulfillment of the requirements for the
degree Master of Science, Department of
Printing and Journalism, South Dakota
State College of Agriculture and
Mechanic Arts

August, 1962

**AN INVESTIGATION OF PRINTING EDUCATION OFFERED BY
SELECTED INSTITUTIONS OF HIGHER LEARNING**

This thesis is approved as a creditable, independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Adviser

Head of the Major Department

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RGH

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CHAPTER I

INTRODUCTION

Reasons for Undertaking the Study

As the impact of technology on the printing industry becomes more apparent, the scope and depth of printing education assume an increasingly important position in modern higher education.

Technology in all its ramifications as it is applied to printing, calls for competent, trained personnel who can understand and utilize the concepts attendant upon technology as opposed to the "pure craft" concepts of the past. Other important factors affecting the printing industry are the custom nature of the product and an intense competitive atmosphere.

Another important factor is the inability, or at least the lack of propensity, of the industry as a whole to accept "scientific" management techniques. Coupled with high unit costs, the foregoing factors relegate printing to the low profit-margin category of modern industry.

Especially because printing is a low profit-margin industry, the need for competent personnel to fill both labor and management positions is readily discernable. This need has led, in recent years, to many comments on the subject of printing education by educators and industry personnel.

S. Wayne Taylor, Director of Graphic Arts, University of Houston, clearly defined this need when he stated recently:

"Our industry, even though we have made some progress, is still behind most other industries in modern technology and

management. We suffer from loss of profit, lack of expert management, lack of improved methods, lack of the proper personnel for a fast moving world." (7-33)

Realization of this situation has led to the establishment, in recent years, of the Education Council of the Graphic Arts Industry and the International Graphic Arts Education Association.

Through the efforts of these organizations as well as educators in the field of printing, industry-oriented printing education has begun to be realized. As a working craftsman and potential educator, the author has always had a deep interest in the extent and depth of printing education available in the United States. The author has also felt that an investigation of printing education at the college level would be a worthwhile endeavor because of the scarcity of information in the field.

Education in printing today will have an immeasurable impact on the industry of tomorrow, and knowledge of industry needs may be useful in developing educational programs to meet these requirements. Both management and teaching positions in the printing industry of the future will demand individuals capable of understanding and applying both scientific concepts and modern business management, so that the industry can survive and grow.

In a recent article, Richard Haumerson of Western Printing and Lithographing Co., stated:

"We live with the problems of expansion, growth, new equipment--all of which combine to create increasing demands for professionally educated executive trainees, engineer trainees, technicians, teachers, personnel directors, etc., etc." (6-39)

From these and similar opinions expressed by leading executives in the printing industry, it can be seen that education geared to industry needs is a clear and present necessity.

Little specific information is available concerning educational offerings in printing, but some general works on printing education have been published. The Education Council of the Graphic Arts Industry has published a pamphlet entitled, A Partial List of College Courses for the Graphic Arts Industry. (6) This pamphlet lists institutions of higher learning that offer programs in the graphic arts. These institutions are listed alphabetically by states and are categorized into teacher education; professional education; and junior college, community college, and technical institute programs. No differentiation has been made as to type or emphasis of the program offerings.

Another reference, the National Directory of Schools and Vocations, lists, alphabetically by states, schools offering printing. (5) In addition, the degree conferred and the length of the program in years or months are given. There is no discussion of the subject matter.

The College Blue Book, (3) American Universities and Colleges, (1) and Lovejoy's College Guide (4) all list printing education, but only in a general sense. These listings were neither extensive nor illuminating to the investigator.

As far as the author was able to determine there were two independent thesis investigations relating to printing education that were of interest. The first was a study concerning the necessity of establishing a college program in graphic arts on the Pacific coast. A

brief overview of the educational facilities available nationally was given, but no attempt was made to probe in depth. (8)

The second thesis related to graphic arts education was a study conducted to determine the personal characteristics most desired in printing school graduates by printing employers in Kansas. This study approached printing education from the position of industry evaluation of the printing graduate. No conclusions were drawn relating to possible curriculum revision or program emphasis to meet the changing needs of the printing industry. (9)

The most extensive study of printing education found during the preliminary investigation was a joint effort by the Education Council of the Graphic Arts Industry and the International Graphic Arts Education Association. This study covered the entire span of printing education in the United States from elementary schools through colleges and universities.

The introduction to this study stated:

"... the basic purpose of this survey was to determine the extent to which the graphic arts processes and techniques are being used in the educational programs of our country's schools, and to prepare a directory of schools and teachers of graphic arts...." (2-7)

These basic objectives seem to have been realized, although it was unfortunate that the final response to the study was only 47.2 per cent. This percentage of return by persons directly involved in educational programs which might benefit from a study of this nature is certainly a poor reflection on the general awareness and interest of printing educators.

The study presented its information as a directory and no attempt was made to probe potential course emphasis or direction. Comparisons were made, however, between subject areas and course duration.

The author's study has attempted to go beyond the level of investigation of the aforementioned studies and probe in depth. A questionnaire was used in an attempt to determine the direction and scope of current trends in printing education at the college level.

Delimitation of the Study

This study included only the institutions of higher learning that have programs geared specifically to education for printing and which are accredited by the various regional accrediting associations of the United States. It did not include any other type of institution.

The study was further limited to include only the information gained from the questionnaires sent to the respondent institutions and from the catalogs published by these same institutions.

Objectives of the Study

Because of the lack of extensive information concerning printing education, the initial objective of this study has been an attempt to define the scope of printing education within the determinate study limits. In this manner, a determination can be made regarding the various institutional offerings and the emphases of the programs. Such clarification can be of definite benefit to the prospective student of printing as well as to the industry representative interested in a

college graduate to fill a managerial position.

An additional objective was to determine the number of persons teaching printing at the college level. In this manner it was hoped that a student-teacher ratio could be resolved. From these findings it is hoped that some future criteria may be determined in relation to what a good teacher-student ratio should be.

Another objective of this study was to determine if there were differences between printing programs in publicly and privately supported institutions.

It was hoped that the study would show if the respondent institutions were able to emphasize new developments in the field of printing. If this objective could be realized then possibly some conclusions could be drawn regarding the ability of the various programs to meet current industry needs.

An attempt was made to determine the method of procurement of printing equipment by the respondent schools. Because of the high costs of printing equipment, the method of procurement can be an important factor in the kind of equipment available for educational purposes.

This study also probed to determine what subject matter the respondent schools would like to add or plan to add to the content of their overall programs. A comparison by educators and industry managers of present programs and their trends, may prove helpful in determining educational emphasis needs and indicate sources of industry and teaching personnel.

Educators have expressed interest in the findings of this study

and the author hopes that this investigation will contribute pertinent information to printing education.

Methodology of the Study

This study is an investigation of the scope of printing education available in the accredited institutions of higher learning in the United States. It is an attempt to determine the current trends of printing education and what direction this education has, if any.

In many fields of study, such as law and medicine, accrediting agencies keep up-to-date records on the programs available and the various schools which offer these programs. Printing education has no such agency. This study was undertaken with the hope in mind that one possible outgrowth of it might be a movement to organize and promote such an agency or service organization.

The author began this study by undertaking a comprehensive examination of the 1959 edition of the College Blue Book. This automatically limited the study to accredited institutions. At the same time a cross check was carried on by using American Universities and Colleges. In this manner it was felt all colleges and universities could be investigated.

The colleges and universities were broken down into categories for subsequent examination of their respective catalogs. These categories were, (1) schools of journalism, (2) design and art programs, (3) technical programs, and (4) teacher training institutions. After all institutions in the College Blue Book had been so categorized, they were thoroughly cross checked against the college catalogs in the

reference section of the South Dakota State College Library to determine if a course related to the graphic arts was offered.

After the library resources had been exhausted, 207 schools remained to be checked. A letter was written to each of these institutions asking for a copy of the current catalog so that no school which offered printing might inadvertently be left out. In this manner the study was narrowed to 112 schools that taught graphic arts courses.

During the catalog examinations a record was maintained, where available, of the names of department chairman or department heads so that the questionnaires could be addressed to these individuals. It was felt that this method would help to assure attention to the covering letter which explained the reasons for the study and asked for the cooperation of the respondent. A copy of the covering letter and questionnaire may be found in Appendix A.

To lend authenticity to the study and help minimize reluctance on the part of the respondents to fill out the questionnaire, the covering letter and forwarding envelope were printed using the South Dakota State College letterhead.

Questionnaires were mailed March 10, 1962, to 112 institutions. These may be found listed in Appendix E. A cutoff date of April 10, 1962, was established and at this time the respondent percentage of return was 70.5 per cent. The author hoped to increase this percentage so that a more comprehensive study could be accomplished. To this end followup letters containing an additional questionnaire, return envelope, and supplementary covering letter were sent to the institutions

that had not replied to the initial mailing. The final cutoff date which would allow sufficient time for tabulating and writing the study was set at May 1, 1962. By this date the percentage of respondent returns had risen to 82.1 per cent. A copy of the supplementary covering letter may be found in Appendix B.

During the construction of the questionnaire, the sentence structure and question order were changed several times to make the questions clearer and to add continuity. Each time this was done the questionnaire was submitted to other graduate students and to the faculty adviser for suggestions and criticisms. The evolved form of covering letter and questionnaire were submitted with the official thesis topic form to the graduate adviser and department head and found satisfactory to the information requirements of the study.

The purpose of question 1 was to eliminate any institution that otherwise had been thought to offer courses in the graphic arts. This method eliminated three colleges from the final list. The second part of question 1 was designed to determine the credit hours of course offerings in the categories listed. It was felt that these categories indicated the general study areas available in the broad field of printing education. These categories would also help determine the program emphasis of each institution.

Question 2 was included so that course hours could be equated on the basis of semester hours. Determination of quarter and semester hour offerings allowed for conversion of the offerings into a comparable unit of measure. Accurate comparisons could thus be drawn in the tables.

To assist in determining general program emphasis and program extent question 3 was devised. This question enabled the cataloging of programs into major course offerings and also indicated if these programs led to a degree. Question 4 was used to determine respondent institutions which offered a minor area of study. The answers could then be compared to part c, d, e, f, and g of question 1 to further classify general course offerings and emphases.

Questions 5 and 6 were included to provide an average teacher-student teaching load comparison in an effort to determine teacher usage and also to provide a basis for growth comparisons for any subsequent studies in this area.

Question 7 was included to determine if there were any significant differences in the programs offered by privately and publicly supported institutions.

Because it was felt that some institutions, perhaps, could not afford the initial investment required to purchase printing equipment or did not have the facilities for such equipment, part one of question 8 was included. The purpose of the second part of the question was to determine the major method of procurement of equipment.

Question nine was used to determine the direction of the respondent programs. Adoption of techniques and processes or program expansion, if any, would be clearly indicated. Question 9 was a particularly significant part of the study because it would show if printing education is keeping pace with industry needs.

Question 10 was used to show if there was any relation between

the feelings of respondent institutions toward the market for graphic arts graduates and contemplated changes in their programs. In connection with this, question 11 reflected what subject matter the respondent educators felt might be beneficial to printing students.

Question 12, in conjunction with question 9, was an additional reflector of current opinion among respondents and was used to define more clearly course emphasis and anticipated changes.

The questionnaire was carefully coded in accordance with the master code sheet plan outlined in Appendix C. Because questions 2, 3, 9, 11, and 12 were of the open-end variety, they were coded as explained on the master code sheet in Appendix C, columns 2 through 11.

CHAPTER II

RESULTS AND FINDINGS

The Classifications

To simplify interpretation and presentation of the results, this study has been separated into three categories. These categories follow the general program classifications found in graphic arts education--teacher-training programs, professional-education programs, and a combination of these two. (See Appendix F).

So that program comparisons may be made between these categories, each table has been constructed to show all three categories. It was felt that this approach would eliminate duplication of tables and add clarity to the presentation.

Of the total returns, 61 (68.5%) fell into the teacher-training category, 18 (20.2%) into the professional-education category, and 10 (11.3%) into the combination category.

Those respondent institutions whose academic offerings were stated in quarter hours were converted to semester hours. Presentation of the course offerings in the three categories was thus made in a comparable manner. All the "hours" shown in Table 1, therefore, are "semester hours." Both questionnaire responses and college catalogs were used to determine course offerings.

The tabulations bear out the author's supposition that professional programs offer a greater percentage of their courses in management, design, and book production than either the teacher-education or

Table 1. Percentage and Number Distribution of Course-Hour Offerings as Determined by Questionnaire Responses

Type of course-hour offering	Teacher-education program	Professional-education program	Combination program	Percentage of all hours offered
Management	1.82 (6)	57.15 (188)	41.03 (135)	17.54
Design	18.36 (47)	64.45 (165)	17.19 (44)	13.65
Teacher training	82.51 (368)	---	17.49 (78)	23.77
Applied printing	31.65 (251)	35.18 (279)	33.17 (263)	42.27
Book production and publishing	19.23 (10)	80.77 (42)	---	2.77 <hr/> 100.00
Total number of hours offered	682	674	520	Total 1876
Average number of hours offered	11.18	37.44	52.00	

the combination programs. An interesting finding pointed out by the table, however, is the close relationship between the course-hour offerings in applied printing in each of the program categories. The actual offerings of 251, 279, and 263 hours, in applied printing suggests that the three program categories are in close accord regarding the amount of applied printing needed. This may also indicate agreement on program objectives with regard to applied printing. It would also appear that students interested in teaching printing would do well to investigate institutions offering a combination program because it allows additional investigation into management and design.

It is also interesting to note that schools with combination programs offer an average of 52 hours of course work compared to 37.44 for the professional and 11.18 for the teacher-training programs. These figures seem to indicate broader course offerings in the combination programs. The only response received to the "other" section of question 1 was book publishing and production. This category has been added to the listing in Table 1.

The major and minor areas of program concentration are easily seen in Table 2. The fact that teacher-training institutions generally regard graphic arts as a minor subject or as an emphasis area within a minor is clearly shown. Of a possible 123 responses to questions 3 and 4, only 25 institutions indicated offering a major, minor, or both. Of the colleges offering a minor, however, 51.72 per cent are teacher-training institutions. This clearly shows that teacher-training programs consider graphic arts a minor, or as an emphasis area within

Table 2. Percentage and Number Distribution of 86 Respondent Institutions Offering a Major or Minor Curriculum or Both

Major and minor course offerings	Teacher-education program	Professional-education program	Combination program	Percentage of all programs
Percentage of schools offering a major	22.58 (7)	45.16 (14)	32.26 (10)	45.59
Percentage of schools offering a minor	51.72 (15)	20.69 (6)	27.59 (8)	42.65
Percentage of schools offering both a major and minor	37.50 (3)	25.00 (2)	37.50 (8)	<u>11.76</u> 100.00
Total number of responses	25	22	26	
Percentage of total response	36.76	32.36	30.88	

a minor area of study.

Nearly half of the institutions offering majors in the graphic arts, 45.16 per cent, fall into the professional category. It is evident that professional program investigation would be in order for the student interested in a major in graphic arts. All colleges offering a combination program also offer a major in the field, and 80 per cent of these offer a minor.

It would appear that proportionally the combination programs have the widest range of offerings and the greatest choice regarding selection of a major or minor in graphic arts. Less than 50 per cent of the professional programs have this double option. In tabulating Table 2 the total response to questions 3 and 4 numbered 86. The discrepancy between this number and the responses indicated by the table is accounted for by the fact that the remainder were indications that a major or minor were not offered and consequently not usable in the tabulations.

Degree offerings in relation to the three categories can be readily seen in Table 3. It is interesting to consider the fact that all of the combination programs included in the study offer a degree. This would seem to bear out the information related in Table 2, page 15, regarding major and minor programs. It is also noteworthy that 27.77 per cent of all degree offerings are in the combination category. The emphasis on degrees offered is apparently on the B.S. degree, which constitutes 69.44 per cent of all degrees offered. The remaining 30.56 per cent are almost evenly distributed among the other five degree

Table 3. Percentage and Number Distribution of Degree Offerings
of 36 Institutions In Relation to Type of Program

Degree offerings	Teacher education program	Professional education program	Combination program	Percentage of all programs
B.S.	20.00 (5)	40.00 (10)	40.00 (10)	69.44
B.F.A.	---	100.00 (2)	---	5.56
M.S. in education	100.00 (2)	---	---	5.56
B.A.	75.00 (3)	25.00 (1)	---	11.10
B. Ed.	50.00 (1)	50.00 (1)	---	5.56
M.S. in printing management	---	---	100.00 (1)	2.78 Total 100.00
Total number of responses	11	15	10	Total 36
Percentage of total response	30.56	41.67	27.77	100.00

possibilities.

Another point presented in Table 3 is that whereas all of the combination programs offer degrees, only 18.03 per cent of the teacher-training programs offer degrees. As determined by question 3 in the questionnaire, only those degrees directly relating to a program in graphic arts were used. The usable response for tabulation purposes was 36. Section d of question 3 filtered out respondent institutions which offered no degree program.

Questions 5 and 6 provided information to satisfy one of the basic objectives of the study--determination of average teacher-student ratio. The comparison of these ratios is shown in Table 4. It would appear again that combination programs provide the student with the best teacher exposure because of the low ratio in such programs. The professional program follows closely, but there is a sizable jump to the teacher-training program. This points out the fact that there are more than twice as many students per instructor in the teacher-training programs as in the combination programs.

Noting the relative closeness of the course-hour offerings as shown by Table 1, page 13, it seems that students in teacher-training programs have the least instructor exposure of the three categories. It is possible, of course, that instructors in teacher-training programs have a much heavier teaching schedule than do those in professional or combination programs. Whichever the case may be, students in teacher-training programs would appear to be benefited least. A high teacher-student ratio in a laboratory situation may indicate the possibility

Table 4. Distribution of Printing Instructors in 80 Respondent Institutions in Relation to Type of Program and Student Enrollment

Type of program	Number of schools responding	Total number of instructors	Total number of students	Average teacher-student ratio
Teacher-education programs	54	91	2531	1/27.8
Professional-education programs	16	68	1125	1/16.5
Combination programs	10	37	467	1/12.6

of less personal student contact by instructors and a high teaching load may reduce available class preparation time as well as the opportunity to revise and update course content.

The data presented in Table 4 were tabulated on the basis of 80 usable responses to questions 5 and 6.

Table 5 compares the method of financial support of the respondent institutions with their average course hour offerings. An interesting finding is that the "publicly supported combination programs" category has the highest average course-hour offering of all the program categories. This would tend to bear out the previous findings regarding the extent of the combination programs. In addition the publicly supported combination programs while composing only 9.52 per cent of the total response, offer 23.26 per cent of the total course-hour offerings.

The publicly supported teacher-training programs while composing 58.33 per cent of the total response offer only 31.29 per cent of the total course-hour offerings.

Table 5 is the presentation of the data determined by the response to questions 1 and 7. These data are based on 84 usable responses.

Only two colleges indicated by their response to question 8 that they had no printing equipment. Notations in these cases indicated that the course work for the programs is carried out at the respondent institutions, but that the laboratory work is done in a trade school. Such an arrangement may serve the individual needs of these institutions.

Table 5. Distribution of 84 Respondent Institutions Relating
Method of Support with Number of
Course Hours Offered

Type of program	Course hours offered	Number of responses	Average number of hours offered	Percentage of total response
Privately supported teacher-training programs	95	9	10.55	10.71
Publicly supported teacher-training programs	573	49	11.69	58.33
Privately supported professional-education programs	351	8	43.87	9.52
Publicly supported professional-education programs	307	8	38.43	9.52
Privately supported combination programs	79	2	39.50	2.40
Publicly supported combination programs	426	8	53.25	<u>9.52</u> 100.00

The response to the part of question 8 regarding method of acquisition of printing equipment, revealed no appreciable difference. A few respondents used gift, loan, or lease methods of acquisition, but the almost unanimous response was "purchase." If equipment budgets were available for the respondent institutions, perhaps some valid observations could be drawn. Without this information the author shall make no attempt to do so.

The contemplated program change categories shown in Table 6 were drawn from the open-end responses to question 9. These categories, with the exception of "no contemplated change" and "reduction of program," are answers provided by the respondents. The total number of responses to this segment of the study was 85. The total tabulated response, however, is 156 because some respondents indicated more than one contemplated change.

One of the facts shown in Table 6 is the large number of teacher-training institutions contemplating no change in their program offerings. This group composed 26.22 per cent of all teacher-training institutions responding. Only one school in the professional-education category and one in the combination category contemplated no change in their program offerings.

These figures show that some institutions which are providing the teachers of future industry workers are in a static situation regarding curriculum modernization. Because of the current, rapid rate of technological change in the printing industry, such a static position actually causes the institution to slip farther and farther

Table 6. Percentage and Number Distribution of Contemplated Program Changes in 85 Respondent Institutions

Contemplated program changes	Teacher-training programs	Professional-education programs	Combination programs	Percentage of contemplated program changes
No change	88.90 (16)	5.55 (1)	5.55 (1)	11.55
Elimination of program	---	100.00 (2)	---	1.28
<u>Addition of:</u>				
Powderless etching	100.00 (1)	---	---	.64
Photocomposition and coldtype	25.00 (2)	50.00 (4)	25.00 (2)	5.12
Larger staff	20.00 (1)	40.00 (2)	40.00 (2)	3.20
Offset process	75.00 (21)	10.71 (3)	14.29 (4)	17.95
Building and facilities	64.70 (11)	23.53 (4)	11.77 (2)	10.90
Camera work and photography	71.42 (10)	14.29 (2)	14.29 (2)	8.97
New program	56.25 (9)	31.25 (5)	12.50 (2)	10.26
Book production and binding	75.00 (3)	25.00 (1)	---	2.56
General updating of the program	57.14 (8)	21.43 (3)	21.43 (3)	8.98
Place program on technological basis	57.14 (4)	---	42.86 (3)	4.48

Table 6. (continued)

Contemplated program changes	Teacher- training programs	Professional- education programs	Combination programs	Percentage of contemplated program changes
New equipment	68.18 (15)	18.18 (4)	13.64 (3)	$\frac{14.11}{100.00}$
Total number of responses	101	31	24	Total 156
Percentage of total response	64.75	19.87	15.38	100.00

behind basic industry needs. This situation cheats the student of a comprehensive educational background and consequently of opportunities available only to qualified persons. It further cheats the industry because ill-prepared teachers cannot train and educate the type of person needed in the printing industry of the future.

On the other hand, 36.84 per cent of the teacher-training institutions, calculated on the basis of one return per institution, are planning to add offset instruction to their programs. Such plans indicate that these institutions are at least trying to promote improvement in course offerings and content. It also indicates the lag between industry acceptance of a printing process and inclusion of that process in educational course offerings.

Regardless of the adequacies or inadequacies of the various program offerings, 75.86 per cent of the respondents, as indicated by

Table 7, plan some program expansion. Of this group, 34.85 per cent feel that the market for printing graduates will increase greatly and 51.51 per cent feel that it will increase moderately. From these figures it appears that the respondents in these categories are well informed regarding the growth rate of the printing industry. Even 68.42 per cent of the respondents who contemplated no change in their programs felt that the need for printing graduates would increase moderately. Considering the fact that there is an awareness of industry demand, it is unfortunate that some of the respondents have not done more to help supply adequately trained personnel to fill these demands. On the other hand, however, it is possible that these respondents feel they are already meeting or ahead of the industry needs. This factor could give rise to the "no change" philosophy.

In conjunction with the discussion of market potential and course content are the areas of study which the respondents feel would be beneficial to a printing student. These areas are shown in Table 8. These areas of study, with the exception of the first five, have been tabulated from the responses to question 11.

The total response to the question was greater than the total questionnaire return because some of the respondents checked more than one category and added new ones in the space marked "other."

It is interesting to observe that 66.07 per cent of the institutions that checked the "printing management" category were teacher-training institutions. This seems to be an indication that these colleges feel management training to be an essential part of the

Table 7. Percentage and Number Distribution of Market Potential for Printing Graduates Anticipated by 87 Respondents in Relation to Contemplated Program Changes

Contemplated changes	Market will: Increase greatly	Increase moderately	Remain the same	Decrease moderately	Decrease greatly	Total number of responses	Percentage of total response
Reduction of program	---	100.00 (2)	---	---	---	2	2.30
No change	15.79 (3)	68.42 (13)	10.53 (2)	5.26 (1)	---	19	21.84
Expansion of program	34.85 (23)	51.51 (34)	10.61 (7)	3.03 (2)	---	<u>66</u> 87	<u>75.86</u> 100.00

Table 8. Percentage and Number Distribution of 77 Respondent Institutions Regarding Recommended Areas of Study for Potential Printing Students

Areas of study	Teacher institution recommendations	Professional institution recommendations	Combination program recommendations	Total number of responses	Percentage of total response
Printing management	66.07 (37)	23.21 (13)	10.72 (6)	56	30.23
Liberal arts	77.78 (21)	22.22 (6)	---	27	12.56
Graphic arts (Education)	80.70 (46)	12.28 (7)	7.02 (4)	57	26.51
Fine arts	80.95 (17)	19.05 (4)	---	21	9.77
Business management	78.57 (22)	21.43 (6)	---	28	13.03
Economics and accounting	50.00 (1)	50.00 (1)	---	2	.93
Engineering	33.34 (2)	66.66 (4)	---	6	2.79
Science	33.33 (1)	66.67 (2)	---	3	1.39
Printing technology	---	50.00 (1)	50.00 (1)	2	.93
Graphic design	---	100.00 (2)	---	2	.93
Journalism	50.00 (1)	50.00 (1)	---	2	.93
				<u>215</u>	<u>100.00</u>

background for printing students. As could be expected, the professional and combination programs also leaned heavily in this direction.

In proportion, there was close agreement between the professional and teacher-training institutions regarding the need for business management. Of the total teacher-training response, 14.86 per cent indicated a need for business management. Of the professional programs, 12.77 per cent checked this category. As was noted previously, this could indicate an agreement in certain basic objectives of the two educational programs.

In constructing Table 9, the "desired content areas" were compiled from the open-end responses to question 11. It was hoped that by using an open-end type question the actual desires of the respondents concerning program additions could be determined.

By a comparison of the data gathered through questions 9 and 11 it was felt that current trends in graphic arts education would become apparent. One of the outstanding points of difference is the fact that although only 4.48 per cent of the respondents indicated (Table 6, page 23) that emphasis on technology was contemplated, 29.11 per cent indicated a desire to emphasize technology. This discrepancy could be caused by various limiting factors not investigated by this study. Many times budgets or other program limitations create practical but undesired problems in education. As a consequence, what educators would like to do often bears no resemblance to what they are free to do.

A workable compromise to this situation may be seen by examination of Table 9. Of the total response, 22.78 per cent indicated a

desire to "broaden the entire program and courses." This desire would indicate that some measure of progress does exist in printing education although not as much, perhaps, as educators would like.

Table 9. Percentage and Number Distribution on 79 Respondent Institutions Regarding Study Areas They Would Like to Add to Course Content

Desired content areas	Teacher-training programs	Professional-training programs	Combination programs	Total number of responses	Percentage of total response
Expand in teacher education	100.00 (9)	---	---	9	11.39
Add degree program in printing	50.00 (2)	50.00 (2)	---	4	5.06
Emphasis on management and business courses	25.00 (1)	50.00 (2)	25.00 (1)	4	5.06
None	76.92 (10)	15.39 (2)	7.69 (1)	13	16.46
Service courses for other majors	100.00 (1)	---	---	1	1.27
Undecided	50.00 (1)	50.00 (1)	---	2	2.53
Emphasis on technology and new developments	65.22 (15)	17.39 (4)	17.39 (4)	23	29.11

Table 9. (continued)

Desired content areas	Teacher training programs	Professional training programs	Combination programs	Total number of responses	Percentage of total response
Emphasis on research	100.00 (1)	---	---	1	1.27
Integrate drawing and photography	---	---	100.00 (1)	1	1.27
Emphasis on individual projects	---	66.67 (2)	33.33 (1)	3	3.80
Broaden the entire program and courses	77.78 (14)	16.67 (3)	5.55 (1)	<u>18</u> 79	<u>22.78</u> 100.00

CHAPTER III

SUMMARY AND CONCLUSIONS

From the analysis of the data gathered by this study, it appears that a beginning has been made in determining the scope of current printing education. Institutions in the combination category seem to have the broadest course offerings and appear to be best for students preparing to teach graphic arts. The combination programs also have the greatest choice regarding a major or minor area of study in the graphic arts.

The data also show that a student desiring a major in graphic arts would do well to investigate the professional-education programs.

A list of respondent institutions is included in Appendix D. This list shows the number of instructors, students, current program emphasis and contemplated program emphasis. It was felt that this listing would provide a guide for educators and industry personnel interested in comparing the various programs.

A current, average teacher-student ratio has been determined for the three program categories as shown in Table 4, page 19. The combination programs have the lowest ratio with professional-education programs close behind. It is hoped that these ratios will serve as comparison figures for future studies in graphic arts and also, for comparison with current programs.

Examination of the teacher-training programs in relation to method of support showed no appreciable difference in course-hour

offerings. The privately supported professional-education programs appeared more extensive regarding hours offered than did the publicly supported programs.

The publicly supported combination program had the highest average course-hour offerings of any program category. This would substantiate the other findings regarding breadth of program offerings in the combination category.

The data gathered by this study show that although aware of the needs of the printing industry, many educators are unable or unwilling to reflect this awareness in the course content of their programs. Whatever the underlying reasons for this situation, there is an apparent lag between industry adoption and educational recognition of new processes and developments. This lag is unfortunate because future industry leaders, in order to do a competent job, need the background and knowledge denied them by this lag. It is much easier to make decisions regarding new developments when an adequate background of knowledge is possessed. Such knowledge is best gained in an educational environment, free from immediate business pressures. Lack of knowledge in these areas makes the decisions harder and reflects on the educational background of the executive.

The International Graphic Arts Education Association has published a recommended curriculum for high school graphic arts instruction which outlines content and courses of study. Examination of the curricula of some of the teacher-education programs makes it evident that graduates of these programs are not equipped to teach this

recommended program. There is an awareness of the need for qualified workers by both industry and educators. This awareness, however, apparently does not extend to a recognition of the need for qualified industry leaders.

The industry cannot survive and progress without qualified workers, but neither can it progress without qualified teachers and leaders. One important fact that this study brings to light is the lack of a standardized, minimum program for educating the printing industry's future leaders. Examination of curricula offerings reveal programs that run the gamut from superb to terrible. Educators have no sure way of judging their respective programs without making intensive studies which are beyond their time limitations.

Because of the economic and technical aspects of modern printing, the competent manager must have a high level of professional attainment. In other areas of endeavor this level is maintained by national agencies that establish standards and accredit programs. Such an agency dealing with higher education in printing appears to be sorely needed.

Through such a medium, minimum program requirements, consistent with the school's objectives, could be developed and maintained. An adequate communication of industry needs to educational institutions could be accomplished. In addition, educators would have a concrete guide on which to base future changes in program emphasis. At the present rate of technological growth in the printing industry, educators don't have time to "keep up." A national organization performing this function through accreditation and information relay could provide

a worthwhile service.

To do a competent job in the future, graphic arts education must reflect the trends and needs of industry, otherwise its reason for existing ceases. Periodic studies of this relationship between industry and education would be one way of determining what educational trends are, and how closely they reflect industry needs.

At present there are no capability criteria for future executives in printing. A study of what industry desires future executives to know would fill a definite need. Because of the lack of original research and specific knowledge in the whole field of graphic arts education, any study dealing with this subject would be of value.

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APPENDIX A

Example of Covering Letter Accompanying
Each Questionnaire

March 10, 1962

Professor Byron G. Culver, Head
School of Printing
Rochester Institute of Technology
65 Plymouth Avenue South
Rochester 8, New York

Dear Sir:

As a graduate student enrolled at South Dakota State College, I have chosen to make a survey, for my thesis, of the accredited colleges and universities in the United States that offer courses in the general area of the graphic arts.

It is my hope that this study will determine the kind and scope of programs available in the graphic arts and what general direction these programs will take in the future. Very little research has been undertaken in this area and I feel that with your help this could be a worthwhile endeavor.

Enclosed is a questionnaire which will give the necessary information to make this study possible. Please return the completed questionnaire in the accompanying self-addressed, stamped envelope.

I shall appreciate any time and consideration that you may take from your schedule in order to make this study possible.

Very truly yours,

Robert G. Hacker

Enc. (2)

Example of an Individual Questionnaire
Sent To Each School

GRAPHIC ARTS QUESTIONNAIRE

1. Do you offer courses in the graphic arts?

a. ☐ Yes

b. ☐ No

If yes, how many hours (quarter or semester) do you teach in the following areas?

c. ☐ Management

d. ☐ Design

e. ☐ Teacher training

f. ☐ Applied printing (include composition, presswork bindery, platenaking, etc.)

g. ☐ Other--If other, what? _____

2. Are these courses in: (check one)

a. ☐ Quarter hours

b. ☐ Semester hours

3. Do you offer a major curriculum in the graphic arts?

a. ☐ Yes

b. ☐ No

If yes, does the curriculum lead to a degree?

c. ☐ Yes

d. ☐ No

If yes, what degree? (Example: B. Ed. in Education, B. S. in Printing Management, etc.)

4. Is a minor curriculum offered?

a. ☐ Yes

b. ☐ No

5. How many instructors on your staff (number) teach graphic arts courses?

6. How many students are presently enrolled in your graphic arts courses?

a. ☐ Major course

b. ☐ Minor course

7. Is your institution publicly or privately owned?

a. ☐ Public

b. ☐ Private

8. Do you have any printing equipment?

a. ☐ Yes

b. ☐ No

If yes, how do you acquire most of your printing equipment?
(Check one)

c. ☐ Gift

d. ☐ Loan

e. ☐ Lease

f. ☐ Purchase

9. Do you have any future plans which call for changes in your graphic arts program?

a. ☐ No contemplated change

b. ☐ Expansion. If so, in what way? _____

c. ☐ Reduction. If so, in what way? _____

10. Do you feel that the need for graphic arts graduates in general will:

a. ☐ Increase greatly

b. ☐ Increase moderately

c. ☐ Remain the same

d. ☐ Decrease moderately

e. ☐ Decrease greatly

11. Which of the following areas of study would you recommend for a student interested in a career in printing?

a. ☐ Printing management

b. ☐ Liberal arts

c. ☐ Graphic arts (Education)

d. ☐ Fine Arts

e. ☐ Business Management

f. ☐ Other. If other, what? _____

12. If you were free to change your course content in the graphic arts, what changes would you make?

APPENDIX B

Example of Follow-up Covering Letter

April 10, 1962

R. L. Gleason, Director
School of Printing
Sam Houston State Teachers College
Huntsville, Texas

Dear Mr. Gleason:

I need your help. The results of my questionnaire should be of great benefit to the field of printing education.

The correlation of printing education to the needs of the industry will become more important as new developments in printing are adopted. As a result of this study, it is my purpose to provide a potential guide for educators in this field.

The return of the questionnaire that was previously sent to you is most vital to this study. If you did not happen to receive it, I am enclosing another along with a self-addressed, stamped envelope for your convenience. I shall greatly appreciate your returning the completed questionnaire as soon as you can fit it into your schedule.

Thank you very much.

Very truly yours,

Robert G. Hacker

APPENDIX C

MASTER CODE SHEET

Column 1 : IS GRAPHIC ARTS OFFERED?

- 1 Yes
- 2 No

Columns 2-3 : MANAGEMENT COURSES OFFERED

The actual hours offered were recorded as numbers in the columns. As an example, if the school offered 15 course hours in management, the number 1 was punched in column 2 and the number 5 was punched in column 3. This method was followed for columns 4-5, 6-7, 8-9, and 10-11.

Columns 4-5 : DESIGN COURSES OFFERED

Columns 6-7 : TEACHER EDUCATION COURSES OFFERED

Columns 8-9 : APPLIED PRINTING (presswork, composition, etc.)

Columns 10-11 : OTHER

The only other categories which were uncovered by the questionnaire were publishing and book production. These were combined because it was felt that they were directly related.

Column 12 : DETERMINATION IF COURSES WERE IN SEMESTER OR QUARTER HOURS

- 1 Quarter hours
- 2 Semester hours

Column 13 : MAJOR CURRICULUM

- 1 Yes
- 2 No

Column 14: DOES CURRICULUM LEAD TO A DEGREE?

- 1 Yes
- 2 No

Column 15 : WHAT DEGREE?

- 1 B.S.
- 2 B.F.A.
- 3 M.S. in Education
- 4 B.A.
- 5 B.Ed.
- 6 M.S. in Printing Management
- 7 PhD

Column 16 : MINOR CURRICULUM

- 1 Yes
- 2 No

Columns 17-18 : INSTRUCTORS TEACHING GRAPHIC ARTS

The actual number was recorded by punching the appropriate numbers in the columns as was done for question 1.

Columns 19-20-21 : STUDENTS ENROLLED IN THE PROGRAM

The number was recorded using the same technique as for questions 1 and 5.

Column 22 : PUBLIC OR PRIVATE INSTITUTION?

- 1 Public
- 2 Private

Column 23 : PRINTING EQUIPMENT?

- 1 Yes
- 2 No

Column 24 : ACQUISITION OF PRINTING EQUIPMENT

- 1 Gift
- 2 Loan
- 3 Lease
- 4 Purchase

Column 25 : FUTURE PLANS

- 1 No contemplated change

Columns 26-36 : EXPANSION

- 26 Powderless etching
- 27 Photocomposition
- 28 Larger staff
- 29 Add or enlarge offset program
- 30 Larger facilities or new building
- 31 Add camera work or photography
- 32 New program contemplated
- 33 Add bookbinding or book production
- 34 General updating of the program
- 35 Approach program on a more technical basis
- 36 Add new equipment

Column 37 : PROGRAM REDUCTION

- 1 Elimination of the program

Column 38 : NEED FOR GRAPHIC ARTS GRADUATES

- 1 Increase greatly
- 2 Increase moderately
- 3 Remain the same
- 4 Decrease moderately
- 5 Decrease greatly

Columns 39-40-41-42-43 : AREAS OF RECOMMENDED STUDY FOR PRINTING STUDENTS

- 39 Printing management
- 40 Liberal arts
- 41 Graphic arts (Education)
- 42 Fine arts
- 43 Business management

Column 44 : OTHER AREAS OF RECOMMENDATION

- 1 Logic
- 2 Economics
- 3 Accounting
- 4 Engineering
- 5 Science
- 6 Psychology
- 7 Printing technology
- 8 General education courses
- 9 Graphic design
- 10 Journalism

Column 45 : CHANGES IN COURSE CONTENT

- 1 Expand in teacher education
- 2 Add degree program in printing
- 3 Emphasis on management and business courses
- 4 None
- 5 Service course for other majors
- 6 Undecided
- 7 Emphasis on technology and new developments
- 8 Emphasis on research
- 9 Integrate mechanical drawing and photography
- 10 Emphasis on individual projects
- 11 Broaden the entire program and courses

Column 46 : PROFESSIONAL- OR TEACHER-TRAINING INSTITUTIONS

- 1 Teacher
- 2 Professional

APPENDIX D

Directory of 89 Respondent Schools Indicating the Number of
Graphic Arts Instructors, Students Enrolled in Graphic
Arts, Current and Contemplated Emphasis,
and Program Options

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Alabama</u>					
Alabama A & M	3	20	Teacher training Management	Broaden entire program	Teacher training Management
Tuskegee Institute	3	12	Management	Elimination of program March 1962	Management
<u>Arizona</u>					
Arizona State University	2	28	Teacher training Management	Management Offset	Teacher training Management
<u>Arkansas</u>					
Arkansas State College	2	17	Teacher training Management	None	Teacher training Management

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
California					
California State Polytechnic College	7	125	Teacher training Management	Management Technical developments	Teacher training Management
Fresno State College	1	54	Teacher training Management	Addition of offset camera work	Teacher training Industrial technology
Long Beach State College	3	50	Teacher training	Broaden the entire program	Teacher training
Los Angeles State College	3	46	Teacher training Management	Emphasis on technological developments	Teacher training Management
Pacific Union College	4	18	Teacher training Management	Camera work, platemaking	Teacher training Management
San Diego State College	1	75	Teacher training	Broaden entire program	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>California (cont)</u>					
San Jose State College	3	175	Teacher training	None	Teacher training
<u>Colorado</u>					
Colorado State College	3	140	Teacher training	Add depth to course offerings	Teacher training
<u>Connecticut</u>					
Central Connecticut 2 State College		55	Teacher training	More offerings in offset	Teacher training
<u>Florida</u>					
University of Miami	1	26	Teacher training	Emphasis on offset	Teacher training
<u>Illinois</u>					
Bradley University	1	16	Teacher training	More offset experience	Teacher training
Chicago Teachers College	1	16	Teacher training	None	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Illinois (cont)</u>					
Eastern Illinois University	1	30	Teacher training	Addition of lithography	Teacher training
Northern Illinois University	2	2	Teacher training	More emphasis on offset, camera	Teacher training
Southern Illinois University	3	27	Teacher training Management	Broaden entire curriculum	Teacher training Management
The School of the Art Institute of Chicago	-	--	Graphic Design	---	---
University of Illinois	1	15	None	New program in teacher train- ing 1963-1964	Teacher training
Western Illinois University	2	27	Teacher training	Broaden entire program	Teacher training
<u>Indiana</u>					
Ball State Teachers College	1	25	Teacher training	No change	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Indiana (cont)</u>					
Purdue University	-	--	---	New program to be introduced February, 1963	Teacher training
<u>Iowa</u>					
State College of Iowa	1	12	Teacher training	Broadening of the current program	Teacher training
<u>Kansas</u>					
Kansas State College	5	51	Teacher training Management	None	Teacher training Management Industrial technology
Kansas State Teachers College	1	10	Teacher training	None	Teacher training
<u>Kentucky</u>					
Eastern Kentucky State College	1	32	Teacher training	Expand entire program	Teacher training
Western Kentucky State College	2	12	Teacher training	None	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Louisiana</u>					
Northwestern State College	2	24	Teacher training	None	Teacher training
Southern University	3	20	Industrial technology	Expansion of program to add management degree	Industrial technology
<u>Maryland</u>					
University of Maryland	2	30	Teacher training	Updating of technical processes	Teacher training
<u>Michigan</u>					
Eastern Michigan University	1	80	Teacher training	Broaden entire program	Teacher training
Emmanual Missionary College	1	7	Teacher training	None	Teacher training
Ferris Institute	5	85	Teacher education Management	Emphasis on course work useful to industry needs	Teacher training Management

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Michigan (cont)</u>					
Michigan State University	2	6	Teacher training	Integration with industrial arts program	Teacher training
Northern Michigan College	1	16	Teacher training	Intensify and broaden entire program	Teacher training
Wayne State University	3	55	Teacher training	None	Teacher training
Western Michigan University	2	50	Management	Emphasis on modern develop- ments and techniques	Management
<u>Minnesota</u>					
Mankato State College	2	34	Teacher training	More emphasis on lithography	Teacher training
Minneapolis School of Art	4	30	Graphic design	Longer program in design area	Graphic arts design
Moorehead State College	2	100	Teacher training	Broaden offset and letter- press course offerings	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Minnesota (cont)</u>					
St. Cloud State College	-	--	Teacher training	--	Teacher training
University of Minnesota	2	56	Teacher training	Broaden entire course offer- ings	Teacher training Service courses for occupational therapists
<u>Mississippi</u>					
Mississippi Southern College	1	--	Teacher training	Integration with journalism	Teacher training in graphic arts crafts
<u>Missouri</u>					
Central Missouri State College	1	--	Teacher training	Expand program to offer a B.S. in printing	Teacher training
<u>Nebraska</u>					
Nebraska State Teachers College (Kearney)	1	24	Teacher training	Make course offerings more inclusive	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>New Hampshire</u>					
Dartmouth College	1	21	Graphic design	More emphasis on individual student projects	Graphic design
Keene Teachers College	1	50	Teacher training	None	Teacher training
<u>New Jersey</u>					
Montclair State College	2	81	Teacher training	None	Teacher training
Trenton State College	1	60	Teacher training	Broaden program in graphic arts	Teacher training
<u>New Mexico</u>					
Eastern New Mexico University	1	39	Teacher training	Inclusion of work in offset	Teacher training
<u>New York</u>					
City College of New York	2	40	Teacher training	None	Teacher training
Pratt Institute	6	146	Graphic design	Emphasize con- cept of graphic artist	Graphic design teacher training book production

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>New York (cont)</u>					
Rochester Institute of Technology	20	370	Management Technology	Raise stand- ards, increase technical con- tent of courses, add options	Basic option Technical option Management option Journalism- Printing option
New York University	1	25	Teacher training	Addition of photocomposi- tion and cold type	Teacher training
State University College of Education (Buffalo)	2	400	Teacher training	Emphasis on graphic arts technology	Teacher education
State University Teachers College (Oswego)	2	30	Teacher training	Broaden entire program and course offerings	Teacher education
Syracuse University	3	212	Design Production	None	Advertising production Magazine production

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>North Carolina</u>					
Appalachian State Teachers College	1	--	Teacher training	None	Teacher training
East Carolina College	2	170	Teacher training	Emphasis on layout and design, and offset pro- cesses	Teacher training
<u>Ohio</u>					
Central State College	1	6	Teacher training	Add a graphic arts minor	Teacher training
Bowling Green University	1	20	Teacher training	Consolidation with journalism and broaden program	Teacher training
Miami University	1	50	Teacher training	None	Teacher training
Ohio State University	1	18	Teacher training	Addition of offset	Teacher training
Ohio University	1	65	Teacher training	Broaden offset course offerings	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Ohio (cont)</u>					
Wilmington College	1	7	Teacher training Management	None	Teacher training Industrial supervision
<u>Oklahoma</u>					
Oklahoma State University	1	8	Teacher training	None	Teacher training
<u>Pennsylvania</u>					
California State College	2	80	Teacher training	Broaden current offerings	Teacher training
Carnegie Institute of Technology	8	200	Design Management	Established new program in design and management	Graphic design option Management option
Millersville State College	3	67	Teacher training	Introduce an elective program in graphic arts	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>South Dakota</u>					
South Dakota State College	6	40	Teacher training Management Journalism	Refinements in course content and offerings	Printing education option Printing management option Printing- journalism option
<u>Tennessee</u>					
Middle Tennessee State College	1	--	Teacher training	Addition of complete offset unit	Teacher training
Southern Missionary College	1	--	Secular teacher training	None	Secular teacher training
<u>Texas</u>					
East Texas State College	2	17	Teacher training	Emphasis on new developments and management	Teacher training
North Texas State College	1	48	Teacher training	None	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Texas (cont)</u>					
Prairie View A & M College	1	16	Teacher training	More emphasis on offset	Teacher training
Southwest Texas State College	1	25	Teacher training Art	None	Teacher training Service courses for commercial art majors
University of Houston	1	5	--	Elimination of program 1963	--
West Texas State College	2	--	Teacher training	No courses offered at present time. Hope to reopen program in a year or two.	--
<u>Virginia</u>					
Hampton Institute	1	25	Teacher training	--	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Washington</u>					
Walla Walla College	4	16	Teacher training Management	More emphasis in photography and offset	Teacher training
Western Washington State College	1	25	Teacher training Management	Emphasis on printing technology	Teacher training
<u>West Virginia</u>					
West Virginia Institute of Technology	4	51	Management	None	Printing management program
West Virginia State College	4	51	Teacher training	Emphasis on layout, design and management	Teacher training option Technical science option
West Virginia University	1	20	Teacher training	More offset emphasis	Teacher training

Appendix D. (continued)

Schools by states	Instructors teaching graphic arts	Students enrolled	Current program offerings	Contemplated program emphasis	Program options
<u>Wisconsin</u>					
Stout State College	4	40	Teacher training Management	More emphasis on research	Teacher training
Wisconsin State College and Institute of Technology (Platteville)	2	--	Teacher training	None	Teacher training

APPENDIX E

Directory of Institutions that Comprised the
Universe for this Study

Alabama A. & M. College, Normal, Alabama
Tuskegee Institute, Tuskegee Institute, Alabama
Arizona State University, Tempe, Arizona
Arkansas State College, Jonesboro, Arkansas
California State Polytechnic College, San Luis Obispo, California
Chico State College, Chico, California
Fresno State College, Fresno, California
Long Beach State College, Long Beach, California
Los Angeles State College, Los Angeles, California
Pacific Union College, Angwin, California
San Diego State College, San Diego, California
San Jose State College, San Jose, California
Colorado State College, Greeley, Colorado
Central Connecticut State College, New Britain, Connecticut
Yale University, New Haven, Connecticut
Florida A & M University, Tallahassee, Florida
University of Miami, Miami, Florida
Berry College, Mount Berry, Georgia
Idaho State College, Pocatello, Idaho
Bradley University, Peoria, Illinois
Chicago Teachers College, Chicago, Illinois
Eastern Illinois University, Charleston, Illinois

Illinois State Normal University, Normal, Illinois
Northern Illinois University, DeKalb, Illinois
Southern Illinois University, Carbondale, Illinois
The School of the Art Institute of Chicago, Chicago, Illinois
University of Illinois, Champaign, Illinois
Western Illinois University, Macomb, Illinois
Ball State Teachers College, Muncie, Indiana
Indiana State Teachers College, Terre Haute, Indiana
Purdue University, Lafayette, Indiana
State College of Iowa, Cedar Falls, Iowa
Kansas State College, Pittsburg, Kansas
Kansas State Teachers College, Emporia, Kansas
Southwestern College, Winfield, Kansas
Berea College, Berea, Kentucky
Eastern Kentucky State College, Richmond, Kentucky
Western Kentucky State College, Bowling Green, Kentucky
Louisiana State University, Baton Rouge, Louisiana
Southern University, Baton Rouge, Louisiana
Northwestern State College, Natchitoches, Louisiana
University of Maryland, College Park, Maryland
Simmons College, Boston, Massachusetts
Eastern Michigan University, Ypsilanti, Michigan
Emmanual Missionary College, Berrien Springs, Michigan
Ferris Institute, Big Rapids, Michigan
Michigan State University, East Lansing, Michigan

Northern Michigan College, Marquette, Michigan
Wayne State University, Detroit, Michigan
Western Michigan University, Kalamazoo, Michigan
Bemidji State College, Bemidji, Minnesota
Mankato State College, Mankato, Minnesota
Minneapolis School of Art, Minneapolis, Minnesota
Moorehead State College, Moorehead, Minnesota
St. Cloud State College, St. Cloud, Minnesota
University of Minnesota, Minneapolis, Minnesota
Winona State College, Winona, Minnesota
Mississippi Southern College, Hattiesburg, Mississippi
Central Missouri State College, Warrensburg, Missouri
Lincoln University, Jefferson City, Missouri
Nebraska State Teachers College, Kearney, Nebraska
Dartmouth College, Hanover, New Hampshire
Keene Teachers College, Keene, New Hampshire
Montclair State College, Upper Montclair, New Jersey
Trenton State College, Trenton, New Jersey
Eastern New Mexico University, Portales, New Mexico
New Mexico Western College, Silver City, New Mexico
University of New Mexico, Albuquerque, New Mexico
The City College of New York, New York, New York
Columbia University, New York, New York
New York University, New York, New York
Pace College, New York, New York

Pratt Institute, Brooklyn, New York
Rochester Institute of Technology, Rochester, New York
State University College of Education, Buffalo, New York
State University Teachers College, Oswego, New York
Syracuse University, Syracuse, New York
Appalachian State Teachers College, Boone, North Carolina
East Carolina College, Greenville, North Carolina
Bowling Green University, Bowling Green, Ohio
Central State College, Wilberforce, Ohio
Kent State University, Kent, Ohio
Miami University, Oxford, Ohio
Ohio State University, Columbus, Ohio
Ohio University, Athens, Ohio
Wilmington College, Wilmington, Ohio
Oklahoma State University, Stillwater, Oklahoma
California State College, California, Pennsylvania
Carnegie Institute of Technology, Pittsburgh, Pennsylvania
Millersville State College, Millersville, Pennsylvania
Pennsylvania State University, University Park, Pennsylvania
South Dakota State College, Brookings, South Dakota
George Peabody College for Teachers, Nashville, Tennessee
Middle Tennessee State College, Murfreesboro, Tennessee
Southern Missionary College, Collegedale, Tennessee
East Texas State College, Commerce, Texas
North Texas State College, Denton, Texas

Prairie View A & M College, Prairie View, Texas
Sam Houston State Teachers College, Huntsville, Texas
Southwest Texas State College, San Marcos, Texas
Texas Southern University, Houston, Texas
University of Houston, Houston, Texas
West Texas State College, Canyon, Texas
Hampton Institute, Hampton, Virginia
Walla Walla College, College Place, Washington
Western Washington State College, Bellingham, Washington
Fairmont State College, Fairmont, West Virginia
West Virginia Institute of Technology, Montgomery, West Virginia
West Virginia State College, Institute, West Virginia
West Virginia University, Morgantown, West Virginia
Stout State College, Menomonie, Wisconsin
Wisconsin State College & Institute of Technology, Platteville, Wisconsin

APPENDIX F

Definition of Study Categories

Teacher-training programs. This category contains those colleges which maintain courses in printing in the area of industrial arts education or industrial education. The category bears no relation to the size or name of the institution.

Professional-education programs. This category contains those institutions which maintain a program in printing education related to professional careers in the field of printing exclusive of teaching.

Combination programs. This category contains those institutions which offer courses in printing that lead to both teaching careers and those in areas exclusive of teaching.