

A SURVEY OF INSTRUCTION IN NEWSROOM COMPUTER
TECHNOLOGY IN NEWS-EDITORIAL COURSE
SEQUENCES IN DEPARTMENTS, SCHOOLS
AND COLLEGES OF JOURNALISM

By

WILLIAM ROBERT STENG JR.

h

Bachelor of Arts
Rutgers University
New Brunswick, New Jersey
1956

Master of Arts in Journalism and Communications
University of Florida
Gainesville, Florida
1968

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
July, 1975

Thesis
1975D
5825s
cop. 2

MAY 12 1976

A SURVEY OF INSTRUCTION IN NEWSROOM COMPUTER
TECHNOLOGY IN NEWS-EDITORIAL COURSE
SEQUENCES IN DEPARTMENTS, SCHOOLS
AND COLLEGES OF JOURNALISM

Thesis Approved:

Fred W. Robbins

Thesis Advisor
Kenneth A. Clair

John P. Hampton

Wm. L. Hughes

N. N. Durham

Dean of the Graduate College

939004

ACKNOWLEDGMENTS

The author wishes to express his appreciation to his major adviser, Dr. Donald W. Robinson, for his guidance and assistance throughout this study. Appreciation also is expressed to the other committee members, Dr. John D. Hampton, Dr. Kenneth St. Clair and Dr. William L. Hughes, for their invaluable assistance in the formulation and conduction of the study and in the preparation of the final manuscript.

Special appreciation is expressed to my wife, Barbara, our son, Kevin, and our daughter, Kimberly, for their understanding, encouragement and many sacrifices, all of which helped to make this study possible.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
The Responsibility of Journalism Education	4
Statement of the Problem	6
Statement of the Purpose	7
Limitations of the Study	8
Assumption	9
II. REVIEW OF THE LITERATURE.	13
The Computer Enters the Newspaper Industry	14
The Wire Services Make Use of the Computer	16
Computer Technology Has Moved into the Newsroom.	17
Some Differing Views of the Newspaper of the Future	22
Some Concerns of Management.	29
The Role of Journalism Education.	33
Computer Technology Becomes Part of Journalism Education.	34
Instruction for Present and Future Newsmen	36
Educator Contacts with the Media	40
Cost to Journalism Programs.	42
III. METHODOLOGY	54
The Subjects	55
The Instrument	58
Reliability of the Instrument	63
Validity of the Instrument	64
Motivation to Respond.	64
Procedures	65
Analysis of the Data	67
IV. RESULTS	72
Part I, Characteristics of Responding Sequences.	73
Part II, Present Practices	94
Part III, Desirable Practices.	100
Part IV, Predicted Practices	110
Part V, Obstacles to Present Practices	120
Part VI, 1980 Descriptions of Instruction.	127
Part VI, Comments.	128

Chapter	Page
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	129
Summary and Conclusions	130
Recommendations	150
Further Considerations	152
SELECTED BIBLIOGRAPHY	158
APPENDIX A - AMERICAN COUNCIL ON EDUCATION FOR JOURNALISM OBJECTIVES AND PURPOSES RELATED TO ACCREDITATION	165
APPENDIX B - COVER LETTERS	168
APPENDIX C - QUESTIONNAIRE	173
APPENDIX D - INDIVIDUAL RESPONSES TO QUESTION 18, PART I, IN REGARD TO NEWS-EDITORIAL STUDENTS VIEW- ING NEWSROOM COMPUTER EQUIPMENT IN OPERA- TION AND HAVING HANDS-ON INSTRUCTION AT COMMERCIAL NEWSPAPERS	186
APPENDIX E - INDIVIDUAL RESPONSES TO QUESTION 20, PART I, IN REGARD TO NEWS-EDITORIAL STUDENTS BEING REQUIRED TO EXTRACT DATA FROM COMPUTERS FOR STORY ASSIGNMENTS	191
APPENDIX F - INDIVIDUAL RESPONSES TO ITEM 6, PART II, REGARDING ADEQUACY OF CONTACTS BETWEEN THE JOURNALISM PROGRAM AND NEWSPAPERS	195
APPENDIX G - INDIVIDUAL RESPONSES TO FIRST PART OF PART VI, DESCRIPTIONS OF PRESENT INSTRUCTION	201
APPENDIX H - INDIVIDUAL RESPONSES TO SECOND PART OF PART VI, 1980 DESCRIPTIONS OF INSTRUCTION	214
APPENDIX I - INDIVIDUAL RESPONSES TO PART THREE OF PART VI, COMMENTS	224

LIST OF TABLES

Table	Page
I. Student Enrollment in News-Editorial Sequence	73
II. Faculty Teaching Courses in News-Editorial Sequence	74
III. Full-Time Faculty in News-Editorial Sequence	75
IV. Part-Time Faculty in News-Editorial Sequence	75
V. Academic Rank of Full-Time Faculty	76
VI. Academic Rank of Part-Time Faculty	79
VII. Degree Held by Full-Time Faculty	80
VIII. Degree Held by Part-Time Faculty	81
IX. News-Editorial Sequences Offering Reporting, Editing, Production/Typography, Newspaper Management Courses	82
X. News-Editorial Sequences Requiring Reporting, Editing, Production/Typography, Newspaper Management	83
XI. Reporting, Editing, Production/Typography, Newspaper Management Courses Offering Instruction in News- room Technology	84
XII. News-Editorial Sequences Requiring Majors to Have Course in Computer Science	85
XIII. News-Editorial Sequences Offering New Technology Course in News-Editorial Sequence	86
XIV. News-Editorial Sequences Requiring Majors to Take New Technology Course	86
XV. Technological Newsroom Equipment Available to News-Editorial Majors on Campus	87
XVI. Availability of Technological Newsroom Equipment	89
XVII. Location of Available Technological Newsroom Equipment	90

Table	Page
XVIII. News-Editorial Sequences with Majors Having Seen Equipment in Operation at Commercial Newspapers	91
XIX. News-Editorial Sequences with Majors Having Hands-On Instruction at Commercial Papers	92
XX. News-Editorial Sequences Requiring Majors to Extract Data from Computers for Story Assignments.	93
XXI. Present Appropriateness of Verbal Explanation as Only Means of Instruction	94
XXII. Present Appropriateness of Viewing Newsroom Computer Equipment in Operation as Means of Instruction	95
XXIII. Present Appropriateness of Hands-On Instruction as Means of Necessary Instruction.	96
XXIV. Present Appropriateness of Replacing Mechanical Typewriters with Electric Typewriters.	96
XXV. Present Appropriateness of Necessity of Not Having Newsroom Computer Equipment.	97
XXVI. Present Adequacy of Contact Between Journalism Program and Newspapers	98
XXVII. Present Preference to Having Newspapers Teach Newsroom Computer Technology	99
XXVIII. Desirability of Providing Instruction by Explanation . . .	100
XXIX. Desirability of Providing Instruction by Viewing Equipment in Operation	101
XXX. Desirability of Providing Instruction by Hands-On Operation at Journalism School	102
XXXI. Desirability of Replacing Mechanical Typewriters with Electric Typewriters.	103
XXXII. Desirability of Investment in All Kinds of Newsroom Computer Equipment	104
XXXIII. Desirability of Having News-Editorial Students Extract Data from Computers for Story Assignments. . . .	105
XXXIV. Desirability of Requiring Computer Science Course	105

Table	Page
XXXV. Desirability of News-Editorial Sequence Newspaper Technology Course.	106
XXXVI. Desirability of News-Editorial Sequence Newspaper Management Course.	107
XXXVII. Desirability of News-Editorial Students Visiting Commercial Newspapers at Off-Peak Hours for Hands-On Instruction	108
XXXVIII. Desirability of Increasing Contact Between Journalism Programs and Newspapers.	108
XXXIX. Desirability of Having Newspapers Responsible for Teaching Newsroom Computer Technology.	109
XL. Likelihood of Providing Instruction by Explanation	110
XLI. Likelihood of Providing Instruction by Viewing Equipment in Operation	111
XLII. Likelihood of Providing Hands-On Instruction at Journalism School.	112
XLIII. Likelihood Electric Typewriters Will Replace Mechanical Typewriters	113
XLIV. Likelihood of Investment in All Kinds of Computer Equipment.	114
XLV. Likelihood News-Editorial Students Will Extract Data From Computers for Story Assignments.	114
XLVI. Likelihood Computer Science Course Will Be Required	115
XLVII. Likelihood News-Editorial Sequence Will Have Newspaper Technology Course.	116
XLVIII. Likelihood News-Editorial Sequence Will Have Newspaper Management Course.	117
XLIX. Likelihood News-Editorial Students Will Have Hands-On Instruction in Newsroom Computer Equipment at Off-Peak Hours at Commercial Newspapers.	118
L. Likelihood Contact Between Newspapers and Journalism Program Will Increase.	119
LI. Likelihood Responsibility of Teaching Newspaper Computer Technology Will Be Assumed by Newspapers. . . .	119

Table	Page
LII. Significance of Cost of Newsroom Computer Equipment as Obstacle to Providing Instruction.	121
LIII. Significance of Journalism Program Budget as Obstacle to Providing Instruction	121
LIV. Significance of Faculty Competence in Newsroom Technology as Obstacle to Providing Instruction	122
LV. Significance of Contact Between Newspapers and Journalism Program as Obstacle to Providing Instruction	123
LVI. Significance of Space in the Journalism Facility as Obstacle to Providing Instruction.	124
LVII. Significance of Increased Enrollment as Obstacle to Providing Instruction.	125
LVIII. Present Methods of Instruction.	126
LIX. 1980 Methods of Instruction	127

CHAPTER I

INTRODUCTION

The newspaper industry in the United States remained in a state of status quo until the 1950s relying mainly upon the moveable type press invented by Johann Gutenberg in about 1435, mechanical typewriters and lead pencils.¹ The 1950s and the 1960s were the electronic age in the industry. The 1970s have given every indication of being the computer age as newspapers have begun computerized composition, makeup and production,² Major advancements in production technology have almost all centered around computer-oriented systems. The improved systems have moved from the pressroom to the typesetting room in the past few years and now the systems have been moving more steadily into the newsroom.³ Richard C. Steele, president and publisher of the Worcester (Mass.) Telegram and Evening Gazette, has believed computer technology will replace the lead pencil of the editor and the mechanical typewriters of the reporters and editors in the newsroom.⁴

A 1971 Masters thesis by Susan Turner Bennett at the University of Florida provided a further indication of the status of computer technology in the newspaper industry. Mrs. Bennett sent questionnaires to 348 newspapers in 48 states and received 258 responses.⁵ Respondents reported jobs being performed by computers at their newspapers were hyphenation and justification of type; accounting operations; storage and sorting of classified advertising; compiling subscriber lists;

electronic editing; storage and retrieval of information from the newspaper library, and display advertising composition.⁶

Mrs. Bennett also reported about future applications of computer technology in the newspaper industry. Tasks the respondents expected to be performed within the next decade were abstraction of wire copy, page layout and satellite plant operations.⁷

Additional indications of the expectations of the future and the pace of technological change as it will affect the procedures of receiving, writing and editing stories in the newsroom was reflected in the results of a Rand Corporation survey reported by Ben H. Bagdikian in The Information Machines. Opinions were gathered from specialists, persons in the communications field, and nonspecialists, those persons in fields relevant to the future of communications such as corporate research and academics.⁸

Specialists believed that before 1979 reporters would be transmitting their stories to the newsroom either with light portable keyboards using a radio or telephone connection, or with portable facsimile machines. The nonspecialists predicted portable keyboards would be in use by 1988 and portable facsimile by 1996.⁹ A few large newspapers have been using portable facsimile senders since 1970.¹⁰

Specialists and nonspecialists predicted that by the mid 1980s it would be common practice among newspapers to place all news into the computer in digital form. Most respondents had low confidence in the adoption by newspapers of machines that automatically read typed copy, which for the computer was a relatively complicated process. A few of the best known specialists said machine reading of copy would grow and would be widespread by 1980 because it has been a form of information

that men have been accustomed to handling. The majority of those surveyed doubted that it would be widespread by 2000.

The respondents foresaw editors in the mid 1980s in different parts of the building, or even in different cities, working at consoles that would be like high quality television screens on which they would call up an individual story, discuss it in voice conference and make changes in the material on the screen. When a decision could be made on the final version of the story and alterations will have been made on the screen, the story would be re-entered into the computer. The specialists and non-specialists agreed that in the late 1980s page makeup and methods of displaying stories in the newspaper would be done by editors working by mutually reactive video screens. Some suggested that computers could be programmed with a large variety of page designs that the machine automatically would suggest on the basis of length, emphasis and style of the individual stories that the editor selects. Creation of the finished page would be almost instantaneous. A number who agreed as to the technical feasibility of computerized editing questioned whether newspaper publishers and editors would be willing to do this using consoles which presently cost \$80,000.¹¹

While the application of computer equipment in the newsroom would seem to be extremely varied and offer numerous advantages, two major disadvantages reported by newspapers have been high costs and inefficient use of the equipment by newsroom staff members, particularly recent journalism school graduates. The purchasing and leasing cost of computers was reported (18.6 per cent) as the second single greatest disadvantage of computerization by publishers and editors surveyed by Mrs. Bennett.¹² The first and single greatest disadvantage of computerization

cited by the publishers and editors was the inability of the staff to use computers at their greatest efficiency.¹³ Approximately 63 per cent agreed strongly that college journalism instruction has been inadequate in teaching graduates how new technology could be utilized.¹⁴ Thirty graduates of 24 journalism schools who have been working in newsrooms throughout the country reported in a 1972 survey by the Associated Press Managing Editors Association that information they received in class was outdated and did not cover developments in automation in the newsroom.¹⁵

The Responsibility of Journalism Education

The criticisms of journalism education have seemed noteworthy as the preparation of newsmen has been to a great degree the responsibility of journalism education. As of the 1974 autumn session 55,078 students were majoring in journalism in four-year and graduate colleges and universities in the United States. This is 6,751 more students than in 1973, and in the past 10 years journalism enrollments have climbed from 15,820 to 55,078. In the 1973-74 academic year 3,961 of 7,667 graduates of journalism programs completed work in the news-editorial sequence.¹⁶

Sixty departments, schools and colleges of journalism, 59 undergraduate and one graduate, have had news-editorial sequences that have been accredited by the American Council on Education for Journalism (ACEJ).¹⁷ ACEJ has defined an accredited sequence as an organized group of related courses intended to prepare students for professional careers in a particular area of journalism. The news-editorial sequence has been an organized group of related courses which should prepare students for a career in newspaper reporting and editing.¹⁸ News-editorial

sequences not accredited by ACEJ have been offered at 100 departments, schools and colleges of journalism.¹⁹

While the Bennett and APMEA studies indicated some dissatisfaction among some publishers and editors and some students as to the preparation offered by journalism programs in the new technology, there has been no clearly defined body of information as to how students have been prepared in newsroom computer technology. There have been indications that the transition in the newsroom has posed problems for journalism programs.

Dean John Paul Jones of the University of Florida College of Journalism & Communications has identified the major problem as obtaining the money necessary to purchase the expensive computer-oriented equipment. He has maintained a wait-and-see attitude because the machinery has been changing too fast to make it practical to invest large sums of money for equipment which may be obsolete in a year.²⁰ John H. Colburn, vice president for corporate development of Landmark Communications, has said journalism programs must give students the opportunity to work with the new equipment now. He estimated that it would cost perhaps \$400,000 to \$500,000 to equip a journalism school for entry into the computerized newsroom technology, with perhaps an additional \$25,000 annually for supplies, maintenance and upkeep.²¹ William D. Rinehart, director of the American Newspaper Publishers Association Research Institute (ANPA/RI), has said he has seen no need to invest in costly equipment for the classroom as no machine can substitute for a well-trained journalist.²² Peter Trigg, an Orlando (Fla.) Sentinel editor, has said the current journalism school approach of explaining equipment use and allowing students to view it in operation at newspapers has

been sufficient at this time.²³ Colburn,²⁴ ANPA/RI²⁵ and others agreed that the first step journalism schools should take would be to replace mechanical typewriters with electric typewriters. The Gannett Newspapers have been attempting to provide some exposure to newsroom technology by having a van containing some of the equipment, including electric typewriters, visit journalism schools throughout the nation.²⁶

Editors and educators have raised other points relevant to preparation offered in newsroom technology by journalism programs. Various editors wanted computer science and management courses to become part of the curriculum for news-editorial students.²⁷ Educators and editors agreed at a 1972 symposium that there has been a need for more communication and contact between newspapermen and journalism students and educators if students and instructors were to know how things really have been in the newsroom.²⁸ Curtis MacDougall, professor emeritus, Medill School of Journalism, Northwestern (Illinois) University, has maintained that journalism faculties have been filled by Ph.D.s who have been theory oriented and have had little or no newsroom experience and the result has been an increasing gap between the reality of the professional newsroom and reporting and editing courses.²⁹ Concern has been expressed for the need to train future newsmen how to use the computer outside the newsroom as much of the information which has been the basis of news stories has been increasingly stored in computers and the reporters should learn to interrogate these sources.³⁰

Statement of the Problem

The problem this study was concerned with has been the lack of information as to the instruction provided in newsroom computer technology

in both the 60 ACEJ accredited and the 100 nonaccredited news-editorial course sequences in departments, schools and colleges of journalism. At present there has been no clearly defined body of information as to what instruction has been provided to ACEJ accredited and non-accredited news-editorial sequences in departments, schools and colleges of journalism in the use of newsroom computer technology, and whether the instruction provided has been necessary.

Statement of the Purpose

The purpose of the study was to describe what instruction has been provided in newsroom computer technology to students in the 60 ACEJ accredited and the 100 non-accredited news-editorial course sequences in departments, schools and colleges of journalism. The study has compared instruction provided in the accredited news-editorial sequences to instruction provided in the non-accredited news-editorial sequences. The study also has provided opinions of top administrators of journalism programs in regard to the problems of cost, adequacy of faculty, increased enrollment and journalism education-newspaper co-operation. The opinions of top administrators of journalism programs having accredited news-editorial sequences have been compared with opinions of top administrators of journalism programs having non-accredited news-editorial sequences.

It was anticipated that data gathered in the survey would provide information as to what top administrators believed would be the ideal in offering instruction in newsroom computer technology and what instruction top administrators predicted would be offered in 1980 in newsroom computer technology. The gathering of such data allowed the

investigator to compare the present instruction offered to what would be the ideal instruction offered and to what instruction would be offered in 1980 in newsroom computer technology. The comparison has been offered within the accredited sequences and within the non-accredited sequences and between the accredited and non-accredited sequences.

Limitations of the Study

The study has been limited to the 60 ACEJ accredited³¹ and to 60 of the 100 non-accredited news-editorial sequences³² offered in departments, schools and colleges of journalism which have been reported in the January 1974 Journalism Educator. The 60 non-accredited sequences were selected at random. Each of the 100 non-accredited sequences were assigned a number from 1 to 100 and the first 60 numbers selected represented the 60 non-accredited sequences surveyed in this study.

The study has not included newspaper news personnel. The survey was designed to gather information as to what instruction in newsroom computer technology has been according to journalism educators, and what journalism educators identified as the problems in providing this instruction. The survey was designed to gather beliefs as to the ideal instruction in newsroom computer technology according to journalism educators and what instruction journalism educators predicted would be offered in 1980 in newsroom computer technology. The study was not designed to gather the descriptions, attitudes and opinions, beliefs and predictions of newspaper news personnel in regard to instruction in newsroom computer technology in the news-editorial sequence.

Assumption

The investigator assumed that the subjects to be surveyed would respond to the questionnaire objectively and responsibly. Based upon this assumption, the investigator deemed it unnecessary to reverse the direction of item responses at any point or points in the survey questionnaire. All questionnaire item responses were stated as Strongly Agree, Most Desirable, Most Likely and of Great Significance from the left polar extreme to Strongly Disagree, Least Desirable, Least Likely and No Significance at the right polar extreme.

The investigator assumed the journalism educators were capable of determining what instruction in newsroom computer technology was necessary to prepare students for positions on news staffs of commercial newspapers.

The investigator assumed that the comparison between the accredited sequences and the non-accredited sequences would indicate that the accredited sequences were providing their students with more exposure to and hands-on use of newsroom computer equipment within the journalism facility and at commercial newspapers, and had greater contact with professional newsmen than non-accredited sequences did. This assumption was based upon the sequences being accredited as having to comply with and be part of various aspects of accreditation such as one objective stated that accreditation should aid in the co-ordination of educational programs with the needs of the profession;³³ that one purpose was to serve as a guide to employers in all mass communication fields as to which schools and departments were worthy of approval;³⁴ another purpose was to promote closer relationships among the media, the communication research organization and journalism education with

the idea of having met the educational and professional needs of the areas which the schools serve,³⁵ and that members of accrediting teams included professional newsmen.³⁶ Objectives, purposes and selection of visiting team as stated in the ACEJ accreditation pamphlet have been presented in Appendix A.

ENDNOTES

- ¹William B. Dickinson, "Cooperation Between Editorial and Production," American Newspaper Publishers Association Research Bulletin, No. 892 (New York, July 6, 1966), p. 1.
- ²Malcolm Jones, "On Tomorrow's Newspapers: Publishing Concepts Are Changing," Publishers' Auxiliary, CV (January 24, 1970), p. 19.
- ³"What's Ahead in Newspaper Production," The American Press, LXXXIX (February, 1971), pp. 21-23.
- ⁴"CRT, ECRM, OCR--Do They Work? Ask a Publisher Who Owns One," Editor & Publisher, CIV (June 5, 1971), pp. 17, 18.
- ⁵Susan Turner Bennett, "The Computer Revolution And The Modern Newspaper: A Descriptive Survey of Computer Use In The Nation's Press" (unpub. Master's Thesis, University of Florida, 1971), p. 1.
- ⁶Ibid., p. 78.
- ⁷Ibid., p. 79.
- ⁸Ben H. Bagdikian, The Information Machines (New York, 1971), introduction, pp. xxii, xxiii.
- ⁹Ibid., p. xxix.
- ¹⁰Ibid., p. xxxvi.
- ¹¹Ibid., pp. xxix-xxxii.
- ¹²Bennett, p. 132.
- ¹³Ibid.
- ¹⁴Ibid., pp. 211, 212.
- ¹⁵John L. Dougherty, "Graduates Cast a Critical Eye on Their Journalism Courses," Associated Press Managing Editors News, XXV (August, 1972), pp. 1-3.
- ¹⁶Paul V. Peterson, "J-enrollments Keep Climbing, 55,000 Mark Surpassed," Journalism Educator, XXIX (January, 1975), pp. 3, 5, 60.
- ¹⁷"ACEJ Accredited Sequences, News-Editorial," Journalism Educator, XXVIII (January, 1974), p. 31.

¹⁸"Accrediting Authority, Activities and Standards," 1973-74 Accredited Programs in Journalism, American Council on Education for Journalism, pp. 3, 9, 10.

¹⁹"Schools and Department of Journalism," Journalism Educator, XXVIII (January, 1974), pp. 32-59.

²⁰John Roosenraad, "Amid CRT Revolution Keep Those Old Glue Pots," Journalism Educator, XXVIII (July, 1973), pp. 48, 49.

²¹"How Is Technology Changing the Newsroom and Journalism Education," ASNE Looks At Journalism Education (Athens, Ga., January 26-28, 1973), p. 6.

²²"ANPA Tells J-educators to Stress Fundamentals," Journalism Educator, XXVIII (July, 1973), pp. 27, 28.

²³Roosenraad, pp. 48, 49.

²⁴"How Is Technology Changing the Newsroom and Journalism Education," p. 6.

²⁵"ANPA Tells J-educators to Stress Fundamentals," pp. 27, 28.

²⁶"Gannett's Electronic Van to Visit AEJ Convention," Journalism Educator, XXVIII (January, 1974), p. 19.

²⁷Lloyd W. Brown, Jr., "Editors Criticize J-schools' Curricula at Symposium," Editor & Publisher, CV (June 24, 1972), pp. 9, 10, 42.

²⁸Ibid.

²⁹Curtis D. MacDougall, "J. Educators Should Be Required to Have 5 Years Media Experience," Journalism Educator, XXVIII (July, 1973), pp. 12-14.

³⁰Maxwell E. McCombs, "New Sources of News: Exploiting Local Data," News Research for Better Newspapers (New York, March, 1971), pp. 123-125.

³¹"ACEJ Accredited Sequences, News-Editorial," p. 31.

³²"Schools and Departments of Journalism," pp. 32-59.

³³"Accrediting Authority, Activities and Standards," p. 4.

³⁴Ibid., p. 5.

³⁵Ibid.

³⁶Ibid., p. 10.

CHAPTER II

REVIEW OF THE LITERATURE

Ben H. Bagdikian in The Information Machines describes the predicted changes in the occupations and education of Americans by the year 2000 in relation to the effect upon the audience for news. In terms of absolute size the audience for news should increase tremendously. Occupations in the United States have been rapidly moving in the direction of professional, managerial and technical white collar jobs, which constitute a peak market for news. Farm laborers, unskilled manual labor and rural farmers, jobs with the lowest news usage have been continually eliminated by automation and other social changes. By the year 2000 more than one-half of the population should have two years of college and graduate degrees should be common.

The audience would be confronted by the limitations of time to consume all the information which would be available. Men and women with higher levels of education have tended to move into occupations that have enlarged responsibilities and this has changed the patterns of their daily lives. They have not been governed by an eight-hour day, five-day work week. Working lunches, working dinners, evening meetings, after-meal reading of professional or commercial literature, participation in professional, civic and/or intense social groups have become more common. Leisure time has been reduced. The time available for reading a newspaper has been lessened and the times when news has been

on television often conflicted with the working dinner and evening meetings.

If the human reading speed could be increased to 1,000 words per minute, a man who has spent two hours per day reading news and newslike information could absorb 120,000 words of print news per day. Major newspapers already have presented that much print news every day and the average time spent reading a newspaper has been 30 minutes.¹ (Very few adults can read as fast as 850 words per minute.)²

"Present transmission of most news to newspapers and broadcasting stations is at a rate of less than 60 words a minute."³ New techniques have brought about a tremendous increase in the rate, and in some places a rate of 2,400 words per minute has been taking place from computer to documentary version for human reading.⁴

Speeding the mechanical transmission rates would not be a measure of what man would be able or willing to receive.⁵ What the trends of the characteristics of the American audience and of technology have seemed to forecast has been a system of news which would offer a richer variety of information, a rapid way to detect what information would be available, an easy means of pursuing subjects of maximum interest to the individual beyond the standard presentation and control over the time when information would be available.⁶

The Computer Enters the Newspaper Industry

The newspaper industry has not ignored these projections and has been replacing the traditional lead pencils, mechanical typewriters and typesetting equipment with computer technology to meet the demands of predicted audience changes. According to the most recent reports by

Editor & Publisher, Cathode Ray Tube (CRT) typesetting machines have been in use in 40 newspapers, 478 Video Display Terminals (VDT) have been in use in 96 newspapers, more than 100 Optical Character Reader (OCR) systems have been in use and 20 newspapers have OCR-VDT systems.⁷ The electronic digital computer entered the newspaper industry in August 1960 as the first fully automated accounting system was installed at the Aurora (Ill.) Beacon News, and by 1965 there were more than 100 computers in use in the newspaper industry.⁸ The application of the computer has been found in numerous phases of the newspaper industry. The Florida Times-Union and Jacksonville Journal, both owned by the Florida Publishing Company, have been using a computer system which has included control of advertising production, accounting functions and subscriber billing.⁹ A high-speed computer capable of making many decisions in a milli-second has done all the justification and hyphenation of lines of type at the Plainfield (N.J.) Courier-Post, allowing 600 lines of type to have been set an hour compared to 200 which could be set manually.¹⁰ The Dayton (Ohio) Journal Herald and the Dayton Daily News, both owned by Dayton Newspapers, Inc., have used a computer system which has included the delivery of newspapers, scheduling and placement of advertising and accounting procedures.¹¹ The St. Petersburg (Fla.) Times and Evening Independent in 1969 were the first newspaper operation to install computer equipment for filing and retrieval of more than 2,000,000 clippings, more than 750,000 photographs and other materials.¹² The Watertown (N.Y.) Daily Times has designed a system which has allowed the storage and retrieval of five 24-hour-a-day wire services, which means that once a request for a story has been made the story has been on its way to being set into type in less than five

seconds.¹³

The Wire Services Make Use of the Computer

The major wire services, Associated Press (AP) and United Press International (UPI), have used the computer in their news gathering and disseminating processes. AP began handling the daily transmission of general news by computer in 1964,¹⁴ and UPI began computerized general news service in 1965.¹⁵ Among the latest technological advances introduced by UPI have been transmission of news pictures by a Telephoto Scan-Converter from any point in the world to any other point without the need to rescan or manually handle the picture in any way,¹⁶ and in 1975 UPI should complete the linking of all its major domestic news bureaus, about 100, to a central data bank in New York. Long range plans of UPI have called for the extension of this all-electric news system by linking the foreign bureaus of the wire service directly to computers in New York.¹⁷ The use of computerized copy processing in the 1972 general election provided vote tables virtually without error, Wes Gallagher, president of AP, has reported. The extension of CRT editing has reduced error, has increased the number of words transmitted and has been accompanied by a one-third reduction in the New York teletype operating staff. Since 1970 AP has eliminated 150 teletype operating positions.¹⁸ In 1973 AP introduced the use of the laser beam in the delivery of news photographs by wire. Laser photographs have provided far better picture quality than conventional methods and have represented the initial step toward electronic editing of pictures on television screens and high transmission speed when digital communication facilities become available.¹⁹

Computer Technology Has Moved into the Newsroom

The wire services have not been the only intrusion of computer technology in the newspaper newsroom. The mechanical typewriter, lead pencil, glue pot and scissors have been increasingly replaced by the CRT, the VDT and the OCR. Mechanical typewriters and lead pencils have been for many years in many newsrooms the standard tools in the preparation of news. The reporter followed a standard procedure as he prepared a story on the mechanical typewriter. In the upper left corner of the page he typed his last name, the number of the page and a one or two-word description (slug) of the story. The reporter started the first page of the story about one-third of the way down the page. Each paragraph was indented five spaces and margins of at least one-half inch were provided on each side of the paper. The typewritten manuscript (copy) was double or tripled spaced. If the story continued beyond one page, the word "more" was typed at the bottom of each subsequent page until the final page of the story was typed. The second and any subsequent pages also were numbered and had the last name of the reporter and a slug in the upper left corner. A sign such as "30" (#) or "endit" always was placed beneath the last paragraph of a story.²⁰

A reporter was not expected to type letter-perfect copy, but his story was to be readable. The reporter used the copy editing symbols to provide the copy editor a story which read smoothly and correctly. After he removed the story from the mechanical typewriter the reporter used a lead pencil to mark the copy with the appropriate symbols. If a word was crossed out, he pencilled a bridge over it from the preceding word to the word following the crossed-out word. If a sentence was eliminated, he connected the sentences on each side of the elimination

with a pencil mark. If a letter or word was not legible or correct, the reporter crossed out the illegible or incorrect letter or word and printed the correction above the crossed-out letter or word.²¹

When the reporter finished marking the story he or a copy boy (messenger) took the story to the copy desk. The editor in charge of the copy desk would mark in pencil on the first page of the story how many columns wide, the size of the type and how many lines of type the headline would be and upon what newspaper page the story would appear. The story then was given to a copy editor who was to edit the story and write the headline.

The copy editor had a pencil, scissors and paste and a mechanical typewriter. As he read the copy he applied copy editing symbols with his pencil to mark paragraphs, connect words and/or sentences, delete letters, words and/or sentences, make spelling, punctuation and grammatical corrections and to insert information where necessary. The copy editor placed many of his marks and his insertions in the double or triple spaces between typewritten lines. Most of the editing was done with a pencil, which demanded legible printing or handwriting, but some insertions were typed. The editor used his scissors and paste pot if he wished to change the order of the story and/or to place inserts in the story. Headlines were written by hand or on the typewriter on a separate sheet of paper or on the top one-third of the first page of the story, the space provided by the reporter. The headline and story were then placed in a pneumatic tube and were sent to the composing room to be set in type.²² Copy editors followed the same procedures when editing stories which were taken from the news wire services.²³

The editor in charge of the copy desk was responsible for designing

the appearance of each page. He designed (dummied) a page on an 8-by-10 inch white sheet of paper (layout dummy) which was a reduced-size version of the newspaper page. The sheet was marked in columns from left to right and in inches from top to bottom. With his pencil the editor in charge drew a facsimile of the ultimate page, providing precise instructions as to where headlines, stories, pictures and typographical devices such as rules and dashes would be placed. A dummy for each page was sent to the composing room where the appropriate stories, headlines, pictures and devices were assembled into the various pages.²⁴

The above procedures have been followed in most newsrooms, but the computer has been advancing steadily into the newsroom and predictions by persons in the communications field and in fields relevant to communications have indicated that newsroom procedure would change. The American Newspaper Publisher Association Research Institute (ANPA/RI) reported in March 1973 that there were 700 computers in use in the United States newspaper industry. The ANPA/RI did not report the exact number but did state that many of the computers were being used in the newsroom in the preparation of news.²⁵

The Detroit News has had perhaps the most automated newsroom of any major newspaper in the United States. Most News reporters have not been using mechanical typewriters and from 30 to 40 per cent of all copy, local and wire, has been handled without conventional typing or editing with paper and pencil. Wire news service stories have arrived on regular teletype lines at speeds of 60 words per minute, but rather than actuating a teletype printer the set of electrical impulses that has represented each key struck in the originating machine of the wire

news service, each story has gone directly into the computer memory of the News.

The local reporter has been seated at the console keyboard, which has been fingered like an electric rather than a mechanical typewriter, of a CRT. The CRT has a screen. The reporter has hit a key called SLUG and two blank lines have appeared on the screen. On these two lines he has instructed the computer where to send the completed story and has typed the first four letters of his last name, a description of the story, the edition the story is scheduled for and the date. He then has typed his story. As he has typed, his story has appeared on the screen. He has been able to delete or add to a line he has typed, using a set of command keys to move a cursor (a bright oblong of light) over the place he wished to alter. The reporter has typed in the change, and the screen has shown this and automatically has made room for the additions and has closed up for the deletions. He could move the story up on the screen to make more room or could roll it down to look for an earlier typed portion.

If the reporter was close to deadline he could send any length portion of the story to the copy desk by pressing a MORE key. If the reporter has the time to read over his entire story he could make whatever changes he believed were necessary. He then has pushed a key marked END which has sent the story into the computer.

The editor in charge of the copy desk could learn what stories were in the computer by pressing a key marked DIRECTORY. This has instructed the computer to display on the screen of the editor a list of all stories placed in the computer for use by his desk. Any story could then be called up on the screen for reading by the editor for final editing

with a pencil emitting a beam of light rather than a lead pencil, scissors or paste. When this process has been completed a key marked COMP ROOM has been pressed and the story has been sent into a computer that automatically has produced a coded paper tape at about 1,000 words per minute; the coded tape has been fed into machinery which at the conventional 14 lines per minute has produced the type. Headlines still have been handwritten and have been sent to the composing room to be set in type. The computerized procedure has allowed the News to move some copy deadlines back three to three and one-half hours without changing the time of delivery to newsstands and homes.²⁶

Among other newspapers where reporters and editors have turned from mechanical typewriters, lead pencils and gluepots to computer equipment have been the Trenton (N.J.) Times,²⁷ San Diego Union and Evening Tribune²⁸ and Augusta (Ga.) Chronicle and Herald.²⁹ VDTs have been used in the editing of copy at the Daytona Beach (Fla.) News Journal and reporters have composed copy on the VDT at the Huntington (W.Va.) Advertiser.³⁰ The Davenport (Ia.) Times-Democrat adopted an electronic system for editing and processing news and advertising copy in 1973. The newspaper has had a \$650,000 system which included 24 video typewriters and four CRT editing terminals.³¹ The Gannett Company has ordered a \$250,000 electronic newsroom system for its Cocoa (Fla.) Today newspaper that would include a new video typewriter. It would make possible an all electronic newsroom.³² As reported in Chapter I, a few large newspapers were using portable facsimile senders in 1970.³³ Teleram Corporation announced in 1974 that it has sold a number of Portable Reporter Terminals. The portable visual display terminal captured and transmitted the original keystrokes of the reporter who via telephone

line could transmit his story to the home office hard copy printers, a host computer or other editing devices in the electronic data handling systems of the newsroom. The portable was compact enough to fit under an airplane seat.³⁴

Some Differing Views of the Newspaper of the Future

The advent of computer technology into the newspaper industry has produced differing opinions as to what the future of the industry would be. To some all of this has indicated the end of the printed-on-paper newspaper. To others the demand for the printed-on-paper newspaper should continue, but the production of the newspaper would become more dependent upon computer technology. Merrill and Lowenstein predicted that during the next few decades the broadcast media would most likely take over more functions of the print media, leaving print in a completely subordinate position. They predicted that newspaper staffs would be under contract to provide news programming for Cable Antenna Television (CATV).

Ultimately each home would have a television screen and a finger-board full of keys somewhere in the room. A reader could use his keyboard to select for viewing a newspaper, magazine or book; he could select articles of particular interest; if he should come to a word he did not know or if he desired information about a person mentioned in the article, the reader could press a hold button to retain the article and push another button to receive the definition of the word or the background information about the person mentioned in the article. Newspapers, magazines and books would be designed as they have been except that reporters, writers and editors would need to produce only a single

copy for storage on a computer tape.³⁵

Distribution of the information product would be instant, individual and personal. The newspaper subscriber would receive a black box to place somewhere on his television set when he starts his newspaper subscription. The box would be his access to the information bank that his newspaper has maintained for him. The bank would be stored with information and each subscriber would be able to select whatever information he desired from the bank, receiving a printout of the story or a historical summary of conditions leading to that particular story or comments or opinions about the story subject matter or all of the information.³⁶

By 1979, give or take a year, newspapers, and perhaps magazines too, will be printed in your living room. This is the substance of a startling full page ad that appeared in 1970 in Advertising Age, the bible of Madison Avenue. The ad was inserted by McGraw-Hill in behalf of its electronics periodical . . . The ad went on: 'All it will take is a compact printout unit attached to an ordinary TV set. When you are ready for the stock market closings, ball games scores, or movie listings, you'll be able to get any part of it, or all of it, any hour of the day or night.'³⁷

Richard Tobin has agreed that the electronic newspaper would be very possible, but that the paper-and-ink newspaper also may continue. He made two points: (1) that the computer would be in the newsroom and would play a significant role, and (2) however the newspaper would come to the reader, those who edited the news inevitably would be more involved and beset by what would be transmitted than by the transmitting devices.

As to the first point, Tobin wrote about the devices. Almost one-third of the nation's daily newspapers already have been using computers to drive typesetting equipment and many others have been exploring or have adopted a form of offset printing similar to electronic printing,

photographic typesetting, high-speed data transmission computer automation. Eventually there could be no typesetters at all, no stereotypers, no pressmen or linotype operators as they have been known.

The VDT has been central to this change in publishing. The CRT has been the principal element in the VDT. In the newsroom the editor would sit before a CRT display terminal. He would use a keyboard to call onto the screen a story that has been stored earlier. He could edit the story as though he had a pencil in his hand, but the pencil he would hold emits light which could move across the screen to delete words or paragraphs, could write in changes and could shift lines around. If the editor changed his mind he could call back the story as it was before he started. When the editor was finished he would send the edited copy back into a memory disc or would send it to production for makeup.

Editing in this manner would be no faster than the present lead pencil, but when combined with an automated system of printing it would have unlimited applications. The production plant of the future would be an entirely automated computer complex. The main inputs to the computer complex would be by CRT terminals. There would be optical character recognition devices and graphics digitizing scanners that would convert photographs and artwork into digital forms for computers. Marked up copy would be sent to the computer with an OCR and editors would make up pages by manipulating copy, photographs and art work. The editors would use the CRT to shorten or lengthen stories and to change type faces or column measures. When the editors were finished the fully made up pages would be produced by computer-driven high-speed phototypesetters.

The reporter would type his story on his own typewriter display

screen connected directly to the computer. He could change and edit his story as he typed, calling back parts or the entire story. He could go to another display screen and could type a request to the library for background information on his story. In seconds he would have abstracts on the screen, and seconds later he would have full printouts of any of the stories he wished. When the reporter finished writing his own story he would send it to the computer where the editor could call for the story whenever the editor was ready.

On a big daily newspaper each department probably would have its own display terminals and would perform its own layout function. At some point the sports section, the family section, the business section and Page One would come together where an editor or makeup man would put together the edition of the newspaper by the use of the GRT. The editor or makeup man would approve each page and would send it for photo-composition, a process accomplished in seconds. The news department would control production. Proofreading would have been done before the text would be released by the news department and printing errors in a GRT system have been so rare that they could be tolerated.³⁸ General Manager Ron Rickman of the Davenport (Ia.) Times-Democrat reported that the editorial department of the newspaper would soon realize full operational control of the composing room, thus returning to the editors the responsibility they abdicated more than 100 years ago-- total responsibility for the product. The move to complete control was begun about eight years ago and all that has remained to achieve total newsroom control has been the elimination of paper tape and wiring together in an on-line mode and the direct feeding of all wire service materials into the computer system.³⁹

As to the second point of Tobin, he has said that if print and broadcast news distribution have joined hands technically, the age of news monopoly has become a reality. This has raised the question of centralization of power as fewer and fewer persons have been telling more and more persons what has been the news.

. . . regardless of the new techniques, and perhaps because of them, every journalist worth his salt has to be more vigilant than at any time since the founding of the Republic to be certain that 1984 is not what George Orwell gloomily foresaw.⁴⁰

Not everyone has seen the end of the print-on-paper newspaper, nor has the matter of ethics and responsibility been dismissed in the age of the computerized newspaper.

Despite television, radio, cable TV, the future of home facsimile, or a computer console that will furnish the latest sports, markets or weather reports at the touch of a button, the newspaper will be a vital part of every household of the 21st century if we design it for a new era.

This means a quality product. Quality means accurate responsible reporting . . . believable advertising and content that is typographically clean . . .⁴¹

John H. Colburn, vice president for corporate development of Landmark Communications, has been of the opinion that readers have been creatures of habit and would continue to demand newspapers for in-depth information. He has contended that most persons could not absorb information as readily from broadcast as they could from print. Colburn has warned that people would continue to demand newspapers only as long as the newspapers were visually attractive and contained current information which readers sought, needed and believed. The computerized newspaper could provide this visual appeal as it would allow more time to create page makeup; light pencils and optical scanners would allow the editor to assemble the news more quickly, would allow the editor to

wait longer before he decided what stories to use. This saving of time should be spent checking and insuring the accuracy of the news and its typographical presentation.⁴²

Robert G. Marbut, president of the Harte-Hanks Newspapers, Inc., has considered cable television, home communications systems and computer services as potential competitors of the newspaper. He has believed that people would continue to demand newspapers for at least the next 15 to 20 years because newspapers would possess unique characteristics that would satisfy the need for mass information in salvageable graphic form at a reasonable price. Marbut agreed with Colburn that computers would be everywhere in the newsroom and that the challenge would be to provide more visually attractive and more truthful and more accurate newspapers. He has envisioned big city newspapers following the lead of the Los Angeles Times by establishing satellite printing plants in the suburbs. The newspaper would retain most of the basic news-editorial content, but would have information of particular local interest to those persons in the suburbs. Suburban newspapers would add international and national news to the local news content. These advances would be made possible by the computer which would allow news to be gathered, assembled, edited and transmitted from a central plant to a satellite plant more rapidly than a separate edition for a particular suburb or a section of national and/or international news could be processed under present conditions.⁴³ A page could be transmitted from a central plant to a satellite plant about 50 miles away in four minutes.⁴⁴ Marbut has said that as long as newspapers would utilize the computer to advantage, such as in ways cited above, newspapers not only would remain as print-on-paper, but they would be profitable.⁴⁵ The

Christian Science Monitor with its editions of January 3, 1974, has launched a new facsimile transmission system between its Boston, Mass., headquarters and its remote printing plants in Glendale, Calif., Chicago, and Somerset, N.J. Officials of the Monitor have said the electronic transmission over telephone lines has eliminated sending pages by airplane and delays caused by airline strikes and bad weather at airports. Full pages could be transmitted at an average speed of five minutes per page and each edition would contain substantially fresher news.⁴⁶

Lyle Erb of Copley Newspapers, Inc., has said newspapers would utilize the new technology in the newsroom, and newspapers would continue to be demanded in their print-on-paper form because readers have relied on newspapers for opinions, interpretations, advice, rationales and entertainment. Erb has claimed that newspaper owners and publishers have not been investing in computerized equipment to pave the way for the electronic newspaper which could be viewed on the home screen, but that investments have been made to improve the print-on-paper newspaper.⁴⁷

In a study previously cited, Susan Turner Bennett asked editors and publishers to predict if and when a technological innovation would take place. Of 258 responses only 1.7 per cent said that page layout and design by computer would never take place, and 47 per cent were of the opinion it would take place by 1973 to 1975.⁴⁸ Development and testing of designs for a full page composition system have been underway at the Federal Systems Division of International Business Machine Corp. No date has been set for implementation of the three-year project.⁴⁹ The development of a Composition and Makeup Terminal (CAM) for the Newspaper

System Development Group (NSDG) was announced in May. The terminal would be part of an overall system which included an IBM 370 Host computer.⁵⁰ Mrs. Bennett reported that 4.5 per cent of the editors and publishers answered that computer abstraction of wire service news to 100-word summaries would never take place and 47.2 per cent said it would take place by 1973 to 1975;⁵¹ 21.9 per cent answered that copy editing by computer would never take place and 30.5 per cent answered it would take place by 1973 to 1975,⁵² and 15.5 per cent said that home facsimile transmission would never take place and 29.6 per cent answered that it would happen by 1976 to 1980.⁵³

There was a difference of opinion as to whether newspapers would be transformed from printed products to electronic information facsimiles transmitted for viewing on home screens or they would remain print-on-paper products. What did not seem to be questioned or disputed was that the computer would become a vital part of the newsroom operation. This lack of dispute was supported by the increase in computer equipment that has been brought into the newsroom and the investment that has been made on the development of computerized newsroom equipment.

Some Concerns of Management

The present application of computer technology in the newsroom and the newspaper industry and the projections that computer technology would become an increasingly vital part of the newsroom have been realities which have been of considerable concern to management in regard to economics, labor and the education and/or training of personnel. Dave West of the Trenton (N.J.) Times said reporters using electric

typewriters tended to go through a carbon ribbon in two or three days. At a cost of 80 cents each with approximately 100 electric typewriters, the ribbons could become a costly item.⁵⁴ More than 100 newsmen attended the first "Electronics Extras for the Newsroom" seminar of the American Newspaper Publishers Association (ANPA) in January 1973 for an updating in the use of computer technology and labor relations;⁵⁵ computerized aspects of newspapers were discussed in January 1973 at the Great Lakes Newspaper Mechanical Conference;⁵⁶ Texas newsmen attended a seminar in new printing techniques in November 1969,⁵⁷ and in June 1967 a seminar for newsmen was conducted at Colorado State University which included the use of computers in communication.⁵⁸ Since 1966 the ANPA/RI has brought together eminent scientists at Massachusetts Institute of Technology to focus specifically on newspaper technology programs.⁵⁹ In 1970 Knight Newspapers Inc. established a research division which will explore and develop advanced newspaper technology.⁶⁰

Robert Moyer, production manager of the Trenton (N.J.) Times, stressed the importance of management when he told the Great Lakes Newspaper Mechanical Conference in January 1973 that part of the solution to rising costs of producing newspapers was found in the proper detailing of management plans. He said this included the training of personnel in new techniques and utilizing a total systems approach from the typewriters of the reporters to the pressroom. This required high quality management planning, according to Moyer.⁶¹

In the next few years, all newspapers, large and small alike will be affected by time-sharing and the computer utility concepts. To appraise these new ideas with an open mind is absolutely necessary; to ignore them may be fatal.⁶²

[Time-sharing has been a method of operation in which a computer

utility has been shared by several users for different purposes, such as classified advertising, subscriber lists, accounting, seemingly at the same time. The computer has provided service to each user in sequence, but the high speed has made it appear that all users were being served simultaneously.]

The need for high quality management planning was emphasized further by the findings of Susan Turner Bennett in her 1971 Masters thesis at the University of Florida. The purchasing and leasing cost of computers was reported (18.6 per cent) as the second greatest disadvantage of computerization by publishers and editors surveyed by Mrs. Bennett.⁶⁴ She reported that 21.8 per cent of the respondents invested \$100,000 or more for computers and 48.1 per cent invested \$50,000 to \$100,000. Fifty-seven per cent of the newspapers with 10,000 or less circulation invested up to \$25,000.⁶⁵ It was reported that computer equipment could be leased for as little as \$100 a month to as much as \$5,000 a month. The largest percentage (31.8) of newspapers that reported that they leased computers paid between \$2,501 and \$5,000 a month.⁶⁶

The first and single greatest disadvantage of computerization cited by publishers and editors was the inability of the staff to use computers at their greatest efficiency.⁶⁷ Approximately 73.5 per cent of the respondents strongly agreed or agreed that computer short courses and seminars would be essential as electronic editing increases, and 62.8 per cent agreed strongly that college journalism instruction has been inadequate in teaching graduates how new technology can be utilized.⁶⁸

Predictions have been made that would seem to indicate more people would have a greater desire for more news and news suppliers should be

able to provide that greater quantity of news at greater speeds. Although there has been disagreement as to whether newspapers would remain as print-on-paper or become part of electronic information facilities, it has become apparent that in either case newsmen of the future would be required to utilize computer equipment in gathering, producing and disseminating the news.

The technological revolution in the newspaper industry already has begun as increasing use of computerized equipment by the newspapers in the United States has been reported and the indications have been that the newspapers have been able to process and to make available information more rapidly than ever before. The wire services, the suppliers of much of the news, have increased their gathering and disseminating of news by means of computerized equipment. The wire services' plans have indicated the speed of gathering and disseminating news should increase, thus, more news would be available. The newspapers not only have been receiving more news from the wire services at greater speeds than before, but the newspapers themselves have been increasing the use of computers in their newsrooms to produce more of their own stories at a greater speed than before.

As newspapers have been increasing the use of computerized equipment in their operations, newspaper publishers and editors have complained of the high cost of such equipment and the low efficiency of personnel who have used the equipment. One complaint has been the inadequate preparation of journalism program graduates in the new technology at a time when the new technology has grown in use and importance and has been expected to grow in use and importance in the newspaper industry.

The Role of Journalism Education

The preparation of the newsmen who would be part of and who in many cases would manage and direct the technological revolution in the newsroom has been to a great degree the responsibility of journalism education. As of the 1974 autumn session 55,078 students were majoring in journalism in four-year and graduate colleges and universities in the United States. This was 6,751 more students than in 1973, and in the past 10 years journalism enrollments have climbed from 15,820 to 55,078. The 1973 figures were gathered in a survey to which 158 journalism programs responded, whereas in 1974 responses were received from 164 journalism programs. There were 209 journalism units in colleges and universities in the United States.⁶⁹ In the 1973-74 academic year 7,667 of 10,549 graduates of journalism programs completed work in the news-editorial, advertising, broadcast or public relations sequences; 3,961 students (51.9 per cent) completed work in the news-editorial sequence.⁷⁰

Sixty, 59 undergraduate and one graduate, departments, schools and colleges of journalism have had news-editorial sequences that have been accredited by the American Council on Education for Journalism (ACEJ).⁷¹ ACEJ has represented educational and professional organizations in journalism and has been the formally recognized agency for the accreditation of journalism programs in institutions of higher learning in the United States.⁷² Among the stated objectives of ACEJ as written in the by-laws has been to aid in the co-ordination of educational programs with the needs of the profession.⁷³ Sequences accredited by the ACEJ have among their purposes the serving of a guide to prospective students who would

seek adequate preparation, to employers who would seek adequately trained personnel, to the public for worthy recognition and to promote closer relationship between journalism education and media men to better meet the educational and professional needs of the area the school or department serves.⁷⁴ An accredited sequence has been defined by ACEJ as an organized group of related courses intended to prepare students for professional careers in a particular area of journalism. The news-editorial sequence has an organized group of related courses which would prepare students for careers in newspaper reporting and editing.⁷⁵ News-editorial sequences which have not been accredited by the ACEJ were offered at 100 departments, schools and colleges of journalism, according to Journalism Educator.⁷⁶ If the ACEJ accredited news-editorial sequences have been assigned the goal of and have been expected to serve the needs of the news profession and provide adequately trained personnel for careers in reporting and editing, then it has seemed reasonable that newspaper publishers and editors could expect students prepared and educated at this time and in the future to perform the tasks demanded by the presence of computer technology in the newsroom.

Computer Technology Becomes Part of Journalism Education

The changes, the demands upon journalism education to provide instruction in newsroom technology and increased journalism enrollments have dictated have been indicated in a number of instances. A new \$3,000,000 plus journalism building, one part of the \$15,000,000 communications center at the University of Syracuse, opened in 1964 with provision for training students in computer technology.⁷⁷ Ohio State

University has included the new technology in its news journalism building⁷⁸ and began hands-on instruction on five VDTs during the summer session of 1973.⁷⁹ A new \$7,000,000 facility for the Journalism Department and the campus newspaper at San Fernando Valley State College in California, opened in 1966. A provision included in the budget was \$17,000 for composing room equipment including a Justewriter to punch line-justified tape.⁸⁰ An editing display system was among equipment provided for students at the University of South Carolina College of Journalism⁸¹ and a \$20,000 newsroom which include OCR-faced electric typewriters has been completed at St. Bonaventure University.⁸² Kansas State University and the University of Missouri at Columbia have added electronic editing terminals to their student newspapers.⁸³ Eighteen seniors and graduate students at the University of Arizona have been enrolled in a course in electronics and have been doing their assignments on CRT terminals. The course was conceived by the journalism department. The equipment has been loaned from an electronics corporation.⁸⁴ Some journalism school heads have been finding that newspapers with equipment may be in a position to allow journalism students to visit the newspapers at off-peak hours for hands-on practice with terminals and for viewing scanner operations.⁸⁵

The journalism faculty at West Virginia University has added more basic science and mathematics courses to all its sequences at the lower division level in an effort to encourage majors to take basic courses in computer science and statistics.⁸⁶ Some journalism professors have worked and/or were working on newspapers during summers or on leaves of absence.⁸⁷ Sixteen news-editorial sequence faculty members at the University of Florida attended a two-day seminar to update their

education in newspaper technology.⁸⁸

Instruction for Present and Future Newsmen

One indication of the demand for instruction in newsroom computer technology placed upon journalism education by newsmen and the importance newsmen have assigned to exposing students to such instruction has been found in a paper, "New Technology," presented to a conference "Education for Newspaper Journalists in the Seventies and Beyond" sponsored by the ANPA Foundation. The conference took place October 31 through November 2, 1973 at Reston, Va. The presenter John E. Leard, executive editor of the Richmond (Va.) Times-Dispatch and News Leader, has served as an adjunct faculty member in the journalism department of Virginia Commonwealth University in Richmond. He told the conference that when he taught a newspaper management course he had students visit a newspaper scanner operation and had them study the theory and application of it and video terminals and then plan how to use them and how to make them pay on theoretical newspapers.⁸⁹

The presentation by Leard mostly concentrated on how instruction in the new technology should be offered to journalism students. Newspaper newsmen and journalism educators agreed every student needed at least the elementary use of the electric typewriter. Suggestions offered by newsmen included working knowledge of the OCR, application of the computer and the concept of editing on CRTs, installations of CRTs, hands-on operation of scanners, CRTs and OCR in editing courses, lectures and demonstrations on the development and principles of the computer, hands-on use of terminals and familiarization with differences in equipment and how equipment could be best utilized.⁹⁰ Colburn⁹¹ and

editors H. Doyle Harvill of the Tampa (Fla.) Tribune and Robert Haiman of the St. Petersburg (Fla.) Times⁹² agreed that journalism schools should get into the technological revolution by providing instruction on electronic devices as soon as possible. They said students should have the opportunity to familiarize themselves with the new equipment they could have when they go to work. The first step would be to replace mechanical typewriters with electric typewriters.

Others have said investment in newsroom equipment by journalism programs was not necessary at this time. William D. Rinehart, director of the ANPA/RI, said he has seen no need to invest in costly equipment for the classroom as no machine could substitute for a well-trained journalist. "A poorly trained journalist will be just as lost behind a VDT as he is behind a typewriter," Rinehart said.⁹³ Peter Trigg, an Orlando (Fla.) Sentinel editor, said the current journalism school approach of explaining the use of the CRT and allowing students to view them in operation at newspapers would be sufficient at this time.⁹⁴

L. D. McAlister, managing editor of the Atlanta (Ga.) Journal, said he has seen no reason to teach courses in new technology. He said teaching of the new technology should be the job of the newspapers. The journalism educators should concentrate on teaching editing and reporting, according to McAlister.⁹⁵ At the ANPA Foundation conferences in Reston, Va., a majority of journalism educators favored some hands-on instruction for familiarization with the equipment, but chiefly students should be presented a description of the systems and their capabilities. Other suggestions included a comprehensive overview of production systems, a course in computer programming as an elective to a requirement in mathematics and concentration upon the skills of editing and reporting

rather than on technology.⁹⁶

Newsmen not only have expressed concern as to having students operate computerized newsroom equipment, but they have expressed concern at the lack of understanding students seem to have in regard to the utilization of the new technology. Some newsmen have been concerned about the lack of understanding for newspapers to operate efficiently in a technological society. The editors at the Southern Newspaper Publishers Association (SNPA) symposium in June 1972 expressed a desire to have computer science included in required liberal arts courses.⁹⁷ As reported in Chapter I, the Bennett study showed editors felt journalism graduates were not prepared in the understanding and utilization of the new technology.⁹⁸ The Associated Press Managing Editors Association reported in a 1972 study that journalism school graduates complained that they did not receive up-to-date information regarding developments in technology in the newsroom.⁹⁹ Colburn and Paul S. Swensson, executive director of the Wall Street Journal sponsored Newspaper Fund, Inc., cited the need for creating an awareness of managerial problems and responsibilities regarding computer technology among journalism students. Colburn stated that new technology will not replace human intelligence and that journalism education should train not only for new skills, but should do a better job of training the mind. "Humanistic understanding and insight must be blended with a grasp of our technological society," he stated.¹⁰⁰ Swensson viewed the newsmen of tomorrow as being a different kind of administrators, men who will be much better students of news and news management. "Include under news management the capacity to use computers in the newsroom as well as the business side," he stated.¹⁰¹ These views agreed with those of Moyer¹⁰² cited on page 30,

While executives in the newspaper industry have been calling for greater emphasis upon management courses in journalism programs, citing new technological developments as but one reason for this emphasis, the percentage of journalism schools and departments offering management sequences dropped from 18.3 per cent to 8.3 per cent during the 1960s. A study by George Everett at the University of Iowa showed that 67 journalism programs reported they were not offering management courses. Thirty-nine schools or departments with one or more sequences accredited by ACEJ offered management courses and 18 with one or more accredited sequences did not. The study did not indicate which management courses were in news-editorial sequences. Forty-five of the management courses were in news-editorial sequences. Forty-five of the management course titles did have the word "Newspaper" in the title. Twenty-four of the 67 not offering management courses did in the past and 20 had discontinued the courses in the past 10 years. The 67 programs that have been offering courses in management reported 125 management courses, an average of 1.87 each. Reasons for not offering management courses included lack of funds to support such courses, lack of personnel qualified to teach such courses, qualified personnel who cannot spare the time to teach the course, not consistent with the goals of the program and lack of student interest. Fourteen schools and departments which did not offer management courses and 22 which did offer management courses hoped to expand the number of management courses taught. Two programs that have been offering management courses planned to reduce the number.¹⁰³

Maxwell E. McCombs warned that understanding and using the computer in the newsroom is not the only challenge computers have presented to prospective journalists. McCombs said that government files and public

records, traditional sources of information, have been replaced completely by magnetic tape reels and record clerks by computer programmers. He has been of the opinion that as more emphasis has been placed upon in-depth and investigative reporting there should be an increase in emphasis placed upon educating prospective newsmen as to how to utilize computerized data as this data would be more readily available and a set of information could be collated rapidly in a meaningful manner. McCombs said the reporter could be more creative and flexible in the gathering and reporting of news, but that the creativeness and flexibility would be lost unless the reporter knew how to intelligently interrogate his technological news sources. The reporter also would be faced with legal and ethical problems, such as the right to use and the exercise of good taste in using certain data.¹⁰⁴

The Philadelphia Inquirer in 1973 published a series analyzing the Philadelphia court system. The reporters utilized comprehensive investigation and computer analysis of more than 1,000 persons accused of violent crimes in Philadelphia for their stories. A special computer program was designed by a member of the Washington Bureau of Knight Newspapers, Inc. Knight Newspapers, Inc. owns the Inquirer.¹⁰⁵

Educator Contacts with the Media

One aspect of preparing students for careers in newspaper reporting, editing and management has been bringing students in contact with professional newspapermen. Such contact has allowed students to learn from persons who have lived daily with the operations of newsrooms and with the interrogating of and gathering of information from technological news sources. As cited on page 34, one of the purposes of sequences

accredited by ACEJ has been to promote closer relationships between journalism education and media men to better meet the needs of the area the journalism school or department serves.¹⁰⁶ In 1962 DeWitt C. Reddick, then president of the American Association of Schools and Departments of Journalism (AASDJ), called for more interchange between professional media men and schools and departments of journalism. One of the reasons he cited for closer and greater contact was the advent of technology in mass communications.¹⁰⁷ Vincent S. Jones, executive director of the Gannett Newspapers, stated in 1969 that there was too little contact between the men who teach journalism and those who employ journalism students.¹⁰⁸ The lack of adequate communication between journalism schools and departments and newspapers was a major point cited at a June 1972 SNPA Foundation symposium at the University of South Carolina. A conclusion reached at the symposium attended by journalism deans and department heads and newspaper editors was that more visits by newsmen to classes and more visits by professors and students to newspapers should take place so students and instructors would know how things really have been in the newsroom.¹⁰⁹ The matter of instructors knowing how things really have been in the newsroom has been of concern to Curtis MacDougall, professor emeritus, Medill School of Journalism, Northwestern (Illinois) University. He has maintained that journalism schools have been filling their faculties with Ph.D.s who have been theory oriented and have little or no newsroom experience. The result has been an increasing gap between the reality of the professional newsroom and reporting and editing courses.¹¹⁰

Cost to Journalism Programs

Another gap between the reality of the newsroom and the classroom has been apparent when the matter of providing CRTs, VDTs and other computerized newsroom equipment for journalism students has been mentioned. William R. Lindley reported in 1970 that the teaching of typography meant the expense of maintaining laboratories and the added cost of keeping up with production innovations.¹¹¹ Newspapers have spent thousands of dollars to purchase and lease computers.¹¹² Some educators at the ANPA convention in Reston, Va., suggested that the latest devices should be provided in journalism programs for teaching, but several pointed out that budgets for such equipment are tight or non-existent.¹¹³ Dean John Paul Jones of the University of Florida College of Journalism & Communications said he has maintained a wait-and-see attitude because the machinery has been changing too fast to make it practical to invest large sums of money for equipment which may be obsolete in a year.¹¹⁴ Colburn, a strong believer in having journalism programs provide students with computerized newsroom equipment, estimated that it would cost perhaps \$400,000 to \$500,000 to equip a journalism school for entry into the computerized newsroom technology, with perhaps an additional \$25,000 annually for supplies, maintenance and upkeep.¹¹⁵ For some years to come many institutions would not be able to or ready to make the financial and other commitments necessary to keep pace with the computer revolution.¹¹⁶ Colburn said that some way should be found to provide students with opportunities to operate new devices. He suggested that universities obtain advice on equipment from the ANPA/RI, obtain some equipment from companies replacing theirs, solicit financial support from publishers through the state

press associations and "put leverage on the legislatures to appropriate money on the same basis as they did to equip expensive broadcast equipment."¹¹⁷ One means journalism educators have to provide hands-on instruction of computerized newsroom equipment has been the Gannett Newspapers technology van. Gannett Personnel Director Gerald M. Sass learned during his 12,000-mile tour of a dozen journalism programs in 1973 that journalism educators have been concerned about how to teach the new technology but believed that costly installations of fast-changing equipment could not be economically justified. Sass reported his findings to the officers and trustees of the Gannett Foundation. The result was the funding by Gannett of \$280,000 to construct and equip a mobile technological van, and an annual operating budget of \$170,000. The van has electric typewriters, an OCR, VDTs, a keyboard photo headline machine, a darkroom with a camera able to reproduce an entire newspaper page and a small offset press capable of printing a tabloid-size newspaper page.¹¹⁸ The van has begun what is expected to be a three-year tour of 100 or more journalism programs to provide journalism students with hands-on instruction in newspaper computer technology.¹¹⁹

The pressure to provide instruction in the operation and utilization of the computer has been upon all of higher education, not only journalism education. Many students in many disciplines would need to use the computer in their work. Computer efficiency has multiplied faster than costs. Initially the computer has been costly, but this cost could be reduced by the use of time-sharing.¹²⁰ A computer could be rented. The cost of the computer should include salaries of any personnel involved, training of faculty members who would operate and

utilize the computer, creation of programs, supplies, maintenance and the value of the space taken by the computer and peripheral devices.¹²¹

Warren Agee, dean of the School of Journalism, University of Georgia, said that journalism programs might find administrators more receptive to big budget items such as OCRs if they showed that such equipment could also be used by other departments.¹²²

The improper use of the computer could, in a sense, increase the cost, as indicated by Thomas M. Gallie.

In two months, one can train a bright high school graduate how to operate a large computer skillfully. Surely colleges should not concern themselves with this type of vocational training. To teach button-pushing as an introduction to computing would be equivalent to beginning a college journalism curriculum with a course on the use and maintenance of the typewriter. Both computer button-pushing and typing skills are very useful kinds of knowledge, but the former does not define a computer any more than the latter tells us what journalism is.¹²³

What the journalist should do in using the computer would be to think in terms of ideas. He should understand the computer is a language, and he should know what the computer can do, how the computer can do it and how by expressing the ideas in a clear and forceful language he could make the computer perform the desired task.¹²⁴

A 1970 The Quill survey indicated the importance of costs to journalism educators as reflected in the response of 46 journalism school deans and directors. Enrollments in 44 of the 46 schools increased an average of 78 per cent from 1966 to 1970; the average increase in faculty was to and one-half persons; in 20 of the 46 schools and departments the tight faculty personnel situation has meant staying with programs that have been developed previously and thus new ideas and innovations were slow to originate. The education problems in 31 of the programs were caused by a tight budget, at 22 by lack of staff, at 13 by low salaries

and at 23 by increased enrollment. A lack of classroom and journalism laboratory space was critical in nine schools.¹²⁵ Journalism enrollments in the past 10 years have climbed from 14,624 to 48,327.¹²⁶

The review of the literature indicates that some changes have taken place and more would seem necessary if journalism education would have a place in the computer age of the newspaper industry. Professor Leslie G. Moeller of the University of Iowa journalism faculty wrote in 1968 that if journalism schools were to take on a new approach to meet the needs of the computer age, substantial changes in curriculum emphasis were needed. He stated that it would mean a change in orientation for faculty, a mental retooling for and a supplementary education for faculty members. Moeller wondered if the sixth graders in 1968 were learning to program FORTRAN, what about journalism faculty members.¹²⁷

Reports have indicated some efforts by journalism schools to provide instruction in newsroom computer technology to students at the journalism school and at commercial newspapers and that some journalism faculty members have attempted to upgrade their education in newsroom computer technology. Problems which have been reported as associated with instruction in newsroom technology have been high cost of the equipment, tight journalism program budgets, contacts between journalism programs and newspapers, faculty members adequately prepared in newsroom technology, space in journalism facilities and rising journalism enrollments.

As reported previously newspapermen have disagreed as to what instruction in the new technology should be provided to journalism students and how that instruction should be provided. Some have claimed hands-on

instruction has not been necessary, but that an awareness of the new technology through explanation and the viewing of equipment in operation has been necessary. Newsmen do seem to agree that whatever instruction there has been has been inadequate.

As yet there has been no single body of information gathered from journalism educators which has described what newsroom computer equipment has been available to journalism school students, what instruction and how that instruction in newsroom technology has been offered, what instruction would be desirable and what instruction probably would be like in the future. There has been no single body of information gathered from journalism educators which has described how the provision of instruction in the new technology has been related to cost of equipment, tight journalism budgets, contacts between journalism programs and newspapers, adequacy of faculty preparation in news technology, space in the journalism facility and increasing journalism enrollments. No indication has been offered as to whether there is a difference between instruction in newsroom technology in accredited and non-accredited news-editorial sequences. At a time when there has been a need for and indications of a future need for newsmen who would be able to utilize newsroom computer technology, there has been lack of information gathered from journalism educators describing instruction in newsroom computer technology in news-editorial sequences in journalism departments, schools and colleges.

ENDNOTES

¹Ben H. Bagdikian, The Information Machines (New York, 1971), pp. 62-68.

²Merit Student Encyclopedia (New York, 1969), XV, p. 529.

³Bagdikian, p. 63.

⁴Ibid.

⁵Ibid., p. 64.

⁶Ibid., p. 68.

⁷George Wilt, "Growth of New Production Processes Are Detailed," Editor & Publisher, CVI (March 17, 1973), pp. 14, 42.

⁸Jules Tewlow, "Time Sharing and the Newspaper of Tomorrow," American Newspaper Publishers Association Research Institute Bulletin, No. 951 (New York, April 1, 1968), p. 101.

⁹"Florida Papers Use Computer to Control Ad Production," Editor & Publisher, CIV (September 18, 1971), p. 18.

¹⁰"The Story of Computerized Typesetting," The Gannetteer (November, 1967), p. 9.

¹¹"All Department EDP System," Editor & Publisher, CIV (September 11, 1971), pp. 29, 30.

¹²"Where the Past is Prologue: Library Has 'Tomorrow Look'," Editor & Publisher, CII (October 25, 1969), p. 17.

¹³"Computer Used For Storage and Retrieval of Wire News," Editor & Publisher, CVI (March 10, 1974), p. 25.

¹⁴"AP Putting Computer on News Wire," Editor & Publisher, XCVII (July 11, 1964), p. 12.

¹⁵Tony Brenna, "UPI Achieves 'Speedy' New TTS Technique," Editor & Publisher, XCIX (February 12, 1966), p. 9.

¹⁶"UPI Installs Photo Scan Converter," Editor & Publisher, CVI (February 10, 1973), p. 55.

- 17 "UPI to Start VDT Link-up of U.S. Bureaus," Editor & Publisher, CVII (March 16, 1974), p. 11.
- 18 "Gallagher's Annual Report to AP Members," Editor & Publisher, CVI (March 3, 1973), p. 16.
- 19 "Rundown on AP's Year Reported by Gallagher," Editor & Publisher, CVII (February 16, 1974), p. 32.
- 20 M. L. Stein, Reporting Today: The Newswriter's Handbook (New York, 1971), p. 47.
- 21 Ibid., p. 79.
- 22 Bruce Westley, News Editing (Cambridge, Mass., 1953), pp. 8-21.
- 23 Ibid., p. 193.
- 24 Ibid., pp. 297, 298.
- 25 Wilt, pp. 14, 42.
- 26 Ben H. Bagdikian, "Publishing's Quiet Revolution," Columbia Journalism Review, XII (May/June, 1973), pp. 7-15.
- 27 Donald P. Delany, "OCR Composing Faster; Capability for Editing Lower," Editor & Publisher, CVI (June 9, 1973), p. 82.
- 28 "Copley's San Diego Dailies to Move to \$24 M Offset Plant," Editor & Publisher, CVI (December 8, 1973), p. 12.
- 29 Tom Hils, "Georgia Newspaper Pioneers News-oriented VDT System," Editor & Publisher, CVI (November 10, 1973), pp. 53, 56.
- 30 "Copy Control Enhanced by VDT's, Editors Learn," Editor & Publisher, CIV (October 23, 1971), p. 36.
- 31 Gerald B. Healey, "Davenport's All-VDT System Sets Newsroom Back 100 Years," Editor & Publisher, CVII (March 30, 1974), pp. 14, 80.
- 32 "Harris Equips Gannett Daily with Electronic News System," Editor & Publisher, CV (February 2, 1972), p. 9.
- 33 Bagdikian, The Information Machines, introduction, p. xxvi.
- 34 "Reporter in the Field to Go 'On/Line' Via Terminal," Editor & Publisher, CVII (May 18, 1974), p. 3.
- 35 John C. Merrill and Ralph Lowenstein, Media, Messages, and Men (New York, 1971), pp. 257-264.
- 36 Carlyle Reed, "The Twenty-First Century Newspaper," Seminar (December, 1967), pp. 13-15.

- 37 Richard L. Tobin, "Publishing by Cathode Ray Tube," Readings In Mass Communication, Concepts and Issues In The Mass Media (Dubuque, Iowa, 1972), p. 175.
- 38 Ibid., pp. 175-180.
- 39 Healey, pp. 14, 80.
- 40 Tobin, p. 181.
- 41 John H. Colburn, "Why Are Content and Display Vital? We've Only Scratched the Surface," The Quill, LVIII (August, 1970), p. 13.
- 42 Ibid.
- 43 Robert G. Marbut, "Newspapers' Future Bright...with Some 'Ifs' in Picture," Editor & Publisher, CIV (November 13, 1971), pp. 56, 58, 60.
- 44 Stanford Smith, "Communication Technology and the World Press," American Newspaper Publishers Association Research Institute Bulletin, No. 967 (New York, August 30, 1968), p. 327.
- 45 Marbut, p. 60.
- 46 "Christian Science Monitor Begins Electronic Transmission of Pages," Editor & Publisher, CVII (January 5, 1974), p. 13.
- 47 Lyle Erb, "The Sky Is Not Falling, A Calm View of the New Technology," The Quill, LIV (December, 1966), pp. 20-23.
- 48 Susan Turner Bennett, "The Computer Revolution And The Modern Newspaper: A Descriptive Survey of Computer Use In The Nation's Press" (unpub. Master's Thesis, University of Florida, 1971), p. 151.
- 49 "Tests Underway on IBM's Page Make-up System," Editor & Publisher, CVII (January 12, 1974), p. 36.
- 50 Jan Levinthal, "Full-page Make-up System for NSDG," Editor & Publisher, CVII (May 4, 1974), pp. 18, 23.
- 51 Bennett, p. 154.
- 52 Ibid., p. 169.
- 53 Ibid., p. 159.
- 54 "Copy Control Enhanced by VDT's, Editors Learn," Editor & Publisher, p. 36.
- 55 "New Technology Demonstrated at ANPA Seminar," Editor & Publisher, CVI (January 13, 1973), p. 38.

⁵⁶"Scanners Topic at Great Lakes," Editor & Publisher, CVI (January 13, 1973), p. 40.

⁵⁷Hal Cunningham, "Newsmen Attend Classes; Learn Offset Techniques," Publishers' Auxiliary, CIV (November 29, 1969), p. 24.

⁵⁸"Opportunities for Continuing Education of Experienced Newsmen," The Quill, LV (June, 1967), p. 59.

⁵⁹"What's the News About Newspapers," The Quill, LVII (March, 1969), p. 23.

⁶⁰"Research Division Explores New Technology for Knight Papers," Publishers' Auxiliary, CV (September 5, 1970), p. 19.

⁶¹"Benefits of OCR Depend on All-out Managerial Plan," Editor & Publisher, CV (January 15, 1972), p. 39.

⁶²Tewlow, p. 84.

⁶³Ibid., p. 90.

⁶⁴Bennett, p. 132.

⁶⁵Ibid., p. 98.

⁶⁶Ibid., p. 103.

⁶⁷Ibid., p. 132.

⁶⁸Ibid., pp. 211, 212.

⁶⁹Paul V. Peterson, "J-enrollments Keep Climbing, 55,000 Mark Surpassed," Journalism Educator, XXIX (January, 1975), p. 3.

⁷⁰Ibid., pp. 3, 6.

⁷¹"ACEJ Accredited Sequences, News-Editorial," Journalism Educator, XXVIII (January, 1974), p. 31.

⁷²"Accrediting Authority, Activities and Standards," 1973-74 Accredited Programs in Journalism, American Council on Education for Journalism, p. 3.

⁷³Ibid., p. 4.

⁷⁴Ibid., p. 5.

⁷⁵Ibid., pp. 9, 10.

⁷⁶"Schools and Departments of Journalism," Journalism Educator, XXVIII (January, 1974), pp. 32-59.

77 "\$15 Million Newhouse Center Dedicated," The Quill, LII (September, 1964), p. 30.

78 John E. Leard, "New Technology," Proceedings: Education for Newspaper Journalists in the Seventies and Beyond (Washington, 1974), p. 151.

79 John J. Clarke, "Ohio St. Teaches Students How to Use VDT Terminals," Editor & Publisher, CVII (July 13, 1974), p. 40.

80 DeWayne B. Johnson, "Cold Type--Hottest Thing on Campus!" The Quill, LIV (February, 1966), pp. 10-13.

81 "News of Journalism Education, Schools and Departments," Journalism Educator, XXIX (July, 1974), p. 29.

82 Ibid., p. 28.

83 "Student Papers Purchase CRTs," Editor & Publisher, CVI (February 10, 1973), p. 36.

84 "J-students Adapt Readily to CRT Editing Routine," Editor & Publisher, CV (April 8, 1972), p. 35.

85 Leard, p. 151.

86 "News of Journalism Education, Schools and Departments," Journalism Educator, XXVI (Spring, 1971), p. 26.

87 Robert J. Cranford, "Moonlighting, It Keeps a Professor in Touch," The Quill, LV (March, 1967), p. 19.

88 "Teachers Try CRT Editing in Seminar at Newspaper," Editor & Publisher, CIII (October 24, 1970), p. 33.

89 Leard, p. 148.

90 Ibid., pp. 148-150.

91 "How Is Technology Changing the Newsroom and Journalism Education," ASNE Looks at Journalism Education (Athens, Ga., January 26-28, 1973), p. 6.

92 John Roosenraad, "Amid CRT Revolution Keep Those Old Glue Pots," Journalism Educator, XXVIII (July, 1973), pp. 48, 49.

93 "ANPA Tells J-educators to Stress Fundamentals," Journalism Educator, XXVIII (July, 1973), pp. 27, 28.

94 Roosenraad, pp. 48, 49.

95 Leard, p. 148.

96 Ibid., p. 149.

⁹⁷Lloyd W. Brown, Jr., "Editors Criticize J-schools' Curricula at Symposium," Editor & Publisher, CV (June 24, 1972), pp. 9, 10, 42.

⁹⁸Bennett, p. 211.

⁹⁹John L. Dougherty, "Graduates Cast a Critical Eye on Their Journalism Courses," Associated Press Managing Editors News, XXV (August, 1972), pp. 1-3.

¹⁰⁰John H. Colburn, "Journalism Education--At a Crossroad," The Quill, LVII (April, 1969), pp. 26, 27.

¹⁰¹Paul S. Swensson, "The Newsmen of the Future," The Quill, LV (June, 1967), pp. 62, 63.

¹⁰²"Benefits of OCR Depend on All-out Managerial Plan," Editor & Publisher, CV (January 15, 1972), p. 39.

¹⁰³George Everett, "Management in the Curriculum: Time for Revival," (Iowa City, Iowa, January 27, 1970).

¹⁰⁴Maxwell E. McCombs, "New Sources of News: Exploiting Local Data," News Research For Better Newspapers (New York, March, 1971), pp. 123-125.

¹⁰⁵"Series Reveals Unfairness in Criminal Court System," Editor & Publisher, CVI (March 10, 1973), p. 12.

¹⁰⁶"Accrediting Authority, Activities and Standards," p. 5.

¹⁰⁷"A Time for New Articles of Partnership...Between Professional Journalists and Journalism Educators," The Quill, L (November, 1962), pp. 49-52.

¹⁰⁸Vincent S. Jones, "Three Major Problems of Today's Press," The Gannetteer (April, 1969), pp. 31-33.

¹⁰⁹Brown, pp. 9, 10, 42.

¹¹⁰Curtis D. MacDougall, "J. Educators Should Be Required to Have 5 Years Media Experience," Journalism Educator, XXVIII (July, 1973), pp. 12-14.

¹¹¹William R. Lindley, "Typography's Trivial Place in Schools of Journalism," Journalism Educator, XXV (Summer, 1970), pp. 5, 6.

¹¹²Bennett, pp. 98, 103.

¹¹³Leard, p. 149.

¹¹⁴Roosenraad, pp. 48, 49.

¹¹⁵"How Is Technology Changing the Newsroom and Journalism Education," p. 6.

- ¹¹⁶John Caffrey and Charles J. Mosmann, Computers On Campus, A Report to the President on Their Use and Management (Washington, 1967), p. introduction vi.
- ¹¹⁷Leard, p. 151.
- ¹¹⁸"Tech Van, on the Move," The Gannetteer (May, 1974), pp. 3, 4.
- ¹¹⁹"Streakers Are Outpaced by Newsroom Mobile Lab," Editor & Publisher, CVII (July 13, 1974), p. 36.
- ¹²⁰Caffrey and Mosmann, pp. 9-14.
- ¹²¹Ibid., pp. 86-94.
- ¹²²Leard, p. 152.
- ¹²³Thomas M. Gallie, "What Is a Computer?" The Impact of the Computer on Society (Chapel Hill, N. C., 1966), p. 15.
- ¹²⁴Ibid., pp. 16, 17.
- ¹²⁵Clarence O. Schlaver, "Too Many Bodies, Too Little Money--J-Deans Worry but Carry On," The Quill, LIX (January, 1971), pp. 8-11.
- ¹²⁶Peterson, p. 3.
- ¹²⁷Leslie G. Moeller, "Journalism Education, the Media and 'the New Industrial State'," Journalism Quarterly, XLV (Autumn, 1968), pp. 496-508.

CHAPTER III

METHODOLOGY

This study was concerned with the lack of information as to the instruction which has been provided in newsroom computer technology in both the American Council on Education: in Journalism (ACEJ) accredited news-editorial sequences and the non-accredited news-editorial sequences in departments, schools and colleges of journalism in the United States. At present there has been no clearly defined body of information as to how students in ACEJ accredited and non-accredited news-editorial sequences in departments, schools and colleges of journalism have been prepared in newsroom computer technology. This investigator designed this study to gather information which would provide a description of what instruction has been provided in newsroom computer technology in accredited and non-accredited news-editorial sequences and would offer a comparison of that instruction. The study was designed to gather opinions of top administrators of journalism programs in regard to problems confronting their programs in attempting to provide instruction in newsroom computer technology. The opinions of top administrators of programs having accredited news-editorial sequences were compared with the opinions of top administrators of programs having non-accredited news-editorial sequences. It was anticipated that data gathered in the study would provide information as to what top administrators believed would be the ideal in offering

instruction in newsroom computer technology and what instruction top administrators predicted would be offered in 1980 in newsroom computer technology. The gathering of such data allowed the investigator to compare what present instruction has been offered to what would be the ideal instruction offered to what has been predicted would be the instruction offered in 1980 in newsroom computer technology. The comparisons were offered within the accredited news-editorial sequences and within the non-accredited news-editorial sequences and between the accredited and non-accredited news-editorial sequences. The investigator gathered the information by sending survey questionnaires by mail to top administrators of journalism programs. The survey questionnaires employed demographic items, Likert scale items and open-ended items to gather the information. The study was designed to provide a clearly defined body of information describing instruction offered at present in newsroom computer technology in accredited and non-accredited news-editorial sequences. The investigator anticipated that information and opinions gathered would allow for the drawing of conclusions which would be helpful in the provision of instruction in newsroom computer technology in accredited and non-accredited news-editorial sequences in the future.

The Subjects

The subjects surveyed in this study were the top administrators of schools, departments and colleges of journalism which had accredited and non-accredited news-editorial sequences. The January 1974 Journalism Educator reported there were 60 departments, schools and colleges of journalism which had ACEJ accredited news-editorial sequences. Fifty-

nine of the accredited sequences were in undergraduate programs and one accredited sequence was in a graduate program.¹ All 60 of the top administrators of the journalism programs which had ACEJ accredited news-editorial sequences were surveyed in this study. According to the January 1974 Journalism Educator there were 100 departments, schools and colleges of journalism which had non-accredited news-editorial sequences.² The investigator selected at random 60 of the 100 top administrators of journalism programs which have non-accredited news-editorial sequences as subjects of this study. Each of the 100 journalism programs which had a non-accredited sequence was assigned a number from 1 to 100 and 60 of these numbers were drawn at random. The 60 numbers drawn at random represented the top administrators of the 60 journalism programs having non-accredited news-editorial sequences which were surveyed in this study and which were matched with 60 subjects in like positions in the 60 journalism programs which had ACEJ accredited news-editorial sequences.

A top administrator of a school, department or college of journalism had the title of dean, head, chairman or director of a school, department or college of journalism. A top administrator was neither a subordinate to nor supervised by any other member of the journalism program faculty. The top administrator was in charge of and responsible for all of the instruction offered in all of the journalism program sequences, including the news-editorial sequences, was the supervisor of all journalism program faculty members and was responsible for their hiring, firing and class teaching assignments.

As previously reported the study was limited to the 60 top administrators of journalism which had ACEJ accredited news-editorial sequences

because there are 60 such programs and to 60 top administrators of journalism programs which had non-accredited news-editorial sequences because the investigator believed it was not necessary to survey the 100 non-accredited news-editorial sequences to provide a representative description of instruction in newsroom computer technology in non-accredited sequences. The investigator selected at random 60 top administrators of journalism programs which had non-accredited news-editorial sequences to match the 60 top administrators of journalism programs which had ACEJ accredited news-editorial sequences.

The study included only journalism educators and not newspaper personnel because the study sought the descriptions, opinions and predictions of journalism educators in regard to newsroom computer technology instruction and not the descriptions, opinions and predictions of newspaper news personnel in regard to instruction in newsroom computer technology. The investigator wanted to provide a clearly defined body of information regarding instruction in newsroom computer technology according to journalism educators, who have been responsible to provide such instruction, and not according to newspaper news personnel.

The investigator assumed journalism educators were capable of determining what instruction in newsroom computer technology was necessary to prepare students for positions on news staffs of commercial newspapers.

The investigator assumed the comparison between accredited and non-accredited sequences would indicate the accredited sequences were offering students more exposure to and hands-on use of newsroom computer equipment and greater contact with professional newsmen than non-accredited sequences because of various aspects of a sequence being

accredited.

The investigator assumed that the subjects to be surveyed will respond to the questionnaire with objectivity and responsibility. Based upon this assumption the investigator deemed it unnecessary to reverse the direction of Likert scale item responses at any point or points in the survey questionnaire. All questionnaire Likert item responses were stated as Strongly Agree, Most Desirable, Most Likely and of Great Significance from the left polar extreme to Strongly Disagree, Least Desirable, Least Likely and No Significance at the right polar extreme.

The Instrument

The investigator designed a six-part survey questionnaire. Part I, Characteristics of Responding Sequences, was structured to gather demographic information about news-editorial sequence faculty and courses and the availability of newsroom computer equipment to news-editorial sequence students. A five-point Likert scale with polar extremes was constructed and was used in Parts II, III, IV and V. Part II, Present Practices, was concerned with present instruction, Part III, Desirable Practices, was concerned with what would be desirable as to instruction, Part IV, Predicted Practices, was concerned with predictions as to what instruction would be in 1980 and Part V, Obstacles to Present Practices, was concerned with obstacles which exist in the provision of instruction in newsroom computer technology at present. Part VI had three open-ended items. The items asked top administrators for specific examples of present instruction, plans for future instruction and offered an opportunity to make any comments the top administrators choose. The questionnaire items were drawn from materials presented in Chapter I,

Introduction, and Chapter II, Review of the Literature, of this study.

Part I, Characteristics of Responding Sequences, of the questionnaire was structured to gather demographic information and information regarding certain aspects of the instruction offered at present in newsroom computer technology in the news-editorial sequence in journalism departments, schools and colleges. Items were structured to gain information as to the name of the university, the number of students enrolled in the news-editorial sequence, the number of faculty who taught courses in the news-editorial sequence, how many faculty were full-time, how many faculty were part-time, what was the academic rank held by full-time and part-time faculty, what was the highest degree held by full-time and part-time faculty, whether courses in reporting, editing, production/typography and newspaper management were offered in the news-editorial sequence, which of the four courses were required, and in which of the four courses instruction was offered in newsroom computer technology, whether a course in computer science was required of all news-editorial majors and if yes what department offered the course under what title, whether the news-editorial sequence offered a course in newspaper technology and if it was required, what newsroom computer equipment was available to news-editorial sequence students, in what quantities the equipment was available and where the equipment was available, in the classroom, the laboratory and/or the student newspaper. Top administrators were asked whether news-editorial students have had an opportunity to have hands-on instruction with newsroom computer equipment at commercial newspapers, whether news-editorial students have viewed newsroom computer equipment in operation at commercial newspapers and whether news-editorial students have been required to

extract data from a computer for story assignments. If the answer to the preceding three items was no, the top administrator was asked to explain briefly why.

A five-point Likert scale with polar extremes was constructed and was used to gather information in Parts II, III, IV and V of the questionnaire. Part II, Present Practices, of the questionnaire had items which were concerned with present instruction in newsroom computer technology in the news-editorial sequence in journalism departments, schools and colleges. The items were concerned with whether verbal explanation of newsroom computer equipment was all that was necessary at this time, whether viewing newsroom computer equipment in operation was necessary at this time, whether hands-on instruction of newsroom computer equipment was necessary at this time, whether electric typewriters should replace mechanical typewriters at this time, whether newsroom computer equipment such as CRTs, OCRs and VDTs were necessary at this time, whether contact between the journalism program and the newspapers was adequate and if the contact was adequate what programs and means were provided to achieve adequacy, and if the contact was not adequate what programs and means should be provided to achieve adequacy and whether the teaching of newsroom computer technology was the responsibility of the newspapers, not the journalism programs. Top administrators were asked to respond to each item by checking the most appropriate response on a five-point Likert scale of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree.

Part III, Desirable Practices, of the questionnaire had items which were concerned with what instruction in newsroom computer technology was most desirable, that if the top administrator faced no obstacles what

instruction in newsroom computer technology in the news-editorial sequence in journalism departments, schools and colleges should and would be provided. The items were whether instruction in newsroom computer equipment should be provided by explanation, whether instruction in newsroom computer equipment should be provided by viewing newsroom computer equipment in operation, whether instruction in newsroom computer equipment should be hands-on instruction, whether electric typewriters should replace mechanical typewriters, whether investment should be made in all kinds of newsroom computer equipment, whether news-editorial students should be required to extract data from computers for story assignments, whether a computer science course should be required, whether the news-editorial sequence should offer its own newspaper technology course, whether the news-editorial sequence should have a newspaper management course, whether news-editorial students should visit commercial newspapers at off-peak hours to have hands-on instruction in newsroom computer equipment, whether contacts between the journalism program and newspapers should be increased and whether the teaching of newsroom computer technology should be the responsibility of the newspapers, not journalism programs. Top administrators were asked to assume that no obstacles would exist in the provision of instruction in newsroom computer technology and to respond on a five-point Likert scale of Most Desirable, Desirable, Neutral, Not Desirable and Least Desirable.

Part IV, Predicted Practices, of the questionnaire had items which were concerned with what top administrators believed would be taking place in 1980 in the provision of instruction in newsroom computer technology in the news-editorial sequence in journalism departments,

schools and colleges. The items were concerned with whether instruction in newsroom computer equipment would be provided by explanation, whether instruction in newsroom computer equipment would be provided by viewing newsroom computer equipment in operation, whether instruction in newsroom computer equipment would be hands-on instruction in the journalism facility, whether electric typewriters would replace mechanical typewriters, whether investments would be made in all kinds of newsroom computer equipment, whether news-editorial students would be required to extract data from computers for story assignments, whether a computer science course would be required, whether the news-editorial sequence would have its own newspaper technology course, whether the news-editorial students would visit commercial newspapers at off-peak hours to have hands-on instruction with newsroom computer equipment, whether contact between newspapers and the journalism program would increase and whether the teaching of newsroom computer technology would become the responsibility of the newspapers rather than journalism programs. Top administrators were asked to respond to each item by checking the most appropriate response on a five-point Likert scale of Most Likely, Likely, Neutral, Not Likely and Least Likely.

Part V, Obstacles to Present Practices, of the questionnaire was concerned with the obstacles which confronted top administrators in the provision of instruction in newsroom computer technology at present in the news-editorial sequence in journalism departments, schools and colleges. The items were concerned with the obstacles of cost of newsroom computer equipment, the journalism program budget, the competence of the faculty members in newsroom technology, contact between the newspapers and the journalism program, the lack of space in the journalism facility

and the increased enrollments in the journalism program. Top administrators were asked to respond to each item by checking the most appropriate response on a five-point Likert scale of Great Significance, Significance, Neutral, Little Significance and No Significance.

Three open-ended items were the final part of the questionnaire. The first of the three items requested specific examples of instructional opportunities in newsroom computer use such as laboratory assignments and exercises, classroom assignments and exercises, visits to newspapers and visits by newsmen to the journalism program, and that appropriate assignments, exercises and other literature be sent to the researcher. The second open-ended item requested information regarding plans for the provision of instruction in newsroom computer equipment by 1980. The researcher requested that pertinent and appropriate literature regarding these plans be returned with the questionnaire. The third open-ended item asked top administrators to offer any comments they wished to make.

Reliability of the Instrument

The reliability of the instrument was measured by the split-half procedure after all the results had been compiled. Two separate scores were derived, one by scoring the odd-numbered items of the instrument. Item 7 in Part II was omitted in measuring the instrument to provide an even number of items to correlate in measuring the reliability of the instrument. The Spearman-Brown Prophecy Formula was used to compute the measure of reliability.

The split-half reliability coefficient for the entire instrument was 0.9106. The split-half reliability coefficient for Part II was

0.5002; for Part III 0.8830; for Part IV 0.8913, and for Part V, 0.8101.

Validity of the Instrument

The validity of the instrument was measured by the procedure of content and logical validity before the survey questionnaire was mailed to top administrators. The survey questionnaire was submitted to a panel of experts. The panel of experts was comprised of four persons who had or were working toward graduate degrees in some areas of mass communications and who have had newspaper experience and/or journalism teaching experience.

Motivation to Respond

Each questionnaire was accompanied by a cover letter which explained the purpose of the study, the structure of the questionnaire and requested the co-operation of the top administrator. The letter emphasized the contribution the top administrator could make by providing information which would become part of a clearly defined body of information as to how students in news-editorial sequences in journalism programs have been prepared in the use of newsroom computer technology and that this body of information would contribute to the providing of instruction in newsroom computer technology in the future. A place was provided on the last page of the questionnaire to allow the responding top administrator to indicate whether he wanted a report of the findings of the study. Each mailing to a top administrator included a self-addressed stamped envelope which could be used to return the response.

Procedures

A questionnaire was sent to the top administrators of the 60 departments, schools and colleges of journalism which had ACEJ accredited news-editorial sequences and to the randomly selected 60 top administrators of journalism departments, schools and colleges which did not have ACEJ accredited news-editorial sequences. The first mailing was September 30, 1974, and brought responses from 46 top administrators. The first follow-up mailing was October 14, 1974, and brought responses from 24 top administrators. The second follow-up mailing was October 31, 1974, and brought responses from 11 top administrators. A final mailing was sent November 27. This mailing included a post card which requested the top administrator to indicate that he was not going to respond and to return the postcard to the investigator by December 20, 1974. The final mailing brought a response from 24 top administrators. Four accredited and three non-accredited top administrators reported they would not return the questionnaire. The four mailings brought 98 usable responses of which four accredited and two non-accredited provided open-ended responses only. Usable accredited responses were 54 of 60 (90 per cent) and usable non-accredited responses were 44 of 60 (73 per cent). Total usable responses were 98 of 120 (82 per cent). An example of the cover letter, attached memoranda and post card have been presented in Appendix B and an example of the questionnaire has been presented in Appendix C. According to Fred N. Kerlinger, a mail questionnaire would be weak in regard to the possible lack of response and the inability to check the responses given. If a mail questionnaire was used very effort should be made to obtain returns of at least 80 to 90 per cent or more of the population sampled. If such returns were

lacking some effort should be made to learn something of the non-respondents.³

The study was descriptive in nature. Demographic data were reported in three sets of frequency tables, one for top administrators of accredited sequences, one for top administrators of non-accredited sequences and one for all top administrators, listing the number and percentages of responses to each item. Results of the Likert scale items were reported in three sets of frequency tables, one for top administrators of accredited sequences, one for top administrators of non-accredited sequences and one for all top administrators, for Present Practices, Desirable Practices, Predicted Practices and Obstacles to Present Practices. The frequency tables reported the number and percentage of responses to each of the five points on the Likert scale for each item by each group of top administrators. Each of the five points was assigned a numerical value and a mean score was reported for each of the items responded to by each of the three groups of top administrators. A value of five was assigned to Strongly Agree, Most Desirable, Most Likely and Great Significance; a value of four was assigned to Agree, Desirable, Likely and Significance; a value of three was assigned to Neutral; a value of two was assigned to Disagree, Not Desirable, Not Likely and Little Significance, and a value of one was assigned to Strongly Disagree, Least Desirable, Least Likely and No Significance.

The responses to the first open-ended item were reported in three sets of frequency tables, one for the top administrators of accredited sequences, one for top administrators of non-accredited sequences and one for all top administrators as to the number and percentage of those utilizing laboratory exercises, those utilizing classroom assignments,

those utilizing visits to newspapers and those utilizing visits by newsmen to the journalism program. In addition to the tables, responses to the first open-ended item were reported in an appendix as submitted by the top administrators. Responses to the second open-ended item were reported in three sets of frequency tables, one for each group of top administrators as to the number of those who were planning to utilize laboratory exercises, those who were planning to utilize classroom assignments, those who were planning to utilize visits to newspaper newsrooms and those who were planning to utilize visits by newspaper newsmen to classrooms. Responses to the second open-ended item were reported in an appendix as submitted by the top administrators. The responses to the third open-ended item were reported in an appendix as submitted by top administrators.

Analysis of the Data

The analysis was descriptive in nature. The investigator reported how many responses to each of the Characteristics of Responding Sequences items and what the responses to these items were according to top administrators of accredited news-editorial sequences, top administrators of non-accredited sequences and all top administrators. The investigator reported the average number of students enrolled in the sequence, the average number of faculty who taught in the sequence, the average full-time and the average part-time faculty members who taught in the sequence, the average number of degrees held by full-time and part-time faculty members who taught in the sequence, the number of news-editorial sequences which offered reporting, editing, production/typography and newspaper management, the number of news-editorial

sequences which required reporting, editing, production/typography and newspaper management, the number of reporting courses, editing courses, production/typography courses and newspaper management courses which offered instruction in newsroom computer technology, how many sequences required computer science of sequence majors and through what departments and under what titles computer science is offered, how many sequences offered a course in newspaper technology and if offered whether the course is required, how many sequences had electric typewriters, Cathode Ray Tubes, Video Display Terminals, Optical Character Readers and/or scanners which have been available to news-editorial majors, the average quantity in which electric typewriters and each piece of newsroom computer equipment have been available, how many sequences have had electric typewriters and the computer equipment available in the classroom, laboratories and/or the student newspaper, how many sequences have provided opportunities for students to observe the computer equipment in operation at commercial newspapers, how many sequences have provided students the opportunity to have hands-on instruction in computer equipment at commercial newspapers, if students have not had the opportunity to observe and/or to have hands-on instruction at commercial newspapers the major reason for this lack of opportunity, and how many sequences required students to extract data from computers for story assignments, and if this is not required what the major reason was for not requiring it. In instances where an average was reported the investigator also reported the median, the mode, and the range. The reporting of this data in frequency tables for top administrators of journalism programs with accredited sequences, top administrators of journalism programs with non-accredited sequences

and all top administrators of journalism programs allowed for the making of comparisons between and among the three categories.

The reporting of the number and percentages of responses to each of the five points on the Likert scale items and the reporting of a mean score for each of the Likert scale items in frequency tables for each of the three categories of top administrators allowed the making of comparisons of the number, percentage and mean score between and among each of the three top administrator categories in regard to Present Practices, Desirable Practices, Predicted Practices and Obstacles to Present Practices. The reporting of the number and percentage and the mean score allowed the investigator to present comparisons within each category of top administrators in regard to Present Practices, Desirable Practices, Predicted Practices and Obstacles to Present Practices.

The reporting of responses to the first two open-ended items by number in frequency tables for each of the three categories of top administrators allowed for the making of comparisons between and among each of the categories as to present utilization of laboratory exercises, classroom assignments, visits to newspapers and visits by newsmen to classrooms and to the making of comparisons between and among each of the categories as to planned utilization of laboratory exercises, classroom assignments, visits to newspapers and visits by newsmen to classrooms. The reporting of numbers allowed the making of comparisons between present utilization and planned utilization within each of the three categories of top administrators. In addition to the tables the responses were reported in appendices as submitted by the top administrators.

The responses to the third open-ended item were reported in an appendix as submitted by the top administrators. The responses were read closely to determine if any prominent or common line of thought regarding newsroom computer instruction was offered, and this line of thought was reported.

ENDNOTES

¹"ACEJ Accredited Sequences, News-Editorial," Journalism Educator, XXVIII (January, 1974), p. 31.

²"Schools and Departments of Journalism," Journalism Educator, XXVIII (January, 1974), pp. 32-59.

³Fred N. Kerlinger, Foundations of Behavioral Research (New York, 1964), p. 397.

CHAPTER IV

RESULTS

The four mailings brought usable responses, either in total or in part, from 54 of the 60 (90 per cent) of the top administrators that had American Council on Education for Journalism (ACEJ) accredited news-editorial sequences and 44 of 60 (73 per cent) of the top administrators that did not have accredited news-editorial sequences. Four top administrators of accredited news-editorial sequences and two top administrators of non-accredited news-editorial sequences provided only open-ended responses. Total usable responses, either in total or in part, were received from 98 of 120 (82 per cent) of the top administrators of journalism programs that had news-editorial sequences.

This chapter has been divided into eight parts, Characteristics of Responding Sequences, Present Practices, Desirable Practices, Predicted Practices, Obstacles to Present Practices, Present Descriptions of Instruction, 1980 Descriptions of Instruction and Comments. In each part, with the exception of Comments, each question has been stated, it has been followed by a table which has reported the responses to the question and the table has been followed by a narrative which has summarized and concluded what has been reported in the table. In Comments the question has been stated and has been followed by a summary and conclusion of all the responses. Where an open-ended response has been gathered the question has preceded the summary and conclusion of all

the responses to that question. Individual responses to each of the open-ended questions have been presented in appendices.

Part I, Characteristics of Responding Sequences

The first question asked for the name of the responding university.

Question 2: Number of students in news-editorial sequence.

TABLE I
STUDENT ENROLLMENT IN NEWS-EDITORIAL SEQUENCE

	Respondents	Total Students	Mean	Median	Mode	Range
Accredited	50	10,234	204.08	200	90,200,300	39-525
Non-Accredited	42	5,362	127.60	86	60,150	30-350
All	92	15,596	169.63	150	150,200	30-525

Student enrollments in accredited news-editorial sequences seemed greater than student enrollments in non-accredited news-editorial sequences. The mean scores in Table I indicated that for every $1\frac{1}{2}$ students enrolled in accredited sequences, there was 1 student enrolled in non-accredited sequences. The medians suggested accredited sequences had student enrollments which have been more than twice as large as non-accredited sequences and the modes suggested that the most frequently occurring student enrollments in accredited sequences have been between $1\frac{1}{2}$ to 2 times as great as the most frequently occurring student enrollments in non-accredited sequences. The range indicated that the

enrollment in the smallest sequences was approximately the same. However, the range indicated the largest accredited sequence had $1\frac{1}{2}$ times the enrollment of the largest non-accredited sequence.

Question 3: Number of faculty teaching courses in news-editorial sequence.

TABLE II
FACULTY TEACHING COURSES IN NEWS-
EDITORIAL SEQUENCE

	Respondents	Faculty	Mean	Median	Mode	Range
Accredited	50	524	10.48	10	5	3-29
Non-Accredited	42	229	5.45	5	5	1-18
All	92	753	8.18	7	5	1-29

The mean scores and the medians indicated there are approximately twice as many faculty members teaching courses in accredited news-editorial sequences as teaching courses in non-accredited news-editorial sequences. The modes suggested the most frequent number of faculty members teaching in either of the sequences has been five. The range indicated the smallest number of faculty and the largest number of faculty teaching courses in accredited sequences were each greater than the smallest and largest number in the non-accredited sequences.

Question 4: Number of full-time faculty in news-editorial sequence. Number of part-time faculty in news-editorial sequence.

TABLE III
FULL-TIME FACULTY IN NEWS-EDITORIAL SEQUENCE

	Respondents	Full-time Faculty	Mean	Median	Mode	Range
Accredited	49	370	7.55	6	5	2-20
Non-Accredited	42	140	3.47	3	2	1-8
All	91	516	5.67	5	2	1-20

The mean scores and the medians suggested accredited news-editorial sequences have had twice as many full-time faculty members as the non-accredited news-editorial sequences. The modes suggested that the most frequent number of full-time faculty members in accredited news-editorial sequences has been $2\frac{1}{2}$ times as great as the most frequent number of full-time faculty in the non-accredited sequences. The range seemed to support the ratio of twice as many to $2\frac{1}{2}$ times as many full-time faculty members in accredited sequences compared to non-accredited sequences.

TABLE IV
PART-TIME FACULTY IN NEWS-EDITORIAL SEQUENCE

	Respondents	Part-time Faculty	Mean	Median	Mode	Range
Accredited	43	176	4.09	3	3	1-20
Non-Accredited	37	93	2.51	2	1	1-16
All	80	269	3.36	3	3	1-20

The mean scores and the median indicated that accredited news-editorial sequences have had $1\frac{1}{2}$ part-time faculty members for every 1 part-time faculty member non-accredited news-editorial sequences have had. The modes suggested that the most frequent number of part-time faculty accredited news-editorial sequences have had has been 3 times as great the number of part-time faculty the non-accredited news-editorial sequences have had. The range indicated that accredited sequences tended to use a greater number of part-time faculty than non-accredited sequences.

Question 5: Number of full-time faculty holding rank of professor, associate professor, assistant professor, instructor. Number of part-time faculty holding rank of professor, associate professor, assistant professor, instructor, other.

TABLE V
ACADEMIC RANK OF FULL-TIME FACULTY

	Respondents	Full-time Professor	Mean	Median	Mode	Range
Accredited	48	132	0.75	2	2	0-12
Non-Accredited	26	21	0.81	1	1	0- 2
All	74	153	2.06	2	1	0-12
		Full-time Assoc. Prof.				
Accredited	47	131	2.78	2	2	0-10
Non-Accredited	34	45	1.32	1	1	0- 5
All	81	176	2.17	2	1	0-15
		Full-time Asst. Prof.				
Accredited	48	132	2.75	2	2	0- 8
Non-Accredited	35	70	2.00	1	1	0- 6
All	83	202	2.49	2	1	0- 8
		Full-time Instructor				
Accredited	24	47	1.95	2	1	0- 6
Non-Accredited	24	33	1.37	1	1	0- 6
All	48	80	1.66	1	1	0- 6

The mean scores of reports of full-time faculty rank suggested that accredited news-editorial sequences have had a better than 3 to 1 ratio at the full professor rank and a better than 2 to 1 ratio at the associate professor rank compared to non-accredited news-editorial sequences. At the assistant professor rank accredited sequences have had slightly less than $1\frac{1}{2}$ assistant professors for every 1 assistant professor in non-accredited sequences. At the instructor rank the accredited sequences have had slightly more than an additional one-half faculty member compared to the non-accredited sequences.

The medians indicated that accredited sequences have had 2 full-time professors at each rank compared to 1 for non-accredited sequences. The modes suggested the most frequent number of full-time faculty members at each professorial rank in accredited sequences has been 2 compared to 1 in non-accredited sequences. The modes suggested the most frequent number of full-time faculty at the instructor level in either sequence has been one. The ranges indicated that the most full-time professors employed in an accredited sequence was 6 times as great as in a non-accredited sequence, at the full-time associate professor rank in an accredited sequence it was 2 times as great as in a non-accredited sequence and at the full-time assistant professor rank in an accredited sequence it was $1\frac{1}{3}$ times as great as in a non-accredited sequence. The range at the full-time instructor level indicated no difference.

The mean scores of reports of part-time faculty rank suggested that non-accredited news-editorial sequences have had an additional one-half more part-time faculty member at the rank of full professor and an additional one-quarter more part-time faculty member at assistant professor than accredited news-editorial sequences and the accredited sequences have had approximately an additional one-half more part-time faculty at the instructor rank and almost 2 additional part-time faculty

at the rank of other than the non-accredited sequences. No difference was suggested at the rank of associate professor. The median indicated no differences except at the rank of assistant professor where accredited sequences have had 2 part-time faculty compared to 1 for the non-accredited sequence. The mode suggested the most frequent number of part-time faculty has been in the non-accredited sequence at the rank of other, three. The modes were one at all ranks of accredited sequences. The ranges indicated that the most part-time assistant professors employed in a non-accredited sequence was almost twice as great as in an accredited sequence and at the part-time instructor rank in a non-accredited sequence it was slightly less than $1\frac{1}{2}$ times as great as in an accredited sequence. The range indicated the most part-time others in an accredited sequence was almost 3 times as great as in a non-accredited sequence. The table indicated the rank most often assigned to part-time faculty has been other and instructor.

TABLE VI
ACADEMIC RANK OF PART-TIME FACULTY

	Respondents	Part-Time Professor	Mean	Median	Mode	Range
Accredited	4	4	1.00	1	1	--
Non-Accredited	2	3	1.50	-	-	--
All	6	7	1.16	1	1	--
		<u>Part-Time Assoc. Prof.</u>				
Accredited	2	2	1.00	-	1	--
Non-Accredited	6	6	1.00	1	1	--
All	8	8	1.00	1	1	--
		<u>Part-Time Asst. Prof.</u>				
Accredited	9	17	1.88	2	1	1-4
Non-Accredited	8	17	2.13	1	1	1-7
All	17	34	2.00	1	1	1-7
		<u>Part-Time Instructor</u>				
Accredited	17	45	2.64	2	1	1-5
Non-Accredited	15	34	2.26	2	1,2	1-7
All	32	79	2.46	2	1	1-7
		<u>Part-Time Others</u>				
Accredited	23	116	5.04	3	1	1-20
Non-Accredited	10	31	3.10	3	3	1-7
All	33	147	4.45	3	1,3	1-20

Question 6: Number of full-time faculty whose highest degree is Doctorate, Masters, Bachelors, No Degree. Number of part-time faculty whose highest degree is Doctorate, Masters, Bachelors, No Degree.

TABLE VII
DEGREE HELD BY FULL-TIME FACULTY

	Respondents	Full-time Doctorates	Mean	Median	Mode	Range
Accredited	49	191	3.89	4	1	0-13
Non-Accredited	32	60	1.87	2	1	0- 5
All	81	251	3.09	2	1	0-13
		<u>Full-time Masters</u>				
Accredited	47	205	4.36	4	4	0-13
Non-Accredited	41	89	2.17	2	2	0- 6
All	88	294	3.34	2	2	0-13
		<u>Full-time Bachelors</u>				
Accredited	24	36	1.50	1	1	0- 4
Non-Accredited	12	13	1.08	1	1	0- 2
All	36	49	1.36	1	1	0- 4

The mean scores and the medians indicated accredited news-editorial sequences have had 2 full-time faculty members with a doctorate for every 1 full-time faculty member in non-accredited sequences, and 2 full-time faculty members with a masters for every 1 in a non-accredited sequence. The mean scores suggested accredited sequences have had $1\frac{1}{2}$ bachelors degrees for every 1 in non-accredited sequences. The median suggested each sequence has had one bachelors degree. The

mode suggested the most frequent held degree in accredited sequences has been the masters, four, twice as many as in non-accredited sequences. The ranges indicated that the most doctorates held by full-time faculty in an accredited sequence was almost 3 times as great as in a non-accredited sequence, the most masters held in an accredited sequence was slightly more than 2 times as great as in a non-accredited sequence and the most bachelors held in an accredited sequence was 2 times as great as in a non-accredited sequence. The table indicated the highest degree held by most full-time faculty members has been the masters.

TABLE VIII
DEGREE HELD BY PART-TIME FACULTY

	Respondents	Part-time Doctorates	Mean	Median	Mode	Range
Accredited	9	14	1.55	1	1	1- 5
Non-Accredited	3	4	1.33	1	1	1- 2
All	12	18	1.50	1	1	1- 5
		Part-time Masters				
Accredited	33	91	2.75	2	2	1- 7
Non-Accredited	25	62	2.48	2	2	1-12
All	58	153	2.63	2	2	1-12
		Part-time Bachelors				
Accredited	30	79	2.63	2	1	1-10
Non-Accredited	14	30	2.14	1	1	1- 6
All	44	109	2.47	2	1	1-10
		Part-time No degree				
Accredited	5	5	1	1	1	--
Non-Accredited	2	3	1.5	-	-	--
All	7	8	1.14	1	1	--

The mean scores indicated accredited editorial sequences have had an additional one-quarter doctorate, an additional one-quarter masters, an additional one-half bachelors and an additional one-half members with no degree on the part-time faculty compared to non-accredited sequences. The medians suggested no difference except at the bachelors level where there have been 2 part-time bachelors in accredited sequences compared to 1 in non-accredited sequences. No differences were suggested by the modes. The ranges indicated the most part-time faculty members holding doctorates in an accredited sequence was $2\frac{1}{2}$ times as great as in a non-accredited sequence and the most part-time faculty members holding bachelors degrees in an accredited sequence was slightly less than twice as great as in a non-accredited sequence. The range indicated the most part-time masters held in a non-accredited sequence was slightly less than twice as great as in an accredited sequence.

Question 7: Check which of the following courses are offered in the news-editorial sequence. Reporting, Editing, Production/Typography, Newspaper Management.

TABLE IX

NEWS-EDITORIAL SEQUENCES OFFERING REPORTING,
EDITING, PRODUCTION/TYPOGRAPHY,
NEWSPAPER MANAGEMENT COURSES

	Respondents	Offer Reporting	Offer Editing	Offer Prod/Typ.	Offer News Mgt.
Accredited	50	50 (100%)	50 (100%)	34 (68%)	29 (58%)
Non-Accredited	42	42 (100%)	42 (100%)	24 (57%)	11 (26%)
All	92	92 (100%)	92 (100%)	58 (63%)	40 (43%)

The table reported all accredited and non-accredited news-editorial sequences have been offering reporting and editing courses, more than twice as many accredited sequences as non-accredited sequences have been offering courses in newspaper management and 10 more accredited sequences than non-accredited sequences have been offering production/typography courses. The newspaper management course has been the least offered course in each sequence.

Question 8: Check which courses are required in the news-editorial sequence. Reporting, Editing, Production/Typography, Newspaper Management.

TABLE X
NEWS-EDITORIAL SEQUENCES REQUIRING REPORTING,
EDITING, PRODUCTION/TYPOGRAPHY,
NEWSPAPER MANAGEMENT

	Respondents	Require Reporting	Require Editing	Require Prod/Typ.	Require News Mgt.
Accredited	50	50 (100%)	49 (98%)	19 (38%)	4 (8%)
Non-Accredited	42	42 (100%)	42 (100%)	11 (26%)	4 (10%)
All	92	92 (100%)	91 (99%)	30 (33%)	8 (9%)

The table reported all accredited and non-accredited news-editorial sequences have been requiring reporting, and all but one accredited sequence and all non-accredited sequences have been requiring editing. The table reported 12 percent more accredited sequences than non-accredited sequences require a production/typography course and 2 per cent more non-accredited sequences than accredited sequences

require a newspaper management course. The table suggested that reporting and editing is required in almost all sequences, typography/production is required in one of every three sequences and newspaper management in less than one in every 10 sequences.

Question 9: In which courses is instruction in newsroom technology offered. Reporting, Editing, Production/Typography, Newspaper Management.

Table XI reported instruction in newsroom technology has been offered mostly in editing courses in both the accredited news-editorial sequences (82 per cent) and the non-accredited sequences (80 per cent). Production/typography courses have been second to the editing courses in the offering of instruction in newsroom technology in both the accredited (51 percent) and the non-accredited (40 per cent) sequences. Instruction has been offered least in newspaper management courses in both the accredited (33 per cent) and the non-accredited (15 per cent) sequences.

TABLE XI
REPORTING, EDITING, PRODUCTION/TYPOGRAPHY,
NEWSPAPER MANAGEMENT COURSES OFFERING
INSTRUCTION IN NEWSROOM TECHNOLOGY

	Respondents	Instruct in Reporting	Instruct in Editing	Instruct in Prod/Typ.	Instruct in News Mgt.
Accredited	49	22 (45%)	40 (82%)	25 (51%)	16 (33%)
Non-Accredited	40	11 (28%)	32 (80%)	16 (40%)	6 (15%)
All	89	33 (37%)	72 (81%)	41 (46%)	22 (25%)

Question 10: A course in computer science is required of all news-editorial majors. Yes, No. If the answer is Yes, please indicate the title of the course and the department offering the course.

TABLE XII
NEWS-EDITORIAL SEQUENCES REQUIRING MAJORS
TO HAVE COURSE IN COMPUTER SCIENCE

	Respondents	Yes, Require Course	No, Do Not Require Course
Accredited	50	0 (0%)	50 (100%)
Non-Accredited	42	1 (2%)	41 (98%)
All	92	1 (1%)	91 (99%)

The table reported one per cent of all news-editorial sequences have required their majors to take a computer science course. The table reported one non-accredited sequence and no accredited sequence have required their news-editorial majors to take a computer science course. Two sequences reported they recommended computer science courses, one reported a computer science source is available as a general education course and a fourth reported such a requirement was being considered.

Question 11: A course in newspaper technology is offered in the news-editorial sequence: Yes, No.

TABLE XIII
NEWS-EDITORIAL SEQUENCES OFFERING NEW TECHNOLOGY
COURSE IN NEWS-EDITORIAL SEQUENCE

	Respondents	Offer Course	Do Not Offer Course
Accredited	50	5 (10%)	45 (90%)
Non-Accredited	39	5 (13%)	34 (87%)
All	89	10 (11%)	79 (89%)

The table reported 11 per cent of all news-editorial sequences have offered new technology courses in the news-editorial sequence. A greater percentage (13 per cent) of non-accredited sequences than accredited sequences (10 per cent) have offered such a course.

Question 12: If the answer to 11 is Yes, is the course required. Yes, No.

TABLE XIV
NEWS-EDITORIAL SEQUENCES REQUIRING MAJORS TO
TAKE NEW TECHNOLOGY COURSE

	Respondents	Require Course	Do Not Require Course
Accredited	5	1 (20%)	4 (80%)
Non-Accredited	5	2 (40%)	3 (60%)
All	10	3 (30%)	7 (70%)

The table reported 70 per cent of all news-editorial sequences do not require their majors to take the news-editorial new technology course. A greater percentage (40 per cent) of non-accredited sequences than accredited sequences (20 per cent) required their majors to take such a course.

Question 13: Check which newsroom equipment is available to news-editorial sequence majors on campus.
Electric Typewriters, Cathode Ray Tube (CRT),
Video Display Terminal (VDT), Optical Character Reader (OCR), Scanner.

TABLE XV
TECHNOLOGICAL NEWSROOM EQUIPMENT AVAILABLE
TO NEWS-EDITORIAL MAJORS ON CAMPUS

	Respondents	Electric Typewriter	CRT	VDT	OCR	Scanner
Accredited	50	25 (50%)	5(10%)	11(22%)	1(2%)	----
Non-Accredited	42	13 (31%)	5(12%)	3(10%)	1(2%)	1(2%)
All	92	38 (41%)	10(11%)	14(15%)	2(2%)	1(1%)

The table indicated most news-editorial sequences did not have technological newsroom equipment available on campus for news-editorial sequence majors. The equipment available most was the electric typewriter. Twenty-five (50 per cent) accredited sequences and 13 (31 per cent) non-accredited sequences reported having electric typewriters available for majors on campus. The next most available equipment was the Video Display Terminal (VDT). Fifteen per cent of all sequences, more than twice as many accredited sequences (22 per cent) as non-

accredited sequences (10 per cent), reported VDTs have been available. Cathode Ray Tubes (CRT) have been available on 11 per cent of the campuses, slightly more have been available in non-accredited sequences (12 per cent) than accredited sequences (10 per cent). Optical Character Readers (OCR) and scanners have been available in two per cent or less of the sequences.

Question 14: In what quantities is newsroom equipment available: Electric Typewriters, CRT, VDT, OCR, Scanner

Table XVI suggested technological newsroom equipment has been available in small quantities and accredited news-editorial sequences have had more equipment than non-accredited sequences. The mean scores of electric typewriters suggested an accredited sequence had less than 30 typewriters and a non-accredited sequence less than seven. The medians were 16 for accredited and four for non-accredited sequences and the modes indicated the most frequent number of typewriters had by accredited sequences was six and by non-accredited sequences four. The mean scores suggested that both sequences have had less than two CRTs and less than two VDTs available. The medians and modes indicated the availability of the VDTs and the CRTs has not exceeded two in either sequence.

TABLE XVI
 AVAILABILITY OF TECHNOLOGICAL
 NEWSROOM EQUIPMENT

	Respondents	Electric Typewriters	Mean	Median	Mode	Range
Accredited	23	638	27.78	16	6	2-200
Non-Accredited	12	79	6.58	4	4	1- 28
All	35	717	20.48	12	20	1-200
<u>CRT</u>						
Accredited	5	9	1.80	2	1,2	1- 3
Non-Accredited	4	5	1.25	1	1	1- 2
All	9	14	1.55	1	1	1- 3
<u>VDT</u>						
Accredited	10	19	1.90	1	1	1- 5
Non-Accredited	2	3	1.50	--	--	1- 2
All	12	22	1.83	1	1	1- 5

The means and medians indicated an accredited sequence has had about 4 times as many electric typewriters as a non-accredited sequence and the mode indicated the most frequent number of electric typewriters had by an accredited sequence was $1\frac{1}{2}$ as many as the most frequent number of electric typewriters had by a non-accredited sequence. The mean scores suggested an accredited sequence has approximately one-half more VDTs and CRTs than a non-accredited sequence which is supported by the modes for CRTs but not for VDTs. One accredited sequence and one non-accredited sequence each reported having one OCR and one non-accredited sequence had all three scanners reported. The ranges supported the indication that equipment has been available in small quantities and

that accredited sequences have had more equipment than non-accredited sequences. The greatest difference is that the most electric typewriters had by an accredited sequence was 7 times as great as the most electric typewriters had by a non-accredited sequence.

Question 15: Where is the newsroom equipment available:
 Electric typewriters in classroom, laboratories, student newspaper. CRT in classroom, laboratories, student newspaper. OCR in classroom, laboratories, student newspaper. Scanner in classroom, laboratories, student newspaper.

TABLE XVII
 LOCATION OF AVAILABLE TECHNOLOGICAL
 NEWSROOM EQUIPMENT

	Electric Typewriter Classroom	Electric Typewriter Laboratory	Electric Typewriter Student Paper
Accredited	11	18	7
Non-Accr.	3	10	5
All	14	28	12
	CRT-Classroom	CRT-Laboratory	CRT-Student Newspaper
Accredited	--	3	4
Non-Accr.	2	1	1
All	2	4	5
	VDT-Classroom	VDT-Laboratory	VDT-Student Newspaper
Accredited	1	7	3
Non-Accr.	1	1	-
All	2	8	3

The table reported the distribution of technological equipment among the classroom, laboratories and student newspaper. Electric

typewriters and VDTs have been located most often in the laboratories and CRTs most often in the student newspaper.

In four accredited news-editorial sequences the same electric typewriters have served in both a classroom and laboratory situation and in one instance have served in both a student newspaper and a laboratory situation. In one accredited sequence the same CRT has served the laboratory and the student newspaper. The one OCR reported in an accredited sequence was in the student newspaper. In three non-accredited sequences the same electric typewriters have served in the classroom, laboratory and student newspaper. In one non-accredited sequence the same CRT has served in the laboratory and the student newspaper. The one OCR reported by a non-accredited sequence was located in the student newspaper and the three scanners reported were located in the laboratory situation.

Question 16: Have news-editorial majors seen newsroom computer equipment in operation at commercial newspapers?
Yes, No.

TABLE XVIII

NEWS-EDITORIAL SEQUENCES WITH MAJORS HAVING
SEEN EQUIPMENT IN OPERATION AT
COMMERCIAL NEWSPAPERS

	Respondents	Yes	No
Accredited	50	47 (94%)	3 (6%)
Non-Accredited	40	37 (93%)	3 (7%)
All	90	84 (93%)	6 (7%)

The table reported 93 per cent of all news-editorial sequences, 94 per cent of the accredited and 93 per cent of the non-accredited sequences, have had their news-editorial majors view newsroom computer equipment in operation at commercial newspapers.

Question 17: Have news-editorial majors had an opportunity to have hands-on instruction in newsroom computer equipment at commercial newspapers?
Yes, No.

TABLE XIX
NEWS-EDITORIAL SEQUENCES WITH MAJORS HAVING
HANDS-ON INSTRUCTION AT
COMMERCIAL NEWSPAPERS

	Respondents	Yes	No
Accredited	50	14 (28%)	36 (72%)
Non-Accredited	40	8 (20%)	32 (80%)
All	90	22 (25%)	68 (75%)

The table reported that one in four (25 per cent) news-editorial sequences have had majors who have had hands-on instruction in newsroom computer equipment at commercial newspapers. More accredited sequences (28 per cent) reported majors have had the opportunity for hands-on instruction at commercial newspapers than did non-accredited sequences (20 per cent).

Question 18: If the answer to 16 and/or 17 is No, briefly explain why.

The reason most cited as to why students have not seen equipment or had hands-on instruction at a commercial newspaper was that the

equipment was not available at the local newspaper. In instances where students could see the equipment but not have hands-on instruction, the determining factor was the newspaper policy, in most instances set by the union, which did not allow hands-on use. Another factor was the number of students the newspaper had to accommodate. The absence of availability locally prompted some top administrators to report that they could not afford financially the expense of transporting students to the nearest plant equipped with newsroom computer equipment. Individual responses have been placed in Appendix D.

Question 19: News-editorial students are required to extract data from computers for story assignments?
Yes, No.

TABLE XX
NEWS-EDITORIAL SEQUENCES REQUIRING MAJORS
TO EXTRACT DATA FROM COMPUTERS
FOR STORY ASSIGNMENTS

	Respondents	Yes	No
Accredited	47	9 (19%)	38 (81%)
Non-Accredited	39	5 (13%)	34 (87%)
All	86	14 (16%)	72 (84%)

The table reported less than one news-editorial sequence in five (16 per cent) has required majors to extract data from computers for story assignments. More accredited sequences (19 per cent) than non-accredited sequences (13 per cent) have required majors to extract data for story assignments.

Question 20: If the answer to 19 is No, briefly explain why.

The most cited reason for not having required majors to extract data from computers for story assignments has been the absence of a computer. The second most cited reason was that news-editorial programs have been designed to train newsmen not researchers or computer scientists. Individual responses have been placed in Appendix E.

Part II, Present Practices

In Part II, top administrators checked the choice which was most appropriate in describing present instruction in newsroom computer technology.

Item 1: Verbal explanation of newsroom computer equipment is all that is necessary at this time.

TABLE XXI

PRESENT APPROPRIATENESS OF VERBAL EXPLANATION
AS ONLY MEANS OF INSTRUCTION

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	48	-----	6(12%)	3(6%)	29(60%)	10(21%)	2.10
Non-Accr.	40	-----	10(25%)	4(10%)	17(43%)	9(22%)	2.37
All	88	-----	16(18%)	7(8%)	46(52%)	19(22%)	2.22

The table indicated that accredited and non-accredited sequences top administrators disagreed strongly that verbal explanation of newsroom computer equipment has been all that has been needed at this time.

No top administrator has expressed strong agreement. Mean scores suggested that top administrators of accredited sequences disagreed more (2.10) than top administrators of non-accredited sequences (2,37).

Item 2: Viewing newsroom computer equipment in operation is necessary at this time.

TABLE XXII

PRESENT APPROPRIATENESS OF VIEWING NEWSROOM
COMPUTER EQUIPMENT IN OPERATION
AS MEANS OF INSTRUCTION

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	49	19(39%)	21(43%)	5(10%)	3(6%)	1(2%)	4.10
Non-Accr.	41	12(29%)	24(58%)	3(7%)	1(3%)	1(3%)	4.09
All	90	31(35%)	45(50%)	8(9%)	4(4%)	2(2%)	4.10

The table indicated top administrators of accredited and non-accredited sequences agreed viewing is necessary at this time. Two per cent of accredited and three per cent of the non-accredited top administrators strongly disagreed and six per cent of the accredited and three per cent of the non-accredited top administrators disagreed as to the present necessity of viewing. The mean scores suggested strong agreement as to the present necessity for viewing between accredited (4.10) and non-accredited (4.09) top administrators.

Item 3: Hands-on instruction of newsroom computer equipment is necessary at this time.

TABLE XXIII

PRESENT APPROPRIATENESS OF HANDS-ON INSTRUCTION
AS MEANS OF NECESSARY INSTRUCTION

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	48	6(12%)	21(44%)	11(23%)	10(21%)	-----	3.47
Non-Accr.	40	11(28%)	16(40%)	7(18%)	5(12%)	1(2%)	3.78
All	88	17(19%)	37(43%)	18(20%)	15(17%)	1(1%)	3.61

The mean scores indicated that top administrators in both sequences agreed (3.61) there has been a need for hands-on instruction of newsroom computer technology, although non-accredited top administrators (3.78) indicated a need for hands-on instruction more than accredited top administrators (3.47). One non-accredited and no accredited top administrators strongly disagreed as to the present need.

Item 4: Electric typewriters should replace mechanical typewriters at this time.

TABLE XXIV

PRESENT APPROPRIATENESS OF REPLACING MECHANICAL
TYPEWRITERS WITH ELECTRIC TYPEWRITERS

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	49	17(35%)	18(37%)	10(20%)	2(4%)	2(4%)	3.94
Non-Accr.	39	11(28%)	16(41%)	4(10%)	5(13%)	3(8%)	3.69
All	88	28(32%)	34(39%)	14(15%)	7(6%)	5(6%)	3.83

The mean scores suggested top administrators of accredited and non-accredited sequences (3.83) agreed there was a need to replace mechanical typewriters with electric typewriters at this time. The mean scores suggested the accredited top administrators (3.94) agreed more strongly than the non-accredited top administrators (3.69) of the need to replace mechanical typewriters with electric typewriters. Of all top administrators, 12 per cent disagreed and strongly disagreed as to the need to replace mechanical typewriters with electric typewriters.

Item 5: Newsroom equipment such as CRTs, VDTs, OCRs and scanners are not necessary at this time.

TABLE XXV
PRESENT APPROPRIATENESS OF NECESSITY OF NOT
HAVING NEWSROOM COMPUTER EQUIPMENT

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	46	1(2%)	10(22%)	6(13%)	22(48%)	7(15%)	2.47
Non-Accr.	41	1(2%)	13(32%)	5(12%)	15(37%)	7(17%)	2.65
All	87	2(2%)	23(28%)	11(12%)	37(43%)	14(15%)	2.56

The mean scores suggested that all top administrators (2.56) disagreed that newsroom computer equipment was not necessary at this time. Thirty per cent of all top administrators strongly agreed and agreed that newsroom computer equipment was not necessary at this time. The mean scores suggested that top administrators of accredited sequences disagreed more (2.47) than non-accredited sequence top administrators

(2.65) that newsroom computer equipment was not necessary at this time.

Item 6: Contact between the journalism program and newspapers is adequate.

If the answer to 6 is Strongly Agree or Agree please briefly describe how adequacy is achieved:

If the answer to 6 is Disagree or Strongly Disagree please briefly describe what must be done to achieve adequate level of contact:

TABLE XXVI

PRESENT ADEQUACY OF CONTACT BETWEEN
JOURNALISM PROGRAM AND NEWSPAPERS

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	47	9(19%)	19(40%)	9(19%)	8(17%)	2(5%)	3.53
Non-Accr.	40	6(15%)	18(45%)	3(8%)	9(22%)	4(10%)	3.33
All	87	15(17%)	37(43%)	12(14%)	17(19%)	6(7%)	3.43

The mean scores suggested all top administrators (3.43) agreed more than they disagreed that contact between the journalism program and the newspapers was adequate. The agreement of the adequacy of contact appeared less strong among non-accredited sequences (3.33) than among accredited sequences (3.53). Sixty per cent of the non-accredited sequences top administrators strongly agreed and agreed that contact was adequate compared to 59 per cent of the accredited sequences top administrators and 22 per cent of the accredited sequences top administrators disagreed and strongly disagreed that contact was adequate compared to 32 per cent of the non-accredited sequences top administrators who disagreed and strongly disagreed that contact was adequate.

The reason most cited in describing contact as adequate was internships where news-editorial students work on newspapers. Other reasons were visits to classes by newsmen, visits to newspapers by the classes and having newsmen teach some courses in the journalism program. Internships were mentioned more often by top administrators of accredited sequences than non-accredited sequences. As to those who judges contact as inadequate, the major reason cited by non-accredited sequences top administrators was the lack of internships. The major reason cited by accredited sequences top administrators was the distance from the journalism program to the nearest newspapers, particularly those newspapers with newsroom computer equipment. Individual responses have been presented in Appendix F.

Item 7: Teaching of newsroom computer technology is the responsibility of the newspapers, not the journalism programs.

TABLE XXVII

PRESENT PREFERENCE TO HAVING NEWSPAPERS
TEACH NEWSROOM COMPUTER TECHNOLOGY

	Respond- ents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Accredited	45	1(2%)	4(9%)	8(18%)	22(49%)	10(22%)	2.20
Non-Accr.	41	2(5%)	2(5%)	10(24%)	19(46%)	8(20%)	2.29
All	86	3(3%)	6(7%)	18(21%)	41(48%)	18(21%)	2.24

The mean scores suggested that all top administrators disagreed strongly (2.24) the teaching of newsroom technology was the

responsibility of the newspapers, not journalism programs. The top administrators of accredited sequences disagreed more (2.20) than the top administrators of non-accredited sequences (2.29). Nine (10 per cent) of all top administrators strongly agreed and agreed the responsibility belonged to the newspapers.

Part III, Desirable Practices

In Part III, top administrators selected the choice which was most appropriate in describing what they would want to be done in providing instruction in newsroom computer technology. They were asked to assume they faced no obstacles, such as a budget limitation.

Item 1: Instruction in newsroom computer equipment should be provided by explanation.

TABLE XXVIII
DESIRABILITY OF PROVIDING INSTRUCTION
BY EXPLANATION

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	47	6(13%)	25(53%)	1(2%)	8(17%)	7(15%)	3.32
Non-Accr.	40	3(8%)	17(42%)	2(5%)	10(25%)	8(20%)	2.92
All	87	9(10%)	42(48%)	3(4%)	18(21%)	15(17%)	3.14

The mean scores suggested disagreement between top administrators of accredited sequences and non-accredited sequences as to the desirability of providing instruction in newsroom computer equipment by

explanation. The mean scores suggested the non-accredited sequences considered providing instruction by explanation would be slightly undesirable (2.92), an almost neutral rating. Accredited sequences seemed to agree that explanation would be desirable (3.32). The mean score of top administrators (3.14) suggested they considered providing instruction by explanation would be somewhat desirable. Sixty-six per cent of accredited top administrators reported explanation would be most desirable and desirable compared to 50 per cent of non-accredited top administrators. Thirty-two per cent of accredited administrators reported explanation would be not desirable and least desirable compared to 45 per cent of non-accredited top administrators. Fifty-eight per cent of all top administrators reported explanation would be most desirable and desirable compared to 38 per cent who reported explanation would be not desirable and least desirable.

Item 2: Instruction in newsroom computer equipment should be provided by viewing newsroom computer equipment in operation.

TABLE XXIX

DESIRABILITY OF PROVIDING INSTRUCTION BY
VIEWING EQUIPMENT IN OPERATION

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	47	6(13%)	32(68%)	2(4%)	6(13%)	1(2%)	3.76
Non-Accr.	41	3(8%)	29(74%)	2(5%)	5(13%)	-----	3.76
All	88	9(10%)	61(71%)	4(5%)	11(13%)	1(1%)	3.76

The mean scores suggested top administrators of accredited and non-accredited sequences agreed viewing newsroom computer equipment would be desirable. Both had a mean score of 3.76. Seven (15 per cent) accredited sequences and five (13 per cent) non-accredited sequences reported viewing would be not desirable and least desirable.

Item 3: Instruction in newsroom computer equipment should be hands-on operation at the journalism school.

TABLE XXX

DESIRABILITY OF PROVIDING INSTRUCTION BY
HANDS-ON OPERATION AT JOURNALISM SCHOOL

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	48	22(46%)	23(48%)	2(4%)	1(2%)	-----	4.38
Non-Accr.	41	22(54%)	12(29%)	5(12%)	2(5%)	-----	4.31
All	89	44(49%)	35(39%)	7(8%)	3(4%)	-----	4.35

The mean scores suggested that hands-on operation of newsroom computer equipment at the journalism school would be more desirable to top administrators of accredited sequences (4.38) than to top administrators of non-accredited sequences (4.31). Both agreed strongly the instruction would be desirable. One (2 per cent) accredited sequence and two (5 per cent) non-accredited sequences reported hands-on instruction at the journalism school would be not desirable and no top administrator reported hands-on instruction at the journalism school would be least desirable.

Item 4: Electric typewriters should replace mechanical typewriters.

TABLE XXXI
DESIRABILITY OF REPLACING MECHANICAL TYPEWRITERS
WITH ELECTRIC TYPEWRITERS

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	47	21(45%)	17(36%)	8(17%)	1(2%)	----	4.23
Non-Accr.	39	20(51%)	14(36%)	1(3%)	1(3%)	3(7%)	4.21
All	86	41(48%)	31(36%)	9(10%)	2(2%)	3(4%)	4.22

The mean scores suggested that the replacing of mechanical typewriters with electric typewriters would be more desirable to top administrators of accredited sequences (4.23) than to top administrators of non-accredited sequences (4.21). Both agreed strongly the replacing of mechanical typewriters with electric typewriters would be desirable. One (2 per cent) accredited sequence and one (3 per cent) non-accredited sequence reported replacement would be not desirable and no accredited sequences and three (7 per cent) non-accredited sequences reported it would be least desirable.

Item 5: Investment should be made in all kinds of newsroom computer equipment.

TABLE XXXII
 DESIRABILITY OF INVESTMENT IN ALL KINDS
 OF NEWSROOM COMPUTER EQUIPMENT

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	48	9(19%)	13(27%)	5(10%)	13(27%)	8(17%)	3.04
Non-Accr.	40	5(13%)	16(40%)	7(17%)	9(22%)	3(8%)	3.28
All	88	14(16%)	29(33%)	12(13%)	22(25%)	11(13%)	3.15

The mean scores suggested that investing in all kinds of newsroom computer equipment would be more desirable to top administrators of non-accredited sequences (3.28) than to top administrators of accredited sequences (3.04), an almost neutral score. The neutrality was reflected somewhat in the mean score of all top administrators (3.15). Twenty-two (46 per cent) top administrators of accredited sequences reported investment would be most desirable and desirable compared to 21 (44 per cent) accredited sequences which reported it would be not desirable and least desirable. Twenty-one (53 per cent) non-accredited top administrators reported it would be most desirable and desirable, 7 per cent more than accredited sequences, and 12 (30 per cent) non-accredited sequences reported it would be not desirable and least desirable, 14 per cent less than accredited sequences. Forty-three (49 per cent) of all top administrators reported investment would be most desirable and desirable compared to 33 (38 per cent) who reported it would be not desirable and least desirable.

Item 6: News-editorial students should be required to extract data from computers for story assignments.

TABLE XXXIII

DESIRABILITY OF HAVING NEWS-EDITORIAL STUDENTS EXTRACT
DATA FROM COMPUTERS FOR STORY ASSIGNMENTS

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	48	7(15%)	28(58%)	10(21%)	3(6%)	---	3.81
Non-Accr.	39	6(15%)	18(46%)	10(26%)	5(13%)	---	3.64
All	87	13(15%)	46(53%)	20(23%)	8(9%)	---	3.74

The mean scores suggested the extraction of data from computers by news-editorial students for story assignments would be more desirable to top administrators of accredited sequences (3.81) than to top administrators of non-accredited sequences (3.64). Both agreed on the desirability of having students extract data. None of the top administrators reported extracting data would be least desirable and three (6 per cent) accredited sequences and five (13 per cent) non-accredited sequences reported it would be not desirable.

Item 7: News-editorial students should be required to take a computer science course.

TABLE XXXIV

DESIRABILITY OF REQUIRING COMPUTER SCIENCE COURSE

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	47	1(2%)	16(34%)	20(43%)	9(19%)	1(2%)	3.15
Non-Accr.	41	3(7%)	14(34%)	13(32%)	8(20%)	3(7%)	3.15
All	88	4(5%)	30(34%)	33(37%)	17(19%)	4(5%)	3.15

The mean scores suggested that the requiring of a computer science course would be slightly desirable to top administrators of accredited and non-accredited sequences, although the mean scores tended toward neutral. Both sequences had mean scores of 3.15. Twenty (43 per cent) accredited sequences and 13 (32 per cent) non-accredited sequences reported they would be neutral toward the requiring of computer science.

Item 8: News-editorial sequence should have its own newspaper technology course.

TABLE XXXV

DESIRABILITY OF NEWS-EDITORIAL SEQUENCE
NEWSPAPER TECHNOLOGY COURSE

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	50	2(4%)	27(54%)	10(20%)	9(18%)	2(4%)	3.56
Non-Accr.	38	5(13%)	20(53%)	4(10%)	9(24%)	-----	3.55
All	88	7(8%)	47(53%)	14(16%)	18(21%)	2(2%)	3.55

The mean scores suggested top administrators of accredited sequences and non-accredited sequences were in virtual agreement as to the desirability of the news-editorial sequence having its own newspaper technology course. The accredited sequences mean score was 3.56 and the non-accredited sequences 3.55. Nine (18 per cent) accredited sequences reported it would be not desirable and 2 (4 per cent) reported it would be least desirable compared to 9 (24 per cent) non-accredited sequences that reported it would be not desirable and none that reported it would

be least desirable.

Item 9: News-editorial sequences should have a newspaper management course.

TABLE XXXVI

DESIRABILITY OF NEWS-EDITORIAL SEQUENCE
NEWSPAPER MANAGEMENT COURSE

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	49	12(24%)	22(46%)	12(24%)	3(6%)	----	3.88
Non-Accr.	37	8(22%)	25(68%)	2(5%)	2(5%)	----	4.05
All	86	20(23%)	47(55%)	14(16%)	5(6%)	----	3.96

The mean scores suggested having a newspaper management course in the news-editorial sequence would be more desirable (4.05) to top administrators of non-accredited sequences than to top administrators of accredited sequences (3.88). Both agreed strongly a newspaper management course would be desirable. None of the respondents reported it would be least desirable and two (5 per cent) non-accredited sequences and three (6 per cent) accredited sequences reported it would be not desirable.

Item 10: News-editorial students should visit commercial newspapers at off-peak hours to have hands-on instruction with newsroom computer equipment.

TABLE XXXVII

DESIRABILITY OF NEWS-EDITORIAL STUDENTS VISITING COMMERCIAL
NEWSPAPERS AT OFF-PEAK HOURS FOR HANDS-ON INSTRUCTION

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	49	7(14%)	31(64%)	7(14%)	4(8%)	---	3.84
Non-Accr.	36	6(17%)	28(78%)	2(5%)	---	---	4.11
All	85	13(15%)	59(69%)	9(11%)	4(5%)	---	3.95

The mean scores suggested visits by news-editorial students to commercial newspapers during off-peak hours to have hands-on instruction in newsroom computer equipment would be more desirable to non-accredited sequences top administrators (4.11) than to accredited sequences top administrators (3.84). Both agreed strongly the visits would be desirable. None of the non-accredited sequences reported such visits would be not desirable and least desirable and four (8 per cent) accredited sequences reported it would be not desirable and none reported it would be least desirable.

Item 11: Contact between journalism programs and newspapers should be increased.

TABLE XXXVIII

DESIRABILITY OF INCREASING CONTACT BETWEEN
JOURNALISM PROGRAMS AND NEWSPAPERS

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Least Desirable	Mean
Accredited	49	17(35%)	29(59%)	3(6%)	---	---	4.29
Non-Accr.	37	19(51%)	18(49%)	---	---	---	4.51
All	86	36(42%)	47(55%)	3(3%)	---	---	4.38

The mean scores suggested increasing contact between the journalism program and newspapers would be more desirable to top administrators of non-accredited sequences (4.51) than to top administrators of accredited sequences (4.29). Both agreed strongly on the desirability of increasing contacts. No top administrator reported the increasing of contacts would be not desirable or least desirable.

Item 12: Teaching of newsroom computer technology should be the responsibility of the newspapers, not the journalism programs.

TABLE XXXIX

DESIRABILITY OF HAVING NEWSPAPERS RESPONSIBLE
FOR TEACHING NEWSROOM COMPUTER TECHNOLOGY

	Respond- ents	Most Desirable	Desir- able	Neutral	Not Desirable	Most Desirable	Mean
Accredited	46	2(4%)	2(4%)	15(32%)	21(46%)	6(14%)	2.41
Non-Accr.	37	1(3%)	4(10%)	7(19%)	18(49%)	7(19%)	2.30
All	83	3(4%)	6(7%)	22(25%)	39(47%)	13(17%)	2.36

The mean scores suggested that the desirability of having newspapers rather than journalism schools be responsible for teaching newsroom computer technology would be more undesirable to non-accredited sequences top administrators (2.30) than accredited sequences top administrators (2.41). Both agreed rather strongly having the newspapers rather than the journalism schools responsible for teaching newsroom computer technology would be undesirable. One (3 per cent) non-accredited sequence reported it was most desirable and 4 (10 per cent) reported it was

most desirable compared to 2 (4 per cent) accredited sequences that reported it was most desirable and 2 (4 per cent) that reported it was desirable. Fifteen (32 per cent) accredited sequences were neutral.

Part IV, Predicted Practices

In Part IV, top administrators checked the choice which was most appropriate in their program in describing what they believed would happen by 1980 in the provision of instruction in newsroom technology.

Item 1: Instruction in newsroom computer equipment will be provided by explanation.

TABLE XL
LIKELIHOOD OF PROVIDING INSTRUCTION BY
EXPLANATION

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	9(20%)	16(35%)	4(9%)	8(17%)	9(20%)	3.17
Non-Accr.	40	7(18%)	20(50%)	1(3%)	6(15%)	6(15%)	3.40
All	86	16(19%)	36(42%)	5(6%)	14(16%)	15(17%)	3.28

The mean scores suggested that top administrators of non-accredited sequences (3.40) believed verbal explanation would be used to provide instruction in newsroom technology more than top administrators of accredited sequences (3.17) believed verbal explanation would be used. Both believed the use of verbal explanation was likely with the mean score of accredited sequences tending more toward neutral.

Eight (17 per cent) accredited sequences reported it was not likely instruction in newsroom computer equipment would be provided by verbal explanation and 9 (20 per cent) reported it was least likely compared to 6 (15 per cent) non-accredited sequences that reported it was not likely and 6 (15 per cent) that reported it was least likely.

Item 2: Instruction in newsroom computer equipment will be provided by viewing newsroom computer equipment in operation.

TABLE XLI
LIKELIHOOD OF PROVIDING INSTRUCTION BY
VIEWING EQUIPMENT IN OPERATION

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	9(20%)	20(42%)	4(9%)	9(20%)	4(9%)	3.46
Non-Accr.	36	7(20%)	18(50%)	6(17%)	3(8%)	2(5%)	3.69
All	82	16(20%)	38(36%)	10(12%)	12(15%)	6(7%)	3.56

The mean scores suggested top administrators of non-accredited sequences (3.69) believed instruction would be provided in newsroom technology by viewing computer equipment in action more than top administrators of accredited sequences (3.46) believed viewing would be used in instruction. Both believed viewing was likely. Three (8 per cent) non-accredited sequences reported that viewing was not likely and 2 (5 per cent) reported it was least likely compared to 9 (20 per cent) accredited sequences that reported viewing was not likely and 4 (9 per cent) that reported it was least likely.

Item 3: Instruction in newsroom computer equipment will be hands-on instruction at the journalism school.

TABLE XLII
 LIKELIHOOD OF PROVIDING HANDS-ON INSTRUCTION
 AT JOURNALISM SCHOOL

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	47	19(40%)	25(53%)	--	3(7%)	--	4.26
Non-Accr.	37	10(27%)	14(38%)	4(10%)	8(22%)	1(3%)	3.65
All	84	29(35%)	39(46%)	4(4%)	11(13%)	1(2%)	4.00

The mean scores suggested top administrators of accredited sequences (4.26) believed hands-on instruction in newsroom computer equipment at the journalism school was more likely than non-accredited sequences top administrators (3.65) believed it was likely. Both believed hands-on instruction was likely. Three (7 per cent) accredited sequences reported hands-on instruction was not likely and none reported it was least likely compared to 8 (22 per cent) non-accredited sequences that reported it was not likely and 1 (3 per cent) that reported it was least likely.

Item 4: Electric typewriters will replace mechanical typewriters.

TABLE XLIII
 LIKELIHOOD ELECTRIC TYPEWRITERS WILL REPLACE
 MECHANICAL TYPEWRITERS

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	47	25(53%)	14(29%)	4(9%)	4(9%)	---	4.28
Non-Accr.	39	13(33%)	18(46%)	3(8%)	3(8%)	2(5%)	3.95
All	86	38(44%)	32(37%)	7(8%)	7(8%)	2(3%)	4.13

The mean scores suggested top administrators of accredited sequences (4.28) believed electric typewriters would replace mechanical typewriters more than top administrators of non-accredited sequences (3.95) believed electric typewriters would replace mechanical typewriters. Both believed strongly electric typewriters would replace mechanical typewriters. Four (9 per cent) accredited sequences reported replacing of mechanical typewriters with electric typewriters was not likely and no sequence reported it was least likely compared to 3 (8 per cent) non-accredited sequences that reported the change was not likely and 2 (5 per cent) that reported it was least likely.

Item 5: Investment will be made in all kinds of computer equipment.

The mean scores of Table XLIV suggested top administrators of non-accredited sequences (2.64) believed investment in all kinds of computer equipment is less likely than top administrators of accredited sequences (2.85). Both believed that investment in all kinds of equipment appeared less than likely. Five (12 per cent) non-accredited sequences reported investment was most likely and 8 (19 per cent) reported it was

likely compared to 4 (9 per cent) accredited sequences that reported it was most likely and 15 (33 per cent) that reported it was likely.

TABLE XLIV
LIKELIHOOD OF INVESTMENT IN ALL KINDS
OF COMPUTER EQUIPMENT

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	4(9%)	15(33%)	2(4%)	20(43%)	5(11%)	2.85
Non-Accr.	42	5(12%)	8(19%)	5(12%)	15(36%)	9(21%)	2.64
All	88	9(10%)	23(26%)	7(8%)	35(40%)	14(16%)	2.75

Item 6: News-editorial students will be required to extract data from computers for story assignments.

TABLE XLV
LIKELIHOOD NEWS-EDITORIAL STUDENTS WILL EXTRACT
DATA FROM COMPUTERS FOR STORY ASSIGNMENTS

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	6(13%)	19(41%)	12(26%)	9(20%)	---	3.48
Non-Accr.	41	9(22%)	11(29%)	13(30%)	6(16%)	2(5%)	3.48
All	87	15(17%)	30(34%)	25(29%)	15(17%)	2(3%)	3.48

The mean scores suggested top administrators of non-accredited

sequences and accredited sequences were in virtual agreement in believing it was likely news-editorial students would be required to extract data from computers for story assignments. Both had mean scores of 3.48. Twenty-five (29 per cent) of the top administrators were neutral, 12 (26 per cent) accredited sequences and 13 (30 per cent) non-accredited sequences.

Item 7: A computer science course will be required.

TABLE XLVI
LIKELIHOOD COMPUTER SCIENCE COURSE WILL BE REQUIRED

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	1(2%)	12(26%)	14(30%)	19(42%)	---	2.89
Non-Accr.	42	6(14%)	9(21%)	5(12%)	18(43%)	4(10%)	2.88
All	88	7(8%)	21(24%)	19(22%)	37(42%)	4(4%)	2.88

The mean scores suggested top administrators of non-accredited sequences (2.88) and top administrators of accredited sequences (2.89) were in virtual agreement in believing that the requiring of a computer science course was less than likely. The mean scores tended toward neutral. Six (14 per cent) non-accredited sequences reported the requirement of a computer science course was most likely and 9 (21 per cent) reported it was likely compared to 1 (2 per cent) accredited sequence that reported it was most likely and 12 (26 per cent) that reported it was likely.

Item 8: News-editorial sequence will have its own newspaper technology course.

TABLE XLVII

LIKELIHOOD NEWS-EDITORIAL SEQUENCE WILL HAVE
NEWSPAPER TECHNOLOGY COURSE

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	6(13%)	22(48%)	4(9%)	13(28%)	1(2%)	3.41
Non-Accr.	42	7(17%)	12(29%)	13(30%)	8(19%)	2(5%)	3.33
All	88	13(15%)	34(39%)	17(19%)	21(24%)	3(3%)	3.38

The mean scores suggested top administrators of accredited sequences (3.41) believed it was likely the news-editorial sequence will have its own newspaper technology course more than top administrators of non-accredited sequences (3.33) believed it was likely. Both believed it was likely the sequence would have a newspaper technology course. Thirteen (30 per cent) of non-accredited sequences were neutral compared to 4 (9 per cent) accredited sequences that were neutral. Thirteen (28 per cent) accredited sequences reported it was not likely the sequence would have its own newspaper technology course and 1 (2 per cent) reported it was least likely compared to 8 (19 per cent) non-accredited sequences that reported it was not likely and 2 (5 per cent) that reported it was least likely.

Item 9: News-editorial sequence will have a newspaper management course.

TABLE XLVIII

LIKELIHOOD NEWS-EDITORIAL SEQUENCE WILL HAVE
NEWSPAPER MANAGEMENT COURSE

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	46	15(33%)	20(43%)	6(13%)	5(11%)	---	3.98
Non-Accr.	42	12(29%)	19(45%)	5(12%)	3(7%)	3(7%)	3.81
All	88	27(31%)	39(44%)	11(13%)	8(9%)	3(4%)	3.90

The mean scores suggested top administrators of accredited sequences (3.98) believed it was likely the news-editorial sequence would have a newspaper management course more than top administrators of non-accredited sequences (3.81) believed it was likely. Both believed strongly the sequence would have a newspaper management course. None of the accredited sequences reported it was least likely and 5 (11 per cent) reported it was not likely that the sequence would have a newspaper management course compared to 3 (7 per cent) non-accredited sequences that reported it was least likely and 3 (7 per cent) that reported it was not likely.

Item 10: News-editorial students will visit commercial newspapers at off-peak hours to have hands-on instruction with newsroom computer equipment.

TABLE XLIX

LIKELIHOOD NEWS-EDITORIAL STUDENTS WILL HAVE HANDS-ON
INSTRUCTION IN NEWSROOM COMPUTER EQUIPMENT AT
OFF-PEAK HOURS AT COMMERCIAL NEWSPAPERS

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	45	7(16%)	22(49%)	4(9%)	12(26%)	---	3.53
Non-Accr.	40	8(20%)	20(50%)	5(13%)	7(17%)	---	3.73
All	85	15(18%)	42(49%)	9(11%)	19(22%)	---	3.62

The mean scores suggested that top administrators of non-accredited sequences (3.73) believed it was likely news-editorial students would visit commercial newspapers during off-peak hours for hands-on instruction in newsroom computer equipment more than top administrators of accredited sequences (3.53) believed it was likely. Both believed the visits were likely. No top administrator reported visits were least likely. Twelve (26 per cent) accredited sequences reported it was not likely compared to 7 (17 per cent) non-accredited sequences that reported it was not likely.

Item 11: Contact between newspapers and journalism program will increase.

The mean scores of Table L suggested top administrators of non-accredited sequences (4.24) believed it was likely contacts between newspapers and the journalism program would increase more than top administrators of accredited sequences believed it was likely contacts would increase (4.13). Both believed strongly it was likely that contacts would increase. No top administrator of a non-accredited sequence reported the likelihood of contacts was not likely and least likely.

Three (6 per cent) accredited sequences reported it was not likely and none reported it was least likely.

TABLE L
LIKELIHOOD CONTACT BETWEEN NEWSPAPERS AND
JOURNALISM PROGRAM WILL INCREASE

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	47	17(36%)	22(47%)	5(11%)	3(6%)	---	4.13
Non-Accr.	41	14(34%)	23(56%)	4(10%)	---	---	4.24
All	88	31(35%)	45(51%)	9(10%)	3(4%)	---	4.18

Item 12: Teaching of newsroom computer technology will become the responsibility of the newspapers rather than the journalism programs.

TABLE LI
LIKELIHOOD RESPONSIBILITY OF TEACHING NEWSROOM COMPUTER
TECHNOLOGY WILL BE ASSUMED BY NEWSPAPERS

	Respond- ents	Most Likely	Likely	Neutral	Not Likely	Least Likely	Mean
Accredited	44	2(5%)	4(9%)	5(11%)	28(64%)	5(11%)	2.32
Non-Accr.	40	1(2%)	7(18%)	8(20%)	17(42%)	7(18%)	2.45
All	84	3(4%)	11(13%)	13(15%)	45(54%)	12(14%)	2.38

The mean scores suggested the top administrators of accredited sequences (2.32) believed it was not likely that the responsibility for teaching newsroom computer technology would be transferred from the journalism programs to the newspapers more than the top administrators of non-accredited sequences (2.45) believed it was not likely. Both believed rather strongly it was not likely the newspapers would take this responsibility from the journalism programs.

Two (5 per cent) accredited sequences reported the transferring of responsibility of teaching newsroom computer technology to the newspapers was most likely and 4 (9 per cent) reported it was likely compared to 1 (2 per cent) non-accredited sequence that reported it was most likely and 7 (18 per cent) that reported it was likely.

Part V, Obstacles to Present Practices

In Part V, top administrators checked the choice which was most appropriate in describing the obstacles which stand in their way of providing instruction in newsroom computer technology at present.

Item 1: Among the obstacles to providing instruction in newsroom computer technology, the cost of newsroom computer equipment is of

The mean scores of Table LII suggested the cost of newsroom computer equipment has been an obstacle of high significance to top administrators. Mean scores suggested the cost of newsroom computer equipment has been a greater obstacle to accredited sequences (4.92) than to non-accredited sequences (4.71). Forty-six (92 per cent) top administrators of accredited sequences reported cost has been an obstacle of great significance compared to 33 (80 per cent) non-accredited top administrators who reported cost was of great significance.

TABLE LII
SIGNIFICANCE OF COST OF NEWSROOM COMPUTER EQUIPMENT
AS OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	46(92%)	4(8%)	---	---	---	4.92
Non-Accr.	41	33(80%)	6(16%)	1(2%)	---	1(2%)	4.71
All	91	79(87%)	10(11%)	1(2%)	---	1(1%)	4.82

Item 2: Among the obstacles to providing instruction in newsroom computer technology, the journalism program budget is of

TABLE LIII
SIGNIFICANCE OF JOURNALISM PROGRAM BUDGET
AS OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	39(78%)	9(18%)	1(2%)	---	1(2%)	4.70
Non-Accr.	41	32(78%)	7(18%)	1(2%)	---	1(2%)	4.68
All	91	71(78%)	16(18%)	2(2%)	---	2(2%)	4.69

The mean scores suggested that top administrators of accredited sequences (4.70) and of non-accredited sequences (4.68) were in virtual agreement as to the significance of the journalism budget. Both

agreed the budget is of high significance in providing instruction in newsroom computer technology. The percentage responses reported by both sequences were identical.

Item 3: Among the obstacles to providing instruction in newsroom computer technology, the competence of the faculty members in newsroom technology is of

TABLE LIV
SIGNIFICANCE OF FACULTY COMPETENCE IN NEWSROOM TECHNOLOGY
AS OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	4(8%)	20(40%)	4(8%)	18(36%)	4(8%)	3.04
Non-Accr.	41	6(16%)	16(38%)	4(9%)	8(20%)	7(17%)	3.15
All	91	10(11%)	36(40%)	8(9%)	26(28%)	11(12%)	3.09

The mean scores suggested top administrators of accredited and of non-accredited sequences identified faculty competence in newsroom technology as a more significant than less significant obstacle, but both tended toward neutral. Accredited sequences had a mean score of 3.04 and non-accredited sequences 3.15. Twenty-four (48 per cent) accredited sequences reported faculty competence was of great significance and significance as an obstacle to instruction compared to 22 (44 per cent) that reported it was of little significance and no significance. Twenty-two (54 per cent) non-accredited sequences reported it was of great significance and significance and 15 (37 per cent) reported it was of little

significance and no significance.

Item 4: Among the obstacles to providing instruction in newsroom computer technology, contact between newspapers and the journalism program is of

TABLE LV
SIGNIFICANCE OF CONTACT BETWEEN NEWSPAPERS AND JOURNALISM PROGRAM AS OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	3(6%)	10(20%)	8(16%)	20(40%)	9(18%)	2.56
Non-Accr.	41	7(17%)	14(34%)	5(12%)	10(25%)	5(12%)	3.20
All	91	10(11%)	24(26%)	13(15%)	30(33%)	14(15%)	2.85

The mean scores suggested the top administrators of accredited sequences and top administrators of non-accredited sequences disagreed as to the significance of contact between the newspapers and the journalism program as an obstacle to providing instruction in newsroom technology. Accredited sequences (2.56) mean score suggested contact was not a significant problem. Non-accredited sequences (3.20) mean score suggested contact was of some significance. The mean score of all top administrators (2.85) suggested contact was of less significance than more significance and it reflected a tendency toward neutrality suggested in the non-accredited mean score. Thirteen (26 per cent) accredited sequences reported contact was of great significance and significance as an obstacle to instruction compared to 21 (51 per cent)

non-accredited sequences that reported contact was of great significance and significance.

Item 5: Among the obstacles to providing instruction in newsroom computer technology, lack of space in the journalism facility is of

TABLE LVI

SIGNIFICANCE OF SPACE IN THE JOURNALISM FACILITY
AS OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	5(10%)	18(36%)	3(6%)	18(36%)	6(12%)	2.96
Non-Accr.	41	9(22%)	15(37%)	4(9%)	8(20%)	5(12%)	3.37
All	91	14(15%)	33(36%)	7(8%)	26(29%)	11(12%)	3.14

The mean scores suggested the top administrators of accredited sequences and top administrators of non-accredited sequences disagreed as to the significance of space in the journalism facility as an obstacle to providing instruction in newsroom technology. Accredited sequences had a mean score of 2.96, suggesting space was a less significant obstacle than a more significant obstacle. The mean score seemed to tend toward neutral. Non-accredited sequences had a mean score of 3.37, suggesting space has been a significant obstacle in providing instruction. The mean score for all top administrators was 3.14, a score that tended toward neutral. Twenty-three (46 per cent) accredited sequences reported space was an obstacle of great significance and significance

compared to 24 (59 per cent) non-accredited sequences that reported space as an obstacle of great significance and significance.

Item 6: Among the obstacles to providing instruction in newsroom computer technology, increased enrollment is of

TABLE LVII
SIGNIFICANCE OF INCREASED ENROLLMENT AS
OBSTACLE TO PROVIDING INSTRUCTION

	Respond- ents	Great Signifi- cance	Signifi- cance	Neutral	Little Signifi- cance	No Signifi- cance	Mean
Accredited	50	9(18%)	22(44%)	6(12%)	10(20%)	3(6%)	3.48
Non-Accr.	41	5(12%)	14(34%)	5(12%)	14(34%)	3(8%)	3.10
All	91	14(15%)	36(40%)	11(12%)	24(26%)	6(7%)	3.31

The mean scores suggested increased enrollments has been an obstacle of more significance to accredited sequences (3.48) than to non-accredited sequences (3.10), a score which seemed to tend toward neutral. Both agreed increased enrollment has been a more significant than less significant obstacle. Thirteen (26 per cent) accredited sequences reported increased enrollment has been of little significance and no significance as an obstacle compared to 17 (42 per cent) non-accredited sequences that reported increased enrollment has been of little significance and great significance as an obstacle.

Part VI, Present Descriptions of Instruction

In Part VI, top administrators were asked to provide any description of specific examples of present instructional opportunities in the use of newsroom computer technology.

TABLE LVIII

PRESENT METHODS OF INSTRUCTION

	Respond- ents	Laboratory Exercises	Classroom Activity	Visits to Newspapers	Visits from Newsmen
Accredited	33	21(66%)	16(48%)	19(58%)	11(33%)
Non-Accr.	32	9(28%)	17(53%)	20(63%)	10(31%)
All	65	30(46%)	33(51%)	39(60%)	21(32%)

Table LVIII has been compiled from the descriptions offered by top administrators. All top administrators of accredited sequences and top administrators of non-accredited sequences indicated visits to newspapers to view equipment has been the most used method of instruction and classroom activity has been the second most used method. Accredited sequences indicated laboratory exercises, many of them simulated rather than hands-on instruction, have been the most used method while non-accredited sequences reported laboratory exercises were the least used method. The second most used method of instruction by accredited sequences has been visits to newspapers. The least used method reported by all top administrators and administrators of accredited sequences has been visits from newsmen.

Reports from top administrators indicated some hands-on instruction has been offered in laboratories with the most common equipment having been the electric typewriter and some has been made available on visits by the Gannett Technology Van. Some students have had hands-on experience on internships at newspapers and in classes engaged in producing copy for a newspaper, commercial, college and laboratory. Individual descriptions have been presented in Appendix G.

Part VI, 1980 Descriptions of Instruction

In the second part of Part VI, top administrators were asked to provide any specific information as to how they planned to offer instruction in newsroom computer technology by 1980.

TABLE LIX

1980 METHODS OF INSTRUCTION

	Respond- ents	Laboratory Exercises	Classroom Activity	Visits to Newspapers	Visits from Newsmen
Accredited	37	18(49%)	6(16%)	1(3%)	0(0%)
Non-Accr.	30	10(33%)	6(20%)	2(7%)	1(3%)
All.	67	28(42%)	12(18%)	3(4%)	1(2%)

Table LIX has been compiled from descriptions offered by top administrators. The reports by administrators of accredited and non-accredited sequences indicated laboratory exercises would be the most used method of instruction in 1980 and that classroom activity would be

the second most used. Accredited sequences indicated they would make greater use of laboratory exercises than would non-accredited sequences and non-accredited sequences indicated they would make greater use of classroom activity than would accredited sequences. Reports from top administrators indicated that major problems were their budgets, the cost of equipment and rapid change which has been taking place in the development of newsroom technology. Individual descriptions have been presented in Appendix H.

Part VI, Comments

In Part VI, part 3, top administrators were asked to provide any additional comments they wished to make. A frequent comment offered was that journalism schools should concentrate on educating and preparing future newsmen and that the role of journalism education was not to train researchers and/or computer scientists. The problems of the journalism program budget, cost of equipment and obsolescence of newsroom computer equipment were also mentioned. Individual responses have been presented in Appendix I.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The major findings of this study were (1) An indication there was a lack of newsroom computer equipment available in the offering of instruction in news-editorial sequences. The apparent lack of equipment seemed related to mostly economic factors faced by top administrators of journalism programs which had news-editorial sequences. Other apparently lesser factors which seemed to be related to the lack of equipment were a belief of some top administrators that the mission of the news-editorial sequence has been to train newsmen, not to train researchers and computer scientists, increasing enrollments, the lack of space in journalism facilities and the competence of faculty in newsroom technology. (2) An indication that journalism programs wanted to retain the responsibility of providing instruction in newsroom technology to news-editorial students and not to have it placed in the hands of commercial newspapers or to have much instruction provided by another academic discipline.

Another finding was that there was an apparent difference between accredited and non-accredited news-editorial sequences. Differences were suggested in the characteristics of the enrollments and faculty of the respondents, the availability of equipment, present instruction and the outlook for instruction in the future.

Other findings were (1) Top administrators suggested more newsroom

equipment should be available in the news-editorial sequence by 1980 than was available at present; (2) Top administrators suggested what would be most desirable in instruction in newsroom computer equipment would not be what was most likely to be available in 1980.

Summary and Conclusions

The first major finding was an indication of the apparent lack of newsroom computer equipment available in the offering of instruction in news-editorial sequences. This lack of equipment seemed to be related to mostly economic factors faced by top administrators. Other apparently lesser factors which seemed related to the apparent lack of equipment were a belief of some top administrators that the mission of the news-editorial sequence was to train and educate newsmen not researchers and computer scientists, increasing enrollments, the lack of space in the journalism facility and the competence of faculty in newsroom technology.

An indication of the lack of equipment available in the news-editorial sequence has been reported (Table LVIII, page 126). The table and the accompanying summary of descriptions of present instruction offered by top administrators reported most instruction has been by verbal explanations in class by faculty members and visiting newsmen and by trips to newspaper plants to view computerized equipment in operation. These methods of instruction have not involved investment in equipment, thus an indication of the lack of equipment has been offered. The summaries of open-ended responses following Table LIX, page 127, and of Comments, page 128, have indicated the top administrators concern for financing the cost of equipment and the concern that the

rapid changes in technology could result in investments being made in equipment which would soon be obsolete. The summary of Comments and individual responses in Appendix I also have reported the belief by some top administrators that journalism programs should not be concerned with instruction in newsroom technology, but should be concerned with training news-editorial sequence students to gather, report and edit news. This rejection of instruction in newsroom computer technology could be a further indication of why there was a lack of equipment in addition to the obstacles economic factors have presented.

Top administrators have indicated (Table LII, page 121, and Table LIII, page 121) that the obstacles most significant to providing instruction in newsroom computer technology have been the cost of the equipment and journalism budgets. A further indication of the economic factors has been suggested in Table XXV, page 97, which reported that top administrators disagreed that newsroom computer equipment was not necessary at this time. Although the top administrators have expressed a need for equipment, the equipment has not been available and this could be explained by the cost of equipment and the journalism budgets.

Evidence of the lack of equipment was suggested in Table XV, page 87, which reported that less than half of all news-editorial sequences, half of the accredited and less than one-third of the non-accredited, have electric typewriters, the most common piece of equipment. When Table I, page 73, and Table XVI, page 89, have been examined it has been suggested that there has been one electric typewriter, the most basic and necessary piece of newsroom computer equipment, for every 21.73 students in all news-editorial sequences. Table XVI also reported the low number of Cathode Ray Tubes (CRT), Video Display

Terminals (VDT), Optical Character Readers (OCR) and scanners which have been available to news-editorial students. Table XVII, page 90, reported a further indication of the lack of equipment as it was reported that much of the equipment, particularly electric typewriters, has served in more than one instructional setting.

Another indication of the lack of equipment has been suggested (Table XX, page 93). Less than 20 per cent of all news-editorial sequences required students to extract data from a computer for story assignments. The summary of open-end responses to Question 20, page 94, indicated that extraction of data has not been required because of a lack of computer facilities and because data extraction has not been considered a necessary part of instruction. The first reason suggested the existence of economic factors and the second reason suggested the belief of some top administrators that news-editorial majors should be trained to be newsmen not researchers and computer scientists.

Table XXII, page 95, reported top administrators agreed that viewing newsroom computer equipment in operation was a necessary part of present instruction and Table XVIII, page 91, reported more than 90 per cent of news-editorial sequences have had students view equipment in operation at commercial newspapers. As top administrators agreed that viewing was necessary and so many sequences have had the viewing take place at commercial newspapers, it has been suggested further that equipment has been lacking at the journalism program facility. Another economic aspect was indicated by responses to Question 18, pages 92 and 93, in which top administrators who reported students had not seen the equipment in operation at commercial newspapers had not done so because the journalism program could not afford the cost of having students travel

to a newspaper to observe the equipment.

Other obstacles apparently less related to the lack of equipment than economic factors but which did seem related were reported as increasing enrollments (Table LVII, page 125), lack of space in the journalism facility (Table LVI, page 124), and competence of faculty in the new technology (Table LIV, page 122). As enrollments increase it could be inferred that providing equipment in adequate numbers for each student becomes more difficult (as noted on page 73, and Table XVI, page 89). It also could be inferred that the greater the enrollment the greater the cost of trips to newspapers and the more difficult it would be for the newspapers to accommodate the greater number of students in the provision of viewing and hands-on instruction. (Question 18, pages 92 and 93). The lack of space in the journalism facility and the competence of faculty in newsroom technology were reported as apparently slightly significant obstacles to the provision of instruction and seemed less significant obstacles than increasing enrollments, cost of equipment and journalism program budgets. It could be inferred that the lack of space would limit the size and/or the number of pieces of equipment which could be placed in the journalism facility. It could be inferred that top administrators could be hesitant to purchase equipment for instructional use by faculty which was not competent in newsroom technology and this could explain to some degree why visits to newspapers and from newsmen were used to the degree they were (Table LVIII, page 126, Table XVIII, page 91, and Table XIX, page 92).

The indicated lack of equipment would suggest that instruction in newsroom computer technology was less than what journalism program top administrators would prefer. This could be inferred from Table XXIII,

page 96, Table XXIV, page 96, and Table XXV, page 97, in which top administrators reported that present instructional practices should include hands-on instruction, the replacement of mechanical typewriters with electric typewriters and newsroom equipment such as CRTs, VDTs, OCRs and scanners. This has been further supported by Table XXI, page 94, in which top administrators reported more than verbal explanation was necessary at present.

The second major finding was an indication that journalism programs wanted to retain the responsibility of providing instruction in newsroom technology to news-editorial students and not to have it placed in the hands of commercial newspapers and not to have much instruction provided by another academic discipline. Top administrators reported (Table XXVII, page 99, Table XXXIX, page 109, and Table LI, page 119) that the responsibility of teaching newsroom technology should not be assigned to newspapers at present, that such assignment was not desirable and that such assignment was not likely. In each instance less than 20 per cent of the top administrators indicated a preference to have the responsibility of the teaching of newsroom technology assumed by newspapers.

Further indications by the top administrators that instruction should remain the responsibility of the journalism programs has been presented (Table XXX, page 102, and Table XLII, page 112). The tables reported top administrators reported that hands-on instruction in newsroom computer equipment at the journalism school seemed desirable and seemed likely. Top administrators reported (Table XXXI, page 103, and Table XLIII, page 113) that it appeared desirable and likely that electric typewriters would replace mechanical typewriters. The top

administrators have suggested in Table LIX, page 127, and the accompanying summary that they had hopes of obtaining or would obtain computer equipment to be used for instruction in the journalism facility. A comparison of Table LIX, page 127, indicated that by 1980 more instruction would be taking place in the laboratory than would be taking place in the classroom and upon visits to newspapers. Another indication that journalism programs could be taking more responsibility in the instruction of newsroom technology could be found (Table XXXVI, page 107, and Table XLVIII, page 117) as top administrators reported newspaper management courses seemed desirable and likely as part of the news-editorial sequence. This could indicate that the top administrators have been aware of criticisms by newspaper management and some journalism program graduates (see pages 30, 31, 38 and 39) and the low percentage of news-editorial sequences which have required a newspaper management course (Table X, page 83) and the one in four sequences which have offered instruction in newsroom technology in a newspaper management course (Table XI, page 84).

It should not be concluded that journalism programs would not continue to depend upon visits to newspapers to provide instruction. Top administrators reported (Table XLIV, page 114) that it seemed less than likely that investment would be made in all kinds of computer equipment. It could be inferred that if the equipment would not be available in the journalism facility it could be available at a commercial facility. As top administrators reported (Table XXIX, page 101, and Table XLI, page 111) that viewing seemed a desirable and likely means of instruction and that having students visit commercial newspapers at off-peak hours for hands-on instruction seemed a desirable and likely means of

providing instruction (Tables XXXVII, page 108, and Table XLIX, page 118), it could be concluded that visits to newspapers would be necessary in some instances.

Indications that top administrators did not plan to have much instruction provided by another academic discipline in computer equipment have been offered (Table XII, page 85, Table XIII, page 86, and Table XIV, page 86). Only one news-editorial sequence required its majors to have a course in computer science outside the sequence. Although only 10 sequences offered a course in the new technology in the news-editorial sequence, but three required majors to take the course offered in the sequence. Top administrators reported it seemed more desirable to have a newspaper technology course within the sequence (Table XXXV, page 106) than to require a computer science course (Table XXXIV, page 105). Top administrators reported it appeared less than likely a computer science course would be required (Table XLVI, page 115), but it seemed more than likely that the sequences would have a newspaper technology course (XLVII, page 116). The top administrators reported that although a few sequences offered their own new technology course (Table XIII, page 86) and fewer required it (Table XIV, page 86), more sequences required their own course than required a computer course outside the sequence (Table XII, page 85). Top administrators reported it seemed more desirable and likely that sequences would provide instruction in the new technology than it seemed desirable or likely majors would be required to learn about computers outside the sequence. This appeared to be a further indication that journalism programs want the responsibility for providing instruction in newsroom computer technology to the greatest extent possible.

Although it has been reported that there is a lack of equipment in the journalism facility in the providing of instruction in newsroom computer equipment and that it could be inferred this lack of equipment suggested instruction was less than what journalism top administrators would prefer, journalism programs did want to retain the responsibility of providing instruction in newsroom technology. It has been indicated journalism programs did want the responsibility and not have it placed upon the newspapers, although some instruction would be provided at commercial newspapers but to a lesser extent than at present. Top administrators also suggested instruction on-campus would remain mostly in the journalism program.

Another finding was that there was an apparent difference between accredited and non-accredited news-editorial sequences. Differences are suggested in the characteristics of the enrollments and faculty of the respondents, the availability of equipment, present instruction and the outlook for instruction in the future.

Student enrollment in accredited sequences appeared greater than in non-accredited sequences (Table I, page 73) and was accompanied by faculty teaching courses in the news-editorial sequence (Table II, page 74), full-time faculty (Table III, page 75) and part-time faculty (Table IV, page 75) in the accredited sequences that seemed larger than in non-accredited sequences. Accredited sequences seemed to have more full-time professors at each academic rank than did non-accredited sequences (Table V, page 76) and more faculty members in accredited sequences appeared to have graduate degrees, both at the doctorate and masters level, than did non-accredited sequences faculty members (Table VII, page 80). Non-accredited sequences had more part-time faculty

members at the professorial ranks, with the exception of associate, than did accredited sequences but fewer at the instructor and other ranks (Table VI, page 79). Part-time faculty members of accredited sequences held more graduate degrees and more bachelor degrees than did part-time faculty of non-accredited sequences (Table VIII, page 81).

The reports that accredited sequences have had larger enrollments and more faculty members in total and more faculty members who held more graduate degrees could be attributed to the presence of accreditation. Students could be attracted more to accredited sequences because among the objectives of accredited sequences, which have been designed to prepare a student for a particular career, has been that the education program has been co-ordinated with the needs of the profession and a purpose has been that accreditation would serve as a guide to employers that students were graduates of approved professionally oriented programs (see pages 9, 10, 33 and 34).

Faculty members too could be more attracted to programs which had professional approval and claimed to provide closer contact among the media professionals, communication research organizations and journalism education (see pages 9, 10, 33 and 34). An indication of quality faculty could be suggested in Table LIV, page 122. Top administrators of both sequences reported faculty competence in newsroom technology seemed to be an obstacle in the provision of instruction. Top administrators of accredited sequences reported faculty competence seemed of less significance than did non-accredited sequences and a greater percentage of accredited sequences reported competence seemed an obstacle of less significance than did non-accredited sequences.

A greater percentage of accredited sequences than non-accredited

sequences have offered courses in production/typography and newspaper management (Table IX, page 82) and a greater percentage of accredited than non-accredited sequences have offered instruction in newsroom technology in reporting, editing, production/typography and newspaper management courses (Table XI, page 84). A greater percentage of non-accredited sequences than accredited sequences required editing and newspaper management (Table X, page 83). One reason accredited sequences seemed to be offering more instruction in newsroom technology was accredited sequences had more equipment.

Table XV, page 87, reported a greater percentage of accredited sequences had more electric typewriters and VDTs than non-accredited sequences, non-accredited sequences had a slightly higher percentage of sequences with CRTs and scanners and the sequences were equal in the possession of OCRs. Table XVI, page 89, reported that total and average, accredited sequences had more electric typewriters, VDTs and CRTs, each had the same number of OCRs and one non-accredited sequence had the only scanners. Another indication was that more accredited sequences than non-accredited sequences reported having used laboratory exercises (Table LVIII, page 126) and most newsroom computer equipment was reported available in the laboratory than any other location (Table XVII, page 90). Although an apparent lack of equipment was indicated among all sequences, the apparent lack of equipment seemed more evident in the non-accredited sequences. Another indication of the lack of the availability of computer equipment to non-accredited sequences was that a smaller percentage of non-accredited than accredited sequences required majors to extract data from computers for story assignment (Table XX, page 93).

It should be noted that non-accredited sequences top administrators reported lack of space in the journalism facility seemed a significant obstacle in the provision of newsroom computer instruction. Accredited sequences reported lack of space seemed a less than significant obstacle (Table LVI, page 124). It could be inferred the lack of space could limit the size and/or number of pieces of equipment the non-accredited sequences could make available. Accredited sequences reported increased enrollments seemed a more significant obstacle to the provision of instruction than did non-accredited sequences, although non-accredited sequences did report increased enrollments did seem a slight obstacle. It could be inferred that providing equipment in adequate numbers for each student becomes more difficult with increased enrollments (page 133). Non-accredited sequences reported that faculty competence in newsroom technology seemed to be an obstacle to instruction (Table LIV, page 122) and it could be inferred that top administrators of non-accredited sequences could be hesitant to purchase equipment which would be used for instructional purposes by that faculty. This combination of factors could further explain why the apparent lack of equipment seemed more evident in non-accredited sequences.

Another reason why accredited sequences seemed to be offering more instruction in newsroom technology than non-accredited sequences was because contact between newspapers and accredited sequences appeared to be more adequate than contact between newspapers and non-accredited sequences. Accredited sequences reported the availability of internships in describing reasons for adequate contacts and non-accredited sequences reported the lack of internships in describing the contact as inadequate (Table XXVI, page 98). A greater percentage of accredited sequences than

non-accredited sequences reported students had hands-on instruction at commercial newspapers (Table XIX, page 92). This apparent difference in adequacy of contact was supported further in Table LV, page 123, as contacts between newspapers and the journalism program were reported by non-accredited sequences to seem to be a significant obstacle in providing instruction in newsroom computer technology. Accredited sequences reported the contact did not seem to be a significant obstacle.

The apparent presence of more equipment in accredited sequences than non-accredited sequences and the greater adequacy of contacts with newspapers reported by accredited sequences could be attributed to accreditation. Despite economic obstacles and increasing enrollments and to some degree faculty competence, top administrators of accredited sequences could have sensed more of an obligation and responsibility to provide equipment for instruction because of the objectives of accreditation which have called for co-ordination of journalism education with the needs of the profession (see pages 9, 10, 33 and 34). The greater adequacy of contact and the apparent absence of an obstacle related to contacts could be attributed to the purpose of accreditation which presumed contact between journalism education and professional journalists (see pages 9, 10, 33 and 34).

Evidence of the difference accreditation could make seemed to be suggested by examining present practices in that accredited sequences disagreed more than non-accredited sequences that verbal explanation was the only means of instruction necessary at present (Table XXI, page 94); accredited and non-accredited sequences were in virtual agreement that viewing of newsroom computer equipment was necessary at present (Table XXII, page 95); accredited sequences agreed more than non-accredited

sequences that electric typewriters should replace mechanical typewriters at this time (Table XXIV, page 96); accredited sequences disagreed more than non-accredited sequences that it was not necessary to have newsroom computer equipment at present (Table XXV, page 97) and accredited sequences disagreed more than non-accredited sequences that newspapers not journalism programs should have the responsibility of teaching newsroom technology (Table XXVII, page 99). The above results indicated that top administrators of accredited sequences agreed more strongly than non-accredited sequence top administrators to measures that would involve greater expense although they agreed more than non-accredited sequence top administrators that cost of equipment (Table LII, page 121) and journalism program budgets (Table LIII, page 121) were obstacles to the provision of instruction. This seemed to suggest again that despite economic obstacles top administrators believed they have an obligation to the objectives and purposes of accreditation (see pages 9, 10, 33 and 34). As hands-on instruction has been more available to accredited sequences than non-accredited sequences at the journalism facility and commercial newspapers, this could explain why non-accredited sequence top administrators agreed more than accredited sequence top administrators that hands-on instruction was necessary at present (Table XXIII, page 96).

Another indication of the difference between contacts of non-accredited sequences and newspapers and accredited sequences and newspapers could be suggested by examining Desirable Practices, Table XXXVI, Table XXXVII and Table XXXVIII. Table XXXVI, page 107, indicated it was more desirable for non-accredited sequences than for accredited sequences to have a newspaper management course. The greater desire could be explained as non-accredited sequences have been a way of appealing to professional newsmen who have cited the need for management skills among journalism students (see pages 30, 31, 38 and 39). However,

it should be remembered that non-accredited sequences offered newspaper management courses less than did accredited sequences (Table IX, page 82) and offered instruction in newsroom technology in newspaper management courses less than accredited sequences did (Table XI, page 84). This could reflect the need of a course offering which is greater among non-accredited sequences than accredited sequences. Non-accredited sequences indicated greater desire than did accredited sequences to have news-editorial students visit commercial newspapers at off-peak hours for hands-on instruction (Table XXXVII, page 108) and indicated greater desire than accredited sequences did to increase contacts between journalism programs and newspapers (Table XXXVIII, page 108). These results seemed to suggest a greater desire for contact between non-accredited sequences and newspapers. The desire for contact could be greater than that of accredited sequences because a significant obstacle to the provision of newsroom computer instruction reported by non-accredited sequences was the contact (or lack of contact) between the newspapers and the non-accredited sequences. Accredited sequences indicated contacts between newspapers and the accredited sequences were not a significant obstacle (Table LV, page 123).

The outlook suggested as to instruction in newsroom technology in the future appeared to be that accredited sequences would have more equipment available in the journalism facility than non-accredited sequences and non-accredited sequences would increase contacts with commercial newspapers more than accredited sequences. Accredited sequences reported providing instruction by explanation seemed less likely by 1980 than the likelihood reported by non-accredited sequences (Table XL, page 110); accredited sequences reported viewing seemed less likely

by 1980 than the likelihood reported by non-accredited sequences (Table XLI, page 111) and the likelihood reported by each seemed less than the present necessity of viewing reported by each (Table XXII, page 95); accredited sequences reported hands-on instruction in the journalism facility appeared more likely by 1980 than the likelihood reported by non-accredited sequences (Table XLII, page 112); accredited sequences reported replacing mechanical typewriters with electric typewriters by 1980 seemed more likely than the likelihood reported by non-accredited sequences (Table XLIII, page 113) and the likelihood reported to each appeared more than the present necessity to replace mechanical typewriters with electric typewriters reported by each (Table XXIV, page 96); although both sequences indicated it was more unlikely that investments would be made in all kinds of computer equipment by 1980, accredited sequences indicated the likelihood of investments was greater than did non-accredited sequences (Table XLIV, page 114). Although both sequences indicated disagreement that investment in all kinds of computer equipment was not necessary at present, accredited sequences disagreed more strongly (Table XXV, page 97). This seemed to support the greater likelihood of investment being made by accredited sequences than by non-accredited sequences. With the likelihood greater that accredited sequences would have less explanation and viewing and would have more hands-on instruction, replacement of mechanical typewriters with electric typewriters and investments in all kinds of equipment than would non-accredited sequences and accredited sequences would have less explanation and viewing and more hands-on instruction and replacement of mechanical typewriters than that indicated as necessary at present, it would seem that accredited sequences would increase by 1980 the use of newsroom

computer equipment at the journalism facility more than non-accredited sequences. This suggested increase despite economic obstacles reported in Table LII, page 121, Table LIII, page 121, Table LIX, page 127, and in the Comments, page 128, seemed to be further evidence that top administrators of accredited sequence believed they had an obligation to meet accreditation standards.

Non-accredited sequences reported hands-on instruction for news-editorial students at commercial newspapers seemed more likely by 1980 than the likelihood indicated by accredited sequences (Table XLIX, page 118) and non-accredited sequences indicated an increase in contact between the journalism program and newspapers seemed more likely by 1980 than the likelihood indicated by accredited sequences (Table L, page 119). One explanation of the likelihood of increased contact indicated by non-accredited sequences could be non-accredited sequences apparently would not be offering as much hands-on instruction at the journalism facility as accredited sequences and could need increased contacts for hands-on instruction. Another explanation of the likelihood of the increased contact could be the non-accredited sequences indicated they would not have the equipment in the journalism facility that accredited sequences would have and a greater need would exist to visit newspaper plants and to have newsmen visit the journalism program to provide information about the new technology. Another explanation could be that contacts of non-accredited sequences with newspapers were indicated to be less adequate than contacts of accredited sequences (Table XXVI, page 98). These increases in contacts could overcome an obstacle to providing instruction in newsroom computer equipment reported by non-accredited sequences (Table LV, page 123) and could ease the obstacles

of lack of space (Table LVI, page 124) and faculty competence (Table LIV, page 122).

An apparent difference between accredited sequences and non-accredited sequences has been suggested. It has been indicated that accredited sequences have attracted more students, more faculty who seem to be somewhat more competent and have more graduate education, had more equipment available for instruction in newsroom technology, appeared to have more adequate contact with newsmen and seemed to have provided more and seemed likely to provide more instruction in newsroom technology. Accreditation and the obligation to meeting accreditation standards sensed by top administrators of accredited sequences seemed to provide some explanation to the advantages held by accredited sequences.

Another finding was that top administrators of all sequences suggested more newsroom computer equipment should be available in the news-editorial sequence than what was available at present. Top administrators indicated that the likelihood of viewing was not as likely (Table XLI, page 111) as was the present appropriateness of viewing (Table XXII, page 95); that the likelihood of hands-on instruction at the journalism facility seemed more likely (Table XLII, page 112) than the present appropriateness of hands-on instruction (Table XXIII, page 96) and that the replacement of mechanical typewriters seemed more likely (Table XLIII, page 113) than the present appropriateness of replacing mechanical typewriters (Table XXIV, page 96). The inference was that if viewing were lessened and hands-on instruction and the replacement of mechanical typewriters with electric typewriters were increased, more equipment would have to be available in 1980 than was available at present. This inference was further supported in Table LVIII, page 126,

and Table LIX, page 127) which reported more of the total instruction would be offered in the laboratory in 1980 than was offered in the laboratory at present, and less would be offered in the classroom, on visits to newspapers and on visits from newsmen in 1980 than was offered at present. The laboratory has been the location of most of the available newsroom computer equipment (Table XVII, page 90).

Another finding was that top administrators suggested that what would be most desirable in instruction in newsroom computer equipment would not be what seemed most likely to be available in instruction in newsroom computer equipment by 1980. Top administrators indicated viewing equipment in operation seemed more desirable (Table XXIX, page 101) than likely (Table XLI, page 111); hands-on instruction at the journalism facility seemed more desirable (Table XXX, page 102) than likely (Table XLII, page 112); the replacing of mechanical typewriters with electric typewriters seemed more desirable (Table XXXI, page 103) than likely (Table XLIII, page 113); the necessity of purchasing all kinds of newsroom computer equipment seemed more desirable (Table XXXII, page 104) than likely (Table XLIV, page 114); contact between the journalism program and newspapers seemed more desirable (Table XXXVIII, page 108) than likely (Table L, page 119); the extraction of data from computers for story assignments seemed more desirable (Table XXXIII, page 105) than likely (Table XLV, page 114); the requirement of a computer science course seemed more desirable (Table XXXIV, page 105) than likely (Table XLVI, page 115); a news-editorial sequence newsroom technology course seemed more desirable (Table XXXV, page 106) than likely (Table XLVII, page 116); a newspaper management course seemed more desirable (Table XXXVI, page 107) than likely (Table XLVIII, page 117) and visits

to newspapers for hands-on instruction by journalism students seemed more desirable (Table XXXVII, page 108) than likely (Table XLIX, page 118). The only more likely (Table XL, page 110) than desirable (Table XXVIII, page 100) result was the provision of verbal explanation as a means of instruction.

The differences in desirability as compared to likelihood in verbal explanation, viewing of equipment in operation, hands-on instruction at the journalism school, replacement of mechanical typewriters with electric typewriters and extracting data from computers for story assignments could be explained by the economic factors of equipment cost and budget as achieving the aforementioned would involve the purchase of equipment. Differences noted in relation to viewing, contacts between the journalism program and newspapers and hands-on instruction at newspapers in off-peak hours could be explained by economic factors and by newspaper policy. If the viewing were to take place at a newspaper this as well as having contact at the newspaper and instruction at the newspaper could involve the cost of transporting students and hands-on instruction could be less likely because of a newspaper policy against students operating newsroom computer equipment. The differences noted in relation to having a news-editorial sequence newsroom technology course and a newspaper management course could be explained by the budget factor in that additional personnel could be necessary. The difference noted in relation to requiring a computer science course could be explained by a reluctance of the journalism program to reduce its responsibility in providing instruction in the area of computers. The above differences indicated again that equipment has been lacking and equipment cost and journalism budgets seemed to be related most to this

apparent lack of equipment. Also, the budget factor was suggested in an area other than equipment and the matter of responsibility for providing instruction was indicated.

It has been concluded that there has been an apparent lack of newsroom computer equipment in the offering of instruction in newsroom technology in news-editorial sequences. This apparent lack seemed related mostly to the cost of equipment and journalism budgets. Other factors such as increasing enrollments, lack of space in the journalism facility, faculty competence in newsroom technology and a belief by some top administrators that a journalism program should train newsmen not computer scientists and researchers seemed to be lesser reasons for the apparent lack of equipment. This apparent lack of equipment would suggest that instruction in newsroom computer technology was less than what journalism program top administrators would prefer.

Despite the apparent lack of equipment and the factors which seemed to be related to the lack, journalism programs wanted to retain responsibility for providing instruction in newsroom technology. The programs indicated they were opposed to relinquishing responsibility for instruction to the newspapers, although contacts with newspapers would be maintained and some contacts would involve instruction. The journalism programs also indicated they were opposed to having much instruction related to computers and technology provided by another academic discipline.

The apparent lack of equipment was indicated less in accredited sequences than in non-accredited sequences. Accredited sequences more than non-accredited sequences seemed to be attracting more students, more faculty who appeared somewhat more competent, appeared to be

providing and would provide more instruction in newsroom technology and appeared to have more adequate contacts with professional journalism. Although factors such as cost, budget, lack of space, increasing enrollments and faculty competence were considered, the presence of accreditation seemed to offer the greatest explanation of advantages held by accredited sequences.

It may be concluded from the indications of top administrators that more equipment would be available in 1980 than was available at present, however instruction in newsroom technology in 1980 should be less than seemed desirable to journalism program top administrators.

Recommendations

As this study was designed to gather information which would provide a present description of the characteristics of news-editorial sequences offering instruction in newsroom computer technology and a present description of the status of instruction in newsroom computer technology in news-editorial sequences in journalism departments, schools and colleges, it would be recommended that the study would be updated each year. The annual updating of the information would provide continually current descriptions. The information could be made available to journalism educators, publishers, editors, state press associations and other organizations which would have an interest in the education of future journalists.

As this study was designed to include information regarding the predictions and projections of journalism educators as to what instruction in newsroom technology in news-editorial sequences would be in 1980, it would be recommended that this study would be a basis for a

study to be conducted in 1980. The purpose of the recommended study would be to learn if the projections presented in this study were realized, what projections and predictions were realized and what projections and predictions were not realized and why the projections and predictions were or were not realized.

As a major finding of this study was that the present apparent lack of newsroom computer equipment was related to the cost of equipment and journalism budgets, it would be recommended that a study would be undertaken in an effort to determine how the purchase of newsroom computer equipment could best be financed. The study could include journalism educators, editors, publishers and others who would have an interest in the education of future journalists.

As this study suggested that an obstacle to providing instruction in newsroom computer technology seemed to be faculty competence in newsroom technology, it would be recommended that instructional programs be established to improve the competence in newsroom technology of faculty members. This program could be a co-operative effort by newspapers and the American Council on Education in Journalism.

As between 10 and 20 per cent of top journalism program administrators indicated the responsibility of teaching newsroom technology should or would be that of the newspapers and not the journalism programs, it would be recommended that a study of publishers and editors should be conducted to learn if they believed newspapers should or would become responsible for instruction in newsroom technology. The study could ask newspaper publishers or editors how instruction would be provided.

As a finding of this study was that accredited news-editorial

sequences seemed to hold advantages over non-accredited sequences, it would be recommended that a study of top administrators of accredited and non-accredited sequences would be made to determine what benefits and obstacles accreditation presented and what benefits and obstacles non-accreditation presented in the provision of newsroom computer technology. It would be recommended that a study of publishers and editors would be made to determine their beliefs about and attitudes toward accredited and non-accredited sequences and how these beliefs and attitudes did affect the relationships between newspapers and non-accredited sequences and newspapers and accredited sequences.

As this study suggested top administrators seemed to be concerned about the adequacy of contacts with newspapers and seemed to desire increased contacts with newspapers, it would be recommended a study be taken to determine ways in which contact between newspapers and news-editorial sequences could be increased and improved.

Further Considerations

The recommendations offered have called for further studies. This has not been done to provide a totally "ivory tower" approach. It has been done to examine carefully the responsibility of journalism education before journalism education becomes lost in the gadgetry of technology. One recommendation was based upon the less than 20 per cent of top administrators who reported the responsibility of teaching newsroom technology was that of the newspapers and not the journalism programs. Their main contention, which was detailed and made strongly in Appendices E, G, H and I, was that the mission of the journalism programs was to educate persons in the reporting and editing of news and not to

educate computer operators and technicians. It was recommended that professional newsmen, editors and publishers, would be surveyed for their beliefs as to whether the newspapers or the journalism programs should provide the instruction in newsroom technology, thus identifying the responsibility of journalism education.

Another recommendation was that publishers and editors should be contacted for their suggestions as to how the funds necessary to purchase technological equipment for journalism programs could be realized. This recommendation was based upon the identification of economics by top administrators as a highly significant problem in providing instruction in newsroom technology. It would seem to be a great waste of economic resources if top administrators would find that the responsibility of providing instruction in the new technology were a responsibility which belonged not to journalism education, but to the newspapers. The great waste would be that financial support would have been taken from the educating of persons to gather, report and edit news in a responsible manner. Money which could be spent in hiring faculty of the highest competence in the teaching of reporting and editing and in the providing of experiences to students which would enhance their abilities to gather, report and edit news would have been spent on tools which would make possible nothing more than the performance of mechanical tasks.

As one top administrator stated, the instruction in the new technology would enhance the education of the prospective journalist, but the basic objective would have to remain instruction in reporting and editing. He believed that to become too involved with gadgets would be to transform journalism schools to trade schools rather than having them

be professional schools. It was a belief shared by other top administrators. A journalism program would not send a graduate who could not type to a newspaper. The operation of electric typewriters, Video Display Terminals and other technological devices has been dependent upon the basic ability to type. The operation of the mechanical typewriter has not been taught by journalism educators. It has been learned by journalism students. The concern of journalism educators has been developing persons who would recognize a news story, would know how to gather information, would know how to accurately, fairly and responsibly report the story and would know how to edit a story which would be accurate, fair and identified as responsible journalism. The less than 20 per cent of top administrators expressed concern that journalism education would become lost in technology, swamped by gadgets and preoccupied with "toys". They have insisted the primary concern of journalism education was and needed to be the training of minds and the nurturing of inquisitive, committed and broadly educated news persons.

Appendices G, H and I provided suggestions as to instruction. The technology has been simulated in laboratory exercises as students have prepared copy as if it were to be electronically edited. In these exercises the students have abandoned lead pencils and glue pots and have gained a familiarity with the marking of copy for electronic editing. Other reports have suggested the use of readings, slide presentations, lectures by faculty and newsmen and visits to newspapers. The instruction described did provide an awareness and an enhancement. It did not sacrifice the main responsibility of teaching reporting and editing. It would seem that the use of such methods could be continued until the determination has been made as to how the instruction in

newsroom technology would be provided without sacrificing or compromising the primary mission of journalism education--the development of persons who would report and would edit the news in a fair, accurate and responsible manner. This would not suggest that those top administrators who were not among those who have raised the question of where the responsibility for instruction in newsroom technology would lie were ignoring the main mission of journalism education. What would be suggested and would be demanded would be that journalism educators would provide instruction in newsroom technology in a context which neither sacrificed nor compromised the main mission of developing persons who would gather, report and edit the news fairly, accurately and in the most responsible manner.

An assumption presented in Chapter I that the comparison between accredited and non-accredited sequences would indicate the accredited sequences were providing their students with more hands-on instruction in newsroom technology at the journalism facility and at commercial newspapers and did have greater contact with professional newsmen seemed to be supported by the findings. Some explanation of the advantages held by accredited sequences seemed to be provided by accreditation itself and the obligation to meet the accreditation standards. The author of this study has taught in both an accredited and in a non-accredited sequence. The author has felt the pressures of the obligations to the objectives and purposes of accreditation while teaching in an accredited sequence. These pressures were not sensed by the author while teaching in the non-accredited sequence.

It would seem presumptuous to attribute the difference between accredited and non-accredited sequences to the presence of accreditation

and the accompanying pressures of the purposes and objectives of accreditation. A study has been recommended and this study would include professional newsmen. This inclusion could confirm or deny a suspicion that professional newsmen have ignored or slighted non-accredited sequences because there have been no bonds of obligation between the non-accredited sequences and the newsmen as there have been between the accredited sequences and the newsmen. As top administrators of non-accredited sequences expressed greater concern as to the adequacy of contacts than did top administrators of accredited sequences and as top administrators of non-accredited sequences identified the lack of contact as an obstacle to providing instruction, an exploration of the relationship between non-accredited sequences and newsmen would be important.

A most important aspect of journalism education in the news-editorial sequence has been the preparation of students for careers as competent newspaper professionals. This obligation has been part of accreditation. It would seem presumptuous to state that non-accredited sequences did not have a like objective. A failure to strive for this objective would be detrimental to the students and to the newspapers. It would seem necessary that newspaper publishers and editors would be as concerned about non-accredited sequences as accredited sequences. There has been a suspicion that accredited sequences have attracted more assistance from professional newsmen, greater financial assistance and greater academic benefits than non-accredited sequences. If the presence of accreditation would provide the best means of preparing students to be competent newspaper professionals, then it would seem that assistance should be given to non-accredited sequences to help

them achieve accreditation. This assistance would come from accredited sequences and newspaper publishers and editors. What would be foremost in any undertaking would be the provision of the best education for students, which in turn would reflect favorably upon journalism programs and would best serve the newspaper industry.

SELECTED BIBLIOGRAPHY

- "A Time for New Articles of Partnership...Between Professional Journalists and Journalism Educators." The Quill, L (November, 1962), 49-52.
- "ACEJ Accredited Sequences, News-Editorial." Journalism Educator, XXVIII (January, 1974), 31.
- "All Department EDP System." Editor & Publisher, CIV (September 11, 1971), 29, 30.
- American Council on Education for Journalism. "Accrediting Authority, Activities and Standards." 1973-74 Accredited Programs in Journalism, American Council on Education for Journalism. Columbia, Missouri: American Council on Education for Journalism, 1973, 3, 9, 10.
- American Society of Newspaper Editors. "How Is Technology Changing the Newsroom and Journalism Education." Summary Report of Education for Journalism Committee. New York: American Society of Newspaper Editors, 1973.
- "ANPA Tells J-educators to Stress Fundamentals." Journalism Educator, XXVIII (July, 1973), 27, 28.
- "AP Putting Computer on News Wire." Editor & Publisher, XCVII (July 11, 1964), 12.
- Bagdikian, Ben H. The Information Machine. New York: Harper and Row, 1971.
- _____. "Publishing's Quiet Revolution." Columbia Journalism Review, XII (May/June, 1973), 7-15.
- "Benefits of OCR Depend on All-out Managerial Plan." Editor & Publisher, CV (January 15, 1972), 39.
- Bennett, Susan Turner. "The Computer Revolution And The Modern Newspaper: A Descriptive Survey of Computer Use In The Nation's Press." (Unpub. Master's Thesis, University of Florida, 1971).
- Brenna, Tony. "UPI Achieves 'Speedy' New TTS Technique." Editor & Publisher, XCIX (February 12, 1966), 9.
- Brown, Lloyd W. Jr. "Editors Criticize J-Schools' Curricula at Symposium." Editor & Publisher, CV (June 24, 1972), 9, 10, 42.

- Caffrey, John and Charles J. Mosmann. Computers On Campus, A Report to the President on Their Use and Management. Washington: American Council on Education, 1967.
- "Christian Science Monitor Begins Electronic Transmission of Pages." Editor & Publisher, CVII (January 5, 1974), 13.
- Clarke, John H. "Ohio St. Teaches Students How to Use VDT Terminals." Editor & Publisher, CVII (July 13, 1974), 40.
- Colburn, John H. "Why Are Content and Display Vital? We've Only Scratched the Surface." The Quill, LVIII (August, 1970), 13.
- _____. "Journalism Education--At a Crossroad." The Quill, LVII (April, 1969), 26, 27.
- "Computer Used for Storage and Retrieval of Wire News." Editor & Publisher, CVI (March 10, 1973), 25.
- "Copley's San Diego Dailies to Move to \$24 M Offset Plant." Editor & Publisher, CVI (December 8, 1973), 12.
- "Copy Control Enhanced by VDT's Editors Learn." Editor & Publisher, CIV (October 23, 1971), 36.
- Cranford, Robert J. "Moonlighting, It Keeps a Professor in Touch." The Quill, LV (March, 1967), 19.
- Crowell-Collier Educational Corporation. Merit Student Encyclopedia, XV. New York: Crowell-Collier Educational Corporation, 1969.
- "CRT, ECRM, OCR--Do They Work? Ask a Publisher Who Owns One." Editor & Publisher, CIV (June 5, 1971), 17, 18.
- Cunningham, Hal. "Newsmen Attend Classes; Learn Offset Techniques." Publishers' Auxiliary, CIV (November 29, 1969), 24.
- Delany, Donald P. "OCR Composing Faster; Capability for Editing Lower." Editor & Publisher, CVI (June 9, 1973), 82.
- Dickinson, William B. "Cooperation Between Editorial and Production." American Newspaper Publishers Association Research Bulletin, No. 892. New York: American Newspaper Publishers Association/Research Institute, 1966, 1.
- Dougherty, John L. "Graduates Cast a Critical Eye on Their Journalism Courses." Associated Press Managing Editors News, XXV (August, 1972), 1-3.
- Erb, Lyle. "The Sky Is Not Falling, A Calm View of the New Technology." The Quill, LIV (December, 1966), 20-23.
- Everett, George. "Management in the Curriculum: Time for Revival." Pamphlet, Iowa City: University of Iowa, 1970.

- "\$15 Million Newhouse Center Dedicated." The Quill, LII (September, 1964), 30.
- "Florida Papers Use Computer to Control Ad Production." Editor & Publisher, CIV (September 18, 1971), 18.
- "Gallagher's Annual Report to AP Members." Editor & Publisher, CVI (March 3, 1973), 16.
- Gallie, Thomas M. "What Is a Computer?" in Thomas H. Naylor and Reed Sarrett (Eds.), The Impact of the Computer on Society. Chapel Hill: University of North Carolina Press, 1966, 15-17.
- "Gannett's Electronic Van to Visit AEJ Convention." Journalism Educator, XXVIII (January, 1974), 19.
- "Harris Equips Gannett Daily with Electronic News System." Editor & Publisher, CV (February 2, 1972), 9.
- Healey, Gerald B. "Davenport's All-VDT System Sets Newsroom Back 100 Years." Editor & Publisher, CVII (March 30, 1974), 14, 80.
- Hils, Tom. "Georgia Newspaper Pioneers News-oriented VDT System." Editor & Publisher, CVI (November 10, 1973), 53, 56.
- "J-students Adapt Readily to CRT Editing Routine." Editor & Publisher, CV (April 8, 1972), 35.
- Johnson, DeWayne B. "Cold Type--Hottest Thing on Campus!" The Quill, LIV (February, 1966), 10-13.
- Jones, Malcolm. "On Tomorrow's Newspapers: Publishing Concepts Are Changing." Publishers' Auxiliary, CV (January 24, 1970), 19.
- Jones, Vincent S. "Three Major Problems of Today's Press." The Gannetteer (April, 1969), 31-33.
- Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, 1964.
- Leard, John. "New Technology." Proceedings: Education for Newspaper Journalists in the Seventies and Beyond. Washington: American Newspaper Publishers Association Foundation, 1974, 148-152.
- Levinthal, Jan. "Full-page Make-up System." Editor & Publisher, CVII (May 4, 1974), 18, 23.
- Lindley, William R. "Typography's Trivial Place in Schools of Journalism." Journalism Educator, XXV (Summer, 1970), 5, 6.
- MacDougall, Curtis D. "J. Educators Should Be Required to Have 5 Years Media Experience." Journalism Educator, XXVIII (July, 1973), 12-14.

- Marbut, Robert G. "Newspapers' Future Bright...with Some 'Ifs' in Picture." Editor & Publisher, CIV (November 13, 1971), 56, 58, 60.
- McCombs, Maxwell E. "New Sources of News: Exploiting Local Data." in Chilton R. Bush (Ed.), News Research For Better Newspapers. V New York: American Newspaper Publishers Association Foundation, March, 1971, 123-125.
- Merrill, John C. and Ralph Lowenstein. Media, Messages, and Men. New York: David McKay Company, Inc., 1971.
- Moeller, Leslie G. "Journalism Education, the Media and 'the New Industrial State'." Journalism Quarterly, XLV (Autumn, 1968), 496-508.
- "New Technology Demonstrated at ANPA Seminar." Editor & Publisher, CVI (January 13, 1973), 38.
- "News of Journalism Education, Schools and Departments." Journalism Educator, XXIX (July, 1974), 29.
- "News of Journalism Education, Schools and Departments." Journalism Educator, XXVI (Spring, 1971), 26.
- "Opportunities for Continuing Education of Experienced Newsmen." The Quill, LV (June, 1967), 59.
- Peterson, Paul V. "J-enrollments Keep Climbing, 55,000 Mark Surpassed." Journalism Educator, XXIX (January, 1975), 3, 5, 60.
- Reed, Carlyle. "The Twenty-First Century Newspaper." Seminar (December, 1967), 13-15.
- "Reporter in the Field to Go 'On/Line' Via Terminal." Editor & Publisher, CVII (May 18, 1974), 3.
- Roosenraad, John. "Amid CRT Revolution Keep Those Old Glue Pots." Journalism Educator, XXVIII (July, 1973), 48, 49.
- "Rundown on AP's Year Reported by Gallagher." Editor & Publisher, CVII (February 16, 1974), 32.
- "Research Division Explores New Technology for Knight Papers." Publishers' Auxiliary, CV (September 5, 1970), 19.
- "Scanners Topic at Great Lakes." Editor & Publisher, CVI (January 13, 1973), 40.
- Schlaver, Clarence O. "Too Many Bodies, Too Little Money--J-Deans Worry but Carry On." The Quill, LIX (January, 1971), 8-11.
- "Schools and Departments of Journalism." Journalism Educator, XXVIII (January, 1974), 32-59.

- "Series Reveals Unfairness in Criminal Court System." Editor & Publisher, CVI (March 10, 1973), 12.
- Smith, Stanford. "Communication Technology and the World Press." American Newspaper Publishers Association Research Institute Bulletin, No. 967. New York: American Newspaper Publishers Association/Research Institute, August 30, 1968, 327.
- Stein, M. L. Reporting Today: The Newswriter's Handbook. New York: Cornerstone Library, 1971.
- "Streakers Are Outpaced by Newsroom Mobile Lab." Editor & Publisher, CVII (July 13, 1974), 36.
- "Student Papers Purchase CRTs." Editor & Publisher, CVI (February 10, 1973), 36.
- Swensson, Paul S. "The Newsman of the Future." The Quill, LV (June, 1967), 62, 63.
- "Teachers Try CRT Editing in Seminar at Newspaper." Editor & Publisher, CIII (October 24, 1970), 33.
- "Tech Van, on the Move." The Gannetteer (May, 1974), 3, 4.
- "Tests Underway on IBM's Page Make-up System for NSDG." Editor & Publisher, CVII (January 12, 1974), 36.
- Tewlow, Jules. "Time Sharing and the Newspaper of Tomorrow." American Newspaper Publishers Association Research Institute Bulletin, No. 951. New York: American Newspaper Publishers Association/Research Institute, April 1, 1968, 84, 101.
- "The Story of Computerized Typesetting." The Gannetteer (November, 1967), p. 9.
- Tobin, Richard L. "Publishing by Cathode Ray Tube." in Michael C. Emery and Ted Curtis Smythe (Eds.), Readings in Mass Communication, Concepts and Issues In The Mass Media. Dubuque, Iowa: William C. Brown Company Publishers, 1972, 175-181.
- "UPI Installs Photo Scan Converter." Editor & Publisher, CVI (February 10, 1973), 55.
- "UPI to Start VDT Link-up of U.S. Bureaus." Editor & Publisher, CVII (March 16, 1974), 11.
- Westley, Bruce. News Editing. Cambridge, Mass.: Houghton Mifflin Company, 1953.
- "What's Ahead in Newspaper Production." The American Press, LXXXIX (February, 1971), 21-23.

"What's the News About Newspapers." The Quill, LVI (March, 1969), 23.

"Where the Past Is Prologue: Library Has 'Tomorrow Look'." Editor & Publisher, CII (October 25, 1969), 17.

Wilt, George. "Growth of New Production Processes Are Detailed." Editor & Publisher, CVI (March 17, 1973), 14, 42.

APPENDIXES

APPENDIX A

AMERICAN COUNCIL ON EDUCATION FOR JOURNALISM
OBJECTIVES AND PURPOSES RELATED TO
ACCREDITATION

Objectives

The objectives of the Council are:

1. To enhance the professional status of journalism and mass communications by stimulating and encouraging sound programs of education.
2. To aid in the co-ordination of educational programs with the needs of the profession.
3. To further the study and investigation of problems in the field of education for journalism and mass communications as these may be referred to the Council by a member organization or by an individual member of the Council.
4. To define and, insofar as possible, to gain acceptance for minimum standards for professional education in the field.
5. To act as a voluntary accrediting agency for educational programs.

Purposes

The following was adopted by ACEJ as a statement of the purposes of accrediting of professional programs in journalism:

1. To stimulate the constant improvement of education for journalism and mass communications through continuing review of objectives, programs and results.
2. To describe the characteristics of schools and departments worthy of public recognition as professional schools.
3. To guide prospective students in choosing a school or department that will adequately meet their educational needs.
4. To serve as a guide to employers in all mass communication fields as to which schools and departments are recognized as presenting professional programs worthy of approval.
5. To promote a closer relationship among the mass communication media, communication research organizations, and the schools and departments with the idea of meeting the educational and professional needs of the areas which the schools serve.
6. To encourage and provide machinery for guidance for schools or sequence self-study by institutions seeking to prepare themselves for evaluation.

Selection of Visiting Team

Members of the visiting team are selected by the Accrediting Committee and include educators and professionals. An expert in each sequence of study for which evaluation is requested is included on the team. The administrator is notified of the make-up of the team in advance of the visit. The institution may request that a representative from its regional association (a generalist) be included in the visiting team. In this case, the regional association assigns the representative after discussions with the institution. A member of the Accrediting Committee serves as team chairman.

APPENDIX B

COVER LETTERS

COVER LETTERS

The cover letter was attached to the questionnaire on each of the four mailings. The first memorandum was attached to the second mailing October 14, 1974. The second memorandum was attached to the third mailing October 31, 1974. The fourth memorandum and the post card were attached to the fourth mailing November 27, 1974.

Date

Dr. Harry E. Heath, Director
School of Journalism & Broadcasting
Oklahoma State University
Stillwater, Oklahoma 74074

Dear Dr. Heath:

Some editors and publishers are claiming that journalism programs have not and are not providing students in the news-editorial sequence with the necessary education in regard to electric typewriters, Cathode Ray Tubes, Video Display Terminals and other computerized equipment used in the newsroom of today. A study by the Associated Press Managing Editors reported that journalism graduates believed their training was inadequate to meet the needs of working amidst the technological revolution which has swept the newspaper industry.

At this time there is no definitive body of information as to the instruction provided in newsroom computer technology to news-editorial sequence students in journalism departments, schools and colleges. The purpose of my doctoral dissertation is to provide that information. Without your help this purpose cannot be fulfilled. Without your help the contentions of editors and publishers can be neither confirmed nor denied. Without your help journalism educators will be unable to know what their own discipline is doing in the preparation of news-editorial students in newsroom computer technology. This is an opportunity for you to contribute to other journalism educators and to editors and publishers so that each of you may know what is being done, what is not being done, what is being planned and what problems confront journalism educators in regard to providing instruction in newsroom computer technology.

The enclosed questionnaire will take no more than 30 minutes to complete. Please respond in each of the parts of the questionnaire to each item as it applies to your news-editorial sequence at present, as to what would be the ideal, as to what is projected by 1980 and as to present problems in offering instruction. Please indicate on the questionnaire if you wish a copy of the report of the study results and please return the questionnaire in the enclosed stamped envelope.

Thank you for your time and consideration in helping me, and more important in helping students, journalism educators and editors and publishers.

Sincerely,

Bill Steng

October 14, 1974

Dear Sir:

As I have not received a response from you I thought that my questionnaire might not have been received by you or perhaps it has been misplaced. I do look forward to having your response. If you have responded by the time you receive this, please ignore. Thank you for your co-operation.

Sincerely,

Bill Steng

Dear Journalism Administrator:

I am writing to hear from you so that I may add your information, opinions and views to those of the 70 journalism administrators who have responded thus far. As you probably have misplaced the questionnaire I have provided another copy. Thank you for your time and consideration.

Sincerely,

Bill Steng

I am appealing to you because I desperately need your help to complete my study of instruction provided in newsroom computer technology to news-editorial sequence students in journalism departments, schools and colleges.

I am contacting you for the fourth time as I need your response to provide a balance in the survey results. Thus far more than 70 per cent of all accredited sequences and more than 60 per cent of all non-accredited sequences contacted for this survey have responded.

I beseech you to complete the questionnaire and return it to me by December 20. I know that you are extremely busy and I will be forever grateful for your help.

Sincerely,

Bill Steng

If you do not intend to respond with the questionnaire please provide the information requested below and return this card.

Name _____

University _____

APPENDIX C

QUESTIONNAIRE

QUESTIONNAIRE

(PART I)

1. Name of University _____
2. Number of students enrolled in news-editorial sequence _____
3. Number of faculty teaching courses in news-editorial sequence _____
4. Number of full-time faculty in news-editorial sequence _____
Number of part-time faculty in news-editorial sequence _____
5. Number of full-time faculty holding rank of professor _____,
associate professor _____, assistant professor _____, instructor _____.

Number of part-time faculty holding rank of professor _____,
associate professor _____, assistant professor _____, instructor _____,
other _____.
6. Number of full-time faculty whose highest degree is Doctorate _____,
Masters _____, Bachelors _____, No Degree _____.

Number of part-time faculty whose highest degree is Doctorate _____,
Masters _____, Bachelors _____, No Degree _____.
7. Check which of the following courses are offered in the news-
editorial sequence. Reporting _____ Editing _____ Production/
Typography _____ Newspaper Management _____.
8. Check which courses are required in the news-editorial sequence.
Reporting _____ Editing _____ Production/Typography _____ Newspaper
Management _____.
9. In which courses is instruction in newsroom technology offered:
Reporting _____ Editing _____ Production/Typography _____ Newspaper
Management _____.
10. A course in computer science is required of all news-editorial
majors: Yes _____ No _____

If the answer is Yes, please indicate the title of the course and
the department offering the course _____.
11. A course in newspaper technology is offered in the news-editorial
sequence: Yes _____ No _____
12. If the answer to 11 is Yes, is the course required? Yes _____ No _____
13. Check which newsroom equipment is available to news-editorial se-
quence majors on campus.

Electric Typewriters _____ Cathode Ray Tube (CRT) _____ Video Dis-
play Terminal (VDT) _____ Optical Character Reader (OCR) _____
Scanner _____.

Questionnaire-2

14. In what quantities is newsroom equipment available?

Electric Typewriters _____ CRT _____ VDT _____ OCR _____ Scanner _____

15. Where is the newsroom equipment available:

Electric typewriters in classroom _____ laboratories _____ student newspaper _____.

CRT in classroom _____ laboratories _____ student newspaper _____.

VDT in classroom _____ laboratories _____ student newspaper _____.

OCR in classroom _____ laboratories _____ student newspaper _____.

Scanner in classroom _____ laboratories _____ student newspaper _____.

16. Have news-editorial majors seen newsroom computer equipment in operation at commercial newspapers? Yes _____ No _____

17. Have news-editorial majors had an opportunity to have hands-on instruction in newsroom computer equipment at a commercial newspaper? Yes _____ No _____

18. If the answer to 16 and/or 17 is No, briefly explain why.

19. News-editorial students are required to extract data from computers for story assignments? Yes _____ No _____

20. If the answer to 19 is No, briefly explain why.

Questionnaire-3

(Part II)

(In the following section please check the choice which is most appropriate in describing present instruction in newsroom computer technology.)

1. Verbal explanation of newsroom computer equipment is all that is necessary at this time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

2. Viewing newsroom computer equipment in operation is necessary at this time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

3. Hands-on instruction of newsroom computer equipment is necessary at this time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

4. Electric typewriters should replace mechanical typewriters at this time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

5. Newsroom equipment such as CRTs, VDTs, OCRs and scanners are not necessary at this time.

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. Contact between the journalism program and newspapers is adequate.

Strongly Agree Agree Neutral Disagree Strongly Disagree

If the answer to 6. is Strongly Agree or Agree please briefly describe how adequacy is achieved:

If the answer to 6. is Disagree or Strongly Disagree please briefly describe what must be done to achieve adequate level of contact:

Questionnaire-4

7. Teaching of newsroom computer technology is the responsibility of newspapers, not journalism programs.

Strongly Agree Agree Neutral Disagree Strongly Disagree

Questionnaire-5

(Part III)

(In the following section please check the choice which is most appropriate in describing what you would want to be done in providing instruction in newsroom computer technology. Assume you would face no obstacles, such as budget.)

1. Instruction in newsroom computer equipment should be provided by explanation.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

2. Instruction in newsroom computer equipment should be provided by viewing newsroom computer equipment in operation.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

3. Instruction in newsroom computer equipment should be hands-on operation at the journalism school.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

4. Electric typewriters should replace mechanical typewriters.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

5. Investment should be made in all kinds of newsroom computer equipment.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

6. News-editorial students should be required to extract data from computers for story assignments.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

7. A computer science course should be required.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

8. News-editorial sequence should have its own newspaper technology course.

 Most Desirable Desirable Neutral Not Desirable Least Desirable

Questionnaire-6

9. News-editorial sequence should have a newspaper management course.

Most Desirable Desirable Neutral Not Desirable Least Desirable

10. News-editorial students should visit commercial newspapers at off-peak hours to have hands-on instruction with newsroom computer equipment.

Most Desirable Desirable Neutral Not Desirable Least Desirable

11. Contact between journalism programs and newspapers should be increased.

Most Desirable Desirable Neutral Not Desirable Least Desirable

12. Teaching of newsroom computer technology should be the responsibility of the newspapers, not journalism programs.

Most Desirable Desirable Neutral Not Desirable Least Desirable

Questionnaire-7

(Part IV)

(In the following section please check the choice which is most appropriate to your program in describing what you believe will happen by 1980 in the provision of instruction in newsroom computer technology.)

1. Instruction in newsroom computer equipment will be provided by explanation.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
2. Instruction in newsroom computer equipment will be provided by viewing newsroom computer equipment in operation.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
3. Instruction in newsroom computer equipment will be hands-on instruction at the journalism school.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
4. Electric typewriters will replace mechanical typewriters.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
5. Investment will be made in all kinds of computer equipment.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
6. News-editorial students will be required to extract data from computers for story assignments.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
7. A computer science course will be required.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
8. News-editorial sequence will have its own newspaper technology course.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
9. News-editorial sequence will have a newspaper management course.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------
10. News-editorial students will visit commercial newspapers at off-peak hours to have hands-on instruction with newsroom computer equipment.

Most Likely	Likely	Neutral	Not Likely	Least Likely
-------------	--------	---------	------------	--------------

Questionnaire-8

11. Contact between newspapers and the journalism program will increase.

Most Likely Likely Neutral Not Likely Least Likely

12. Teaching of newsroom computer technology will become the responsibility of the newspapers rather than journalism programs.

Most Likely Likely Neutral Not Likely Least Likely

Questionnaire-9

(Part V)

(In the following section please check the choice which is most appropriate in describing the obstacles which stand in the way of providing instruction in newsroom computer technology at present.)

1. Among the obstacles to providing instruction in newsroom computer technology, the cost of newsroom computer equipment is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

2. Among the obstacles to providing instruction in newsroom computer technology, the journalism program budget is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

3. Among the obstacles to providing instruction in newsroom computer technology, the competence of faculty members in newsroom technology is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

4. Among the obstacles to providing instruction in newsroom computer technology, contact between newspapers and the journalism program is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

5. Among the obstacles to providing instruction in newsroom computer technology, lack of space in the journalism facility is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

6. Among the obstacles to providing instruction in newsroom computer technology, increased enrollment is of

<u>Great</u> Significance	<u>Significance</u>	<u>Neutral</u>	<u>Little</u> Significance	<u>No</u> Significance
------------------------------	---------------------	----------------	-------------------------------	---------------------------

Questionnaire-10

(Part VI)

1. Would you please provide descriptions of specific examples of instructional opportunities (laboratory exercises, classroom assignments, visits to newspapers, visits from newsmen and other experiences) in the use of newsroom computer technology offered in your news-editorial sequence.

Please send any brochures, course outlines, exercises, assignments and other information which describes or illustrates how you provide such instruction.

Questionnaire-11

2. Would you please provide specific information as to how you plan to offer instruction in newsroom computer technology by 1980. Please send any brochures and/or other literature which describes these plans.

Questionnaire-12

3. Please use this space for any additional comments you wish to make.

**If you would like to have a report of the findings of this study
please check this space

APPENDIX D

INDIVIDUAL RESPONSES TO QUESTION 18, PART I,
IN REGARD TO NEWS-EDITORIAL STUDENTS
VIEWING NEWSROOM COMPUTER EQUIPMENT
IN OPERATION AND HAVING HANDS-ON
INSTRUCTION AT COMMERCIAL
NEWSPAPERS

INDIVIDUAL RESPONSES TO QUESTION 18, PART I

Responses from accredited sequences were as follows:

1. (16 Yes, 17 No) Lack of money.
2. (16 Yes, 17 No) Local papers are just putting in this equipment.
3. (16 Yes, 17 No) Haven't been able to make arrangements with paper. Distance also a factor.
4. (16 Yes, 17 No) Not used locally.
5. (16 Yes, 17 No) Too many students for limited equipment.
6. (16 Yes, 17 No) Not locally available. No funds to transport all students to a plant so equipped.
7. (16 Yes, 17 No) Unavailability of opportunity at this time.
8. (16 Yes, 17 No) Scheduling problems.
9. (16 Yes, 17 No) Had Hendrix 5200 VDT demonstration in 1973. Newspapers with VDTs, scanners too far away.
10. (16 Yes, 17 No) Hands-on instruction is given in the school, in editing class, to all students in news-editorial sequence, on the CRT.
11. (16 Yes, 17 No) Some students have seen equipment. As to hands-on, no opportunity to do so; local paper is quite small.
12. (16 Yes, 17 No) Too many students, no enough equipment access.
13. (16 Yes, 17 No) Day is 24 hours long.
14. (16 Yes, 17 No) Too many students for too little time on too little equipment.
15. (16 Yes, 17 No) Paper lacks sufficient equipment; hands-on handled with college equipment.
16. (16 Yes, 17 No) Too many students.
17. (16 Yes, 17 No) Local paper converting to OCR--having enough trouble without having to contend with our students.
18. (16 Blank, 17 No) We don't have such equipment available in our community, but we will by fall 1975.
19. (16 Yes, 17 No) Newspaper policy prohibits it.

20. (16 Yes, 17 No) Equipment not yet available.
21. (16 Yes, 17 No) Only one newspaper in the area has the equipment and it has just been installed. In fact, we had our VDT units before the newspaper did and they sent their staff to look at them.
22. (16 Yes, 17 No) The commercial paper using CRTs is still shaking down and time for students is not available.
23. (16 Yes, 17 No) Obvious--admittance highly restricted.
24. (16 Blank, 17 No) The equipment is on request.
25. (16 Yes, 17 No) Part of orientation, not course.
26. (16 Yes, 17 No) Equipment not available for that use.
27. (16 Yes, 17 No) They have hands-on at the student daily newspaper.

Responses from non-accredited sequences were as follows:

1. (16 Yes, 17 No) Arrangements are not possible.
2. (16 Yes, 17 No) Too many students.
3. (16 Yes, 17 No) We have tape punchers and readers in our newspaper composing room operated by students.
4. (16 Yes, 17 No) None (CRT, VDT, OCR) only composition machines (Singer, Compugraphic).
5. (16 Yes, 17 No) Most commercial newspapers in areas that employ any interns don't have such equipment.
6. (16 No, 17 No) Too early in semester--changeover in faculty.
7. (16 Yes, 17 No) Facilities in Flagstaff are limited. When the class visits other papers time is limited.
8. (16 Yes, 17 No) Hands-on instruction not yet possible.
9. (16 Blank, 17 No) We are looking into such equipment as budgeting limits allow; the local paper has scanner equipment now, will have VDTs soon.
10. (16 Yes, 17 No) ITU at local daily forbids such use; not available in newsroom of Bangor Daily News as yet.
11. (16 Yes, 17 No) Money.
12. (16 Yes, 17 No) Have seen it, but no opportunity to use.
13. (16 Yes, 17 No) Too disruptive of normal staff routine.
14. (16 Yes, 17 No) Unions.
15. (16 Yes, 17 No) Systems vary and we consider this an element of on-the-job training--hardly part of an academic program.
16. (16 Yes, 17 No) Local paper not receptive to hands-on use (except by our own interns working there) without previous instruction elsewhere, and we cannot now provide this instruction. However, we have interns placed at other papers, in addition to the local paper, and those interns at papers with OCR equipment to get hands-on experience.
17. (16 Yes, 17 No) Has not been feasible.
18. (16 Yes, 17 No) No opportunity.
19. (16 No, 17 No) None available in Laramie.

20. (16 Yes, 17 No) Field trips only.
21. (16 No, 17 No) Local newspaper does not have it, school newspaper is printed by local paper, school does not have computer equipment.
22. (16 Yes, 17 No) Haven't worked out arrangements.
23. (16 Yes, 17 No) Only those employed at those newspapers have had the opportunity.

APPENDIX E

INDIVIDUAL RESPONSES TO QUESTION 20, PART I, IN
REGARD TO NEWS-EDITORIAL STUDENTS BEING
REQUIRED TO EXTRACT DATA FROM
COMPUTERS FOR STORY
ASSIGNMENTS

INDIVIDUAL RESPONSES TO QUESTION 20, PART I

Responses from accredited sequences were as follows:

1. Have no operating system.
2. No access.
3. Insufficient interest on part of faculty up to now.
4. No computer available.
5. Not available.
6. They need to learn to do basic reporting and editing. Course is in journalism, not computer operation.
7. This is one small facet of reporting. Some students do it, but not all.
8. Only some students--not all--have used this method of getting info.
9. Not yet considered a necessary part of the curriculum for all students.
10. No terminal present in building; no access to other terminals at this time.
11. Equipment not available.
12. No computer-assisted morgue or resources available.
13. No appropriate data available in campus computers.
14. Because we haven't yet been able to finance a new course in computers/aggregate data.
15. Why use a computer for what can be put on a mimeograph sheet.
16. They don't do programming, etc. They do, however, work with others' survey results, printouts.
17. No facilities thereof.
18. No computer.
19. None accessible.
20. Relevant data not available.

21. We have yet to acquire the proper equipment which will allow this activity on a cost-effective basis. The necessary equipment is currently being acquired under a series of grants from the Gannett Foundation.
22. Lack of opportunity, access, manpower (faculty) and so forth.
23. Campus computer is tied up most of the time.
24. Not available.
25. Department has not considered this necessary part of curriculum.
26. Do not have the computer yet, but will soon.
27. Not trained to do so.
28. Inadequate facilities.
29. We are not yet operational with CRT/VDT interconnected with PDD 11/45.
30. They have the opportunity with city-county data--Reporting and Applied Journalism.

Responses from non-accredited sequences were as follows:

1. New computer being installed.
2. Reporters really don't use computers in their day-to-day assignments. When that becomes necessary, we will go to it. Otherwise, the investment of time seems foolish at this point.
3. We've no current agreement with computer center.
4. No computer available for such work.
5. Shortage of faculty in both Mass Communication and Computer Science.
6. Not relevant to the program needs.
7. No such equipment.
8. No facility available.
9. Not yet feasible.
10. Not required, but some students do so on in-depth assignments where data is available via computer.
11. Money.
12. Not available.
13. Computer not available for this function.
14. We utilize a computer-assisted interactional writing program which, coupled with the computer course requirement and use of VDT, which uses tube for retrieval we think is sufficient computer exposure at this time.
15. Haven't got terminal hooked up yet with computer center.
16. No equipment of this kind, either in classroom or at student paper.
17. Haven't felt it has been necessary.
18. No opportunity.
19. No one available to teach the subject.
20. Not a priority.
21. No need.
22. We are not trying to train researchers.

APPENDIX F

INDIVIDUAL RESPONSES TO ITEM 6, PART II,
REGARDING ADEQUACY OF CONTACTS BETWEEN
THE JOURNALISM PROGRAM AND
NEWSPAPERS

INDIVIDUAL RESPONSES TO ITEM 6, PART II

Of those who responded Agree and Strongly Agree, the open-ended responses from accredited sequences were as follows:

1. Great cooperation with editors and publishers for visits as lecturers; also for field trips.
2. Frequent visiting speakers from newspapers and field trips to newspapers help make good, productive contacts.
3. Numerous contacts with area and state newspapers. Technologically, our VDT equipment is ahead of 90% of our state's newspapers. Newspaper officials have inspected it, discussed technology with us.
4. Through use of student newspaper equipment.
5. Internships, classes in newspaper newsrooms.
6. Personal contacts, visitations, internships (summer).
7. Intern and practicum arrangement.
8. Internships, visiting editors/professionals.
9. Our contact with newspapers re: VDTs, CRTs, OCRs is great!
10. By visits to news offices; by having speakers; by having professional newsmen as part-time instructors.
11. Executives and news staffers from major area papers teach regular classes for us and provide guest lectures in others. Our faculty members work on newspaper assignments during vacation periods.
12. Visits both ways--close ties.
13. Our whole professional program is geared to eventual placement; hence we maintain good contact.
14. Class field trips to local metropolitan daily and community weeklies; advanced class in Community Newspapers (once a year) spends a week at a weekly and helps put out paper.
15. Local pros visit classes, teach on part-time basis; papers give tours to classes, hire our grads.
16. Internships and adjunct faculty.
17. Visits preceded by intensive study of the paper visited.
18. Five part-time instructors are from local papers (in editorial sequence); many speakers from papers utilized.

19. Class visits, internships, visiting journalists.
20. Interns-field trips-visiting lecturers.
21. Several members of this department maintain professional contacts with Tucson's two newspaper and newspaper production staffs.
22. Intern students regularly assigned to newspapers.
23. Campus publications, extensive intern program, class field trips.
24. It works, e.g. via employment, but is not good enough.
25. Mutual cooperation--visits to newspapers and visits by newspapermen. Internships.
26. Gannett van, area newspapers.
27. Applied Journalism--summer internships.

Responses from non-accredited sequences were as follows:

1. In our operation we work very closely with the newspapers in our state. As they make adjustments we follow in our institutional program.
2. Adequate, but local papers do not have the newest equipment.
3. Most newspapers that we place our graduates with find our contact with them adequate for student instruction.
4. Students accompany reporters on beats, compete with them in gathering stories, etc. As for working with computer techniques, we teach the scanner using manual typewriters, which is adequate, although ideally we would use electrics. Newspapers and scanner manufacturers have supplied me with instructional manuals and I am thoroughly familiar with procedures used by local newspapers.
5. Faculty contacts with newspaper and cooperative newspaper publisher.
6. Managing editor and others from local newspaper are teaching in our program.
7. Field trips. Resource personnel in the classroom.
8. Visiting faculty, visiting guest lecturers from newspapers. Visits to newspaper newsrooms and mechanical facilities.
9. Faculty and students are in constant contact weekly with professional journalists.
10. Via editing and reporting internships.
11. Class contact with Miami Herald.
12. Excellent cooperation with nearby newspapers.
13. Daily Iowan cooperates in use of its equipment during down time.
14. But room for improvement.
15. Field trips, internships, part-time jobs, on-campus speakers, etc.
16. Through course work and internships.
17. Internships.
18. Frequent contact and visitation.
19. Rapport with editors at local papers.
20. We have a news service. We have 12 client newspapers in the region.
21. Internships, professionals instruct in program, assignments through commercial press.

Of those who responded Disagree and Strongly Disagree, the open-ended responses from accredited sequences were:

1. This question was confusing. If you mean contact between students and program per se--it is adequate--if you mean in terms of equipment--then it is not.
2. Good new-technology paper is 3-hour drive away. Contact is difficult.
3. Use equipment at college, not newspaper.
4. Closeby commercial papers not so equipped; need VDTs, scanners for present campus offset daily which now has phototypesetting.
5. Problem is distance; the most computerized newspaper in the U. S. is in Davenport, but how do you get funds to transport 100 or so students a year 190 miles? And how do you justify the time?
6. Open-minded individuals on both sides.
7. We believe that minimal hands-on instruction with VDTs is highly desirable, and we will have such equipment when we move back into our renovated building in about two years.
8. Need limited access to limited number.

Responses from non-accredited sequences were as follows:

1. More faculty time to devote to this aspect.
2. More students need to take advantage of our internship program; more newspapers need to offer internships.
3. We need another 2-3 years to grow to point of recognition.
4. We'd like to have internships with Detroit major dailies.
5. More internships available to students.
6. By keeping channels of communication open and constant with newspapers.
7. More comprehensive intern plan needed--while now is fair--more of our students need to work with and on newspapers before graduation. Area dailies and weeklies take only a few and these only the top students.
8. Closer proximity to daily newspaper operation.
9. More and better intern and intern-like programs. I think that there should be alternatives to the conventional summer job order for interns. Rather it should be an on-going, continual association with the news media that is sought, co-operative and involving faculty in interaction with working press.
10. Newspapers generally feel the instruction function is that of the college; resist "taking on our job" (except for students who are there on a regular basis--i.e., interns and/or part-time employees). Institute more internships and share or underwrite partial cost of needed equipment.
11. Students should work on paper all the time.
12. Time must be made available to faculty to cultivate contacts.

APPENDIX G

INDIVIDUAL RESPONSES TO FIRST PART OF PART

VI, DESCRIPTIONS OF PRESENT INSTRUCTION

Responses from accredited sequences were as follows:

1. Reporting, Editing, Management students tour local, Dallas-Fort Worth newspapers regularly to see the new equipment in action. Editing classes get a heavy dose of instruction on the new equipment, so they know what the various pieces (CRTs, VDTs, OCR, etc.) do.
2. Electric typewriters in hand and will be installed next semester. We are in process of negotiating with student newspaper to help purchase VDT or OCR. This would be available for classroom and lab use. Intern programs provide hands-on experience for limited number of students. Mandatory computer courses will be dependent upon expansion of university computer facilities. This may come into play more if and when graduate program is offered.
3. Students in advanced reporting cover campus beats for student newspaper, compare stories and edit copy on VDTs and process tape through photocomposition equipment. Two hours of lab per week.
4. Students spend one semester as interns at daily newspaper. Classes spend time in daily newspaper newsroom.
5. None at present.
6. All our six instructional classrooms for basic reporting are equipped with electric typewriters.

As part of our basic editing course, students are taught hands-on VDT operation. We have five Hendrix units and a control unit.

Exercises on the VDT consist of style quizzes, spelling tests, all kinds of editing exercises. These are fed into the system on paper tape, the students edit at the machines and output their "answers" on a Versatec hard-copy printout for marking by the instructor.

We visit newspapers as needed, particularly to see OCRs in operation. In classroom we explain scanner editing and give students some scanner copy to edit.

Newsmen are always visiting our campus. We find that most of them are gradually moving into scanner operation with an eye toward eventual VDT usage. The Gannett Mobile Technology Laboratory has been on our campus twice, for a week each time, for the benefit of our students.

7. This is my first year here, so I haven't developed this sort of thing much. However, I came from Richmond newspapers, which have as advanced a production operation as any newspaper in the nation and so I am able to present pretty "real world" information concerning the latest newspaper technology, and for this reason I don't need any visiting firemen. I plan to use some of the material we used at RNI when we reach the proper time.

I hope that I will be able to arrange a trip to either Roanoke (1½ hours away) or Richmond (3 hours away) so the students may see a modern plant in operation, but this is difficult because of the time factor and because other things naturally take precedence the first year in a course. The basics of reporting and editing, not the toys used to do it, are the most important thing in a journalism class, and so field trips take second place and I make no apologies for it.

8. Graphics labs will do production work. We produce, both editorially and mechanically, a student magazine. Editing classes visit local papers.
9. Suffice to say that the new technology is touched on in reporting, editing, newspaper management and survey of contemporary newspaper courses, as well as on the intro courses. It is handled chiefly through lectures, discussions and readings.
10. We require a one-unit course in Industrial Arts that covers some aspects of graphics. There is some explanation given in several classes on new technological developments. These are supplemented in some instances by visits from newsmen and visits to newspapers. Last week a wire service executive demonstrated a new device to call up any particular story that has been stored in the New York computer on a given day.
11. Our advanced reporting-editing courses (J 101-102, Practicum) require, students to work one night a week on daily newspaper where CRTs, VDTs, OCRs are explained and used by the student copy editors who actually edit (real-life) for the newspaper.
12. I am sorry but I just don't have the time to answer this fully.
13. One of three writing labs, each with 20 stations, was recently equipped with IBM selectric typewriters. News-Ed chairman attended ANPA Educators Seminar in Richmond, Va., in April 1973, to gain info about new technology. Director, News-Ed Chairman, visited newspaper at Iaylviville, Ill., one of the first small dailies in nation to go fully electronic. News-Ed Chairman gives lecture each quarter, illustrated by slides, to acquaint newswriting classes in the new computer technology. School is seeking funds, so far unsuccessfully, for one or two terminals for use both on school daily newspaper and for hands-on instruction during day-time hours.
14. All news-editorial students have at least two hours' hands-on experience on CRT. All news-editorial, PR, and broadcast-news students spend at least one-semester news writing course at selectric typewriters. All news-editorial students are exposed to the system, in its components and its totality, by which reporters' copy (and headlines) moves from typewriter to printed page. All such students take part in the entire system except the actual press work (which is done by the printers). All news-editorial and most PR students see on orientation film (½ hour) on use of the CRT.

Beginning this semester or next, we expect to have access to OCR for instructional use in a state facility. But we do not plan to invest in OCR because our best guess (we wouldn't call it a sure bet!) is that OCR won't be in much use within a few years.

15. The laboratory exercises for editing are prepared as if they were to be read by the optical character scanner. Students are required to edit them so that the copy is scanner ready when returned to the instructor.
16. We have compgraphics in the building which are used by the Daily, but students don't operate them. They can and do observe their operation, however. Otherwise, we don't do much.
17. Electric typewriters in editing class. Visits to local and distant operations. Visitors whose systems are functioning, lectures, etc.
18. All news-editorial majors are instructed by faculty on the different pieces of equipment used in the new technology. In addition, the college owns a Hendrix 5200 VDT, and all news-ed majors are required to participate in a training program on that piece of equipment as well as putting in a minimum of six hours hands-on training time with it.

Our reporting and introductory course lab room has been completely equipped with electric typewriters. The reasoning here was that all the new equipment in use now and in the future will operate off an electric keyboard. The student needs to be familiar with the feel and characteristics of the electric typewriter.

Our students are also exposed to newsroom technology when we use (as we frequently do) professional journalists as guest lecturers in our various skills courses. In any given semester we will have from one to four professionals either handling skills labs for us or serving as part-time faculty teaching courses.

Although the students are told about the OCR (scanner), we have purposely avoided the purchase of such equipment. In numerous discussions with professionals from Louisville, St. Petersburg, Houston, Dallas, Charlotte, etc., it would appear that the scanner is the bane of the copyeditor's existence. We think the ability to use the electric typewriter is enough since the processing of copy by the scanner is basically a mechanical function best handled by a secretarial type.

We are looking forward to the acquisition of a second VDT with one or both of the machines we would then have being on-line with a university computer to provide storage capacity.

19. Laboratory exercises, classroom assignments, visits to newspapers and visits from newspapers are used. Gannett Foundation demonstration has recently provided exposure for our students.

20. The "new technology" has been observed through visits by the Gannett Foundation Newspaper Technology Van. Major Seattle newspapers are computerizing their editorial operations. The School of Communications at UW is acquiring this type of equipment as well. So we will be able to offer students a broad experience in this area in the near future.
21. Limited at this time--to tours--explanations at local newspaper. Newspaper hasn't solved own problems--still trying to instruct own personnel in use of OCR equipment and procedures.
22. Electric typewriters are available in reporting and editing labs. A Hendrix 5200 stand-alone editing terminal is available to reporting, editing and typography students. Editing students are required to complete about three hours of editing assignments on the terminal in order to develop a familiarity with and a facility to perform on this type of equipment.

Reporting students generate some of their stories on the terminal, and typography students use the terminal to generate perforated tape for the headliner and phototypesetters. This type is used for various layout and makeup assignments.

Some students get experience on typesetters and terminals on their summer internships. The ANPA slide set is used to teach about the application of the new technologies to news processing. Visiting lecturers (especially from AP and UPI) meet with our classes to inform them of what is happening in the wire services for speeding up the processing of the day's copy by using computer technology.

23. It has just gotten underway this term, since we only added the equipment in September so any material we have is being used now in classes and we have not yet fully developed a surplus to give out.

Students now being given hands-on training on Hendrix 6100 Electronic Editing Systems in copy editing, advanced editing and layout class, and graphic arts classes. Reporting students will be given instructions on the equipment beginning winter term also.

24. We try to provide as much as can realistically as an integral part of our laboratories and classes. We are having as much trouble as any one else--except the extremely wealthy folks--in making decisions on how much of this to do and how much not to do. We are all concerned that our students not be ignorant about the new technology, but we are even more concerned that we work on their minds and professional abilities without becoming terribly involved with extremely expensive equipment. Thus far, I do not have overwhelming evidence from the profession that schools of journalism need to become totally involved in the new technology.

Our efforts thus far are to acquaint them as well as we can through such outside efforts as the Gannett van, trips to newspapers, etc.

The latter, I find good public relations for the school but not very satisfactory insofar as learning is concerned.

We do have some phototypesetting equipment. It is actually primitive, compared to the most sophisticated equipment now available. It is our intention to add a tube or two to give our students some editing experience. That, too, is expensive. But we think we should go that far.

I suspect that you know a great deal more about this than I. I might like to talk to you sometime after you have finished your survey.

25. A member of our faculty was a member of a newspaper committee planning a move into computer devices and offset and saw much of this gear in operation in the early days of the spreading technology.

He has maintained his knowledge of the technology by watching it in operation, by reading and by discussing developments with the people in charge of production and newsroom technology at the local newspapers.

In addition, several different classes at the university visit the local newspaper operation.

For about six months in 1972 we had a Hendrix stand-alone CRT, punch and reader on loan and taught our students how to use it for story writing and editing.

26. None available.
27. We've had a seminar on the subject and did visit newspaper installation (very early on). JOU 599 includes a unit (about 50%) on Precision Journalism, including the extraction and interpretation of computer output, based on student-generated survey research project.
28. Limited to visits.
29. We have an extensive program where we produce a laboratory newspaper using IBM Selectrics, optical scanners, telecopiers, etc., but equipment all belongs to local newspaper, not to us. We couldn't afford it.
30. Editing classes visit local paper and local commercial printing plant. Newsmen visit all news-ed classes. Students in graphics classes (optional for news-ed students) do special projects in latest printing processes. Gannett Van is scheduled for visit.
31. IBM Selectric typewriters will be used for an Advanced Reporting class for the first time in 75 spring semester. Gannett

Technology Van on campus for 3 days last spring (1974). Visits from editors who are in charge of technology for their newspapers.

32. We have a new course--Fact Finding. One unit is concerned with how to get computer data for city-county government. Students take a two-hour field trip for explanation.

We introduce technology in JM 301, newswriting, primarily to teach terminology. We spend a brief period on offset-letter-press and how the new technology is adapted to each.

In JM 403, editing, students visit the Gainesville Sun for a tour of their facilities--they are fully offset and computerized.

Students in JM 450, Applied Journalism, get a good concept of how the new technology operates, but don't have much hands-on practice. The Sun is moving into OCR and some of the student copy is typed for this operation.

33. This summary will answer most of your Part VI questions:

We added computer technology lectures to our editing course in 1971. We purchased electric typewriters, IBM with OCR type element preparatory to moving to new location in 1973, January. Texas Student Publications purchased Photo typesetters in 1972, added Ultracomp VDT in 1973, and added a Hendrick's OCR-I optical character reader in the fall of 1974--all for the production of the Daily Texan and other publications. We have installed a Digital Equipment Co. (DEC) PDP 11/45 computer this month (Dec/74) and software is now being written concurrent with making the computer operational. We have the first of eight Ontel CRT units on hand, and software is being written. This CRT arrived last week. Five of these units will include cassette tape auxiliary units, and there is some intelligence programmed into the individual CRTs. Six of these CRTs will be used in reporting and editing labs; two CRTs will be used at the Daily Texan, primarily as editing (do you choose to now call them VDTs) terminals. When software is fully written, we will be on-line with CRTs and Photon typesetters interfaced with the DEC computer. The DEC computer (a mini-maxi type) will be interconnected with the Control Data 6600 used for instruction and time-sharing for educational computation.

The Computation Center will have a CRT, and will interface through our computer for the purposes of composing type on the Photo photo-composition machines.

Dean Wayne Danielson's graduate seminar has been working on computer applications for several years, at least six to my knowledge. (Dean Danielson consulted with the Perry group when that Florida chain experimented with computerized newspaper type production.) His students have worked on automatic indexing, automated story writing for various routine news stories, read-ability tests,

headline writers, and other computer applications beyond type-setting. Dean Danielson and Mike Sewell have submitted a report of this research to Journalism Quarterly this week.

Our students in mass media management have tackled the problem of deciding what technology to employ. That same class has completed a month's computerized simulation in which students made management decisions required for a newspaper publisher. Joe Harper is the author of that simulation.

We have other projects underway, some of which have escaped by 30 minute presentation. Please contact us for other details.

Responses from non-accredited sequences were as follows:

1. Hour lecture and slides in basic reporting class.
2. Expecting Gannett Van soon. Publish lab paper where professionals set type.
3. We are beginning a program of sending a professor to the local daily one day each week to produce the newspaper. All jobs on paper for the edition to be performed by students.
4. We have summer interns, field trips to Courier-Journal (state paper), Paducah Sun-Democrat (regional) and the local papers. These are tied in w/orientation, editing, management and reporting classes. In addition, we have a number of editors in the region who come to speak to the classes. The staff of the MSU News (the lab paper) work with our printing people to produce a weekly tabloid. We make trips to various papers as part of our affiliation in SDX, WKPA, KIPA, and KPA (press associations).
5. None
6. In the editing course, we spend about 10 days writing and editing for the scanner. We do not have electric typewriters; however, we synthesize the operation with manuals, using proper computer codes, spacing, etc. We use a non-light sensitive pencil for initial editing, then follow through with proper editing by typewriter. This seems adequate, at least temporarily, since a student who can perform the operation on a manual typewriter should adapt easily to the electric.

We teach only the optical scanner now because that is the only procedure currently in general use in the Atlantic area, including the two major newspapers, the Journal and Constitution.

7. Visual aids have been the chief source of teaching the new technology. The two recent films made by UPI, the film "They Used to Call It Printing," filmstrips, and 15 slides furnished by the ANPA Foundation along with my comments have been helpful. Students have been required to do some reading about the new technology.

I was one of 40 educators who attended the ANPA-sponsored workshop in Chicago. Some of the editors who had put in newsroom computer technology (including the editor from Ames, Ia.) said that it had taken only four hours for them to train persons to convert to the new technology. He advised against schools investing heavily in such equipment since it would soon become outdated. Most of the editors wanted us to stick to the basics of teaching news judgment, etc.

8. Currently we have a mini-course in technology and our editing students work on the downtown newspaper which is computerized.

9. Except for visits to newsrooms and printing plants, we do very little now in this area.
10. Only two newspapers in our area have CRT/VDT technology, and both are in the process of conversion. There is no slack period at one (the KC Star) and we have poor relations with them anyway; at the other the equipment is unsophisticated. We use the Gannett Van, slides of that and are waiting for a good film to come out on the topic.
11. We had a workshop in connection with the WSU Press Club last spring speaking of the OCR and CRT, but we could not get any of the equipment on campus for demonstration to our workshoppers and students. We do have newspapermen come to speak for classes about the new technology.

Our students do have to serve an internship at weeklies or other agencies such as pr-advertising and radio-TV which exposes them to various new technological advances. They serve the internships in their senior year.

Unfortunately, budget does not permit us to get any of this equipment, including electric typewriters at the moment. It is too bad, but I guess all universities are suffering in the same way.

12. I have just moved to SMU and am teaching the courses in which this should be done. It hasn't yet, but we will. Therefore there is nothing to tell at SMU.
13. News-editorial people take several trips to visit newspaper plants throughout the state in JLSM 410 Community Newspaper. These include the Yuma Daily Sun and the Tucson Daily Citizen. Films are shown. However, by the time we receive them they are outdated! We have employees, (ex: Bureau Chiefs) from AP or UPI visit.
14. We have a CRT, which students are learning to use in editing and typography classes.
15. Description of new technology is included as part of the lectures in the basic course in history and theory of the mass media.

This description is continued for students in the basic reporting course, the first class in news methods. Electric typewriters are scheduled for use in basic and advanced reporting, news writing and feature writing classes next year.

Classes in editing and newspaper makeup received an overview of the new technology in class lectures and twice in the past two years, the classes have visited a shop where electric typewriters, VDT's and OCR's are in use along with computers and photocomposition equipment in production. Other advanced reporting classes have visited Washington wire services bureaus to see new technology being applied in daily news work.

16. At this point in program we rely on class readings and discussion and visits to newspaper plants. Expect to have the Gannett Newspaper Technology Van visit campus this year.
17. (1) Visit to Salt Lake City newspapers for on-sight experience. (2) Use of Gannett Mobile Van. (3) Use of films. (4) Visits from SLC Associated Press and Deseret News personnel.
18. We try to bring into the classroom as many qualified pros in the media, including the print medium, as possible. We have in the past sought out people connected with computer technology.
19. We use Marion (Ind.) Chronicle Tribune (VDT), Kokomo (Ind.) Tribune (OCR), Richmond (Ind.) Pallidum-Item (offset conversion) and Muncie (Ind.) Star and Press (letterpresses with some cold type). Campus newspaper facilities are used as lab under our supervision. Compugraphic equipment (A keyboard plus headlines).
20. Not much, except visit to area daily which recently has installed; to lesser extent by a number of editorial students who work with some equipment in production in commercial plant of the student newspaper. We are far, far behind and getting behind.
21. Because we're a small school our journalism program is extremely limited. Our journalism professor is on sabbatical this year so any explanation of our program would be sketchy at best.
22. News reporting and editing students input their stories on CRTs of Daily Iowan, first from copy and then directly. News Processing (editing) students put together lab tabs (Laboratory Tabloid newspaper) through CRTs, perforated tape, photocomp, paste-up camera ready. Offset printing by contract with nearby weekly publishing firm. Hands-on visit to Davenport Times-Democrat (latest equipment) and Iowa City Press-Citizen.
23. Workshop equipped with manual typewriters for in-class instruction. Visits to various media outlets, i.e. radio, TV stations, newspaper plants.
24. Instruction thus far has been limited to "units" on the new technology. These vary in length and depth, from a two-hour presentation in a summer workshop, for example, to a one-week period in an advanced editing class. Since we have no equipment, these are concerned principally with basic principles, implications for future media workers, and visuals on a variety of installations.

Interns and part-time employees at the local newspaper and other papers get considerable exposure and some hands-on experience. Mass communications students who work on the student newspaper also get some exposure and experience, although the student paper's equipment is relatively "primitive"--a 2088 Compugraphic Computer writer for text type and a 7200 Compugraphic headliner for display

type. This seems adequate for their present operation, but of course provides no editing or data extraction capability. Assuming the funds, continued enrollment increases, etc., they may be expected to move into more sophisticated equipment in time.

On the same assumptions, the department too may be expected to move in this direction. We have made a modest beginning (an IBM Selectric II set up for OCR copy is on order, and hopefully other machines will follow). A more "efficient" approach might seem to be in combining the department's and the student paper's equipment, but the paper is independent here (and independently funded), and any movement in the direction of a laboratory-type operation controlled by the department does not seem indicated.

25. None.
26. None.
27. All students visit modern newspaper operations; instructors in editing course come from papers employing up-to-date newsroom computer technology.
28. Contact with ANPA research bureau, Easton, Pa.
29. Editing class has one 3-hour "hands-on" session at local daily which uses VDT and OCR. Reporting classes have one 2-hour "tour" of the local daily facility. An optional course in our mass communication major is Computer Science 201. Introduction to Computers for the Humanities.
30. We have in our newsroom operation an IBM-MTSR. We are considering the installation of a VDT that would tie-in with the university computer. In our instructional activities concerning newsroom computer technology we visit newspaper offices with such equipment and receive lectures from visiting newsmen.

Our laboratory newspaper is produced using computerized equipment.

The client newspapers of the American News Service, which is under the direction of a fulltime communication professor and is staffed by graduate and undergraduate students, utilize computer technology in their operations.

Our graduate students studying communication research methodology utilize the computer facilities of the university.

31. We have just moved into new quarters-which includes a new graphics laboratory-that has modernized our capabilities. We have just installed a CRT unit which will be used in our editing program. OCR and VDT available in computer center and available to our students. We have unit in senior Press and Society course in new technology which includes slides of latest equipment. We bring in editors who

explain the technology and the problems in adapting it to the newsroom. Seminar class visits two area newspapers that are completely converted to new technology. Additional information given in editing courses as well as introduction to research class. We are providing some tapes for CRT which include errors that students must correct and instructor corrects edited tapes.

32. We now have compugraphic type stream--we are getting CRT. Visits to AP and UPI office where new VDTs in operation.

APPENDIX H

INDIVIDUAL RESPONSES TO SECOND PART OF PART VI,
1980 DESCRIPTIONS OF INSTRUCTION

Responses from accredited sequences were as follows:

1. We expect to have VDT system in operation for both production and instruction within two years. It is unlikely that we will install any OCR as I view this as simply an intermediate phase of technology.
2. We are in the planning stage for new facilities, so are unable to answer this question at present.
3. Major goal will be to get a VDT to produce lab paper through news-writing and editing courses.
4. Hope to have funds for additional equipment--OCRs in particular.
5. I can't comment on this because the technology is changing so fast.
6. We hope to add VDT for classroom demonstration use in another 2 years, as well as reviewing curriculum to insure the entire matter is covered in some regard. Our graphics lab (part of another sequence) may add an OCR device. OCR is less of a problem than VDT, in that it is an electric typewriter with an "added twist."
7. We have no specific plans for 1980 or before. We have been authorized to purchase four electric typewriters for our reporting lab. These should be in place sometime next semester.
8. We are discussing purchase of VDT and linkup from newsroom to computer.
9. At this time I cannot answer this with any accuracy.
10. Our next step is to acquire a scanner, finances permitting, for the Lantern, the campus newspaper, which is part of our instructional setup.

Students will prepare copy from the scanners on electric typewriters. The scanner will convert the copy to electrical impulses and feed them into the VDT system.

Students at the VDT consoles will edit, either as lab instruction, or as part of the production process of the Lantern, outputting their stories into photo-composition machines at the University print shop.

All of the above will be implemented well before 1980, the date you set. By that time, I would suspect, pagination will be well-advanced and we probably will be teaching page layout via machine as part of our instructional program. In the meanwhile, we have no intention of teaching pasteup, plate-making, etc., which we do not consider professional journalism skills.

11. We are now seeking a grant to develop an editing by CRT program which can be used by us and by any other small college journalism department or most papers for training purposes. If we don't get it, we'll try again. I expect we will either be able to find the money from someone else or browbeat the university into something in the next five years.
12. Two key facts influence us most:
 1. Montana dailies do not have editorial dept. computer equipment yet.
 2. The University cannot at present afford such equipment.

The local daily plans to install the equipment soon. At that time, I hope we can work out an arrangement to train our students.
13. Probably integrate in present writing, editing, and management classes, with the instruction being as practical as the availability of funds will allow. The newspaper, which serves as a laboratory now, would make an even better lab were it equipped with half a dozen VDTs, a scanner, and IBM selectrics all around. Tight budgets at present time, however, dampens prospects of funds being available soon.
14. I don't have specific information or plans for 1980, but we plan to move with the technology and invest as necessary to achieve our goals. Well before 1980, will have instruction in extracting from aggregate data via computer.
15. We are currently planning to install an additional 15 Selectric typewriters in the editing laboratory and to obtain a minimum of 2 video editing terminals for use in teaching students to process copy.

We are not convinced that a scanner is necessary in the teaching process except to demonstrate how the scanner functions.
16. We will probably add video display units, but that is about all. Our graduates tell us that learning the new technology in the field is not particularly difficult--what they need to know is how to write and edit. We are planning more emphasis on speed and accuracy in typing because this seems to be a problem where OCR units are used. Also, the new technology demands better (editing) (self-editing) by reporters since proof reading is bypassed and the copy desk is as we have known it is shrinking.
17. Stand-alone electronic editing facility plus hard copy printout and punched to be, plus tie-in to university computer, plus computer to be input/column width output. Let's hope.
18. I do not believe we will ever set up a separate course in newsroom technology, but will handle the instruction through various courses

and labs as we do now. It is our present intention to stay abreast of developments through the careful purchase of necessary equipment. We think our students should be prepared here for the tools they will have to use in the newsroom of 1975 or 1980. The ability to use the VDT, for instance, is as basic as the ability to write a good lead or a crackling headline.

We also have here at the College of Journalism a complete cold-type production area including a Compugraphic 2961 photocomposition unit, a Compugraphic 7200 headline machine and a POS 1 photo enlargement/reduction/copy unit. Our students use all this equipment in the production of our weekly laboratory newspaper as well as being responsible for the paste-up of the paper. We think that if they understand the production process, they will understand why deadlines exist in the newsroom.

19. We have submitted proposals for a new facility (building). If granted, it will undoubtedly include some of the new technology.
20. Our planning calls for combined OCR-CRT system with input from 35 selectric stations. Capacity on the CPU for the system will be sufficient (either due to its real capacity or its ability to condense and supervise exchange with a central computer facility elsewhere on campus) to allow data retrieval, computer assisted instruction and the like. We are presently lining up financial support to underwrite this project. Reporting and editing courses would be exposed to the equipment on a day-to-day basis.
21. New newspaper layout course--Journalism 421--2 hours lecture--2 hours lab--approved this semester (Fall, 1974) for Fall, 1975--OCR and CRT equipment being ordered for new building for 1975-76--will include initially electric typewriters (IBM Selectrics) and two stand-alone CRT units. Trying to add ECRM S100 autoreader for 1976-77 to have complete production system for lab newspaper. Present student newspaper (independent editor) may or may not allow more emphasis on education to allow more students to participate. Growing enrollment placing great stress on limited facilities. Need better informed faculty.
22. As of this moment, some of our students have had an opportunity to observe the new technology in newsrooms. However, no complete system is located in our community.

Two members of our news-editorial faculty have attended ANPA technology seminars over the past two years, and the head of our N-E sequence traveled to about 10 newspapers with circulations from 6,000 to 600,000 to observe their new systems. He made a study which is assisting us in our choice of equipment for our building, which is to undergo a thorough renovation over the next two years.

By 1976, when we move back into our hall, we will have writing and editing terminals for use in our labs. We anticipate tying our terminals into the system which the University daily will be buying.

In fact, the daily general manager and our N-E head traveled together this past summer to examine the aforementioned systems at newspapers. We probably will have at least one terminal for ad composition. All of our labs will be equipped with IBM Selectric typewriters. The University daily will have an OCR and photo-typesetting equipment, so our N-E students will be able to gain experience in a full system at the campus daily offices. In fact, our N-E majors are the ones who produce the copy for the daily, but they do it as paid employees of the newspaper--not as lab assignments.

Our N-E grads should move from our instructional labs, to the campus daily to any other daily after graduation with no trauma.

Lest we be misunderstood, the technology will not turn out superior N-E graduates. Plenty of conventional writing and editing under supervision in labs will still be necessary. Lots of typewritten (on electrics) copy will be blue-penciled by faculty members. The new machines will only enhance our student's education and make their transition to the professional world a little easier.

23. We have requested funds to buy smaller computer such as Compuscan and related equipment to set type and provide camera-ready copy.
24. I would hope that by 1980 we will have some of the latest equipment available to our students in order for them to get some "hands-on" experience.

I would expect that we will have all electric typewriters in our labs, a couple of editing terminals, an OCR in our printing lab for our journalism students to use, etc.

It is difficult to speculate on what will be available by 1980 given the recent rapid advances in newspaper technology. We will try to keep up as required and as our resources will allow.

25. Who knows?
26. None available.
27. I have already described part of what we plan to do. In the present economic situation in this nation, I would be foolhardy to make any guesses about 1980. I suppose if a chunk of money comes down the road, we might involve ourselves in a fairly extensive purchase of computer equipment. I suppose, if one wanted to dream, one might imagine that we would have a school with the entire chain. That is, all the way from the reporter's computer-attached typewriter to the printed page. I don't anticipate having that kind of money. Also, obviously, it does not worry me greatly. I am much more concerned about the other things that schools of journalism must provide the future professionals. I hate to sound like a curmudgeon, but I am actually concerned that we may become so involved in

technology that charges that we are trade schools might become accurate. I want you to remember that that statement comes from a school that is as professionally oriented as any in the country.

28. We hope to have some equipment--such as a stand-alone CRT.
29. We're pretty well set up now, except to add scanner itself.
30. No.
31. We have fund raising program underway.
32. Fight for budget and space increases. Work with publishers and manufacturers.
33. If we can get the money--which is doubtful--we'll be doing a lot more along these lines by 1980.
34. I don't know yet.
35. We have again budgeted for equipment for the coming year--whether or not we get the money is a question.
36. Hope to have some VDT, CRT equipment for use by reporters and copy editors. Some of this could be used by students who work on student newspaper.
37. We're planning space in the editing lab of our new building for CRT and VDT units. These would be used on rotation basis by students. I would think about four machines would be maximum.

Responses from non-accredited sequences were as follows:

1. Now buying electric typewriters. Lectures and slides. Visit local paper. Get Gannett van on campus with electronic equipment.
2. Expecting budget support for equipment.
3. We currently have both tape punchers and readers which give us copy output. We are introducing electric typewriters on the newspaper this year and hope to put them in the reporting lab next year. Our next step will probably be the purchase of a Compuscan or similar varatype operation. At this point, we will be looking toward the purchase of one or two VDT units. The newspaper operation in our community currently has IBM typewriters and Compuscan, and the Louisville Courier-Journal has a similar operation. Both papers plan to go to VDTs over a 5-year period. We will have to keep pace in our training program.
4. Currently, we have no equipment nor do any of the regional papers. We teach by explanation and hand-outs that describe the new technology. We have been able to take one class to Louisville and the state AP bureau to play with the VDTs but that is the limit of practical application. If the area papers get the equipment, will use theirs. If they don't will have to lease for the department. J-enrollment is up, but university is down. Thus, expansion budget is not seen for several years. Cost will play a major role.
5. We are just beginning to work on this. The Texas Journalism Education Council meeting, scheduled for Oct. 27-28, will be devoted almost entirely to this subject. We will probably be fully involved in instruction in newsroom computer technology by 1980, perhaps before.
6. We hope to use actual computerized equipment. However, we expect to use only that type of equipment most generally employed by newspapers in the Atlanta area.
7. From a realistic standpoint, I doubt if our school will feel that it can afford any of the modern technology other than perhaps electric typewriters, although it has been impossible as yet to convince the right people that the department needs electric typewriters. If our enrollment continues to increase (we now have 34 majors), we will have more asking power.

In the meantime, we will present some courses in cooperation with the local newspapers and stress our internship program through which students can gain credit while working on newspapers. If we have some nearby newspaper that will let us do some hands-on work, we certainly will take them up on it.

8. We are currently planning to add electric typewriters to our laboratory programs. Also, we are looking at VDT and OCR costs with hopes of purchasing some.

9. I am hopeful that the Minnesota Newspaper Association will offer workshops at selected locations in the state for journalism students who need this kind of training. The Gannett Technology Van is also making a useful contribution in this kind of training.

The shared responsibilities of education in the new technology is, I think, a matter of some concern to both educators and professionals. This is a topic which will probably be explored by the new regional committees established by the American Society of Newspaper Editors and includes a mix of professional people and educators. Since I am a member of the regional committee in this area, I expect to make it a topic if it is not now included.

10. We already have CRT/VDT technology on campus for registration. We will keep trying (for the budget) to interface with it.
11. Our plans are contingent upon budget which at the moment looks rather bleak for us and other segments of the university community. But if monies ease up, then naturally we will do what we can to begin such programs here and getting proper equipment to work in connection with such programs.
12. I can't say for sure, I just know that we will have to do it. Plans are in the works (in the early works) to do something about a new building here and that would be part of the new equipment.
13. Our department needs funds right now to provide typewriters (manual) for our students. We have 23 typewriters in the department and over 300 majors. Sad!!!
14. Depends upon finances, probably limited.
15. Conversion of the student news room (classroom) to all electric typewriters should be complete well before 1980.

Also, we plan to have before then regular use of some VDT equipment both for reporting classes and editing classes to experience hands-on use. It is possible that this equipment will be limited, so that use of it will supplement rather than completely replace typing of news reports on copypaper and hand-editing of copy.

16. (1) Develop tie-in with Salt Lake Newspaper Agency Corp. for use of computerized equipment. (2) Development of data bank through on-campus computer system.
17. We are in the process of conferring with the university administration on the need for putting newsroom computer technology and equipment in the classroom, at least on a limited basis.
18. Completely equipped laboratories.

19. Have made proposals to secure at least elementary equipment for composition and other proposals for the sophisticated scanners, video, etc., but have met with not the least encouragement because of tight money and budgets at this institution.
20. We'll have our own CRT-VDT photocomp, paste-up equipment. Will also use Daily Iowan's upcoming on-line system. Will have own computer-stored data (morgue) terminal and computer-instruction system.
21. Difficult to ascertain at this time.
22. The question is essentially answered in the reply to 1., preceding: a large-scale investment in this equipment (hence a large-scale program alteration; to correspond) does not seem likely by 1980. Ours is an expanding program, but one which is expanding in a number of directions, several of which also require heavy investments in equipment (e.g., radio-TV, cinematography), and the amount of investment that will be made in the new newsroom computer technology will of course be determined on a priority basis by the department as a whole.

Our best estimate at this time is that we shall be fairly well equipped in this area by 1980, but probably on a "shared-use" basis--that we shall have an adequate number and variety of this equipment that all students may have some hands-on experience, in several of the upper-division classes (e.g., advanced reporting, advanced editing). But a full course or course sequence, with a full array of, and a full concentration on, such equipment does not at this time seem indicated.

23. We haven't considered it yet.
24. None.
25. No specific planning is under consideration.
26. We are beginning our third year of operation and still have higher priority choices to plan. There is one newspaper in Alabama fully computerized.
27. No specific information at present.
28. By 1980 it is our hope to be utilizing newsroom computer technology to the maximum extent possible given budgetary considerations. This will entail some instruction and "hands-on" use of equipment in our reporting and editing classes.
29. No specific information available at this time. Much is contingent on budgets. We have attempted to establish a priority list in equipment and plan to purchase items as soon as possible. We find that the new technology may be almost too new as equipment changes render models obsolete long before the costs can be

absorbed. Our professional advisory board is helpful to us in our planning. We are anticipating replacing our manual typewriters in our editing laboratory with electric models but may be only able to do a limited number each year. We have established a computer center in our building that will make more CRT and OCR units available each year. We hope to add a second CRT unit next year.

30. VDTs in editing and reporting classes and graphic stream for Design and Production class.

APPENDIX I

INDIVIDUAL RESPONSES TO PART THREE OF
PART VI, COMMENTS

Comments provided by accredited sequences were as follows:

1. Money is the major holdback. At present time we are trying to get broadcast equipment and then will eye print equipment.
2. We are following the recommendations of the ANPA research division offered at meetings with journalism educators. The money just isn't there for equipment--also, investments in the new technology today will buy equipment that will be obsolete in 3-5 years.
3. I am more concerned about the possibility that we might be turning out students who can't think than I am by the possibility that we might be turning out students who can't run a CRT or an electric typewriter. We need to be careful not to overemphasize gadgets.
4. We need to provide some familiarization with VDT/OCR equipment. However, we must not become so wrapped up in gadgeting that we lose sight of more compelling educational goals, including turning out broadly educated, inquisitive, committed individuals who can communicate well, no matter what technology is used to put the words on paper or in the air.
5. We do not teach Advertising, Public Relations, Agricultural Business or Home Economics Communications, nor do we offer teacher certification. It is not the task of a Graduate School like this one to teach people the delicate transition from manual to electric typewriters. Nor am I persuaded that the skills essential to high-quality reporting and editing need to be taught through "hands-on" instruction.

Surveys such as the one you have undertaken suggest to me that all too many editors and publishers have become so intoxicated with the promise of the new cost-cutting technology that they have forgotten what journalism is all about. We need to spend a lot more time sensitizing students to what happens around them, and in my judgment, a lot less on technologies which have yet to be standardized and which in a school such as ours could eat up a disproportionate share of the budget.

6. I can't speak for other journalism schools, but insofar as the Ohio State Journalism School is concerned I would certainly question your opening statement that "Some editors and publishers are claiming that journalism programs have not and are not providing students in the news-editorial sequence with the necessary education in regard to . . ." etc.

If anything, we have been ahead of most newspapers in converting to the new technology--and at this stage, we still are.

As to the APME report that J-grads believe their training was inadequate to meet the needs of working amidst the technological revolution:

Of course!

The technological revolution did not really begin until the '70s, despite some early experimentation. And, by and large, most newspapers are slowly coming around to it. Many newspapers, as of September, 1974, are still using manual typewriters, more are bogged down in switching to scanners, and only a relatively handful of the 1700-plus dailies are really using VDTs as news processing devices. The fact is that the industry itself is just coming around, and I think it's a little much to expect that J-schools prepare students for techniques that most newspapers still aren't using. At that, the J-schools, and certainly this one, have been a few years ahead of the industry.

7. I'm glad you're not worried about money. Maybe you should be our university president. When you start talking about \$50,000 in hardware, not counting time needed to develop programs for these things, you're talking about a whole lot more money than ANY moderate-sized school has got to throw around. The problem is not imagination here--I just came from the most advanced news production operation in the country, so I know what the stuff is all about. But what it's about when you talk about teaching it is money, and it cannot be ignored no matter how valuable it might be for J-students to learn how to use the new hardware.

Second, you seem to have lost sight of the fact that learning to write and edit news stories is the prime role of the journalism students. Learning to use a specific piece of hardware he may never see again is not what he is in school for. If he can use a manual typewriter, he can use an electric, and he can learn to operate a CRT in very short time. Scanners are used by production people and repaired by mechanics, so news people don't need to know how to feed pieces of paper into them and would be useless in a news course. Sure, it would be much nicer if j-students came out familiar with some of the new electronic stuff, but it would be much nicer if they came out familiar with the principles of journalism, and that does and should come first.

Third, what is the bit about computer sciences classes? Very, very few reporters will ever in our lifetimes have to extract data from a computer to write a story, I would suggest, and when they are ready to do such heady stuff they can pick up the few comments needed from the people who operate the computer. These guys, again, are being trained as journalists, not computer operators. They need to learn how to write obits and city council stories. Giving them all this fancy knowledge is going to give them the idea they are going to walk into some small newspaper somewhere and become Woodstein overnight, and that's part of the difficulty with journalism education now: too much emphasis on the fancy stuff that only seasoned, mature, experienced journalists can and should handle and not enough on how to write and edit a basic newspaper story. They need to learn to walk and you are suggesting they ought to be able to talk to computers. Really!

Don't get me wrong. It would be lovely to have the hardware so the students can be aware of what it's like. And the stuff can be programmed to take some of the mechanical grading off the teacher's hands, but it's not the major question facing journalism education by any means.

8. That is a heckuva long questionnaire. Instead of taking the time to fill in the questionnaire, I will simply tell you what our position is here and what we are doing about it.

First of all, we believe that Journalism majors should be not only exposed to but required to use as much of the new technology as can be accommodated to the classroom as soon as possible. We also believe that the new technology should become an integral part of instructional objectives and techniques, with the ideal terminal course(s) being one in which students go through the whole process from reporting to production of some kind of publication, even if only an insert or supplement.

We have already begun to replace traditional typewriters with IBM electrics for the purpose of producing tapes for computer production at the University of Illinois Press. As we do not have a student newspaper under the direction of the department, we expect eventually to have a complete production system, with the CRT, VDT, OCR, electrostatic plate maker, variable photo reproduction units, etc. as student equipment.

The problem at the moment is a University-wide lack of equipment money. The University has not received an increase in its equipment allocation from the Board of Higher Education for the past three years. However, by some scrounging and good luck, and possibly the hand of Providence, we have enough basic equipment on order now to get a new program off the ground next spring or fall. We hope eventually to have equipment that at present prices would probably run \$180,000 to \$200,000.

9. At least three members of the news-ed faculty have extensive experience in printing production, both letterpress and offset. Expertise isn't problem--it is funding for the needed hardware.
10. At the ANPA-sponsored Newspaper Technology Seminar last spring in Chicago, Forrest Kilmer of the Davenport Times-Democrat (which is almost total computer news processing) gave the journalism educators there some rather sound advice.

He said, in effect, the following: Don't be enamoured by the new technology. Be familiar with it, teach about it, and if you are fortunate enough, have some of the equipment available for your students to use. But remember that your main job is to continue to teach reporting, writing and editing and to teach these skills well. Everything else follows from that.

This isn't a direct quote, but it seemed like rather sage advice, given the tendency to get caught up in the technology rather in the essence of what it is we are all about in journalism education.

11. Some of the answers to foregoing questions may be contradictory but we are in a state of indecision as to which way to proceed.

We are not in position to make major equipment purchases at this time. Even if we were, there is considerable doubt as to what type of equipment to acquire. There is a feeling among the faculty that still-to-come changes may make any purchases now less desirable than what may soon be available. We would rather wait a little longer to weigh the merits of different types of equipment. Some of the pioneers in the educational institutions may wish they had not been so hasty unless they are in the enviable, and perhaps unknown, position of having unrestricted budgets.

There also are doubts as to how important it is to stress the new technology. In observing technological changeovers at the Fresno Bee the past year, we noted that reporters and editors have adapted to new methods and machinery quite rapidly.

Our present feeling is that stress on basic techniques will still be the most vital function of journalism departments and schools. We do feel that ability to type should be given increasing emphasis and we are moving in that direction.

My own observations have convinced me that learning to operate a VDT, for example, is not something that requires extensive coursework. I suspect that once a reporter or editor sees how effective a VDT is, they will have all the motivation they need to learn new tricks.

Undoubtedly, our policy will shift somewhat in the next few years. We do not intend to ignore technological changes. We do want to evaluate them carefully before we invest in additional equipment.

12. I have been remiss in not responding to your request to complete the questionnaire you had sent earlier. I believe I owe you an explanation for my lack of response.

Three main questions surround my reluctance to return your questionnaire. First, with so many explanations required, I believe the questionnaire will take an enormous amount of time if it is to be given proper and full answers which would be meaningful. I simply do not have the time now for such thoughtful responses, and I do not wish to provide flippant answers nor hasty ones which would diminish the usefulness of your instrument. Secondly, it is difficult for me to understand the relationships with some of your questions to the goals you set forth in your letter. This, of course, takes additional time to try to figure out what the questioner had in mind in phrasing a particular question. Third,

the length of the questionnaire, again, would indicate a considerable expenditure of time, which, as I said above, I do not have at the moment.

I might add here that an additional annoyance was to find questions which are readily available through existing sources such as faculty rank and requirements for the major. I concur with your feeling that the study could be an important one, but I have answered at least three similar surveys recently which, in my mind, focused more pointedly at the topic.

I wish you well on your study and hope that others may have more time to give you the answers you need.

13. This area of J-education is being researched to death.
14. Some of your questions were too broad.
15. I hope that all my comments have not seemed cynical. But I am suspicious about all of this. If schools of journalism are forced into a great deal of technology work, I fear that we are going to do damned little to improve the breed. Since that is my main personal objective, I am going to look closely before allowing us to become terribly involved.
16. Much-needed study. Can use the ammunition.
17. Questionnaire probably needed a better pre-test.
18. I don't think it is as urgent as some do that journalism schools invest in a lot of equipment. Students need to be exposed to what is available and what is being done. However it takes little time for people to adjust to the new technology in the newsroom. Educators need to concentrate on teaching students how to report, write and edit. There is ample time for students to learn how to operate the equipment on the job. The professionals tell us this.
19. A big obstacle not covered in your questionnaire is the reluctance to invest a great deal of money in equipment that could well be obsolete in a couple of years. Maintenance of the equipment is another factor when considering cost. We just switched to all IBM Selectrics this year, which represents one great step for us. We also plan to install a dozen machines at the local newspaper for our students.
20. I would prefer to give my own summation of the need for keeping journalism education abreast of the new technology of mass communications, instead of taking the time to fill out your questionnaire. The issue is so simple, and to me the answer is so obvious, that my views can be stated more directly, as follows:

We are gradually phasing electric typewriters into all of our news-writing laboratories and into the newsroom of the Columbian Missourian. We are doing this, in part, so that students will be accustomed to the "touch" of the electrics, which are essential for OCR equipment and are similar in touch with the CRT's. Not all of our typewriters will be equipped with the type faces necessary for OCR's because we do not plan to utilize OCR equipment in the School of Journalism. This decision has been made because we feel that any normal person can become accustomed to effective OCR use in a few minutes time and instruction.

Video display terminals are different, however. We have found that reporters and copyeditors who may reach the point where they are efficient writers and editors with typewriters and pencils may become baffled and confused when confronted with a computer keyboard. Inasmuch as VDT's will supplant in some cases the tools of a journalist, journalism school graduates who profess to be ready to work on newspapers in this age need to be proficient in their operation. We treat the operation of VDT's in the same category as the operation of typewriters: The student is expected to reach an acceptable level of proficiency before he receives his degree. We do not offer courses in VDT operations, but we have the equipment available in newswriting and editing laboratories and use this equipment routinely in the production of our daily laboratory newspaper. Students taking courses in editing are exposed to the theory and potential of electronic writing and editing equipment, supplementing their instruction in computer theory that comes from their courses.

Students involved in instruction or research utilizing computers have a computer terminal in the school that is connected with the University's computer center, which is available for their use. Other terminals are located at nearby locations and likewise are available to them.

My frank thoughts concerning the responsibility of journalism schools to turn out students who understand the potential and are able to use the instruments of our new technology are guided in part by my experience as a newspaper editor. We did not have time in the newsroom to teach students to type, nor to teach them to write a simple story, nor to instruct them on the basic fundamentals that lead to accuracy and the best attainable level of objectivity. We did not hire students who needed such instruction, and if by mistake we did we got rid of them quickly. I would not like to see graduates of this school confronting a busy city editor without the basic skills that a journalist needs in our time.

Comments provided by non-accredited sequences were as follows:

1. A major problem is that so many automated and computerized systems are available and in use. The cost of installing all types of systems at Georgia State would be prohibitive; in addition, it would take one helluva course to teach all systems. Realistically, we at Georgia State can only expect to teach the systems used by the Atlanta newspapers, offering only brief explanations of other systems.

Newspapers certainly could ease this problem by standardizing their systems. I don't expect this for some time; the Journal and Constitution, only recently converted to the optical scanner, expect to convert to an expensive and more sophisticated system within four or five years. We at Georgia State can't afford to do this.

Another consideration is that most writers and editors (and teachers of these subjects who are former newsmen) have difficulty mastering computerized techniques, or at least are fearful of advanced technology. In my case, fortunately, I took a number of mechanical engineering courses and many math courses as an undergrad, and these have made me confident of ability to deal with automation and computerization.

2. Much of the questionnaire was unanswerable, due to the general feeling of the faculty that: (1) Future emphasis will be on software. (2) We do not train technicians. (3) Technology replaces itself too rapidly to dwell on specific machines. (4) Specialization is not emphasized at the undergraduate level.
3. The general opinion I get from talking to working journalists at this point is that intensive training on CRT/VDT is not really necessary because (1) there are a diversity of different systems and languages with no standardization yet; consequently, the newspaper can teach its own employees and (2) adaption only takes a few days--so why not wait for the young journalist to actually get his job before "training" him on the new technology. Expose him, yes, but train him, no.
4. We are a small department with about 350 students in the program. Our part-time staff are all professionals working on Detroit dailies in one capacity or another so our students do get men in the field. Most of our graduates do very well in journalism. We are proud of them.
5. With the budgetary question so uncertain at this time and unlikely to improve, many of the questions here must be answered via speculation and as a visionary. We would like to see more use of electric equipment available to our students, but cost and practical (at this stage) use are overriding deterrents.
6. A ten-page questionnaire is not likely to get the return rate of a shorter instrument!

7. Sorry could not provide more detailed data but information is lacking.
8. We do have one advantage in that a department member has just returned from a sabbatical leave during which he investigated the new equipment and has a fairly good if general picture of the nature and importance of the equipment, and of its implications.

But there is a question in his mind (as in that of many other journalism educators) regarding the kind and extent of training which is the proper (and especially the feasible) responsibility of the schools. Just as the new technology is itself in somewhat of a shakedown phase, so is this question--and the results of your questionnaire should shed considerable light on this.

9. I agree that it is undoubtedly necessary for journalism students to have knowledge of computers, particularly on how computers will help them with research, surveys, etc. I am not really sold on the idea of students in journalism spending time on the machines, etc. This should be handled by secretaries and technicians.

We have enough trouble trying to "learn" students the 3 Rs and some history and government and English. More time spent with technical details, using equipment that students probably never will use when they go to work on newspapers, might be a waste of time.

Perhaps I'm old-fashioned and fuddy-duddy, but I'll wait and see your results. At least I'm open minded about the whole thing.

I still feel a good liberal arts education plus some journalism classes in writing is enough.

10. I apologize for being testy about this. But your questionnaire simply isn't designed for infant programs like ours, or else I'm unusually dense this Monday morning.
11. In Wisconsin we still get the message from the editors and publishers that we should concentrate on trying to teach solid writing and editing practices and they will provide the technological competency. We hope to provide a minimal hands-on experience for our students and a maximum identification program on equipment and its potential. The way this state budgets our money I cannot be optimistic that we will get the funding we need to make the purchases we want.

VITA

William Robert Steng Jr.

Candidate for the Degree of

Doctor of Education

Thesis: A SURVEY OF INSTRUCTION IN NEWSROOM COMPUTER TECHNOLOGY IN NEWS-EDITORIAL SEQUENCES IN DEPARTMENTS, SCHOOLS AND COLLEGES OF JOURNALISM

Major Field: Higher Education

Biographical:

Personal Data: Born in Englewood, New Jersey, August 25, 1934, the son of Mr. and Mrs. W. R. Steng.

Education: Graduated from Dumont High School, Dumont, New Jersey, in June, 1952; received Bachelor of Arts degree in Journalism from Rutgers University in 1956; received Master of Arts in Journalism & Communications from the University of Florida in 1968; completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1975.

Professional Experience: Reporter, Rewrite Chief, Copy Editor, Assignment Editor and Editorial Writer, The Record, 1956-1963; Reporter, Sports Columnist and Sports Copy Editor, Sarasota Herald-Tribune, 1965-1966; teaching assistant, College of Journalism & Communications, University of Florida, 1967; instructor, Florida Southern College, 1968-1969; assistant professor, School of Journalism and Broadcasting, Oklahoma State University, 1969-1975.