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RATIONALE AND PROCEDURES  
FOR IMPLEMENTING A COMPUTER EDUCATION DEGREE  
AT MOREHEAD STATE UNIVERSITY

APPLIED PROJECT

An applied project submitted in partial fulfillment of  
the requirements for the degree of Education  
Specialist at Morehead State University

by

Barbara P. Walters

Committee Chairman: Dr. Lawrence Griesinger

Professor of Education

Morehead State University

1991

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Accepted by the faculty of the School of Education, Morehead State University, in partial fulfillment of the requirements for the degree of Education Specialist in the area of Curriculum and Instruction.

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7/22/91  
Date

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**Barbara P. Walters, Ed.S. in Education**

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Morehead State University**

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## ABSTRACT

The printing press by Gutenberg altered the methods of social and commercial interaction. Since that time the process of the transfer of information had remained relatively stable. However, the advent of the computer has profoundly transformed the methods of exchanging information. Among those affected by this change are educational institutions. Computers are now in classrooms influencing instructional strategies from kindergarten through graduate school. This has motivated many institutions to make changes in the realm of teacher training. One form of change has been in the offering of new degrees with names such as Computer Education. The number of schools offering these programs, representing all degrees except the Associate, increased dramatically during the decade of the 1980's.

A review of available literature indicates that the number of states who have higher education institutions with Computer Education programs ranges from 23 to 45. A review of that same literature shows the number of institutions offering these programs to be from 53 to 214. This wide variance is due in part to the way the programs are described. There is an inconsistency in program names as well. In the seven states surrounding

Kentucky, fifteen institutions from six of those seven states are listed as offering Computer Education programs.

This study found support for the implementation of a Computer Education degree. Two surveys in the service area of Morehead State University revealed an interest in graduates of computer education degree programs by public school superintendents and an interest in pursuing the degree on a Master's level by students. Two additional surveys showed a strong belief in the need to give teachers additional training in computer skills. This belief was shared by certain faculty at MSU and by the surrounding business and industry community.

The procedures for the implementation of a computer education degree at Morehead State University contain a description of the degree and a determination of an appropriate curriculum which conforms to state and accreditation regulations and guidelines. Also contained in the procedures is a formula for the selection of benchmark institutions. Recommendations for the criteria for faculty selection are included. The question of academic jurisdiction is approached through the study of computer education programs currently in operation.

This information supports the conclusion that Computer Education is an emerging discipline among higher

education. In response to this conclusion, it is recommended that Morehead State University implement those steps necessary to offer a degree in Computer Education to its constituency.

Accepted by:

Lawrence Spivinger, Chairman

Rodney Don Miller

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**APPLIED PROJECT**

**Barbara P. Walters, Ed.S. in Education**

**Graduate School  
Morehead State University**

**1991**



## Preface

*I wish to acknowledge the contributions of the following:*

1. *My first students in computer classes at Russell High School, Russell, Kentucky, in the late seventies, whose motivation and excitement opened my eyes to the need for such a program of study,*
2. *Mr. Richard Baker, the principal at Russell High School, who had enough faith in me to add a class in computer mathematics to the academic schedule and assign the teaching of it to me,*
3. *Dr. Lawrence Griesinger, my advisor at Morehead State University, who encouraged me for over a decade in the pursuit of my educational goals,*
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8. *Dr. Tony Newberry, president of Ashland Community College, who showed me the way to a sabbatical so I could have the time and opportunity to work,*
9. *the educators across the country who took the time to respond to my letters (in particular Dr. Bonnie Mathies of Wright State University, Dayton, Ohio),*
10. *those folks, past and present, who have executed the initiative and exhibited the vision that education so badly needs--for having the courage "to be first",*
11. *the library staff of Ashland Community College,*
12. *all my co-workers, students, and friends who encouraged me by their interest in the study, and*
13. *last, but not least, my family for instilling in me the values that gave me the endurance and confidence to pursue to completion this effort.*

*This effort is dedicated to the students, today and tomorrow, in the classrooms of eastern Kentucky. May they reap the rewards.*

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## Chapter 1

### INTRODUCTION

#### Statement and Purpose

The purpose of this study is to develop the rationale and procedures for the implementation of a computer education major in the College of Education and Behavioral Sciences of Morehead State University.

#### Significance of the Study

A nation with decreasing exports and increasing imports has diminished economic power. The citizens of such a nation would like to understand the cause for this condition. When that same nation produces a presidential candidate with a platform advertising his desire to be known as the "Education President", those same citizens begin to hope for solutions. In Kentucky with decreasing population (1990, U. S. Census Bureau) preceded by loss of employment opportunities, citizens are seeking reasons. In Kentucky with one of the nation's highest rates of high school drop-outs and illiterate residents, the citizens demand a reform of the educational system. In a region where enrollments at educational institutions

are growing, one suspects that citizens are seeking retraining for the changing job market.

The people of the commonwealth of Kentucky have found that even with high school diplomas many are ill prepared to meet the needs of today's technological society. A recent study by the Massachusetts Institute of Technology concluded that Kentucky has the lowest rating in the nation in terms of the education capabilities of its labor force (Morehead State University, Office of the President, 1990). In the early seventies roughly twenty-five percent of the public schools had any type of computer training for its young people, and even fewer colleges of education had training for the teachers whose job it was to prepare those young people (Lester, 1980). The public institutions have not only failed to keep pace with the increased need for technological skills, they have fallen sadly behind. Thus we find a nation economically at risk. As Zuckerman stated in 1989, "National wealth is no longer measured in gold, silver, and precious stones, but in what we know" (Wesolowski, 1990).

In the 19th edition of The College Blue Book there were twenty-two institutions of higher learning in the continental United States and Canada who were listed with degree offerings in computer education. This implies



that they had the foresight and initiative to implement programs specifically to train teachers in the use of technology such as the computer in the classroom. In a brochure prepared by Barry University of Miami Shores, Florida, one of those 22 institutions, there is a statement of support for computer education programs:

The increasing rate of technological progress is making the capability of the computer available at a continuously decreasing cost to a consequently larger and larger proportion of society. The primary factor limiting greater use of computers and the resulting societal benefits is the availability of training opportunities and trained personnel. The scope of the need for computer education is so great that all existing educational institutions must develop the capability to educate their traditional constituency (Barry University bulletin, 1990).

Currently there are only two computer education programs in the state of Kentucky, Eastern Kentucky State University and Spalding College. Of those two, Eastern offers work on the bachelor's level, with an endorsement for the teaching of computer science (at the secondary level), not a degree in computer education. Yet in 1978 when only 18 states had pioneered the use of computers in the classroom, Kentucky was one of those 18 states

(Lester, 1980). Why, then, has higher education in the state of Kentucky failed to respond with programs designed for instructional technology degrees?

The technological needs of society are advancing rapidly. In fact, they are advancing at a pace that the citizens cannot meet. In the April 4, 1989 issue of Executive Strategies an article, "Recareering in the 1990's", listed as one of three strategies for defending oneself (against unemployment) to "become technologically literate". The colleges of education can not afford to do less for their students. The recognition that the training skills of most citizens is below what business needs was documented in the February 9, 1990 Wall Street Journal Reports. This article, titled "The Knowledge Gap", bluntly criticized the status of employee skills by saying, "smarter jobs, dumber workers". It is the major role of today's educational institutions to bridge this ever-widening knowledge gap. A vital population to be reached is the elementary school student. It, therefore, behooves the colleges of education in Kentucky to implement technology instruction programs.

It is the hope of the author of this study that the contents contained herein will serve as both the guide and the motivation for Morehead State University to take the lead in seeing that the public elementary and

secondary schools do, indeed, have faculty who are trained in the use of computers for the classroom. Through such an effort the economic problems listed in the first paragraph of this chapter will not disappear, but should lessen. Morehead State University has the potential to be part of the solution rather than part of the problem.

#### Definition of Terms

The following terms are defined in this study according to their most common usage in the educational community.

1. APPLICATION SOFTWARE: computer programs that instruct computers to produce information specifically to meet user needs.
2. COMPUTER COORDINATOR: a person whose job it is to organize and analyze a computer system and its relevant applications.
3. COMPUTER EDUCATION: the study of computers and their uses as related to the school environment.
4. COMPUTER INFORMATION SCIENCE: basically the same as computer science, as defined in #7, but which stresses application by the facets of society that are affected by the computer.

5. COMPUTER LITERATE: having general knowledge about computers; may include ability to use computers for solving problems, technical knowledge about hardware and software, and awareness of how computers affect society.
6. COMPUTER SCIENCE: the study of an electronic device (known as a computer) which, by means of stored instructions and information, performs rapid, often complex, calculations or manipulates data.
7. DATA PROCESSING: the study of the recording and handling of information by means of electronic equipment.
8. INFORMATION SCIENCE: the study of the relationships among people, equipment, procedures (manual and/or automatic) and data that delivers information to users.
9. INSTRUCTIONAL TECHNOLOGY: the study of instructional, evaluative, and administrative uses of technology and media in education.

### Delimitations

The researcher, in an effort for up-to-date information, chose to correspond directly with those institutions with programs currently in place.

Therefore, the study is limited by the responses of those institutions.

### Objectives

This study has the following objectives:

1. to determine if employment would be available to those individuals trained in a program which concentrates on computer applications for school environment,
2. to determine an appropriate curriculum for a computer education degree at MSU,
3. to determine the detailed procedure for implementing a program at Morehead State University,
4. to determine which college or department at Morehead State University should have academic jurisdiction,
5. to identify benchmark institutions,
6. to determine credential requirements for faculty who teach in the program.

## Chapter 2

### REVIEW OF RELATED LITERATURE

"Parents' Edition", a noonday program aired on National Public Radio, had as its guest on January 19, 1991 Dr. William Beasley of Cleveland State University, Cleveland, Ohio. Dr. Beasley, a professor of educational computing, described the computer in the classroom as "a lever for the mind". His perception of today's classroom computer is that the computer replaces certain educational tools, such as reference books or pencils. However, he believes the computer in the classroom of the future will be a "knowledge agent". This agent will be an artificially intelligent personality. The role of the classroom computer, as he sees it, will evolve from tool to research assistant. One might even say from "pencil to person"--a person whose function is to serve as a research assistant to the user.

As new technologies are further developed many believe that a new learning environment will emerge. This environment will affect the role of the teacher of tomorrow. As that role shifts, the future students will have more indepth and independent study. Teachers will become instructional designers rather than lecturers of course content. A staff that is aware of curriculum

options and technology will understand how to make decisions in the use of technology in order to give expression to the best curriculum (Madian, 1990).

In 1987 the U. S. Office of Technology Assessment conducted a State Educational Technology Survey which revealed that only half the states required or recommended that beginning teachers receive technology preparation. Even though colleges are under considerable pressure to accomplish many goals in a very short period of time, one can not ignore the fact that included in the list of jobs with the brightest futures for the 1990's are those involving computers and information systems, not to mention the application of the computer in other top fields such as international trade, environmental protection, and health and medicine (Moreau, 1990). This no doubt means that tomorrow's workers, who are today's students, must have computer training prior to their entrance into college. The teachers who work with those students may not be ready for the tasks of the future if they continue to gain their computer knowledge through workshops that last only four or five days. It is easier to incorporate information technology into courses for prospective teachers than to expect local school districts to provide the training (Gardner, 1989).

According to Bruder, even though there is an emphasis to make beginning teachers technology proficient, the universities that teach these future teachers how to teach technology in the classroom are, in reality, few and far between. Only a few teachers per school are successfully integrating simple technological applications like word processing and video into the curriculum (Madian, 1990). In an attempt to give teachers an opportunity to become technologically prepared, the East Lansing Public Schools in Michigan has developed the Teacher Explorer Center. This center, which provides techniques and training in multimedia instruction, is the result of a grant awarded by the Michigan Department of Education. The equipment has been supplied by various businesses such as IBM, Sony Showcase, and DataImage (Bruder, 1989a). It is the belief of those who manage and operate this center that all school districts need to design a technology plan, which must include teacher training. However, to date, information was not readily available to document if its success has been evaluated by outside sources.

An alternative method of preparing teachers in the use of classroom technology is investment in teacher productivity, an area not normally considered in education. However, not all school districts have



neglected their teachers in this respect. The Lake Washington (Seattle) School District gave its teachers the opportunity to receive computers for home use a year before they were expected to utilize computers in the classroom. In New Hampshire the Governor's Initiative for Excellence funded the purchase of computers for teachers' personal use (Pearlman, 1989). This approach is highly realistic in view of the time constraints placed on most elementary and secondary teachers. It also is a strong vote of confidence for these teachers and an even stronger statement of commitment to the students who should benefit from such a learning environment.

In some areas of the country, industry, higher education and public schools are collaborating on projects involving new technologies. For example, Autodesk, Inc. of Sausalito, California, Oregon State University and the Novato Unified School District in the San Francisco bay area have experimented with a cyberspace system. Cyberspace is called "virtual reality". This human-computer interface provides the ability to virtually simulate, and interact with, any "reality" that can be imagined (Merichel, 1990). This sounds very much like the research assistant idea suggested by Dr. Beasley.

How can classroom teachers hope to benefit from such endeavors unless more of them are better trained in computer education? How can schools in eastern Kentucky take advantage of such partnerships with business unless the universities help the teachers prepare, through teacher education, to meet such a challenge? The nation needs immediate retraining of many teachers to implement high tech curriculums. How will this be done?

It would seem likely that computer science departments might want to take the responsibility. However, since they have staffing problems in their own computer science curriculums, they have been slow to expand their service role on campus. Therefore, a trend toward setting up departments of Computer Education has emerged within the Colleges of Education (Poirot, 1988). The Teacher Retraining Task Force formed in 1985 by the ACM (Association for Computing Machinery) and the Educational Activities Board of IEEE Computer Society stated in its summary, "The universities of our country must address the retraining needs and do so immediately" (Poirot, 1988).

Gary Bitter, professor at Arizona State University-Tempe, says that preservice teacher education must be improved at the undergraduate level. At Lesley College (Boston, Massachusetts) many graduate students choose a

"Computers in Education" Master's degree option. For many Lesley students, obtaining this Master's degree has a relatively high priority. Several explain that they do not want another "straight education course"; the students say that they "have had enough general education" courses. Their preference is for a more focused program such as is offered at Lesley College (Ferris, 1989). Lesley College, in 1979, was among the first schools in the nation to offer a Master's degree in Computers in Education. Not everyone agrees that such a degree should exist. Leroy Finkel, Instructional Technology Coordinator for San Mateo County, California does not believe the schools of education will ever catch up in the training of technology for preservice teachers. His suspicion is that it will continue to be inservice training (Bruder, 1989c).

Geoffrey Fletcher, director of the Division of Educational Technology at the Texas Education Agency, ranks teacher training as the top issue in the advancement of technology. He does not believe that preservice nor inservice should be emphasized over the other. However, educators and educational researchers consistently cite one factor as central to the full development of technology's use in the schools--the

classroom teacher (Simon, 1990). Sylvia Charp, editor-in-chief of T.H.E. Journal, attended the XIth World Computer Conference in the fall of 1989. This conference involved 2000 delegates from 60 countries. After attending, Ms. Charp wrote in an editorial:

New methods in teaching and learning require retraining of instructors and administrators and a better understanding of the role of the technology.

That there is a need for action is a belief shared by many other outstanding educators. Dr. Janet Shelver, the International President of Delta Kappa Gamma, a women educators honorary society, recently wrote, "There is no doubt that educators must be ready to teach and demonstrate the 'tools of the age'. We are preparing students for the next century" (Shelver, 1990).

Dr. Richard Miller, Assistant Superintendent of educational services of the Hueneme School District in Port Hueneme, California, believes that intelligent use of technology makes good teachers better (Slaughter, 1989).

According to Electronic Learning's ninth annual survey of the states, the respondents from ten states and Washington, D. C. agree with Fletcher of the Texas Education Agency (Bruder, 1989c) that the lack of funding appears to be the biggest impediment.

The General Assembly of Kentucky has stated that technology "is vital to an efficient system of public schools." The Kentucky Education Reform Act, passed in March of 1990, allocated \$48 million for technology over two years (\$15 million the first year and \$33 million for the second year). The general guidelines for technology use are based on teacher discretion (Bruder, 1990). Can this be wise in view of the level of technology training and expertise of the majority of teachers in Kentucky? Perhaps part of this money could be the funds for improved teacher training in Kentucky. This is a funding opportunity that many other states lack. Perhaps Morehead State University could offer a program in Computer Education. This might possibly enhance the range of MSU's ability to serve its constituents.

Morehead State University is presently one of approximately 80 institutions which received grants from the teacher preparation portion of the IBM five-year \$25 million, two-part grant program, titled Enhancement of Teacher Education Program at Morehead State University. The purpose of this grant is to improve U. S. elementary and secondary education through more effective use of technology (Morehead Statement, 1990).

The proposed computer education degree of this study has as its purpose to prepare public school educators not

only for the teaching of computer science applications but for positions as computer coordinators. Computer coordinators, perhaps more than any other group of educational professionals, could be the catalysts in the education-reform movement (November, 1990). The coordinator's original goal (1980-85) was to motivate teachers to use the technology. That role has changed to somewhat of a broker and collaborator. People who can move comfortably in and across "the worlds of high technology" and education are valuable and in high demand because there are so few of them (Bissonnet, 1990).

However, because hardware is often not available and teachers untrained, many schools are placing what computers they do have into labs staffed by "laboratory specialists". In a recent paper, Leiber and Cosden found that half the specialists they studied did not have college degrees (Bracey, 1990). Leiber and Cosden suggest that this lack of formal academic credentials accounts for the lack of influence by the lab specialist on classroom teachers, who tend to view the specialist much the same as they view art and music specialists.

In addition, there are those who have certain fears of technology in the classroom. Some would argue that extensive use of technology is dehumanizing the learning process (Ferolina, 1990). But when one considers that as

these very words were composed, a war was being waged in the Persian Gulf--a war described as a "push-button" war. The consequences of an undereducated, ill-prepared population are quickly understood. According to the director of the New York State Center for Learning Technologies Policy, Research, and Development, Gregory Benson:

There's a knee-jerk reaction within the profession to technology. That is not to say there aren't a whole lot of people out there who understand what needs to be done, what can be done and are willing to do it. But that group is still really at the forefront; it certainly doesn't represent the masses.

Technology is changing both learning and teaching. It must, therefore, change teacher training. This process requires continual support for those in catalytic positions. Teacher technologists, those who direct and teach technology, are in a position to be change agents. It is not enough for teachers to use technology effectively; teachers should be prepared to be educational leaders in the use of technology (Ferris, 1989).

Regardless of the stand one takes--preservice with computer education degrees or ongoing inservice technology workshops--one must remember that there are no

"silver bullets". Quick fixes always fail in education and for understandable reasons. Education is a complex enterprise. Sensible professionals do not replace their strongly held views and behavior patterns in response to fiat or the latest vogue; instead, they respond to developing sentiment among respected colleagues, to incentives that reward serious efforts to explore new possibilities, and to the positive feedback that may come from trying out new ideas from time to time--all of which can take years (NSF report, 1990).

But, undoubtedly, exploring, developing and implementing new ideas takes courage since risk of failure or misjudgment is involved. Mary V. Bicouvaris, the 1989 National Teacher of the Year, in her suggestions for restructuring the profession, said of the training of administrators: "Don't send us managers--we need leaders." (Delta Kappa Gamma bulletin, 1990). In a coming decade of expected unprecedented change, educators must be alerted to the possibility of faddism. Investments must be made in thorough evaluations and ongoing refinements of the instructional process and provision made for first-rate staff development and support.

Unfortunately, the teacher training problem is far from solved (Billings, 1988). There are many factors



that can contribute to the success or failure of curricular innovations. Not the least of these is the extent to which teachers endorse any innovation and are sufficiently trained or prepared for it.

In an advertisement by Porsche (Automobile, 1991) there was a statement which seems to fit the atmosphere of this situation:

Humanity is divided into two distinct groups. Those few with the courage and vision to lead the way into unexplored realms, proving what is possible. And everyone else, who later follows, once the way has been cleared.

In the academic realm, because of institutions such as Lesley College of Massachusetts, University of North Texas, Bank Street College of New York, United States International University of California, and Barry University, Florida, the way has been cleared for Computer Education as a discipline in its own right.

## Chapter 3 PROCEDURES

### Sample Selection

There are three objectives listed in Chapter 1 pertaining to this project which required statistical sampling and the selection of a population. They are:

- (1) determining if employment would be available to those trained in the program,
- (2) determining an appropriate curriculum for the computer education major, and
- (5) identifying benchmark institutions.

The first objective listed above involved discovering attitudes of those with a vested interest in a computer education program. Important populations to be surveyed were those with the potential to be:

- (1) trained in such a program
- (2) instructors in such a program
- (3) employers of those trained in the program.

Also important to be surveyed were those without a vested interest, namely the business and industry community.

During the fall and spring semesters of the 1990-91 academic year, students currently enrolled in undergraduate education core courses at Ashland Community College and those students enrolled in graduate and

undergraduate education courses at the Morehead State University Ashland Center were surveyed. This involved eight MSU courses with a combined enrollment of 154 students and three ACC courses with an enrollment of 65 students. All students were either certified teachers or those studying to become teachers. Names of courses and enrollment numbers were secured from the Ashland Community College Office of Admissions and from the Morehead State the Morehead State University Ashland Center Office in Ashland, Kentucky.

Instructors of these classes were considered to be part of the sample population of possible instructors in the proposed computer education program. Since one ACC instructor taught all three courses and two MSU instructors taught two courses each, there were seven faculty surveyed in the MSU off-campus setting. Other faculty surveyed were taken from the faculty listing of the 1989-90 Morehead State University undergraduate catalog. In particular, there were ten randomly selected (EMM-method) faculty from the Department of Mathematical Sciences, ten selected faculty from the School of Business and Economics and one from the Department of Industrial Technology. The latter two involved those instructors of computer information systems and digital electronics course offerings. The names of these

additional eleven faculty members came from the Chairs of the respective departments.

A list of twenty-four school systems, which are within the service area of Morehead State University, was compiled. The Kentucky School Directory was used for names and addresses of the superintendents.

Since the business and industry community will be ultimately affected, it was deemed important to seek the opinions of that group. Since most communities in eastern Kentucky are quite similar, a sampling was taken by using the mailing list of the Tri-State Management Association. This organization represents manufacturing industries, utilities, retail and wholesale businesses, banks and other service oriented businesses. This group composed a mailing of fifty questionnaires.

The College Blue Book and the Chronicle Four-Year College Databook were utilized to find the names of those institutions which were listed as offering degrees in Computer Education. These comprised the target population for the second objective listed above.

The portion of this population which responded to a request for program information formed the population from which benchmark institutions were selected and the full population for the second objective listed in this chapter.

### Instrumentation and Data Collection

The student surveys were distributed by the author who answered any clarifying questions that arose. Instructors of those classes surveyed were included, but with a slightly different questionnaire. In all cases except the classroom administration, survey questionnaires were mailed, accompanied by an explanatory cover letter and a stamped, addressed envelope.

Located in the Appendices are items relevant to this data collection. These items are sample cover letters, copies of the four questionnaires, lists of the superintendents, business and industry sources, and two separate lists of contacted institutions who offer degrees in computer education. The survey effort began during the fall of 1989. During the fall of 1990 an updated list was compiled utilizing more current listings. The names of those institutions appear in Appendix F, pages 80 and 81.

Table 1 (see Appendix A) shows those states listed as offering a computer education program in the years 1987 and 1989. Also located in Appendix A are Table 2 and Table 8, which were used to select benchmark institutions. Table 3 of Appendix A contains the pertinent information regarding the computer education degrees from responding institutions.

The data for achieving the third objective (to determine the detailed procedure for putting in place a new program at Morehead State University), was secured from the Department of Leadership and Secondary Education, Ginger Hall, Morehead State University. Confirmation of the Type IV Curricular Proposal guidelines, state regulations, and accreditation guidelines were through Dr. Sylvester Kohut, Dean of the College of Education and Behavioral Sciences, Professor Jerry Franklin, Certification Officer, and Dr. Richard Daniel, Interim Chair, Department of Leadership and Secondary Education.

#### Data Analysis

The fundamental purpose of all data collected was to determine if there were justification for the existence of a computer education degree at Morehead State University. The analysis of the questionnaires was based on both a raw numerical count and a percentage analysis. In the case of the student surveys there was a breakdown and comparison between the graduate and undergraduate responses. Of noteworthy interest was the percentage of students interested in such a degree and at what level. The number of needed employees as stated by the superintendents was totalled.

The listing of colleges and universities was examined by total number of states involved in 1987 and in 1989. Any growth rate and/or decline was noted, particularly in the areas of bachelor level degrees and Master's or above level. There was a tally of the number of states that have computer education programs, with an added analysis of the number of states surrounding the state of Kentucky. In the list of tables, Table 1 will give the reader an opportunity to see a state-by-state numerical comparison of Computer Education programs available.

The data received from the institutions was used to make curriculum decisions. An analysis of required courses in defined areas was part of that process. Comparisons of program matrices were made along with attention to course descriptions and time frames for program completion. Information concerning faculty qualifications was used to formulate a recommendation for the program's teaching faculty at Morehead State University. Where such was available, ideas for marketing the program were taken under advisement.

Benchmark institutions were selected through the use of a table of similarity in which 12 areas were examined. A similarity index (SI) assigned to each institution was the number which represented the sum of the areas marked (Table 2, Appendix A). Other indices assigned were the

geographic proximity (GPI), responsiveness (RI), and compatibility of purpose (CPI). The GPI was five points for states surrounding Kentucky, three points for the same geographic region as Kentucky, and one point for states in geographic regions adjacent to the southern region (midatlantic, southwestern, and midwestern). The RI, ranging between one and five points, depended on the the information's relevance to the five areas of program comparison listed in Chapter 4 (program purpose, target audience, program emphasis, number of specialized courses required, and categories of curriculum). In short, the numerical assignment of the RI was based on whether or not information in the given areas was provided. An additional point was added if a marketing brochure was included. The most subjective index was the CPI (a one to five point range), assigned in terms of MSU's purpose in implementing such a program. Only responding schools were considered. Those with the highest sums of the four indices were selected as the benchmark institutions.

The specific procedure for implementing this computer education program at Morehead State University is outlined in the Type IV Curricular Proposal. This outline is for new programs. The Type IV Curricular Proposal has five major areas: (1) program information, (2) purpose, goals, and objectives; (3) need and



justification; (4) personnel, and (5) additional information, which includes quantitative components pertinent to any program.

## Chapter 4

### FINDINGS AND INTERPRETATION

Objective three of this study, as identified in Chapter 1, was to determine the implementation procedure of a new program at Morehead State University. However, several of the objectives of this study satisfy the requirements of that implementation procedure. For example, under 'program information' of the Type IV proposal there is to be a program title, a program description, the total general education credit hours required and statements of any special admissions requirements and/or limitations on enrollment. All of these are in Chapter 5, Recommendations. Item II, which is purpose, goals, and objectives, might best be examined and written by a committee of MSU faculty whose interest is the actual implementation of a computer education program. The need and justification are supported by the four questionnaires and the analysis of similar programs in the continental United States, which were all an integral part of this project. Through the process of further researching those institutions selected as benchmarks, all additional quantitative information can be projected.

Kentucky State Representative Pete Worthington is the current Chairman of the legislative subcommittee on Education Technology. He was quoted as saying, "How we improve technology in the 1991-92 school year is a factor in how the public is going to perceive the progress in school reform." (School computer, 1990) Legislators are generally concerned with public perceptions. Once all the technology is in place in Kentucky classrooms the burden for educating the children with this equipment falls on the classroom teachers. Who will teach the teachers? Justifiably, superintendents of those teachers are looking for people to do just that. The result of one of the questionnaires of this study reveals that concern.

The survey of superintendents yielded a response rate of 87.5%, probably attributable to the simplicity of the questionnaire and the convenience of the stamped, addressed envelope. Of those responding, 100% stated that computers are used in their systems with grades 3 - 8 having 90% use while grades K - 2 along with grades 9 - 12 having 95% use. To some superintendents "computers are used" may mean that a computer is in the classroom available to be used. Whether the use of the computer is real or intended is significant. Even the presence of

such equipment indicates that someone believes the classroom computer is important. However, having someone in charge who can use it is equally, if not more, important.

Forty-three percent of the respondents felt less than half of their faculty members are "computer literate", 38% felt approximately half are, but only 19% felt that more than half are so. Nineteen of the 21, or 90%, stated they would definitely hire a person with a degree which involved computer training specifically for a school setting. One superintendent said he would not hire such a person. Another superintendent said that he would if the person had elementary education certification. In further support of the demand for teachers with computer education training, it can be noted in Table 7 (see Appendix A) that in 1987 on a scale of one to five (with five representing the greatest demand), computer science was rated 4.22-- a range indicating some teacher shortage (Ryan/Cooper, 1988).

Fifty-seven percent of the superintendents said they could use between one and three such graduates. Four superintendents could use between five and ten, but three indicated they could use more than ten such persons. One was unsure and one requested that the person be

knowledgeable about CAI (computer-assisted instruction). In total, this represents a minimum of 62 potential positions and a maximum of 121 positions for computer education graduates.

The high percentages in all categories can no doubt be interpreted to mean that the attitude of those superintendents in charge of public school systems in Morehead State University's service area is strongly in favor of training a certain portion of teacher education candidates specifically in the use of computers for the school setting.

There were 97 students surveyed with 28 of those being graduate students. There was a belief that there is a need for public school teachers to have more computer training, as evidenced by the 86% of the total respondents (100% of the graduate students) expressing this need. The majority expressed a positive reaction to such a specialized degree being offered at Morehead State University. There was some difference of opinion between the graduate and undergraduate students concerning MSU's ability to staff the program, with less confidence shown by the graduate students (54%) than the undergraduate students (68%). The strongest agreement shown was in the belief that today's business and

industry needs do, in fact, warrant the existence of such a degree. The implication here is that the students taught by computer education teachers may be better prepared for their chosen vocations. Concerning actual interest in participation in such a program, the students were rather evenly divided--36% voiced a definite "yes", 33% a definite "no", and 31% were unsure. The percentage of unsure students was greater among the undergraduates. Since most graduate students have begun studies in specific areas, they were less inclined to be interested. Of those graduate students who did respond "yes", forty percent were interested in a Specialist level and fifty percent in a Master's level degree. As one might expect, the undergraduate affirmatives were more interested in a possible Bachelor level degree in computer education (44%). However, another 40% expressed interest in the Master's level. A composite table indicating percentages is in Table 4, Appendix A.

The business and industry sector involved fifty mailings of the survey instrument, of which there was a 60 percent response rate. The area of greatest agreement (87%) was that there is a need for more computer training of public school teachers. Following closely behind, eighty-three percent (83%) felt that business and

industry needs warrant the existence of such a program. However, only seventy percent of the business and industry respondents felt positive about the program at Morehead State University. This response was reflected by the 50% responses that questioned Morehead State's ability to secure the faculty. Sixty-seven percent were willing to endorse such a program, but only 16 percent could offer an internship opportunity to the students. However of those five business/industry personnel who could, three were interested in Bachelor level candidates and two were interested in the Specialist level. At this point the reader might want to examine Chart 2 in Appendix A. This chart indicates the feelings of managers, according to NCRIPAL's Update, with respect to which management practices improve teaching and learning. Of the 15 areas examined, educational technology was the only area that received a rating of high in all three categories studied: frequency, recency, and effectiveness.

The faculty survey yielded a 67% response rate with no appreciable differences among members of the Colleges of Education and Behavioral Sciences, Arts & Sciences, or Business and Economics. Ninety-four percent felt that a need exists for public school teachers to have more

training. Seventy-two percent had a positive reaction to the offering of a specialized computer education degree. Forty-four percent were sure and forty-four percent were unsure of Morehead State's ability to provide faculty for such a program. Sixty-seven percent were willing to endorse the program with fifty percent feeling it would be most effective at a bachelor's level and with fifty percent favoring the master's level.

Over a two and a half year period there were responses from 29 schools of the 51 contacted. This involved four separate mailings on the part of the author. The information supplied by those who did respond formed the basis for the analysis and comparison.

In 1987 there was a total of 16 states offering either a Bachelor's or Master's degree in Computer Education (see Table 1, appendix A). Two years later that number was 23, indicating a 43.75% increase in the number of states involved in such programs. However, the rise in the number of institutions was more dramatic. In 1987 there were 21 institutions offering computer education degrees. That number more than doubled in a two-year period, rising to 53 institutions. When one respondent (Wright State University) supplied information, she also supplied an informative, up-to-date



resource, which was quickly utilized through the inter-library loan system. This resource, The Educational Media and Technology Yearbook, contained some information which made the College Blue Book and Data Chronicle seem somewhat amiss in data collection. In addition, the statistic was given that in 1986, when the Yearbook first compiled such information, there were 50 Master-level programs in Educational Computing in the United States. The 1989 listing showed 82. This is a 64% increase over a period of three years (Ekhaml, 1989). Due to the relative newness of the degree it has to be difficult for research groups to compile information accurately. Since all institutions have not named the degree the same, one may assume that the differences in the numbers from these resources is expected. However, since the Yearbook has statistical information, it seems reasonable to accept it as current and as valid. Whatever the choice of the reader, it seems that even a casual observer would be aware that something of significance has been occurring in the area of computer education.

The 1989 Yearbook documented that six of the seven states surrounding Kentucky have programs with aims of improving the technology preparation of school personnel. No undergraduate programs were included, but there was

detailed information on the 15 institutions from these six states (see Table 6, Appendix A). In addition, this author has learned of institutions other than those listed executing efforts in this direction. Three specific examples are:

(1) Montclair State College in Upper Montclair, New Jersey, which is not listed with computer education degrees, offers in its graduate program a Master of Arts in Computer Science. This program, in addition to being designed for students interested in pursuing computer science, both theoretical and applied practically, is also designed to prepare teachers of computer science at the middle school, high school, and two-year college levels (Monclair State College graduate bulletin, 1987).

(2) Ashland University of Ashland, Ohio advertised in the April 4, 1990 issue of The Higher Education Chronicle for an assistant or associate professor in computer education. Ashland University is not listed as offering a computer education degree, yet it has been seeking faculty with such training. This could mean that Ashland University is concerned in some way about the offerings in the area of computer education.

(3) In an article describing technology programs (Kanigel, 1986), Columbia University of New York was described as having a model Preservice Technology Program. Columbia was not listed as a computer education degree school in the College Blue Book.

In fact, two of these three institutions were not mentioned in either the Educational Media Yearbook, the Data Chronicle, or the College Blue Book. It seems that the figures do not begin to represent the scope of this movement. However, they do support the rationale for implementation.

In 1987, seven of the programs were offered at a Bachelor's level. In 1989, exactly twice that number were available. However, if experienced classroom teachers are to pursue their studies in an area of academic need and public school systems are not to be burdened with the pressure to hire all new personnel, then it seems that the Master's level is a sensible place for initial implementation. However, students beginning teacher training also need the option to study computer education just as professional baseball teams need minor league feeder programs. In addition, some institutions offer Ph.D. programs in computer education (see Table 3,

Appendix A) and others have them proposed (University of North Texas).

The next area for examination is the findings from those institutions who responded to letters of inquiry. These responses represent 29 institutions covering 18 states. Seventy-six percent of those programs are under the guidance and jurisdiction of Colleges of Education (see Table 3, Appendix A). Seventy-six percent offer Master's degrees in Computer Education while roughly fourteen percent offer the Specialist's and ten percent a doctorate. One has a Ph.D. program proposed. Twenty-one percent offer Bachelor level degrees in Computer Education.

The names of the programs vary only slightly, such as Computer Science (Teaching) and Instructional Technology or Computer Education and Cognitive Systems. However, the most frequently used program title (48%) is either Computer Education or Computers In Education.

In an attempt to compare the information from the responding institutions, five areas were considered:

- (1) program purpose
- (2) target audience
- (3) categories of curriculum
- (4) the number of specialized courses required

#### (5) program emphasis

Program purposes seemed to be centered on the enhancement of computer knowledge for educators--whether to coordinate programs, to teach students, to train teachers or business personnel, or to use the computer in the classroom as an instructional aid. Most seemed to be guided by the conviction that computer technology is important.

Most programs are designed for the classroom teacher who wishes to become more technology proficient, or who wants to teach computer science, or coordinate computer programs. Some institutions have programs specifically for administrators, but many seem to lean toward educators with mathematics backgrounds.

Program emphasis appeared to focus primarily on two things: (1) the preparation of computer science teachers, which led to heavy emphasis on programming languages and structure theory, and (2) instructional applications such as authoring/designing software or effectively using available commercial applications software. There seemed to be a trend of offerings for administrative uses of the computer. Curricula were broken down into components which supported the program emphasis. For example, most institutions require some programming and some exposure

to various subject-centered software packages. Those schools who have had programs for longer periods of time offer additional courses in hardware, modeling and simulation through computer graphics. Robotics and computer ethics were other topics which appeared more than once.

The number of required specialized courses varied from as few as three at Grand Canyon University in Arizona to as many as twelve or thirteen at Eastern Kentucky University and Western Michigan University. The schools with more requirements were those who offered degrees in computer science (teaching), which may be related to the age-old issue of content versus methods. It is interesting to note that twenty-two of the twenty-nine programs from responding institutions are housed in Schools of Education.

The total number of courses offered with computer or one of its synonyms in the course title were as few as five or as many as seventy-one. The prefixes for the courses were the expected CS, CIS, CSC, but some had been labeled with CMPU or EDT for Educational Technology.

The state of Kentucky was listed as including two institutions with computer related graduate degrees for educators. Spalding College in Louisville has a program

which began in 1983 with offerings of both the Ed.S. and M.A. in Computers in Education. In 1988 there was only one full-time faculty member for the 11 Masters students and 20 Specialists students. Twenty-one to twenty-seven semester hours in computers are required.

The University of Kentucky has a program in the Department of Special Education offering a Special Education Microcomputers Specialist Program, which began in 1984 and involved 13 students in 1988. The program was staffed by five part-time faculty members.

Through its Department of Curriculum and Instruction, the University of Kentucky also offers a doctorate (Ed.D.) which emphasizes instructional design and instructional technology, research and teaching. All but two of the states surrounding Kentucky also have doctorate level programs in an area titled Instructional Technology. Some of these are primarily for media specialists; however, eight institutions have a curriculum that involves strong computer related requirements.

To obtain some numerical information the fifteen institutions in the states bordering Kentucky were analyzed. The areas examined were:

- (1) beginning date of program

(2) number of faculty for program

(3) number of students listed as enrolled in program.

Beginning dates of programs ranged from 1980 to 1987. The mean enrollment in 1988 was 25. Approximately half of the institutions utilized only full-time faculty with ten percent using only part-time faculty. The other forty percent had both. The average number of faculty was six. It should also be noted that eleven of those fifteen programs were in the schools of education. This information appears in Appendix A as Table 6.

There are 24 states with computer education programs (Virginia is not included in Table 1, but appears in Table 6). Of those 24, twelve have state mandated computer instruction on the secondary level (Appendix A, Chart 1). However, since the other twelve have no state mandate there does not appear to be any correlation between educational legislation and implementation of computer education programs in higher education. Examination of Chart 1 may lead the reader to conclusions about the eastern to midwestern concentration of programs. Apparent trends could be analyzed by program initiation dates and possible pressure from surrounding business communities.



The six selected benchmark institutions, representing the states of Kentucky, Illinois, Indiana, Virginia and Missouri, are Eastern Kentucky University, University of Illinois at Urbana-Champaign, Fontbonne College, Virginia Tech, Purdue, and Southern Illinois at Carbondale (see Table 8, Appendix A).

## Chapter 5

### RECOMMENDATIONS

The first recommendation is that Morehead State University should study the possibility of implementing a degree offering titled Computer Education. It is recommended that the degree be offered first as a Master's option.

Specific recommendations are as follows:

Program description: This program, practical and unique in focus, is designed to prepare students for specific career opportunities in teaching and in planning, developing, implementing, coordinating, administering and evaluating computer education in K - 12 schools, higher education. It is tailored for educators who wish to use computers to enhance classroom instruction.

Admissions requirements: The admission requirements are the same as for any other graduate program at Morehead State University with the addition of two prerequisites. These are (a) that the student must have satisfactorily completed two introductory level computer courses and (b) a minimum of three courses in professional education.

Enrollment limitations: Initially, there may be limited positions for employment. Thus, it is recommended that no more than 20 new students be admitted per semester.

Degree requirements: These should be the same as for other graduate programs, as listed on page 21 of the MSU Graduate Catalog, but with a practicum a necessary component rather than a thesis.

Program curriculum: The proposed program will be for a Master's degree and will consist of 10 three-hour courses required and a three to six hour practicum. Of these 10 courses only two will be electives. There will be one course in curriculum (EDEL 630), Curriculum Construction, and one in foundations (EDF 600), Research Methods in Education. It is recommended that the prefix EDCP (Educational Computing) be used for all other courses in the program. Recommended are:

EDCP 445 (to parallel EET 245) Digital Electronics for Teachers. Functional and logical operation of digital circuits, including logic gates, combinational logic, counters, and registers.

EDCP 516 (to parallel CIS 516) Educational Computing. The development of competencies and applications in the use of microcomputers for instruction, management

in the school setting, information processing in the school setting, and computer-assisted instruction. Hardware and operating systems are covered. Designed for students with some previous knowledge of data processing instructions.

EDCP 592 **Fundamentals of Microcomputer Hardware.**

Study of the components and operating principles for microcomputer systems and topical (involving local applications) system configurations; considerations in the selections of hardware for schools.

EDCP 501 **Logo in the Classroom.** Exploration of the

Logo philosophy and how it relates to developmental learning theories; introduction to LogoWriter, including developmentally appropriate strategies for using Logo to promote children's problem-solving abilities; study of Logo as a computer graphics language and as a general programming language.

EDCP 502 **Structured Computer Programming for the**

**Educator.** Teaches structured programming design concepts (writing, coding, debugging, documenting, and program testing) using various computer languages such as Pascal, structured BASIC, and COBOL.

EDCP 535 Educational Applications of Microcomputers: Reading and Writing Development. Provides the student with instructional applications of the microcomputer for use in reading, language arts, and writing skills development. Particular emphasis is placed upon the use of the microcomputer for the enrichment of the reading-writing connection.

EDCP 536 Educational Applications of Microcomputers: Mathematics. Presents a variety of software and examines how these might be incorporated into the teaching of mathematical concepts and skills and the development of the problem-solving processes. Examines the use of commercial and instructional applications software, the creation of teacher-authored software, and the assessment of software and hardware needs.

EDCP 625 Practicum in Educational Computing. Supervised experience in an educational computing environment.

Recommended for selections in the elective category are:

EDCP 537 Administrative Uses of Microcomputers. An overview of the administrative uses of microcomputers in educational settings. Emphasis will be on data management functions, focus on hardware and software

for use with budgets, schedules, record keeping, data processing, and word processing. Also includes review of educational hardware and software packages.

EDCP 497 Computer Graphics for Teachers. An introduction to computer desktop publishing as a tool in the classroom and graphics programming concepts. Students will be expected to complete an original graphics design through both desktop publishing and programming techniques.

EDCP 499 An Introduction to Hypertext and Hypermedia. An overview of Hypercard and LinkWay, their capabilities, and creation of relatively sophisticated presentations without programming.

Criteria for teaching faculty: Since there are institutions that offer doctorates in computer education it seems reasonable to seek personnel with that training. However, in the early years of the program it is recommended that only one such person be hired. There may be members of MSU's current faculty who have adequate training, experience and expertise to administer the recommended curriculum. In all fairness to faculty and students, teaching assignments in the proposed curriculum should not be made to inexperienced teaching assistants. If the current enrollment of Morehead State University

requires that additional faculty be hired, then it is recommended that, in addition to MSU's standard criteria, the following be considered for teachers of computer education courses:

- (1) minimum of five years' public school experience,
- (2) programming skills,
- (3) basic hardware knowledge,
- (4) minimum of five years' experience with microcomputers and applications software
- (5) above average communication skills

An alternative to the degree and probably a suitable precursor is a training program for practicing teachers such as the one offered by Governor's State University in Illinois.

Since nothing new is accomplished without encountering obstacles, it is further recommended that attention be given to those areas that have been found to be troublesome for schools with a computer education program in place. Dede Heidt, an instructional computer specialist for the Fort Bend Independent School District and James Poirot, Chairman of the Department of Computer Education and Cognitive Systems of North Texas State University, listed the following five problems that can

be encountered in the implementation of computer education courses for preservice teachers:

- (1) university politics
- (2) accreditation standards
- (3) faculty expertise
- (4) student background
- (5) content and level of courses

Heidt and Poirot feel that concentrated and coordinated work is required on the part of many, but the pay-off is well worth the effort--more highly qualified teachers.

In the 1990-91 Morehead State University Graduate catalog the mission of the institution is described on page one:

The university should continue to meet the needs of teacher education in its primary service region and should continue to develop new programs to enhance the growth of Appalachia.

Further, on page two, item seven listed under the Statement of Ideals, which are to represent the commitments of the faculty, staff, and administration of the university:

- (7) continually evaluate, develop, and improve programs to fulfill its specific mission of serving



the economic, educational, social, and cultural needs of northern and eastern Kentucky.

It should be noted that the information in this project is congruous with both the ideals and the mission of Morehead State University.

Since two sets of data indicated academic jurisdiction to be more frequently in Schools of Education, it is recommended that this Computer Education degree be housed in Morehead's College of Education and Behavioral Sciences.

Closing comments:

Kaizen is a Japanese word referring to the philosophy of never-ending improvement, a passion for making things better, and the drive for perfection (Goddard, 1991). In a sense, if action to advance in education is not taken, educators, students and citizens may find themselves not only losing ground but even being left behind. This is particularly true in the area of technology. Acquiring and utilizing the Kaizen philosophy is a place to start. Computer education is a place to start.

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## A P P E N D I C E S

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# Appendix A

Table 1

States with Computer Education degrees  
In the years 1987 and 1989

State name	<u>Number of degree granting institutions</u>		
	1987	1989	total
Arizona	0	1	1
California	3	2	5
Connecticut	0	1	1
Delaware	1	0	1
Florida	2	2	4
Illinois	1	1	2
Indiana	1	1	2
Iowa	1	1	2
Kansas	0	1	1
Kentucky	1	2	2
Louisiana	0	1	1
Massachusetts	1	2	2
Michigan	1	2	3
Missouri	0	1	1
New Hampshire	1	0	1
New Jersey	2	0	2
New York	2	4	5
Ohio	0	4	4
Pennsylvania	1	4	5
South Dakota	1	1	1
Texas	1	3	4
Vermont	1	0	1
Wisconsin	0	2	2
Totals			
23 states	21	36 *	53

\* Fourteen were bachelor degrees.

Sources: 21st Edition, College Blue Book  
Chronicle Databook for 4-year Institutions, 1988-80

Note: Apparent discrepancy in total is due to "overlap"—  
Institutions appearing both places/times were not  
recounted.

Table 2

SIMILARITY CHART

Comparison of responding institutions with Morehead State University

Institution	a	b	c	d	e	f	g	h	i	j	k	l	S.I.
Grand Canyon (AZ)	x	x		x	x	x	x	x	x		x		(7)
USIU (CA)		x		x			x				x		(4)
Barry (FL)		x			x	x	x	x					(5)
Jacksonville (FL)		x		x		x	x				x		(5)
Concordia (IL)		x							x		x		(3)
Governor's (IL)	x	x					x						(3)
National-Louis (IL)		x	x				x						(3)
Northern Ill. (IL)	x	x	x	x									(4)
Southern Ill. Carbondale (IL)	x	x			x		x	x	x		x		(7)
UI-Urbana <sup>a</sup> Champaign (IL)	x	x			x			x		x	x		(6)
Purdue U. (IN)	x	x			x			x	x		x		(6)
UNI (IA) <sup>a</sup>	x	x	x		x		x			x		x	(7)
Clarke (IA)		x			x		x	x	x	x			(6)
Southwestern (KS)		x			x						x		(3)
EKU (KY)	x	x	x	x	x	x	x			x	x	x	(10)
Lesley (MA)					x		x				x		(3)
WU (MI)	x	x		x	x		x		x		x		(7)
Fontbonne (MO)		x		x	x				x		x		(5)
Rivier (NH)				x	x			x	x	x			(5)
St. Peter's (NJ)		x		x	x				x	x	x		(6)
Bank Street (NY)		x			x								(2)
Vassar (NY)		x			x		x	x					(4)
Bowling Green (OH)	x	x		x	x				x		x		(6)
OSU (OH)	x	x						x	x	x		x	(6)
Wright State (OH)	x	x						x					(3)
UNT <sup>a</sup> (TX)	x	x			x	x		x				x	(6)
Hampton U. (VA)		x			x	x	x						(4)
Va. Tech. (VA)	x	x		x	x	x	x		x				(7)
Edgewood (WI)		x		x	x				x	x		x	(6)

(x is marked for areas of similarity)

S.I. - similarity index

Comparison areas used for seeking a benchmark institution

Areas Examined	Morehead State University
a. funding type	public
b. student sex	coed
c. approximate enrollment	7000 - 10000
d. faculty-student ratio	1-18
e. academic year scheduling	semester
f. accreditation	SACS
g. degrees granted	Assoc., B., M., EdS
h. institutional affiliation	UK joint Doctoral
i. acceptance rate	90% (use 75 and up)
j. financial aid recipient rate	70%
k. enrollment requirements	ACT/hs pre-college
l. average tuition costs/sem	\$570

Table 3

**Responding Institutions  
pertinent information regarding  
computer education degrees**

institution name	contact person	academic jurisdiction	degree name	degree level
Grand (AZ) Canyon	Betz Frederick	Education	Comp. Sc. (teaching)	B.S.
USIU (CA)	(none given)	School of Education	Computer Education	Ed.D.
Barry Univ. (FL)	Robert Burke	School of Comp. Sc.	Computer Education	M.S. Ed.S.
Jacksonville University (FL)	Daryl May	School of Education	Computer Education	M.A.
Concordia (IL) University	Donald Gnewuch	School of Education	Comp.Sc. Education	M.A.
Governor's (IL) State Univ.	John H. Meyer	College of Educ.	Computer Education	M.A.
National-Louis University (IL)	Sandra Turner	College of Educ.	Computer Education	M.A.
Northern Ill. University (IL)	David G. Geulette	Ldshp. Educ.	Instruct. Technol.	Ed.D. M.S.
Southern Ill. Carbondale (IL)	Pierre Barrette	Dept. C & I	Computer Based Spec.	M.A.
Un. of Ill. Urbana- Champaign (IL)	J. Richard Dennis	Dept C&I, College of Education	Computer Sc.(Teaching) Teaching Comp.Sc. Instructional Technology	B.S. M.A. M.A., Ph.D.

Table 3

institution name	contact person	academic jurisdiction	degree name	degree level
Purdue Univ. (IN)	James Russell	School of Education	Educational Computing	M.A.
UNI (IA)	Philip East	Math/CS C&I	Com.Sc.Ed. Computer Appl. Ed.	M.A. M.A.
Clarke (IA) College	Kay Pease	Education	Computers in Ed.	M.A.
South- (KS) western	Gary King	Comp. Sci.	Comp. Sc. CIS	B.S. B.B.A.
EKU (KY)	Charles Frankle	Math/CS	CS/Math Teaching	B.S.
Lesley College (MA)	n/a	Dept. of Education	Computers in Educ.	M.A.
WMU (MI)	J. Donald Nelson	Dept. of Comp.Sc.	Comp.Sci. (teaching)	B.S.
Fontbonne College (MO)	Dr. Mary Stephen	Dept. Math & Comp.Sc.	Computer Education	M.S.
Rivier (NH) College	Sister Mary Jane Benoit	Education	Computers in Education	M.A.
Saint Peter's College (NJ)	Henry Hartz	Education	CS/DP Sc. & Tech. Education	M.A. M.A. (ed)
Bank Street College (NY)	Barbara Dubitsky	Education	Computers in Education	M.S. (ed)
Vassar (NY) College	Elle Gohl	Comp. Sc.	Comp.Sc./ Math.	B.S.

Table 3

institution name	contact person	academic jurisdiction	degree name	degree level
Bowling Green (OH)	Gregg Brownell	Dept. Ed. C & I	Computer Ed. Cognate	Ed.S.
Ohio State Univer. (OH)	Keith Hall	Educ. Ldshp.	Instr.Desn. Tech.	M.A.
Wright State (OH)	Bonnie Mathies	College of Education	Computer Education	M.E. M.A.
Univ. North Texas (TX)	James L. Poirot	Education	Computer Education & Cognitive Systems	M.S.
Hampton College (VA)	Carlton Brown	School of Education	Computer Education	M.A.
Va. Tech. (VA)	John Burton	Education	Computers in Education	M.A.
Edgewood College (WI)	Joseph Schmiedicke	Education	Technology	M.A.

Table 4

Percentage Responses of Surveyed Students  
Concerning Computer Education Degree  
At Morehead State University

	U	G	C	U	G	C	U	G	C
	y e s			n o			u n s u r e		
Teacher training needs	84	100	89	6	0	4	10	0	7
Reaction to degree	78	89	81	9	0	6	13	11	13
Staffing possibilities	68	54	64	4	0	3	28	46	33
Personal endorsement	72	89	77	9	0	3	19	11	17
Business & Industry needs	90	96	92	3	0	2	7	4	6
Interest in program	36	36	36	30	43	33	34	21	31
Degree level *									
Bachelor	44	10	34						
Master	40	50	43						
Specialist	16	40	23						
Doctorate	0	0	0						

\* Of those affirmative responses of definite interest.

Code: U - Undergraduate students (69 responses)  
G - Graduate students (26 responses)  
C - Combined, graduate and undergraduate (97 responses)

Source: Survey instruments administered, Fall 1990, Barbara Walters

Table 5

**Computer Education Degree  
Percentage Comparisons of Responses  
of the  
Four Survey Groups**

	School Suptdnts.	Related Faculty	Students	Business & Industry
Response Rate	87.5%	67%	49% *	60%
Additional teacher training needed	87%	94%	89%	87%
Favorable reaction to degree	90%	72%	81%	70%
Belief in MSU'S ability to staff	n/a	44%	64%	50%
Belief that business and industry needs warrant degree	n/a	56%	92%	83%

\* Based on number of students in attendance at time of survey as a part of the original enrollment.

NOTE: The base of each percentage is the number of responses in that category.



Table 6

**Master's Degree Program in  
Educational Computing  
Seven States Surrounding Kentucky**

<u>SCHOOL Name</u>	<u>State</u>	<u>Begin. Year</u>	<u>Academic Jurisdiction</u>	<u>Computer hrs. req.</u>	<u>Faculty ET PT</u>		<u>Degree Name</u>	<u>Enrollment**</u>	<u>Contact Person</u>
Central Missouri State University	MO	1986	C & I	15	12	0	Educational Computing	6	Dr. Max McCullough
Concordia College ++	IL	1987	Math/CS	8*	3	0	Computer Science Education	18	Dr. Paul Kreiss
Fontbonne College ++	MO	1986	Education	33	0	5	Computer Education	67	Dr. Mary Stephen
Governors College ++	IL	1986	College of Education	15	3	5	Education with spec. in Computer Ed.	31	Dr. David Blood
Hampton College ++	VA	1983	School of Education	21	0	5	Computer Education	19	Dr. Carlton Brown
Kent State Univ.	OH	1984	Educational technology	16	4	1	Instructional Computing	40	Dr. Barbara Martin
National-Louis University	++ IL	1983	Dept. of Computer Education	18	2	4	Computer Education	60	Dr. Sandra Turner
Northern Illinois ++ University	IL	1986	College of Education	24	5	0	Instructional Technology-- Microcomputers	--	Dr. James Lochard
Ohio State Univ. ++	OH	1980	--	--	8	0	Computers in Education	40	Dr. Keith Hall
Purdue University ++	IN	1984	School of Education	16	6	0	Educational Computing Instructional Dev.	7	Dr. James Russell
Southern Illinois ++ Univ-Carbondale	IL	1983	Dept. of C & I	21	5	6	Computer-Based Specialization	25	Dr. Pierre Barrette
Southwest Baptist University	MO	1982	School of Education	18	2	3	Computer Education	28	Dr. Fred Teague
VPI & State College ++	VA	1982	Education	12	7	0	Computers in Education	6	Dr. John Burton
Wright State Univ. ++	OH	1985	Dept. Ed. Tech & Vo.Ed	--	2.6	2.6	Computer Education	13	Dr. Bonnie Mathios
Xavier University	OH	1981	Math/CS	12	4	0	Computer Science Education	11	Dr. David Berry

++ Responding Institution.

-- Figures not available.

\* Quarter system.

\*\* Based on 1988 figures.

Source: Educational Media and Technology Yearbook, 1988.

Notes of Interest: Oldest Program--1980. Newest Programs--1987.  
 Number of students involved:  
 Range - 61; Median - 22; Mode - 40  
 Mean - 25.  
 Numbers of semester hours specifically in computers:  
 Range - 27; Median - 15; Mode - 15;  
 Mean - 17

## Relative Demand by Teaching Area, 1986 Report \*

<i>Teaching Fields with Considerable Teacher Shortage (5.00-4.25)</i>	
Mathematics	4.55
Science—physics	4.44
Science—chemistry	4.40
Bilingual education	4.27
Special education—multi-handicapped	4.25
Special education—mentally retarded	4.25
<i>Teaching Fields with Some Teacher Shortage (4.24-3.45)</i>	
Special education—learning disabled	4.23
Computer science	4.22
Special education—ED/PSA	4.20
Speech pathology/audio	4.09
Data processing	3.97
Special education—gifted	3.91
Science—earth	3.86
Science—general	3.82
Science—biology	3.65
Language, modern—Spanish	3.64
Special education—reading	3.46
<i>Teaching Fields with Balanced Supply and Demand (3.44-2.65)</i>	
Psychologist (school)	3.43
Library science	3.39
Language, modern—French	3.34
Industrial arts	3.30
Language, modern—German	3.26
English	3.25
Agriculture	3.23
Music—instrumental	3.14
Business	3.11
Counselor—secondary	3.05
Counselor—elementary	3.04
Music—vocal	2.95
Journalism	2.93
Elementary—intermediate	2.78
Social worker (school)	2.77
Speech	2.72
Elementary—primary	2.70
<i>Teaching Fields with Some Surplus of Teachers (2.64-1.85)</i>	
Home economics	2.51
Driver education	2.46
Art	2.20
Social science	2.11
Health education	1.92
<i>Teaching Fields with Considerable Surplus of Teachers (1.84-1.00)</i>	
Physical education	1.60
5 = Greatest demand    1 = Least demand	
Source: <i>The ASCUS Annual: A Job Search Handbook for Educators, 1987</i> (Addison, Ill.: Association for School, College and University Staffing, 1986), p. 20. Based upon a survey of United States teacher placement officers dated October 1985. Reprinted by permission.	

\* Most current report available at time of printing

Table 8

## BENCHMARK TALLIES

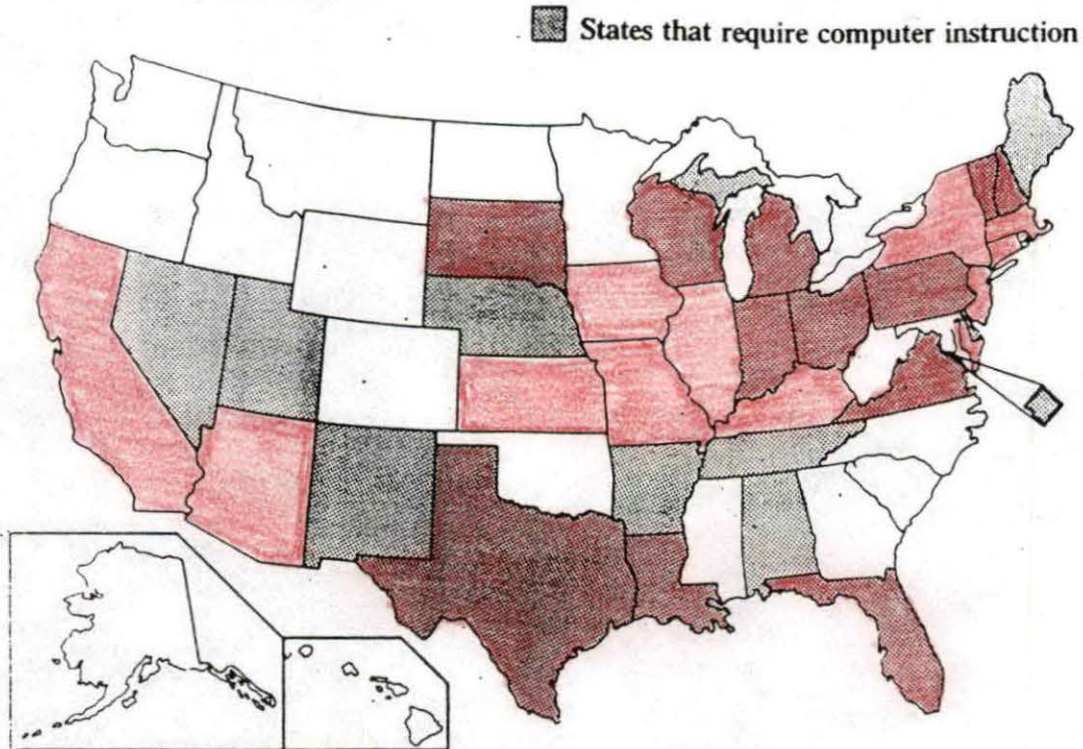
College/ University	State	Region	SI	GPI	RI	CPI	Total
Grand Canyon	AZ	SW	7	1	2	3	13
USIU	CA	PC	4	0	4	1	9
Barry Univ.	FL	S	5	3	6	5	19
Jacksonville	FL	S	5	3	0	0	8
Concordia	IL	MW	3	6	3	3	15
Governor's	IL	MW	3	6	5	4	18
Nat-Louis	IL	MW	3	6	5	5	19
NoIL Univ.	IL	MW	4	6	6	2	18
SoIL Univ.	IL	MW	7	6	6	5	24 *
UI-Urbana	IL	MW	6	6	5	5	22 *
Purdue	IN	MW	6	6	5	4	21 *
UNI	IA	MW	7	1	3	5	16
Clarke	IA	MW	6	1	2	4	13
Southwestern	KS	MW	3	1	1	1	6
EKU	KY	S	10	8	4	4	26 *
Lesley	MA	NE	3	0	1	4	8
WMU	MI	MW	7	1	5	1	14
Fontbonne	MO	MW	5	5	6	5	21 *
Rivier	NH	NE	5	0	4	3	12
St. Peter's	NJ	MA	6	1	4	1	12
Bank Street	NY	MA	2	1	6	3	12
Vassar	NY	MA	4	1	4	2	11
BGU	OH	MW	6	6	3	3	18
OSU	OH	MW	6	6	4	3	19
WSU	OH	MW	3	6	3	4	16
UNT	TX	SW	6	1	5	5	17
Hampton	VA	S	4	8	1	2	15
VPI	VA	S	7	8	4	3	22 *
Edgewood	WI	MW	6	1	3	4	14

SI = similiarity index  
RI = responsiveness index

GPI = geographic proximity index  
CPI = compatibility index

\* Selected institution

## State-Mandated Computer Instruction



Twenty-one states and the District of Columbia require schools to provide computer education at some level, according to a survey by Quality Education Data, Inc., a Denver-based marketing-information firm.

The state mandates range from a general injunction to offer instruction in computers to a specific set of required courses and abilities, the survey indicates. Florida students, for example, must show understanding of 46 computer skills by the time they finish school and must take computer tests in the 3rd, 5th, 8th, and 11th grades.

SOURCE: Education Week, November 30, 1988.

Chart 2

**MANAGEMENT PRACTICES EMPLOYED TO IMPROVE  
TEACHING AND LEARNING**

<b>MANAGEMENT PRACTICE</b>	<b>FREQUENCY</b>	<b>RECENCY</b>	<b>EFFECTIVENESS</b>
Faculty Recruitment, Selection and Promotion	HIGH	LOW	HIGH
Academic Planning	HIGH	HIGH	LOW
Educational Technology and Computers	HIGH	HIGH	HIGH
Institutional Emphasis on Undergraduate Education	HIGH	MODERATE	MODERATE
Academic Management Information and Analytic Support Systems	HIGH	HIGH	LOW
Admissions and Enrollment Management	MODERATE	HIGH	HIGH
Assessing and Rewarding Teaching Effectiveness	MODERATE	LOW	HIGH
Student Academic Support Services	MODERATE	MODERATE	HIGH
Academic, Curriculum, and Program Policy	MODERATE	LOW	MODERATE
Institutional Academic Governance	MODERATE	LOW	MODERATE
Academic Resource Allocation	LOW	MODERATE	LOW
Instructional and Teaching Improvement	LOW	HIGH	LOW
Academic Administrative Leadership	LOW	HIGH	MODERATE
Faculty Development	LOW	MODERATE	LOW
Student Assessment	LOW	HIGH	MODERATE

SOURCE: NCRIPAL UPDATE, Winter 1989-90.

**Appendix B****CURRICULUM MATRIX  
Computer Education/Master's Option**1st Semester

EDCP 501 Logo in Classroom

EDF 600 Research Methods in Education

EDCP 445 Digital Electronics For Teachers

2nd Semester

EDEL 630 Curriculum Construction

EDCP 592 Fundamentals of Microcomputer Hardware

EDCP 502 Structured Computer Programming for the Educator

3rd Semester

EDCP 516 Educational Computing

EDCP 535 Microcomputer Applications: Reading/Writing

OR

EDCP 536 Microcomputer Applications: Mathematics

Elective

4th Semester

EDCP 625 Practicum

Elective

Questionnaire/Computer Education Degree  
Fall 1990

A degree in Computer Education is currently offered by at least 53 institutions in 23 States of the U.S. at the Bachelor's, Master's, Specialist, or Doctorate level. The purpose of this degree is generally to train educators in the use of computers for the classroom or other educational settings. The jobs available are computer teachers, trainers, or coordinators of elementary and secondary programs.

Please respond to the following questions by placing an X in the box [ ] which best describes your feelings.

1. Do you believe there is a need for public school teachers to have more computer training?  
 YES                       NO                       UNSURE
2. What is your reaction to a specialized computer degree in education being offered at Morehead State University?  
 POSITIVE                       NEGATIVE                       NEUTRAL
3. Do you think Morehead State University has (or could find) the faculty to handle effectively such a program?  
 YES                       NO                       UNSURE
4. Would you personally endorse such a program for MSU?  
 YES                       NO                       UNSURE
5. Do you feel today's business and industry needs warrant the existence of such a degree at MSU?  
 YES                       NO                       UNSURE
6. Would you be interested in such a degree if it were available to you?  
 YES                       NO                       UNSURE
7. If you responded YES to #6, at what level would you be most interested?  
 Bachelor                       Master  
 Specialist                       Doctorate

C. Questionnaire/Computer Education Degree  
Spring 1991

A degree in Computer Education is currently offered by at least 53 institutions in 23 States of the U.S. at the Bachelor's, Master's, Specialist, or Doctorate level. The purpose of this degree is generally to train educators in the use of computers for the classroom or other educational settings. The jobs available are computer teachers, trainers, or coordinators of elementary and secondary programs.

Please respond to the following questions by placing an X in the box [ ] which best describes your feelings.

1. Do you believe there is a need for public school teachers to have more computer training?  
 YES                       NO                       UNSURE
2. What is your reaction to a specialized computer degree in education being offered at Morehead State University?  
 POSITIVE                       NEGATIVE                       NEUTRAL
3. Do you think Morehead State University has (or could find) the faculty to handle effectively such a program?  
 YES                       NO                       UNSURE
4. Would you personally endorse such a program for MSU?  
 YES                       NO                       UNSURE
5. Do you feel today's business and industry needs warrant the existence of such a degree at MSU?  
 YES                       NO                       UNSURE
6. Could your business/industry offer any internship opportunities for such a program?  
 YES                       NO                       UNSURE
7. If you responded YES to #6, at what level would you be most interested?  
 Bachelor                       Master  
 Specialist                       Doctorate



Questionnaire/Computer Education Degree  
Spring 1991

A degree in Computer Education is currently offered by at least 53 institutions in 23 States of the U.S. at the Bachelor's, Master's, Specialist, or Doctorate level. The purpose of this degree is generally to train educators in the use of computers for the classroom or other educational settings. The jobs available are computer teachers, trainers, or coordinators of elementary and secondary programs.

Please respond to the following questions by placing an X in the box [ ] which best describes your feelings.

1. Do you believe there is a need for public school teachers to have more computer training?

[ ] YES                      [ ] NO                      [ ] UNSURE

2. What is your reaction to a specialized computer degree in education being offered at Morehead State University?

[ ] POSITIVE              [ ] NEGATIVE              [ ] NEUTRAL

3. Do you think Morehead State University has (or could find) the faculty to handle effectively such a program?

[ ] YES                      [ ] NO                      [ ] UNSURE

4. Would you personally endorse such a program for MSU?

[ ] YES                      [ ] NO                      [ ] UNSURE

5. Do you feel today's business and industry needs warrant the existence of such a degree at MSU?

[ ] YES                      [ ] NO                      [ ] UNSURE

6. If such a program were in place at Morehead State University, at which level do you think it would experience the most success?

[ ] Bachelor              [ ] Master

[ ] Specialist              [ ] Doctorate

## Appendix D

List of eastern Kentucky school superintendents  
 Source: The Kentucky School Directory, 1989-90

:Ashland Independent :1420 Central Avenue :Ashland, KY :41101 :Dr. William C. Foutch	:Paintsville Independent :2nd Street :Paintsville, KY :41240 :Supt. Leon Burchett	:Greenup County :3449 Old Dam Ct. :Greenup, KY :41144 :Supt. R. Edward Stephens
:Bath County :P. O. Box 327 :Owingsville, KY :40360 :Supt. Dr. Martin Carr	:Pike County :Box 3097 :Pikeville, KY :41501 :Supt. Larry Burke	:Lawrence County :Box 607 :Louisa, KY :41230
:Boyd County :Box 5059 :Ashland, KY :41105 :Supt. Delmis Donta	:Pikeville Independent :P. O. Box 2010 :Pikeville, KY :41501 :Supt. John Waddell	:Lewis County :P. O. Box 159 :Vanceburg, KY :41179 :Supt. Michael Forman
:Carter County :228 Carol Malone :Grayson, KY :41143 :Supt. Dwayne Cross	:Raceland Independent :US 23 :Raceland, KY :41169 :Supt. Charles Sammons	:Magoffin County :P. O. Box 109 :Salyersville, KY :41465 :Supt. Carter Whitaker
:Elliott County :P. O. box 767 :Sandy Hook, KY :41171 :Supt. Eugene Binion	:Rowan County :121 E. Second Street :Morehead, KY :40351 :Supt. Kenneth Bland	:Menifee County :P. O. Box 118 :Frenchburg, KY :40322 :Supt. Richard Ratliff
:Fairview Independent :2127 Main Street :Ashland, KY :41101 :Supt. Paul Reliford	:Russell Independent :409 Belfont St. :Russell, KY :41169 :Supt. Fred Madden	:Montgomery County :P. O. Box 7277 :Mt. Sterling, KY :40353 :Supt. Dr. Robert Haynes
:Fleming County :211 W. Water :Flemingsburg, KY :41041 :David Barnett	:Floyd County :Arnold Avenue :Prestonsburg, KY :41653 :Supt. Ronald Hager	:Morgan County :Box 489 :West Liberty, KY :41472 :Supt. James Earl Reed
:Holy Family :932 Winchester Avenue :Ashland, KY :41101	:Seventh Day Adventist School :4009 Hart :Ashland, Ky :41101	:Rose Hill Christian Schools :1001 Winslow Road :Ashland, KY :41101 :Jerry Foster

## Appendix E

List of Business and Industry Sources  
for  
Computer Education Questionnaire, January 1991

American Mailing Service, P. O. Box 1525, Ashland, KY  
Appalachian Power Co., POB, Huntington, WA  
Armco, Inc., P. O. Box 191, Ashland, KY  
Ashland Acoustical, P. O. Box 1007, Ashland, KY  
Ashland Oil, Inc., P. O. Box 391, Ashland, KY  
Ashland Publishing Co., P. O. Box 311, Ashland, KY  
BancOhio National Bank, S. Third St., Ironton, OH  
Bank of Ashland, 1422 Winchester Ave., Ashland, KY  
Bennetton, Ashland Town Center, Ashland, KY  
Chamber of Commerce of Boyd & Greenup Counties, Ashland, KY  
Chimney Corner Tea Room, Carter Ave., Ashland, KY  
Coggin O'Steen Honda & Mercedes Auto Sales, Ashland, KY  
Columbia Gas of Kentucky, Inc., P. O. Box 1030, Ashland, KY  
Columbia Gas of Ohio, Inc., 214 S. Fourth St., Ironton, OH  
Craig Allen, Attorney-At-Law, S. Third St., Ironton, OH  
CSX Transportation, Seventh Ave., Huntington, WA

Daniel's Home Bakery, 2413 Greenup Ave., Ashland, KY  
Dan Lester Insurance, POB, Chesapeake, OH  
Dow Chemical Company, Rt. 2, Box 253, Ironton, OH  
Economy Machine & Tool, Inc., POB, South Point, OH  
Ed Moore Carpet & Interiors, 1490 Diederich Blvd., Russell, KY  
First American Bank, POB, Ashland, KY  
First Federal Savings & Loan, POB, Ashland, KY  
General Telephone of the South, POB, Ashland, KY  
Gibson Bros. Furniture, Winchester Ave., Ashland, KY  
Greater Lawrence Co. Chamber of Commerce, POB, South Point, OH  
Harold D. Miller Insurance, 415 Main St., Greenup, KY  
Heilig-Meyers Furniture, Winchester Ave., Ashland, KY  
Hillard & Lyons, POB, Ashland, KY  
Huntington Chamber of Commerce, POB, Huntington, WA  
Huntington Wholesale Furniture, POB, Huntington, WA  
Kelly, Galloway & Company, 1200 Bath Avenue, Ashland, KY  
Kentucky Power Co., POB, Ashland, KY  
Kilgore Furniture, TV & Appliances, Flatwoods, KY  
Legal Profession Association, S. Third St. Ironton, OH  
McDonald's Restaurant, 150 Russell Rd., Ashland, KY  
McGinnis, Inc., POB, South Point, OH  
Ohio Power Company, S. Third St., Ironton, OH

Our Lady of Bellefonté Hospital, St. Christopher Dr., Ashland, KY  
P. J. Wonn, 1730 Beverly Blvd., Ashland, KY  
Putnam Agency, POB, Ashland, KY  
Quoroum Corporation, POB, Hurricane, WVA  
Rex Payne, 2620 South 12th St., Ironton, OH  
Robert Dalton, 409 Third Ave., Chesapeake, OH  
Star Bank, S. Third St., Ironton, OH  
Star's Fashion World, 1505 Greenup Ave., Ashland, KY  
Sue Dowdy, AOI, POB 391, Ashland, KY  
Third National Bank, POB, Ashland, KY  
Twentieth Street Bank, POB, Huntington, WVA  
WLG Radio, P. O. Box 685, Greenup, KY

Source: Mailing list of Tri-State National Management  
Association (KY-OH-WVA), 1990-91

Alphabetical listing by state  
of  
Colleges and Universities offering degrees in  
Computer Education (and variations)

College/University	Address	State	Degree Code	Source of Information	Logical Information
United States International University (U, O)	10455 Commercial Road San Diego, CA 92131	CA		The College Book, 21st Edition MacMillan Publishing Company New York, 1987	23 colleges or universities
University of LaVerne (M)	1950 Third Street LaVerne, CA 91750	CA			
University of Southern California (B)	University Park Los Angeles, CA 90089	CA			
University of Delaware (M)	Howard, DE 19718	DE			
Jacksonville University (M)	2800 University Boulevard, North Jacksonville, FL 32211	FL			
Baylor University (M)	11300 Northwest Second Avenue Miami Shores, FL 33181	FL			
University of Illinois-Urbana-Champaign (B, M)	505 South Wright Street Urbana, IL 61801	IL			
University of Evansville (M)	Evansville, IN 47712	IN			
Clarke College (M)	1550 Clarke Drive Dubuque, Iowa 52001	Iowa			
Eastern Kentucky University (B)	Lancaster Avenue Richmond, Kentucky 40475	KY			
Louisiana State University (B, M, O)	28 Forest Street Chapel Hill, Mass. 02113-2780	MA			
Computer Science & Mathematics Education					
Salisbury State College (M)	2841 Kennedy Boulevard Jersey City, NJ 07308	NJ			
Computer Science, Education					
Northwestern Michigan University (M)	Marquette, MI 49855	MI			
Computer Science Education					
Rider College (M)	425 E. Main Street Methuen, MA 02068	MA			
Computer Education					
Georgetown Court College (O)	Lawrence, NJ 08701	NJ			
Computer Education					
Computer Science, Data Processing Education					
Utah State College (B)	11300 North 3000 Provo, UT 84601	UT			
Mathematics Education					
State Street College of Education (M)	610 West 112th Street New York, NY 10023	NY			
Computer Science Education					
Boyer College (M)	Easton B. Church Road Greenville, PA 16038	PA			
Computer Science Education					
Concordia University (X)	1450 de Meunier Boulevard West Montreal, PQ H3G 1M8	PQ			
Computer-Aided Learning					
Quebec State College (B)	Medison, SD 57042	SD			
Computer Education					
Carroll State University (B, O)	8300 Jordan Drive Carroll, TX 76812	TX			
CIS, Education					
Goddard College (B)	Plainfield, VT 05667	VT			
Computer Education					

Alphabetical Listing by States  
of those institutions offering a bachelor's degree  
in computer education. Chronicle Databook, 1989-90

Grand Canyon College  
330 West Camelback Road  
P. O. Box 11097  
Phoenix, Arizona 85017

University of Northern Iowa  
Department of Mathematics and Computer Science  
Cedar Falls, Iowa 50614

Southwestern College  
100 College Street  
Winfield, Kansas 67156

Spring Arbor College  
106 Main Street  
Spring Arbor, Michigan 49283

Western Michigan University  
Kalamazoo, Michigan 49008

Vassar College  
Poughkeepsie, New York 12601

Bowling Green State University  
Bowling Green, Ohio

Miami University  
East High Street  
Oxford, Ohio 45056

Mount Vernon Nazarene College  
800 Martinsburg Road  
Mt. Vernon, Ohio 43050

Wright State University  
Colonel Glenn Highway  
Dayton, Ohio 45435

East Texas Baptist University  
1209 N. Grove Street  
Marshall, Texas 75670

University of North Texas  
College of Education  
Computer Education & Cognitive Systems  
P. O. Box 5155  
Denton, Texas 76203-5155

University of Texas/University Park  
Houston, Texas 77004

University of Mary Hardin Baylor  
Belton Station  
Belton, Texas 76513

Edgewood College  
855 Woodrow Street  
Madison, Wisconsin 53711

1400 College Drive, Ashland Community College  
Ashland, Kentucky 41101  
September 14, 1990

Dear Superintendent,

You may be wondering what an associate professor from the UK Community College System could want? I would like to have just a minute of your time for the progress of education. (Future generations of young eastern Kentuckians and I thank you.) I have enclosed a stamped, return envelope in which you may send your responses to the following questionnaire:

Sincerely,

*Barbara*  
Barbara Walters

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Please check the responses that best describe your situation.

(1) Does your system use computers as an instructional tool?

yes

no

(2) If "yes", in what grades?

K - 2

3 - 6

7 - 8

9 - 12

(3) Approximately what percent of your faculty would you classify as "computer literate"?

less than 50%

approx. 50%

more than 50%

(4) If the degree were available, would you like to have faculty members trained specifically in the use of computers for a school setting?

yes

no

(5) How many such people could you use?

1 - 3

4 - 10

more than 10



G

[Sample]

83

1400 College Drive  
Ashland Community College  
Ashland, Kentucky 41101  
October 8, 1990

University of North Texas  
P. O. Box 13797 N. T. Station  
Denton, Texas

Attention: Computer Education Dept.

Dear Madam/Sir:

This fall I am beginning an applied project toward the completion of an EdS. degree in curriculum and instruction. The research centers on higher education's treatment of the use of the computer in the classroom. I notice that your institution offers some training in Computer Education. Could you please send me information pertaining to this program of study, its curriculum, the date it was implemented, enrollment, etc. I thank you for your time in so doing.

Sincerely yours,

Barbara Walters, Associate Professor

[ SAMPLE ]

1400 College Drive  
Ashland Community College  
Ashland, Kentucky 41101  
January 14, 1991

Dana Conley  
Putnam Agency  
P. O. Box 991  
Ashland KY  
41101

Dear Citizen,

Attached please find a questionnaire concerning the need for faculty computer education in this area. This is part of my research toward an Ed. S. degree in Curriculum & Instruction. If you will, please, respond to this questionnaire, placing your reply in the stamped, addressed envelope within 10 days.

The educational community, the children it serves, and I, personally, thank you for your time in so doing.

Sincerely yours,

Barbara Walters, Associate Professor, Education

Ashland Community College  
1400 College Drive  
Ashland, Kentucky 41101  
January 22, 1991

Morehead State University  
Morehead, Kentucky 40351

Dear

I am currently engaged in an applied project for an Ed.S. degree in Curriculum and Instruction. This project is the development of a computer education degree, specifically for Morehead State University. Hence, your opinions and attitudes concerning such a program are of great value in this research. Would you please use the stamped, addressed envelope to return your responses within ten days?

I appreciate the time and consideration you are able to show this request.

Sincerely yours,

Barbara Walters, Associate Professor

Ashland Community College  
1400 College Drive  
Ashland, Kentucky 41101  
February 20, 1991

Lesley College  
29 Everett Street  
Cambridge MASS 02138-2790

Attention: Computers in Education Department

Dear Professor,

I am in the process of completing a research project about the Computer Education programs available in the continental United States. In the fall of 1989 and/or the fall of 1990, I wrote your institution seeking information about the program offered in this area by your school. Since I have not yet received that, I am seeking it a second time. Your response is my best resource. I will greatly appreciate whatever information you are able to share.

Sincerely yours,



Barbara Walters, Associate Professor