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A Study to Determine the Number of Graduates of the Technology Education Program at Old Dominion University That Have Incorporated the Revised Technology Education Materials and Concepts Into Their Public School Teaching

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A STUDY TO DETERMINE THE NUMBER OF GRADUATES OF THE TECHNOLOGY EDUCATION PROGRAM AT OLD DOMINION UNIVERSITY THAT HAVE INCORPORATED THE REVISED TECHNOLOGY EDUCATION MATERIALS AND CONCEPTS INTO THEIR PUBLIC SCHOOL TEACHING

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By

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APPROVAL PAGE

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Date

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Michael V. Hall

TABLE OF CONTENTS

Page

TABLE OF TABLES

CHAPTER I

INTRODUCTION

Since the 1970's, Virginia has been a leader in industrial arts and technology education. To continue its dominance and betterment of its youth, in 1990 the state leadership met to plan for the revision of the high school technology education curriculum. The Virginia curriculum has been under continual revision during recent years. New curriculum guides have been available and every high school and middle school having a technology education program has had opportunity to incorporate the new curriculum into their course of study. The new curriculum introduces concepts in teaching technology education to grades 9 through 12 in the high school and grades 6 through 8 in the middle school.

At the high school level the new curriculum consists of competency based instructional units that are designed to acquaint students to foundational knowledge in technological materials, energy, and information and apply processes associated with the technological thinker. It includes laboratory activities, working in groups and applying mathematics, science, and engineering to technological situations.

The new curriculum was designed to enhance the technological learning process. Curriculum guides have been developed to help achieve this goal. The incorporation of the

new technology education curriculum gives new guidance for critical thinking in both the high school and middle school.

The focus of this study is to determine the number of middle school and high school teachers in the Tidewater, Virginia, area that have incorporated the new curriculum into their programs. It will also be used to identify the success of the program and the number of graduates of technology education from Old Dominion University that have utilized the concepts they learned.

STATEMENT OF THE PROBLEM

The problem of this study was to determine the number of graduates of the Technology Education Program at Old Dominion University that have incorporated the revised technology education curriculum materials and concepts into their public school teaching.

RESEARCH GOAL

The research goals of this study were to determine:

(1) What percentage of technology teachers in the Tidewater area believe the revised technology curriculum is a valuable tool in teaching technology education.

(2) What percentages of middle school technology teachers in the Tidewater area have incorporated the revised Virginia approved Technology Curriculum.

(3) What percentages of high schools technology teachers in the Tidewater area have incorporated the new Virginia approved Technology Curriculum.

(4) To what extent were the 1990-1992 program completers of Old Dominion University's Technology Education program satisfied with the current direction of their teacher preparation programs.

BACKGROUND AND SIGNIFICANCE

Technology education has provided a means for educating and preparing many of our nations youth to face the realities of life. Through technology education programs students are challenged and are effectively prepared to live and work in a highly technological society. Given the importance of this educational program, a task force on high school technology education was convened in the fall of 1990 to conceptualize a high school program for the future. The program was adopted and final copies distributed for implementation into Virginia schools.

Quality education is of paramount importance and the implementation of this program material is one way of assuring that Virginia's students are receiving the best education possible. As instructors, we must incorporate methods of instruction to meet interests, needs and preferred learning styles of students. Virginia Department of Education, Technological Systems (1990) states that "today's schools must

prepare students to understand technological innovations, the production of technology, the impact of technology on the quality of life, and the need for critical evaluations of the social changes resulting from technological improvements." We must ensure that graduates are prepared to live knowledgeably in a technology-based society and contribute productively to it.

The Virginia Department of Education, Teachers Guide for High School Education (1992), also states that the revised curriculum "is central to the high school education curriculum". The technology education program will assist teachers and administrators in implementing the technology courses according to Virginia standards of vocational education.

LIMITATIONS

This study was limited in the following manner:

1. The number of technology teachers actively teaching in the Virginia, Tidewater Area.
2. The teachers of the middle school and high school programs.
3. Old Dominion University graduates in technology education from 1990 - 1992.

ASSUMPTIONS

This research study is based on the assumption that

technology educators understand the concepts of the revised technology curriculum and have had opportunity to implement them into their course of instruction. This is not to say that there is anything wrong if they have not incorporated the curriculum, but rather to determine the reasons for not implementating the curriculum. If teachers are having difficulty implementing the program or do not agree with the program, these concerns need to be voiced so that the Department of Education can seek to find solutions.

It should be noted that the purpose of this study in not to infringe upon the rights or abilities of the technology teacher, but to see if the revised programs are working as designed and if Old Dominion University graduates are presently prepared to teach these programs.

PROCEDURES

Research data was collected from Old Dominion University technology education graduates who instructtechnologyeducation at the middle school and high school level in the Tidewater, Virginia area. The data was collected through the use of a survey. The respondents answered questions pertaining to their involvement in the implementation of the revised curriculum for technology education and how well their education prepared them to teach the new curriculum.

DEFINITION OF TERMS

The following terms are used throughout the study. They are listed to give the reader an understanding of this project.

(1) Virginia Approved Technology Curriculum -"Curriculum designed for technology education approved for implementation into Virginia secondary and middle schools."

(2) Old Dominion University Technology Education Program "A program designed to prepare students to teach technology education in secondary and middle schools".

(3) Technology Education - "The study oftools,materials, processes, products and occupations that exist in an industrial and technological society to include the impacts that technology has on individuals, society, and the environment.

(4) Industrial Arts - "The phase of general education which deals with industry, its organization, materials, occupations, processes, and products - and with the problems resulting from the industrial and technological nature of society.

(5) Revised Technology Curriculum -A series ofcurriculum guides / competency-based instructional packages that support a program of instruction in technology education.

OVERVIEW OF CHAPTER

Chapter I dealt with the question of the importance of the revised technology curriculum. The success of technology education depends on the enthusiasm of its teachers. The revised technology education curriculum is a tool that can be used to enhance every aspect of technology education in Virginia's public school. If problems exist in the program, identification and recognition are key factors in proposing changes. A solution is not accomplished by merely

implementing a program, but by careful selection of a "successful" program. The success of technology education can only be measured by the quality of students completing the program. To achieve the goals established by the Virginia Vocational Education Department, the programs must be implemented. The intent of this research study is to identify the number of technology teachers that have graduated from Old Dominion University that have implemented the revised curriculum into their program. The following chapters will present a review of pertinent literature, methods and procedures of obtaining information, findings, conclusions and recommendations.

CHAPTER II

REVIEW OF LITERATURE

Chapter II is the Review of Literature. It will provide background information related to the number of graduates of the Technology Education Program at Old Dominion University that have incorporated the revised technology education curriculum materials and concepts into their public school teaching. The review of literature contains the following sections: (1) Contemporary issues facing technology education, (2) Technology education curriculum reform, and (3) The six year technology plan for Virginia.

CONTEMPORARY ISSUES FACING TECHNOLOGY EDUCATION

Technology has become a household word. School reformers warn that tomorrow's citizens need to be technologically literate. Thousands of continuing changes in our technological society have placed new demands on our citizens. Unfortunately, evidence suggests that the school systems have been slow to make the curriculum changes required to prepare students for the year 2000 and beyond (Wright, 1990, p. 3). The first challenge facing technology educators today is to take a realistic view of the world we live in and the demands placed on teachers and students. The challenge is to accept the fact that our students must be flexible, adaptive life long learners who can effectively work in groups; that manual

skill and detailed technical knowledge has only marginal value compared to problem solving and creative abilities; and that a broad understanding about technology provides a valuable base for consumer, citizenship, and career activities. While problems tend to be "now" oriented, opportunities are future oriented (Savage & Sterry, 1990, p.7). We cannot determine the kind of future we want if we do not consider a plan for one that is preferred. As individuals, a society, or a global community, we can choose either to stumble into or we can actively plan for the future (Savage & Sterry, 1990, p. 7). The critical movement for technology education leadership occurs when attempts are made to convince local industrial arts teachers to incorporate the new technology based content and instructional practices. The leaders must focus the organization's energy and resources on one or a few changes at a time taking precautions to blend that reform into the school system culture (Wenig, 1990, p. 3).

Another issue facing teachers, supervisors and teacher educators who are working through curriculum modifications is "Which way?" "Clearly, however, technology teachers are struggling to reflect contemporary technologies in the classroom and the laboratory" (Scarborough, 1989, p. 6). A contemporary curriculum that meets the needs of the student is not the whole story. We need students in teacher education programs that have been trained and will implement these newly learned concepts into the educational program. "This new

problem solving curriculum stimulates the student thinking and his/her feelings of self worth by allowing the student to "own" the solution to a problem" (Stewart, 1989, p. 175). In 1989-1990, the Technical Foundation of America and the International Technology Education Association co-sponsored a series of meetings to consider new perspectives. The resulting document (Savage & Sterry, 1990, p. 7) proposed a technological systems model with input, process, and output as the major curriculum organizer.

"Now that the curriculum model reflects a more modern perception of the field of study, technology educators are turning their attention to the problems of program implementation" (McCrory, 1987, p. 40). One of the problems is to update existing curriculum to get away from the traditional vocational education philosophy of shop classes.

TECHNOLOGY EDUCATION CURRICULUM REFORM

In the fall of 1990, technology education leadership from Virginia's Department of Education, universities and local school systems met to plan future directions for their high school technology education programs. The leadership felt that there were too many offerings available at the high school level (Ritz & Swail, 1992 p. iii). The idea was to bring curriculum more in line with academic offerings and to gain the support of school administrators and counselors. The results were a new high school technology education program

composed of three courses. The three core high school courses include Technology Foundations, Technology Transfer, and Technology Assessment. Figure 1 illustrates the Virginia Technology Education structure. Technology Foundations includes specialized study into the nature, principles, and application of materials, information, and energy. In addition, the composition of technological products are investigated. Finally new products are designed which include their control and operation by electrical, fluidic and/or computer systems (Van Dyke, 1992, p. 11).

Technology Transfer analyses the systems of technology in an interdisciplinary nature, including their integration with the knowledge of mathematics, science and society (Dugger, 1992, p.109). Technology assessment, the capstone offering of this program, analyses the nature of population, resources, and technology and the impact that their use has on individuals, society and environment (Ritz & Swail, 1992, p. 183).

This program has been developed to expose students to the realm of society that has been ignored too long. Students of the technological age have the need and right to be aware of current technological practices, the trends and directions in which these practices lead, and the ability to systematically analyze these technologies as to their appropriateness (Ritz & Swail, 1992, p. iii).

Although a curriculum resource guide resulted from the

VIRGINIA
TECHNOLOGY EDUCATION PROGRAM

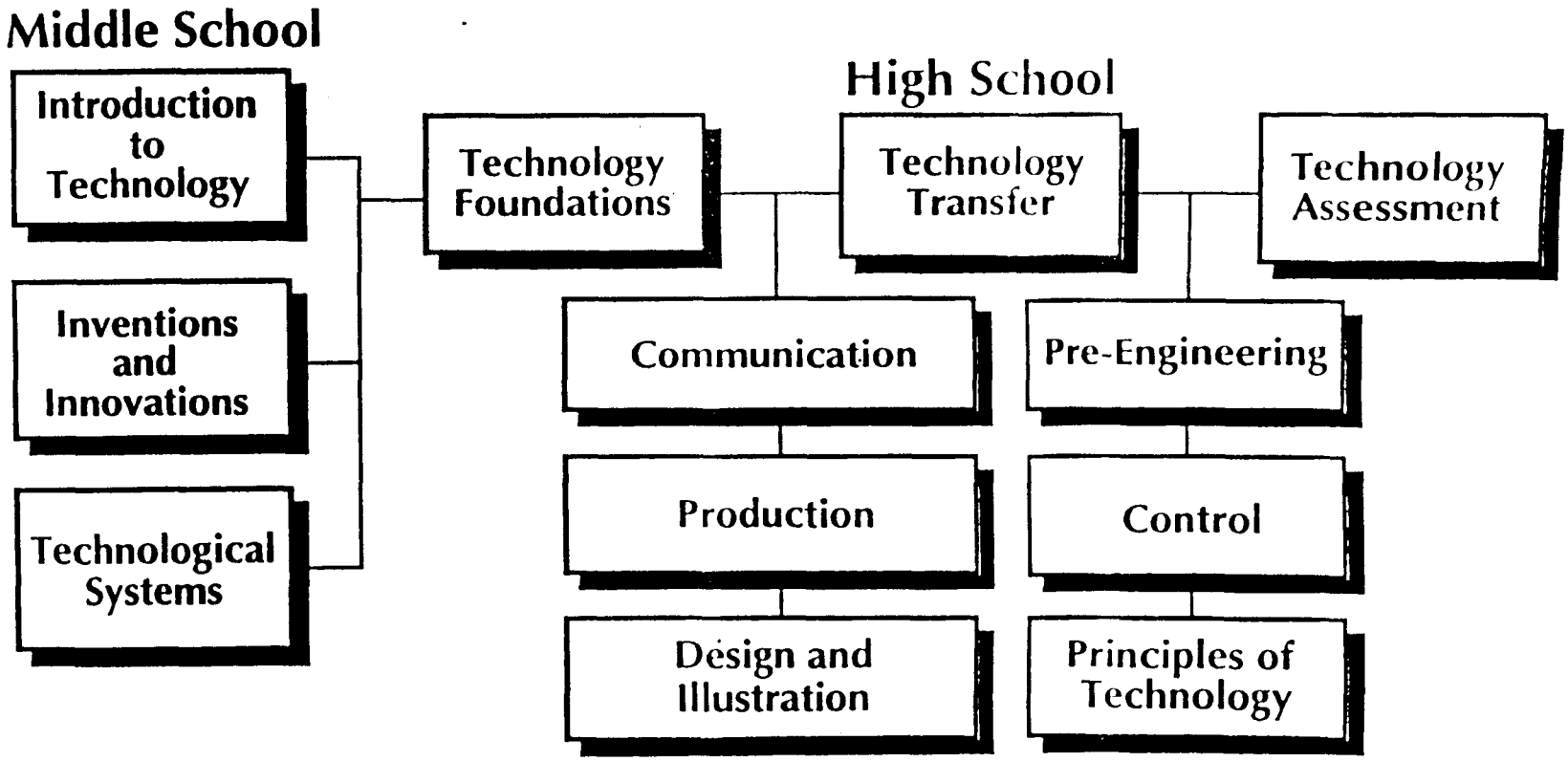

FIGURE 1

efforts of the technology education leadership, concern was also expresses in preparing teachers to instruct these new courses. Unfortunately, evidence suggests that the school systems have been slow to make curriculum changes required to prepare citizens for the year 2000 and beyond (Wright, 1990, p. 3) A portion of the failure of curriculum reform can be placed directly on the door step of teacher education institutions (Wright, 1990, p.3). Therefore, technology teacher educators must directly and proactively address a number of personal and institutional challenges if their graduates are to be flexible, competent teachers, and curriculum change agents (Wright, 1990, p.3). In many cases technology educator programs develop technicians and we expect them to miraculously become teachers. We focus on tool skills and technical knowledge. An assumption is made that a single introductory course in technology and some higher division courses in methods and laboratory planning will make technology teachers out of skilled craftspersons (Wright, 1990, p. 3).

Consequently, plans have been made at Old Dominion University to prepare Virginia graduates through preservice and inservice activities. At the undergraduate level, there exists a unique opportunity to utilize campus and department courses to prepare teachers to instruct a course in technology assessment. At Old Dominion University students are required to complete courses in a broad based university general

studies program. They are required to select courses that will provide academic perspectives and also depth in selected general study areas, such as history, philosophy, and the arts. The faculty in the technology education program at Old Dominion University saw this as an opportunity to strengthen its teacher preparation program. In conjunction with their technology education curriculum and methods courses, they integrate knowledge and technical skills and learners become aware of the new high school courses. In this way they integrate knowledge and skills so that they become prepared to teach courses the university feels are on the cutting edge of technology education (Ritz & Swail, 1992, p. iii).

Technology teachers must be able to teach technology. They must be able to design, use, and maintain technological devices, and systems (Wright, 1990, p.3). "Major curriculum reform efforts are relatively young and have yet to bring about major changes in school programs" (McCrory, 1990, p. 139).

SIX YEAR TECHNOLOGY PLAN FOR VIRGINIA

The current Virginia plan contains 72 recommendations from the Virginia Governor's commission on excellence in education that are directed at three major issues in technology/vocational education: (1) equity in access to education; (2) excellence in the quality of teaching and learning; and (3) connections for linking learners in the

state, the nation and the world. Each of the recommendations for the 6 year technology programs projected to address these issues is accompanied by a narrative statement, and strategies for carrying it out, the projected outcomes, and the responsible entity. Such issues as teacher training, program implementation, materials and equipment procurement and availability, and curriculum content are outlined in this plan. This plan supports the need for the revised technology curriculum and fully supports the need for change in our technology education programs (Virginia Department of Education, 1989, p. iv).

SUMMARY

As shown in the literature reviewed, extensive research and documentation have been analyzed in determining the importance of the revised curriculum implementation.

> In order to teach technology effectively in our schools, it is essential that we allow students to view technology from different perspectives, and not the ones that educators have become accustom too. All core areas of the curriculum are incorporated into one unit and provide real world applications for the student (Ritz & Swail 1992, p. iii).

Davis and Hicks (1990, p. iii) state that:

> As educators, our challenge is to ensure that graduates are prepared to live knowledgeably in a technology-based society and to contribute productively to it. The revised competency-based curriculum will assist teachers and administrators in implementing the technology courses according to Virginia standards for vocational education.

There is a drama in implementing change that exists in

stagnated industrial arts programs. In the American technology education renaissance, we are seeing the reawakening of a dormant spirit of purpose - almost a missionary zeal - with which technology educators approach this new and exciting focus is making a difference in implementing change (Wenig, 1990, p. 4).

The following chapter will outline the method and procedures used for completing the study. Chapter IV will report the findings of the study and Chapter V will present a summary, conclusions, and recommendations.

CHAPTER III

METHODS AND PROCEDURES

Chapter III will describe the methods and procedures used to undertake this study. Within this chapter will be a description of (1) the populations, (2) the research design (3) the method of collecting the data (4) and statistical analysis for treating the collected data.

Population

The population of this study consisted of nineteen middle school and sixteen high school technology teachers within the Virginia, Tidewater area that have graduated from the Technology Education program of Old Dominion University. This was the complete population of graduates from the technology education program from 1990 to 1992.

Research Design

The method of research was a survey. A sample of the survey is included in Appendix A. The survey asked if Old Dominion technology education program completers currently use the revised state curriculum in their educational program at their local school. It also asked what percent of those graduates believed the revised technology curriculum was a valuable tool in teaching technology education.

Data Collection

The data was collected by mailing survey forms to the individuals teaching at a middle school or high school levels. The questionnaires were mailed on May 2, 1994, with a response date of May 23, 1994. A cover letter was sent explaining the purpose of the research. The letter stressed the importance of the study and how the information was to be used. A sample cover letter is inserted as Appendix B.

Upon receipt of the survey, the number of responses were tallied as to whether they felt the revised curriculum was a valuable tool in teaching technology education and the number of responders that used the revised curriculum in their school setting. Percentages of responses were also determined.

Summary

The methods and procedures for conducting this research were explained at the beginning of the chapter. The population surveyed, the research design, method of data collection, and statistical analysis were explained. The results of the survey will be tabulated and reported in Chapter IV.

CHAPTER IV

FINDINGS

Chapter IV presents the results of the data collected in the study of middle school and high school technology education teachers in Virginia. The problem of this study was to determine the number of graduates of the Technology Education Program at Old Dominion University that have incorporated the revised technology education curriculum materials and concepts into their public school teaching. The research goals of this study were to determine:

(1) What percentage of technology teachers in the Tidewater area believe the revised technology curriculum is a valuable tool in teaching technology education.

(2) What percentages of middle school technology teachers in the Tidewater area have incorporated the revised Virginia approved Technology Curriculum.

(3) What percentages of high schools technology teachers in the Tidewater area have incorporated the new Virginia approved Technology Curriculum.

(4) To what extent were the 1990-1992 program completers of Old Dominion University Technology Education program satisfied with the

current direction of their teacher preparation programs.

SURVEY RESULTS

The survey used for this study was sent to 35 teachers throughout the Tidewater area. All teachers were graduates of the Technology Education Program at Old Dominion University. After the questionnaires were sent and two follow-up questionnaires mailed, a cut-off date was established. This date was July 1, 1994. Twenty-three questionnaires, or 65 percent were returned. An analysis of this data may be seen in Table 1.

TABLE 1

QUESTIONNAIRE RESPONSE

Surveys Sent	Surveys Returned	Percent Returned	Surveys Not Returned	Percent of No Return
35	23	65%	12	35%

The following information section dealt with determining the significance of the responses to each question. The key concern was to become aware of the tabulations and responses of each question. Table 2 provides specific responses and statistical tabulations of each question.

TABLE 2

TECHNOLOGY EDUCATION CURRICULUM

Question 1. At what level do you currently teach?

Number of Teachers	High School Teachers	Middle School Teachers	% of High School	% of Middle School
23	12	11	57%	43%

Question 2. Check the following courses that you have been trained to implement either through pre-service or in-service training.

Courses	Number of Teachers	Number of Teachers Trained	% of Teachers	% Totals
Introduction to Technology	23	19	82%	
Inventions and Innovations	23	17	74%	75%
Technological Systems	23	16	70%	
Technology Foundations	23	9	40%	
Technology Transfer	23	5	21%	30%
Technology Assessment	23	7	30%	

TABLE 2 (continued)

Question 3. Rate these courses as of value to the Virginia student.

Courses	Number of Teachers	% of Teachers	Responses
Introduction to Technology	13	56%	5 High Value
	7	30%	4 Med. High Value
	2	9%	3 Average Value
	1	5%	2 Med. Low Value
	0	0%	1 Low Value
Inventions and Innovations	7	30%	5 High Value
	12	52%	4 Med. High Value
	4	18%	3 Average Value
	0	0%	2 Med. Low Value
	0	0%	1 Low Value
Technological Systems	8	34%	5 High Value
	11	47%	4 Med. High Value
	3	13%	3 Average Value
	1	6%	2 Med. Low Value
	0	0%	1 Low Value
Technology Foundations	10	43%	5 High Value
	6	26%	4 Med. High Value
	6	26%	3 Average Value
	1	5%	2 Med. Low Value
	0	0%	1 Low Value
Technology Transfer	6	26%	5 High Value
	6	26%	4 Med. High Value
	10	43%	3 Average Value
	1	5%	2 Med. Low Value
	0	0%	1 Low Value
Technology Assessment	7	30%	5 High Value
	8	35%	4 Med. High Value
	7	30%	3 Average Value
	1	5%	2 Med. Low Value
	0	0%	1 Low Value

TABLE 2 (continued)

Question 4. Check the following courses that you plan to teach.

Courses	Currently Teach	% that Teach	Plan to Teach	% That Plan to Teach	Do Not Plan to Teach	% That do not Plan to Teach
Introduction to Technology	11	47%	3	13%	9	39%
Inventions and Innovations	10	43%	3	13%	10	43%
Technological Systems	9	39%	3	13%	11	47%
Technology Foundations	1	4%	2	8%	20	86%
Technology Transfer	1	4%	1	4%	21	91%
Technology Assessment	1	4%	0	0%	22	96%

Question 5. Are you satisfied with the current program directions being undertaken in Virginia Public Schools?

Number of Teachers Satisfied	% of Teachers Satisfied	Number of Teachers Not Satisfied	% of Teachers Not Satisfied
18	78%	4	17%

Question 6. Do you feel your program at Old Dominion University prepared you to implement the Virginia Technology Education Curriculum?

Number of Teachers Satisfied	% of Teachers Satisfied	Number of Teachers Not Satisfied	% of Teachers Not Satisfied
20	86%	3	13%

Question one: At what level do you currently teach.

Eleven teachers or 47 percent answered they were presently teaching middle school and twelve teachers or 53 percent answered they were currently teaching high school.

Question two: Check the following courses that you have been trained to implement either through pre-service or in-service training. Nineteen teachers or 82 percent indicated they have had training in Introduction to Technology; seventeen teachers or 74 percent indicated they have had training in Inventions and Innovations; sixteen teachers or 70 percent indicated they have had training in Technological Systems; nine teachers or 40 percent indicated they have had training in Technology Foundations; five teachers or 21 percent indicated they have had training in Technology Transfer; and seven teachers or 30 percent indicated they have had training in Technology Assessment.

Question three: Rate these courses as of value to the Virginia student.

Introduction to Technology

This received a response of "High Value" by 13 or 56 percent of the teachers, seven or 30 percent responded medium high value, two or eight percent responded to average value, and one or four percent responded to low value.

Inventions and Innovations

This received a response of "High Value" by seven or 30 percent of the teachers, 12 or 52 percent responded medium

high value, and four or 17 percent responded to average value.

Technological Systems

This received a response of "High Value" by eight or 34 percent of the teachers, 11 or 47 percent responded medium high value, three or 13 percent responded to average value and one or 4 percent responded to medium low level.

Technology Foundations

This received a response of "High Value" by 10 or 43 percent of the teachers, six or 26 percent responded medium high value, seven or 30 percent responded to average value and one or 4 percent responded to medium low level.

Technology Transfer

This received a response of "High Value" by six or 26 percent of the teachers, six or 26 percent responded medium high value, 10 or 43 percent responded to average value and one or four percent responded to medium low level.

Technology Assessment

This received a response of "High Value" by seven or 30 percent of the teachers, eight or 34 percent responded medium high value, seven or 30 percent responded to average value and one or four percent responded to medium low level.

Question four: Please check the following courses that you are currently teaching or plan to teach. Eleven teachers or 47 percent responded they currently teach Introduction to Technology and three teachers or 13 percent responded they plan to teach it. Nine or 39 percent indicated they neither

teach the course now or plan to teach it in the future. Ten teachers or 43 percent responded they currently teach Inventions and Innovations and three teachers or 13 percent responded they plan to teach it. Ten teachers or 43 percent indicated they neither teach the course now or plan to teach it in the future. Nine teachers or 39 percent responded they currently teach Technological Systems and three teachers or 13 percent responded they plan to teach it. Eleven teachers or 47 percent indicated they neither teach the course now or plan to teach it in the future. One teacher or four percent responded they currently teach Technology Foundations and two teachers or six percent responded they plan to teach it. Twenty or 86 percent indicated they neither teach the course now or plan to teach it in the future. One teacher or four percent responded they currently teach Technology Transfer and one teacher or four percent responded they plan to teach it. Twenty-one or 91 percent indicated they neither teach the course now or plan to teach it in the future. One teacher or four percent responded they currently teach Technology Assessment and one teachers or four percent responded they plan to teach it. Twenty-two or 96 percent indicated they neither teach the course now or plan to teach it in the future.

Question five: Are you satisfied with the current program directions being undertaken in Virginia Public Schools? Eighteen teachers or 78 percent replied they were

satisfied with the current program direction, and four teachers or 17 percent responded that they were dissatisfied with current program directions. One teacher or four percent did not respond to the question.

Question six: Do you feel your program at Old Dominion University prepared you to implement the Virginia Technology Education Curriculum? Twenty teachers or 86 percent replied they were satisfied with their teacher preparation received from Old Dominion University, and three teachers or 13 percent responded that they were dissatisfied.

Summary

Chapter IV presented the data collected in the study of Old Dominion University Technology Education Program graduates who have incorporated the revised technology education materials and concepts into their public school teaching. After the information was processed, an overall response toward each statement was gathered. This information was then transferred into tables for examination and interpretation.

Chapter V gives a summary, conclusions, and recommendations for classroom teachers who instruct technology education and wish to incorporate the revised curriculum into their regular programs.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The problem of this study was to determine the number of graduates of the Technology Education Program at Old Dominion University that have incorporated the revised technology education curriculum materials and concepts into their public school teaching. This chapter summarizes the study, draws conclusions based on the findings and research goals, and makes recommendations based on the findings.

SUMMARY

The study was conducted to find out what percentage of technology teachers believe the revised technology curriculum is a valuable tool in teaching technology education, what percentages of middle school technology teachers have incorporated the revised Virginia approved technology curriculum, what percentages of high schools technology teachers have incorporated the new Virginia approved technology curriculum, and to what extent were the 1990-1992 program completers of Old Dominion University Technology Education program satisfied with the current direction of their teacher preparation programs.

To determine the research goals a questionnaire composed of six close-form questions was sent to teachers in the Tidewater Virginia area who graduated from the Old Dominion University Technology Education Program. The questionnaire was prepared using a series of yes and no questions and the Likert scaling technique. The questionnaires were distributed, responses were gathered and the data was processed. It was through the above stated procedures that the research goals were determined.

CONCLUSION

Based upon the findings, the following conclusions are made. **To what extent were the 1990-1992 program completers of Old Dominion University's Technology Education program satisfied with the current direction of their teacher preparation programs.** It was concluded that graduates from the Old Dominion University Technology Education program are satisfied with their teacher preparation program. This evidence was supported by the response of "satisfied" by 86 percent of the teachers surveyed. It can also be concluded that of the teachers surveyed, 78 percent responded they were satisfied with current program directions being under taken in

Virginia Public Schools.

What percentage of middle school technology teachers in the Tidewater area have incorporated the revised Virginia approved Technology Curriculum? It was concluded that only about 50 percent of the Middle School teachers are currently teaching the revised Virginia approved Technology Education curriculum and of the remaining 50 percent, only 10 percent plan to implement it into their courses in the future, with 40 percent choosing not to implement the curriculum at all.

What percent of high school technology teachers in the Tidewater area have incorporated the new Virginia approved Technology Curriculum? It was concluded that at the high school level that four percent of the teachers surveyed currently teach the revised Virginia approved state curriculum and over 90 percent stated they do not plan to teach it in the future.

What percent of technology teachers in the Tidewater area believe the revised technology curriculum is a valuable tool in teaching technology? It can also be concluded that over 80 percent of the middle school teachers surveyed rated the Middle school courses medium high to high in value to the Virginia student, with the high school teachers surveyed rating their courses at average in value to the Virginia student.

It can also be concluded that Middle school teacher have received more training on their courses than high school

teachers. This is supported by 82 percent of the middle school teachers reporting they have received training in Introduction to Technology, 74 percent stating they have received training in Inventions and Innovations, and 70 percent reporting they have received training in Technological Systems. High School teachers on the other hand reported that 40 percent have received training in Technology Foundations, 30 percent have received training in Technology Assessment and only 21 percent have received training in Technology Transfer.

RECOMMENDATIONS

Based on the findings, and conclusions in this study, the researcher submits the following recommendations:

(1) It is recommended that a follow-up study be conducted to ascertain the reasons why 40 percent of the middle school teachers and over 90 percent of the high school teachers do not desire to implement the revised Virginia Technology Education Curriculum.

(2) It is recommended that Old Dominion University investigate the importance of implementing courses to introduce new teachers to the revised Virginia Technology Education Curriculum for both middle school and high school at the undergraduate level and provide guidance in implementing the curriculum in their classrooms.

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APPENDICES

APPENDIX A - Sample of Research Survey

APPENDIX B - Sample of Research Cover Letter

APPENDIX C - Sample of research Follow-Up Letter

APPENDIX A

SURVEY QUESTIONNAIRE

Technology Education Curriculum

Purpose: To determine the number of graduates of the Technology Education Program at Old Dominion University that have incorporated the revised technology education curriculum materials and concepts into their public school teaching.

Name _____

City Employed _____

School Employed _____

Year Graduated _____

Directions:

The following survey contains 5 questions. Please answer each question as it applies to your current teaching situation.

1. At what level do you currently teach?

   _____ Middle School _____ High School

2. Check the following courses that you have been trained to implement either through pre-service or in-service training.

   _____ Introduction to Technology

   _____ Inventions and Innovations

_____ Technological Systems

_____ Technology Foundations

_____ Technology Transfer

_____ Technology Assessment

3. Rate these courses as of value to the Virginia Student.

Circle the desired value.

Introduction to Technology

High Value Low Value

5 4 3 2 1

Inventions and Innovations

High Value Low Value

5 4 3 2 1

Technological Systems

High Value Low Value

5 4 3 2 1

Technology Foundations

High Value Low Value

5 4 3 2 1

Technology Transfer

High Value Low Value

5 4 3 2 1

Technology Assessment

High Value Low Value

5 4 3 2 1

4. Please check the following courses that you are currently teaching or plan to teach.

Currently Teach		Plan to Teach
_____	Introduction to Technology	_____
_____	Inventions and Innovations	_____
_____	Technological Systems	_____
_____	Technology Foundations	_____
_____	Technology Transfer	_____
_____	Technology Assessment	_____

5. Are you satisfied with the current program directions being undertaken in Virginia Public Schools?

_____ Yes _____ No

6. Do you feel your program at Old Dominion University prepared you to implement the Virginia Technology Education Curriculum?

_____ Yes _____ No

APPENDIX B

INTRODUCTORY LETTER EXPLAINING RESEARCH PROJECT

Dear Graduate:

I am conducting a research project to determine the number of graduates of the Technology Education Program at Old Dominion University who have incorporated the revised Virginia technology education curriculum materials into their school teaching. Information regarding your experiences and program changes since graduation will aid us in improving and developing a more meaningful curriculum. The survey information will be confidential, and your name will not be revealed in any report.

Please take the time to complete the questionnaire and return it in the enclosed business envelope. Thank you for your help in this study.

Sincerely,

Michael Hall
Graduate Student
Old Dominion University

APPENDIX C

FOLLOW-UP LETTER

Dear Graduate:

A few weeks ago, you were sent a survey concerning Technology Education Curriculum. This is a reminder incase the survey has been set aside. Because my research covers such a small number of teachers, your input is critical to my project validity.

Please take a few minutes to complete the enclosed questionnaire and return it in the enclosed business envelope. Again, thank you for your help in this study

Sincerely,

Michael Hall
Graduate Student
Old Dominion University