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A Study to Determine the Relationship Between Parent's Work and Their Concern for Their Children Becoming Technologically Literate

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A STUDY TO DETERMINE THE RELATIONSHIP
BETWEEN PARENT'S WORK AND THEIR CONCERN FOR THEIR
CHILDREN BECOMING TECHNOLOGICALLY LITERATE

A RESEARCH PROJECT
PRESENTED TO THE FACULTY OF
THE DEPARTMENT OF
OCCUPATIONAL AND TECHNICAL STUDIES
OLD DOMINION UNIVERSITIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE MASTER OF SCIENCE DEGREE

BY
GERALD T. HOOVER
DECEMBER 2003

SIGNATURE PAGE

This research paper was prepared by Gerald T. Hoover under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science.

APPROVED BY:

A handwritten signature in cursive script, reading "John M. Ritz", is written over a horizontal line.

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12-17-03

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CHAPTER I

INTRODUCTION

The need for students to be technologically literate increases to be a concern for the future of society. With computers being common in nearly every household, the influence of the information age, and the need for an understanding of the technology in the work place, there is a need for technological literacy. Parents must play a role in their children's future and have a concern for their children's technological literacy.

Technological literacy should be a concern for all parents, students, and educational institutions, to ensure future technological needs are met. Determining parents concern about technological literacy for their children is the primary concern for this study.

In this study, the researcher shows the relationship between current employment held by parents and their concerns over their children's technological education. As society continues to expand with the progress in technological fields, a concern exists for the knowledge of future workers in these fields.

Parents must take the lead to ensure that all children are properly taught to meet the needs of employers. Without

having the support of parents within the community, education systems may not get the proper attention needed.

Statement of the Problem

The problem of this study was to determine the relationship between parent's work and their concern for their children becoming technological literate.

Research Goals

This study was used to gain an understanding of parent's concern for their children's technological literacy. The questions established for this research were:

1. Are parents who work in technical fields more concerned about their children's technological literacy than parents who work in non-technical fields?
2. Do parents who work in technical fields have a better understanding of what technology is over parents working in non-technical fields?
3. Are parents concerned about their children studying technology at all grade levels or on the same level as other classes in the school systems?

Background and Significance

Society continues to change and the technology used everyday continues to advance towards new and more demanding levels. The study of technology is significant to the interest for those who work in technological fields and

has been for the past several decades. Though there is an interest in technology education, there is a lack of understanding of what it means to be technologically literate.

This study is a result of there being no previous studies about the concern parents have over their children being technologically literate. In order to study this area fully, an understanding of technology and technological literacy are important for students today.

Technological literate people have an understanding of the role technology plays in society. These individuals understand the value and benefits gained by the use of technology as well as the risks associated with the use of technology.

In order to provide businesses with technologically literate individuals, school systems must teach with that goal in mind. The problem is that some educators believe computers and related devices teach about technology. (Pearson, 2002) If this were the case, then every student in school today that utilize computers as part of their class activities would be considered technologically literate.

With the exception of the use of computers and the Internet, technology in schools is not treated seriously as

a subject in grades K-12. (Pearson, 2002, p. 6) This issue is not isolated to the schools. Many adults may be very interested in technology, but even they are poorly informed about technology. (Pearson, 2002) Understanding the concern parents may have about the level of technological literacy of their children will help shape the future of technology within school systems.

This study will enlighten educators and employers that rely on hiring technologically literate individuals as to the concern parents have toward education in the schools. Through the survey of parents, the researcher will determine if there is a concern for technological literacy within the community.

There are several benefits for having a society of technologically literates. Individuals within society will make better, well informed decisions on matters relating to technology. Having workers who are technological literate are more likely to have the required skills or abilities to learn what is necessary to meet an employers needs. (Pearson, 2002)

Technological literacy is not knowledge that is learned over night or only in high school. Students must start on their path to understanding technology from the moment they begin their education.

Limitations

The following factors presented limitations in the completion of this research study:

1. This study was limited to parents of students attending middle and high schools in the Deep Creek section of Chesapeake, Virginia, during the 2002-2003 school year.
2. It was limited by the technological literacy of the parents and their willingness to take time to complete the survey.
3. Finally, it was limited by the income of families in the area and their ability to have access to technology.

Assumptions

In this study there were several factors assumed to be true. The assumptions were as follows:

1. Parents who work in technology fields have a greater concern for their children's technological literacy.
2. Parents working in technological fields are more technologically literate than parents who work in other fields.
3. Parents understand the difference between technology education and educational technology.

Procedures

Completion of this research required development of a survey that the students within the school would deliver to their parents for completion and returning the responses back to the school. Distribution of the surveys required obtaining permission from Deep Creek Middle School and Chesapeake Public Schools administration. The data were recorded, tabulated and analyzed to determine the correlation between parent work and concern for technological literacy of their children.

Definitions of Terms

The following terms are defined to assist the reader with this study:

Parents' work - these are the types of jobs or fields that parents of students work on a daily basis.

Technological Literacy - the ability to use, manage, assess, and understand technology. (ITEA, 2000)

Technology - methods and ways that people modify nature to meet their needs.

Overview of Chapters

In this chapter, the researcher presented the issue of parents' concern for the technological literacy of their children. Though this study was limited to a single high school, it is representative of the entire region.

In Chapter II, the researcher will review literature relating to technological literacy and concerns others have had or are currently concerned. Chapter III will describe the methods and procedures that the researcher used in the collection of the data and the findings will be presented in Chapter IV.

In the final chapter, Chapter V, the researcher will summarize the study, determine the conclusions as a result of the research, and close with recommendations of how this research can be utilized by others.

CHAPTER II

REVIEW OF LITERATURE

Chapter II is the review of literature. Literature on parent's work in technological fields and the study of technology education will be covered.

Parent's Understanding of Technology

Parents play a vital role in ensuring that their children become informed about technology and its uses. One factor that affects this is that most American adults have a very limited view of what technology is. (Pearson, 2002, p. 64) Before a determination can be made as to what is required for students to learn in the area of technology, an understanding of how parents feel about technology must be examined.

In 2001, the International Technology Education Association (ITEA) commissioned the Gallup Organization to research American citizens' knowledge of and attitudes about technological literacy. Few other surveys have been conducted to determine the level of technology understanding of the population. Conclusions drawn from the study are summarized as follows (ITEA, 2002):

- The American public is virtually unanimous in regarding the development of technology literacy as an important goal for people at all levels.

- Many Americans view technology narrowly as mostly being computers and the Internet.

- There is near total consensus in the public sampled that schools should include the study of technology in the curriculum.

However, there continues to be a growing gap seen between the knowledge required in the work force and the level of technological understanding of those who are entering it. In an article by Gupta and Ndahi (2002), "About 22 percent of adults currently entering the labor market possess the technology skills that are required for 60% of new jobs". (p. 1) This variation in knowledge levels in the labor force can be reduced with the proper training methods put in place.

Engineering and professional associations play an important role in promoting technological literacy by conveying the required levels of technology content needed for students to enter their organizations with the proper training. (Dugger, 2001) With the use of technology on the increase, students must be exposed to technology at a level to enter the work force with a better understanding of technology and how it affects their world.

Individuals currently working in technological fields may not have the knowledge of technology requiring them to be considered technological literate. Engineers, who are traditionally considered experts in their scientific fields, may lack the training or experience necessary to think about the social, political, and ethical implications of their work. (Pearson, 2002)

The Internal Revenue Service (2002) list of technical fields include: architecture, engineering and related services; computer systems design; mining; transportation; manufacturing; utilities; construction of buildings and other related fields; specialized design services, and other related technical services. Non-technical fields include: real estate, rental and leasing; retail trade; wholesale trade; educational services; finance and insurance; and other services.

We can only hope that parents who work in the fields of technology may at least have enough understanding to have a concern for technological literacy of their children. This study will show the current level of concern parents have based on their understanding and knowledge.

Study of Technology Education

Technology is the process by which humans modify nature to meet their needs and wants. Though this sounds basic, there is confusion in today's society about what technology actually is. (Dugger, 2001) People view technology in a number of different ways. Some view technology as working with computers or accessing the Internet. Others are confused about the connection between science and technology.

Students must have an understanding of technology in order to meet their needs fully. The computer used in the classroom helps to understand technology but doesn't make one technologically literate. Though computers may be used in technology education, the use of technology to learn is not the same as technology education.

Technology is used as part of our daily lives. Using cell phones, programming a VCR, or using a computer to do work, are all utilization of technology. This does not make the users of these items technological literate. That can only come by being technologically educated.

A study of Pupil's Attitudes to Technology (PATT) was reported on U.S. students in 1989. This study revealed that students had a narrow conception on technology associated

with computers, and a limited knowledge of the influences technology has had on human history. (Pearson, 2002) Since then, no other studies have really been done in the area of technology.

The lack of technology studies in U. S. schools allows us to reasonably assume that students have a limited understanding of the nature and history of technology. This comparison pertains to other subjects being taught, such as mathematics and sciences. (Pearson, 2002)

This finding is further collaborated by the poor performance of U.S. middle and high school students on the Third International Math and Science Study (TIMSS) conducted in 1995 and the completed follow-up (TIMSS-R) in 1999. (Pearson, 2002) This poor performance suggests that the student technological knowledge would even be lower.

Teaching technology in schools is the most natural and important place to begin. Teaching about technology in schools provides all students with early and regular contact with technology. (Young, 2002)

As mentioned previously, technology education is not the same as education technology (the use of technology for education). Teachers assume by using computers to access the Internet and assisting in the teaching process is an understanding of technology education. This only utilizes

technology to educate students and does not teach students about technology or how it affects society.

Through the study of technology, students must be able to recognize the many forms of technology and how they affect society. They must have an understanding of the basic concepts, terms, and trade-offs that come with technology. Additionally, they must recognize and understand that technology affects society as much as society impacts the affects of technological developments.

The method used to achieve an understanding of technology is through the use of the technology content standards in the education systems. According to the International Technology Education Association, technology content standards are important for several reasons. (ITEA, 2000)

- *Technological literacy enables people to develop knowledge and abilities about human innovations in action.*

- *Technology Content Standards establish the requirements for technological literacy for all students.*

- *Technology Content Standards provides qualitative expectations of excellence for all students.*

- *Effective democracy depends on all citizens participating in the decision-making process. Because so many decisions involve technological issues, all citizens need to be technologically literate.*

- *A technologically literate population can help our nation maintain and sustain economic progress.*

There is a definite need for technology education in today's school systems in order to meet the demands of society in the future. The need for technology education is expressed in an article by Dugger(2001, p. 6) as he states:

Our world will be very different 10 or 20 years from now. This is inevitable. However, we have a choice as to whether we march into that world with our eyes open, deciding for ourselves how we want it to be, or whether we let it push us along, as we remain ignorant and helpless to understand where we're going or why. Technological literacy will enable us to make a conscious choice.

The students in school today will become the work force of tomorrow. We owe it to these students and to society to best prepare them to meet the challenges of the future. The only way to achieve this is through the proper technology education.

Summary

With the information available and lack of additional studies conducted, the ITEA/Gallup Poll shows that the general public does have a concern for technology and they want to be informed decision-makers of technological events. (Starkweather, 2002)

The review of literature has indicated that no sufficient studies have been conducted to indicate that parents have a concern for their children being technologically literates. In Chapter III the researcher will discuss the population and methods of data collection.

CHAPTER III

METHODS AND PROCEDURES

Chapter III outlines the methods and procedures that were used in this study. This research is a descriptive study seeking to determine whether parents who work in technological fields have more concern for their children's technology literacy than parents who work in other fields. A description of the population studied, research instrument used, methods of data collection, type of statistical analysis performed, and summary of the research methodology follow.

Population

The population of this study was limited to the parents of students attending middle and high schools in the Deep Creek section of Chesapeake, Virginia. There are approximately 3500 students enrolled in the sixth through twelfth grades in Deep Creek schools. There were 131 parents surveyed in this study.

Instrument Design

Parent's concern for the technological literacy of their children was measured with a survey developed for use

in this study. The first section of this survey asked parent's questions about technological literacy and to rate them from strongly agree to strongly disagree. The second section asked questions about current occupation and meaning of technology. The questions used in this survey were adapted from questions presented in ITEA/Gallup Poll (Rose, 2002). A copy of this survey is presented in Appendix A of the research paper.

Methods of Data Collection

Initial data were collected through surveys distributed to students of Deep Creek Middle School. The school principal distributed the surveys to the classrooms for those students' families at random to participate in the study. These students were asked to deliver the surveys home to their parents for completion and then return the completed surveys back to the researcher using self-addressed stamped envelopes.

Due to a lack of responses and insufficient time to follow-up on these students, additional parents of students attending middle and high schools were surveyed within the Deep Creek community until a sufficient number of responses were received. One hundred fifty parents overall were asked to respond to the survey.

Statistical Analysis

Data collected from the parent's listed their perception of technological literacy and any concern they have for their children's technological literacy. A comparison was made between parents who work in technology related fields and those parents who work in non-technology fields. Additionally, the comparison looked at those who had a concern for their children's technological literacy to those who had no concern. A mean score was tabulated for the data received in each of the questions evaluated.

Summary

In Chapter III the population of this study was presented and was limited to the parents of students attending middle and high schools in the Deep Creek region of Chesapeake, Virginia. The survey included information to determine the relationship between the employment of parents and their concern for their children's technological literacy.

The data received will be tabulated to measure parent's feelings about technology education. The findings of the data will be presented in Chapter IV.

CHAPTER IV

FINDINGS

The purpose of this study was to determine the relationship between parent's work and their concern for their children becoming technological literate. This chapter presents the findings of the data collected for this study.

Study Group

The Deep Creek community of Chesapeake, Virginia, was represented in this study. Data were collected from 131 parents, 65 who worked in technical fields and 66 who worked in non-technical fields. Parents were grouped in technical and non-technical fields based on their current employment or previous experience of working in a technical field.

These fields were listed in the 2002 IRS bulletin with 82% of those surveyed working in these fields. The remaining respondent occupations were not listed in this bulletin of which 12 of 18 respondents were homemakers.

Findings

The first part of the survey began by having respondents answer 10 questions about technology and its relationship to other fields and to education. The results

of these 10 questions are listed in Table 1 and are differentiated by technical and non-technical respondents.

Question 1 of the survey asked individuals to respond to the statement, "It is important for people to develop some ability to understand and use technology". Out of 131 respondents, 129 respondents either strongly or mostly agreed with this statement. There was one response from each group stating they mostly disagreed. The mean for the question was 4.8 indicating strongly agree.

Questions 2 and 3 dealt with technology being taught as part of normal education and had similar response results as Question 1. Question 2 asked, "Technology education should be taught at the secondary or all levels". 97% of those in technical fields and 94% in the non-technical fields either strongly to mostly agreed with this. The mean for the question was 4.5 indicating strongly agree

Not surprisingly, when asked in Question 3: "Technology education courses should be part of the regular curriculum", the responses had similar results with 94% of the technical and 91% of those working in non-technical fields either strongly to mostly agreeing with the statement. The mean for the question was 4.4 indicating mostly agree.

In your opinion, do you strongly agree, mostly agree, mostly disagree, or strongly disagree with each of the following statements.													
	SA+MA		SA Strongly Agree		MA Mostly Agree		Mostly Disagree		Strongly Disagree		Don't Know/No Response		Mean Score
Statement			5		4		3		2		1		
Occupation	%		%		%		%		%		%		
	T	NT	T	NT	T	NT	T	NT	T	NT	T	NT	
1. It is important for people at all levels to develop some ability to understand and use technology.	98.5	98.5	80	81.8	18.5	16.7	1.5	1.5	-	-	-	-	4.8
2. Technology education should be taught at the secondary or all grade levels.	96.9	93.9	67.7	56	29.2	37.9	3	3	-	1.5	-	1.5	4.5
3. Technology education courses should be part of regular curriculum requirements.	93.8	90.9	52.3	50	41.5	40.9	4.6	3	1.5	1.5	-	4.5	4.4
4. Engineering and technology are basically one and the same thing.	41.6	39.4	10.8	6.1	30.8	33.3	24.6	21.2	26.2	18.2	7.7	21.2	3.0
5. Science and technology are basically one and the same thing.	36.9	43.9	7.7	10.6	29.2	33.3	26.2	22.7	26.2	19.7	10.8	13.6	3.0
6. Technology has an affect on my daily life.	97	93.9	78.5	69.7	18.5	24.2	3	3	-	1.5	-	1.5	4.7
7. I feel technology should be taught on the same level as English, Math and Science.	76.9	72.8	32.3	25.8	44.6	47	16.9	18.2	3.1	3	3.1	6.1	3.9
8. Technology mostly deals with computers and the Internet.	33.8	46.4	4.6	4.5	29.2	40.9	13.8	34.8	49.2	16.7	3.1	3	3.1
9. Technology Education and education technology are basically one and the same thing.	30.7	39.4	9.2	13.6	21.5	25.8	27.7	24.2	20	10.6	21.5	25.8	2.8
10. Technological literacy should become a part of SOL examinations.	33.1	46.4	12.3	4.5	30.8	40.9	24.6	24.2	29.2	19.7	3.1	10.6	3.1

Table 1. Instrument (Note: "T" represents parents who work in technical fields, "NT" represents parents who work in non-technical fields.)

Questions 4 and 5 of the survey delved into the relationship that technology had with "engineering" and with "science" respectively. When comparing engineering and technology being one and the same thing, the technical and non-technical responses had similar results with 41.6% of the technical and 39.4% of non-technical respondents strongly to mostly agreeing with this. However, a higher percentage of respondents disagreed with 51% of the technical and 40% of the non-technical respondents. 21% of the non-technical workers chose a non-response to the statement. The mean for the question was 3, meaning mostly agree.

The comparison of science and technology as being one in the same, a greater percentage of the non-technical workers 44% agreed with this, whereas only 37% of those working in technical fields agreed. For those disagreeing with this statement, 52% of those working in technical and 42% of those in non-technical fields disagreed with the statement. The mean for the question was 3 indicating mostly agree.

Relating back to the Question 1 of the survey and the importance of technology, Question 6 stated: "Technology has an effect on my daily life". The results of this question had 97% of the technical and 94% of the non-

technical respondents either strongly or mostly agreeing with the statement. This would be expected based on the responses listed for the Question 1. The mean for the question was 4.7 indicating strongly agree.

With the results of Question 6 in mind, Question 7 asked, "I feel technology should be taught on the same level as English, Math and Science." Seventy-seven percent of the technical and 73% of those in non-technical fields either strongly or mostly agreed with this. Though respondents felt technology had a significant impact on their daily lives, they were not as strong with their responses to have it taught as a core subject. The mean for Question 7 was 3.9 indicating mostly agree.

When asked to answer the statement, "Technology mostly deals with computers and the Internet", 63% of the technical and 51.5% of those working in non-technical fields disagreed with this statement. However, 46% of those working in non-technical fields did agree to this statement. These responses are in line with the earlier question of what first comes to mind when hearing the word technology where about 46% responded "computers". The mean for Question 8 was 3.1 indicating mostly disagree.

Question 9 compared technology education with education technology, the technical and non-technical

workers had opposing thoughts: Thirty-one percent of the technical and 39% of the non-technical workers agreed they were the same. However, nearly 48% of the technical and 35% of the non-technical workers disagreed they were the same. This would indicate that individuals working in technical fields have a better understanding of technology education than those individuals working in non-technical fields. The mean for Question 9 was 2.8 indicating mostly disagree.

Finally, in Question 10, whether technological literacy should become part of Standards of Learning (SOL) examinations, respondents did not agree as they did with the earlier questions dealing with education. Though most respondents indicated that technology should be taught on a greater level with other classes, only 33% of the technical and 46% of those in non-technical fields feel "technology" should become part of SOL testing. Nearly 54% of the technical and 44% of non-technical workers disagree that technology should be included in SOL examinations. The mean for Question 10 was 3.1 indicating mostly disagree.

Question 11 asked the respondents to list what the first thing that came to their mind when hearing "technology"; five major responses were given as presented in Table 2. These responses closely relate to the answers

given in the Gallup Poll where individuals responded in a similar fashion. (Rose, 2002)

The highest response resulted in 46.6% of the respondents answered "computers". The difference between groups with this response is that only 38.5% of those who work in technical fields chose this response, whereas 54.5% of those who work in non-technical fields gave this response.

When you here the word "technology", what first comes to mind			
List of comments	Total %	Technical %	Non-Tech %
Computers	46.56	38.46	54.5
Electronics/Electronic Devices	7.6	10.77	4.55
Space/Science	4.6	4.6	4.55
Daily Life	3.8	1.5	6.1
Future Advancements	3.1	1.5	4.55
Other	34.35		

Table 2. Technology-first word.

The second highest response was for electronics or electronic devices with an overall of 7.6% giving this response. This was the result of 10.8% of those working in technical fields choosing this response and 4.6% of the responses coming from the non-technical workers.

The remaining responses had similar percentages and were given for "space and science", "future advancements", and "daily life". Additional responses were given in a variety of areas that included: automation, building,

development and education, fixing cars, progress and several other answers.

The final question to gain an understanding of how parents thought about technology asked, "Technology is of the most important and has the greatest affect on: (a) society, (b) environment, (c) individuals, or (d) Don't know".

Seventy-four percent of the technical and 62% of the non-technical workers chose "society". Nine percent of the technical workers and 12% of the non-technical workers chose environment. The second highest response was given for "Individuals" where 12% of the technical and 15% of the non-technical workers choosing this response. Less than 5% of each group did not know or chose not to respond to the statement.

Three other questions were asked on the survey but were for gathering data on employment to determine whether the respondents belonged to technical or non-technical working groups. Based on information given, 61% of those working in non-technical fields (40 of 66) felt their employment was technology related. Of those working in technical fields, only 6% (4 of 65) did not feel their field was technical in nature.

Summary

In this chapter, a relationship between parents who work in technical fields and those working in non-technical fields was presented. The results of the survey showed commonalities between the two groups on how they feel towards technology education. Chapter V will provide the Summary, Conclusions and Recommendations of the study.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this study was to determine the relationship between parents work and their concern for their children's technological literacy. In this final chapter, the results of the findings will be presented as the researcher draws conclusions from the data collected and makes recommendations for future studies in this area.

Summary

The problem of this study was to determine the relationship between parent's work and their concern for their children becoming technologically literate. The questions established for this research were:

1. Are parents who work in technical fields more concerned about their children's technological literacy than parents who work in non-technical fields?
2. Do parents who work in technical fields have a better understanding of what technology is over parents working in non-technical fields?
3. Are parents concerned about their children studying technology at all grade levels or on the same level as other classes in the school systems?

Data were collected through a survey of parents in the Deep Creek region of Chesapeake, Virginia. One hundred fifty parents were asked to respond various questions about technology and how it relates to education. The result was

an 88% response rate or 131 respondents. The information collected was used to obtain an overall understanding of how parents interpreted technology as compared to other areas.

A survey was used in determining the relationship between these two groups. Four questions dealt with technology being taught within the school curriculum as well as making it part of the Standards of Learning (SOL) examinations. There were also questions that related technology with science, engineering, and computers and the Internet.

Additional questions were asked to determine if parents thought technology was important to them and had affects on their daily life. The responses to these questions help draw the conclusions in the following section.

Conclusions

This study was used to gain an understanding of parent's concern for their children's technological literacy. Three questions were established to conduct this research with the following conclusions.

Question 1 asked: "Are parents who work in technical fields more concerned about their children's technological literacy than parents who work in non-technical fields?"

Data revealed nearly all parents have a concern for their children becoming technologically literate. The first three questions of the survey revealed that over 90% of all respondents agreed that technology is important at all levels of society.

Question 2 asked: "Do parents who work in technical fields have a better understanding of what technology is over parents working in non-technical fields?" The data show that there is some difference in the level of understanding of what technology is between the two research groups.

Respondents working in non-technical fields felt science was more closely related to technology than those working in technical fields. They also felt technology dealt mostly with computers and the Internet by 13% over those in technical fields and 9% more felt education technology and technology education were the same thing.

Question 3 asked: "Are parents concerned about their children studying technology at all grade levels or on the same level as other classes in the school systems?" Respondents in both technical and non-technical fields felt technology should be taught at all school levels and as part of the regular curriculum. Though still a significant positive response, there was a drop in agreement when it

came to whether technology should be taught on the same levels as English, Math and Science. However, about 75% of respondents agreed with this statement.

What causes some conflict within the results is whether technological literacy should become part of the Standards of Learning (SOL) examinations. More than 50% of the overall respondents disagreed with this. As a result, though parents have a high concern for their children to learn technology based on earlier survey questions, they do not agree on a method to measure their children's technological literacy. However, parents who work in non-technical fields felt SOL testing should be used where over 45% which was 13% more than those working in technical fields.

Overall, parent's who work in technological fields do not have a greater or lesser concern for their children becoming technologically literate as compared to those working in non-technical fields. Parents in general feel technology is important at all levels of society and nearly a unanimous response that technology has an effect on daily life.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made to help further determine the concern for parents wanting their children to become technologically literate.

The research data show that the community feels that technology is not only important, but that it also has an effect on the everyday lives of individuals. Therefore, with the overwhelming support for technology being taught at the same level as Math, English and Science would indicate that testing of some sort must be conducted to assess the technological literacy of students. With this in mind, technological literacy should be included as part of SOL examinations.

To further validate this data, this study should be conducted on other Chesapeake schools within the region that will provide a sufficient number of responses to fully represent the community. Performing this research on another middle or high school within Chesapeake will provide a broader perspective of the region and will include parents with different income and technical backgrounds.

Additional research in this study should also be performed on local companies where employees work in

technical job fields and compare their responses to a company of non-technical employees. This again would represent the community and region and obtain the data desired in the research study.

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Appendix A

Parents Concern for Technology Education

Purpose: Determine if parents have a concern for their children to develop technological literacy.

Directions: For questions 1 - 10, answer using the scale provided. For questions 11 - 15, fill in the blank or choose the appropriate response.

Please circle the response that you most agree with:

SA - Strongly Agree, MA - Mostly Agree, MD - Mostly

Disagree, SD - Strongly Disagree, DK - Don't Know.

In your opinion:	SA	MA	MD	SD	DK
Question					
1. It is important for people at all levels to develop some ability to understand and use technology?	5	4	3	2	1
2. Technology education should be taught at the secondary or all grade levels.	5	4	3	2	1
3. Technology education courses should be part of regular curriculum requirements.	5	4	3	2	1
4. Engineering and technology are basically one and the same thing.	5	4	3	2	1
5. Science and technology are basically one and the same thing.	5	4	3	2	1
6. Technology has an affect on my daily life.	5	4	3	2	1
7. I feel technology should be taught at the same level as English, Math and science.	5	4	3	2	1
8. Technology mostly deals with computers and the Internet.	5	4	3	2	1
9. Technology education and education technology are basically one and the same thing.	5	4	3	2	1
10. Technological literacy should become a part of SOL examinations.	5	4	3	2	1

Appendix A

Please answer the following questions

11. When you hear the word "technology", what first comes to mind? _____
12. What is your current occupation? _____
13. In your opinion, do you consider your occupation to be technology related? Yes / No (circle one)
14. Technology is of the most importance and has the greatest affect on: (a) Society, (b) Environment, (c) Individuals, or (d) Don't know? (circle one)
15. Employment background, are you currently employed, or if retired or no longer working, have you ever been employed, in any of the following areas? (circle one)
- (a) Architecture, engineering or related services
 - (b) Computer systems design or related field
 - (c) Manufacturing, building construction or transportation
 - (d) Other technology field
 - (e) Some other occupation
 - (f) Not employed.

Thank you for completing this survey!

Please return in the self-addressed, postage paid envelope to:

Gerald T. Hoover
2924 Crosstie Lane
Chesapeake, VA 23323-1737

Appendix B

Gerald T. Hoover
Old Dominion University
2924 Crosstie Lane
Chesapeake, VA 23323

Dear Sir or Madam:

The purpose of this letter is to inform you about a research study that I am currently conducting. I am attending Old Dominion University and as part of my graduate studies to become a technology teacher for the middle/secondary level, I am conducting this research to get parent's opinion on their children developing technological literacy.

Technological literacy is the ability to use, manage, assess, and understand technology. Technology is defined as the methods and ways people modify nature to meet their needs. The ability to use technology in the learning process, i.e. computers, is education technology, but does not mean that the individual is technologically literate.

There have not been any previous studies conducted in this area, and I would like to develop an understanding of how adults within the community feel about this topic. Your child was randomly chosen to bring this survey home for your completion. In no way have you been chosen based on your occupation, race or any other factor which could alter the outcome of this study. By completing this survey and returning it to me, you consent to the information to be used for the purpose of this study only. Confidentiality will be maintained throughout this study and surveys will be destroyed once the information has been tabulated for research analysis.

Your participation in this study is voluntary, but is extremely important. Without your input, it will not be possible to get an accurate picture of the community's thoughts on technology education in the area school systems. I expect that it will take no more than 10 minutes to complete and return this survey. A self-addressed, postage paid envelope is enclosed to assist you in that effort. If you have questions, please do not hesitate to contact me by telephone at (757) 558-0119 or by email at: ghoov002@odu.edu. If you would like to see the results of this study, please provide you email address at the top of the survey.

Thank you for your support in completing this survey!

Sincerely,

Gerald T. Hoover
ODU Graduate Student