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Parents' Definition of Technological Literacy and Their Perceived Attitudes toward Technological Literacy

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Parents' Definition of Technological Literacy and Their Perceived Attitudes toward Technological Literacy

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By

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APPROVAL PAGE

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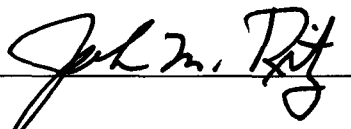
APPROVAL BY:  8-7-03

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Charles L. Thomas

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CHAPTER I

INTRODUCTION

Getting dressed for work today not only involves color coordinating ties and shirts but trying to figure out where to place or carry all the required devices necessary in today's business environment. Some of these devices are the video and game playing Personal Communication System, SMART access badge, two-way pager, digital camera, Personal Digital Assistant, MPG player, and the wireless laptop computer. Today's blue-collar worker probably carries the video and game playing Personal Communication System, SMART access badge, MPG player, Global Positioning System, and a computer type of device to record signatures for deliveries or tracking of stock items.

Many people consider these devices high technology. Most employers are looking for employees with skills using high technology. Most professions have been changed by the microchip revolution of the last thirty years. This change has resulted in a new set of job skills.

> *In today's world, computers are everywhere around us - at the shopping mall, at the bank, at the local bowling alley. A person today, to be successful in the world of computers, needs to understand how they operate, how they function, how they're programmed. Computers are seen in every application, all the way from manufacturing, to the airlines, to the medical field as well. Look at all the computer imaging that's done with CAT Scans and MRIs. In manufacturing, it's Computer Aided Design - computer assisted manufacturing techniques. Young*

> *people today need to understand how essential it is that they learn all that they possibly can about how computers operate in the workforce today.* (Meeks, http://www.carolinacareers.org/CareerFair/CriticalSkills1.asp)

Employers are looking for skills in the use of computer devices, and an understanding of how they work and are programmed. These are important skillsets but as participants in a democratic society, skills in understanding the effects of technology are also imperative. Citizens need the skills necessary to critically evaluate both the positives and negatives of technology and the intended and unintended effects of technology to make informed decisions on the growth, use and placement of technology.

Statement of the Problem

The purpose of this study was to determine how parents define technological literacy and their perceived attitudes toward technological literacy.

Research Goals

The research objectives used to guide this problem were:

1. Determine parents understanding of technology.
2. Determine the parent's attitude towards the effect of technology on society.
3. Determine the parent's attitude toward technological literacy and the school curriculum.

4. Compare the results of this research with the results of the International Technology Education Association's Technology for All Americans Project Gallup Poll of spring 2002.

Background and Significance

There have been three technological waves in the United States. The first was the industrial revolution in the beginning in the late nineteenth century. It was the age of man against machine. The transformation of the United States from an agrarian society to an industrial society had begun. During this time the age of the factory and our modern educational system was formed.

"History changed on October 4, 1957, when the Soviet Union successfully launched Sputnik I.... That launch ushered in new political, military, technological, and scientific developments. While the Sputnik launch was a single event, it marked the start of the space age and the U.S.-U.S.S.R space race." (NASA, http://www.hq.nasa.gov/office/pao/History/sputnik)

Sputnik was the first perceived technological failure of the United States. Historian Geoffrey C. Ward later recalled

> *How frightening Sputnik seemed to me as a high-school kid, especially when I got a letter from an old friend in India that simply said 'with this news, America is finished,' and asked plaintively, 'What happened? How could America let this*

happen?' as if we had somehow lost control. (Dickson, 2001, http://www.theglobalist.com)

The launch of Sputnik brought about a reform of the American educational system in the 1950s and 1960s. "The post-Sputnik concerns were curricular, focusing on what was being taught and how." (Rutherford, January 1998, http://www.nas.edu/sputnik/ruther1.htm) Further, four additional issues were raised:

> *These issues came into play in the case of Sputnik and science education: Should, progressive, child-centered education or basic, discipline-centered education have precedence in the schools? Should priority be given to building the nation's scientific capability or to creating nationwide science literacy? Who should decide what students are supposed to learn: the school community (teachers, school administrators and trustees, parents) or university scholars (scientists, mathematicians, and engineers, in our case)? What should the balance be between the stability that comes with maintaining traditional content and practices and the discombobulation that comes with the introduction of major changes?* (Rutherford, January 1998, http://www.nas.edu/sputnik/ruther1.htm)

The Sputnik reforms were about the perception of a loss of scientific literacy.

The perception of technological literacy brings us to the third and current wave. The astounding advances of microchip technology fueled the microchip and personal computer wave. Since the late 1980s microchip technology has been exploding and creating whole new industries. "In 2001, over 70 percent of all children ages 3-17 had access to a computer at home, up from 15 percent in 1984." (Child Trends Databank,

2003, http://www.childtrendsdatabank.org) The term whole new industry is just too simple and does not do justice to the microchip revolution. This revolution not only created new industries, it changed almost every existing industry, created and impacted the existing infrastructure. This microchip revolution created an entire new economic sector. Its impact on the educational system is still being debated. This debate has some similarities to the Sputnik debate. Should priority be given to building the nation's technical capability or to creating nationwide technology literacy? Should we teach how to use technology, how technology works or both? Who should decide what students are supposed to learn: the school community (teachers, school administrators and trustees, parents) or technologist (computer corporations, computer programmers, and information technology managers) or politicians (governors, presidents, and school board members)? What should the balance be between the stability that comes with maintaining traditional content and practices and the discombobulation that comes with the introduction of major changes?

This current debate is also about how to best use limited monetary resources and how to measure the effectiveness of those resources. "Twenty years and billions of dollars since the first personal computers were plugged into the nation's schools, policymakers and the public are finally starting to demand evidence that their investments in education technology have been worthwhile." (Trotter, 2003, http://www.edweek.org/sreports/tc98/intro/in-n.htm)

Parents are concerned that the schools of today are not preparing their children for the jobs of the future.

> *In the early 1990s workers with computer skills earned 10 to 15 percent more than workers without such skills... An estimated 60 percent of new jobs in the year 2000 will require skills possessed by only 22 percent of new workers... Today, more than half of new jobs -- be it a lawyer, doctor, salesperson, waitress or clerk -- require some level of technology literacy involving the use of a computer.* (The Childrens Partnership (TCP), 1998, http://www.childrenspartnership.org)

Business, academia and political leaders are concerned about the lack of basic education and technology in the United States. According to National Center for Education Statistics, eighth grade United States students scored 19th in Mathematics, and 18th in Science, in the Trends in International Mathematics and Science Study (TIMSS, formerly known as the Third International Mathematics and Science Study, 1999).

President Bush signed the No Child Left Behind Act of 2001 within a year of taking office.

> *The NCLB Act will strengthen Title I accountability by requiring States to implement statewide accountability systems covering all public schools and students. These systems must be based on challenging State standards in reading and mathematics, annual testing for all students in grades 3-8, and annual*

statewide progress objectives ensuring that all groups of students reach proficiency within 12 years. (NCLB Act, 2001)

Schools will now be required to implement testing in reading and mathematics. Testing requires standards. Passing the standards equals school funding. No Child Left Behind stated President Bush's unequivocal commitment to ensuring that every child can read by the end of third grade.

To accomplish this goal, the new Reading First initiative would significantly increase the Federal investment in scientifically based reading instruction programs in the early grades. (NCLB Act, 2001)

Not only does standards equal funding but also now we understand that not all standards are equal. Some standards are more equal than other standards.

Since the late 1980s, the United States has been immersed in a major educational reform movement, one based on standards in most school subjects. These standards serve to identify what every discipline-literate pupil, kindergarten through high school, should know and be able to do.

Over 16 sets of nationally developed standards have been generated since 1989, and 49 of the 50 states have been using state standards in developing curriculum and assessment for pupils in public schools.

The first set of standards in this movement, released in 1989 by the National Council of Teachers of Mathematics (NCTM), were titled Curriculum and

Evaluation Standards for School Mathematics. Following the NCTM effort, almost every subject area has developed standards... Nationally developed standards exemplify for many states and local school districts what to adopt or adapt in their efforts to reform education at their level.

The International Technology Education Association (ITEA) released Standards for Technological Literacy: Content for the Study of Technology (STL), in April 2000 at the ITEA conference in Salt Lake City. This document delineates 20 distinct standards and their related benchmarks. (Dugger, 2002, p.1)

These 20 standards are arranged into five general areas: The Nature of Technology, Technology and Society, Design, Abilities for a Technological World, and the Design World. In the nature of technology students learn understanding of the characteristics and scope of technology, core concepts and relationships among technologies and the connections between technology and other fields of study. In technology and society they develop an understanding of the cultural, social, economic, and political effects of technology, effects of technology on the environment, the role of society in the development and use of technology, and the influence of technology on history. Design teaches attributes of design, engineering design, the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving. In abilities for a technological world the following abilities are covered: apply the design process, use and maintain technological products and systems, and assess the impact of products and systems. Finally in the design world selection the following technologies

are covered: medical, agricultural and related biotechnologies, energy and power, information and communication, transportation, manufacturing, and construction technologies. By incorporating these standards into the curriculum a student will be exposed and taught not only the hands on skills employers are looking for, but also the ability to think critically and logically not only on technology issues but also on other issues.

All parents desire that certain sets of skills be taught to students. These skills are either real or perceived. Educators and policy makers need to understand what skill sets and how these skill sets should be implemented. Many studies have been conducted concerning the general public's perception of technology, technological literacy, school curriculum and high stakes testing in the high school arena. No study has been designed and implemented to obtain the opinion of parents. This study intends to obtain information on parental attitudes towards technology and education.

Limitations

The following limitations were made concerning this study:

1. This study was limited to actively enrolled Ocean Lakes High School students taking the following courses: graphic communications, photography and print, and basic mechanical drafting using AutoCAD.
2. This research study was limited to parents of technology students at Ocean Lakes High School.

3. The survey instrument was designed with four choice items each with only one correct answer. Research has indicated that in order to measure effectively the level of technological literacy of an individual a combination of multiple-choice, matching, analysis, ordering, true-false, problem-solving, simulation and game simulations is needed. (DeVore, 1986, pp. 202-209)

Assumptions

The following assumptions were made concerning this study:

1. The parents, not the students, filled out the survey instrument.
2. Parents value the importance of technological literacy.
3. Teachers value the importance of technological literacy and informed students of the importance of being technological literate.
4. Parents understand why technology and its use is such an important force in our economy.
5. Parents and students will be able to perform their jobs better if they are technologically literate. Technological literacy benefits students who will choose technological careers.

Procedures

The researcher will survey the parents of students enrolled in technology education courses at Ocean Lakes High School. Using information gathered from this survey, the

researcher would determine how parents define technological literacy and their perceived attitudes towards technological literacy.

Definitions of Terms

The following terms were relevant to the study conducted:

1. AAAS. American Association for the Advancement of Science.
2. Computer Literacy. The ability to use a computer and its software to accomplish practical tasks.
3. Content Standards. Specify what students should know and be able to do in technology. They indicate the knowledge and processes essential to technology that should be taught and learned in school.
4. Curriculum. The courses offered by an educational institution.
5. Educational Technology. Teaches with technology (uses technology as a tool).
6. Information Literacy. The ability to locate, evaluate, and use information to become independent life-long learners.
7. ITEA. International Technology Education Association.
8. Literacy. Involves a complex set of abilities to understand and use the dominant symbol systems of a culture for personal and community development. The need and demand for these abilities vary in different societies.
9. Media Literacy. The ability to decode, analyze, evaluate, and produce communication in a variety of forms.

10. NAE. National Academy of Engineering.

11. NASA. National Aeronautics and Space Administration.

12. NCTM. National Council of Teachers of Mathematics.

13. NCLB. No Child Left Behind Act of 2001.

14. NRC. National Research Council.

15. NSF. National Science Foundation.

16. STL. Standards for Technological Literacy.

17. Technology. The innovation, change, or modification of the natural environment in order to satisfy perceived human needs and wants.

18. Technology Education. The study of technology, which provides an opportunity for students to learn about the processes and knowledge related to technology that are needed to solve problems and extend human capabilities.

19. TFAAP. Technology for All Americans Project.

20. Technological literacy. The ability to use, manage, understand, and assess technology.

Summary

In this chapter, the proposal was made to determine how parents define technological literacy and their perceived attitudes towards technological literacy. Assumptions were also detailed. Procedures for collecting the information and data were given and definitions of terminology used throughout the study were explained.

In Chapter II, a review of relevant literature pertaining to the problem will be presented. Chapter III will explain the methods and procedures used to conduct the study. In Chapter IV, the findings of the study will be detailed. The summary, conclusions and recommendations of the study will be represented in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

The review of literature provides an overview of research and published articles addressing how parents define technological literacy, perceived attitudes of parents towards technological literacy, parental attitudes towards the school curriculum and technology education, and whether technology education should be a graduation requirement. Additionally, the history of technology education and how technological literacy has been defined will be discussed.

History of Technology Education Curriculum

The Labor Movement (late 1700 thru 1800s) started the development of the educated labor force. This movement advocated the establishment of schools, societies of mechanics, and mechanics institutes. These technical institutes and societies were developed to keep up with the educational demands of the new factory and social system. "The Morrill Act establishes colleges in engineering, agriculture and military science following the Civil War." (U.S. Statutes at Large 12 (1862): 503, http://usinfo.state.gov/usa/infousa/facts/democrac/27.htm)

In the late 1800s the educational system combined theory and practice. These efforts led to the establishment of manual training schools. The curriculum of these manual training schools consisted of labor for half of each school day while maintaining the regular

school program for the other half. "As Commissioner of Education from 1889 to 1906, William T. Harris supported industrial education as a secondary teaching program to the humanities." (Davis, http://www.tamu-commerce.edu/coe/cct/history.htm)

College professors Mossman and Bonser have been identified as the founders of the "field of "industrial arts" in the 1920s. They focused on the development of industrial arts into the elementary curriculum." (Foster, http://scholar.lib.vt.edu/ejournals/JTE/v7n1/foster.jte-v7n1.html) In 1923 Bonser and Mossman provided the following definition of industrial arts, "Industrial arts is a study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes." (Bonser and Mossman, 1923, p. 5, as cited by Foster)

The development of an educated labor force led to specific institutes of learning for these mechanics and finally industrial arts being integrated into the elementary school curriculum. Exploring the development of technology from its industrial beginnings Gordon Wilber defined the industrial arts as

> *those phases of general education which deal with industry - its organization, materials, occupations, processes, and products - and with the problems of life resulting from the industrial and technological nature of society.* (Wilber, 1948, p. 2)

Wilber's definition is similar to Bonser and Mossman's, but substitutes the concept of industry for technology.

The integration of industrial/technological education into the school curriculum continued as a more educated work force was needed to operate and maintain ever increasingly sophisticated machinery. Donald Maley, a leader in technology education developed the Maryland Plan, a junior high school industrial arts program. The Maryland Plan

> *promoted the point of view that schools should contribute to the development of individuals capable of living and contributing to a technically and socially changing democratic society.* (Leadership Series , http://www.nait.org/foundation/maley.html)

Maley thought industrial arts dealt with

> *...those phases of general education which deal with technology, its evolution, utilization, and significance; with industry, its organization, materials, occupations, processes, and products; and with the problems and benefits resulting from the technological nature of society.* (Maley, 1973, p. 2)

The Maryland Plan embraced the four following fundamentals: education, technology, industry, and society.

Three years after the Maryland Plan was developed DeVore and Lauda suggested "that the Industrial Arts profession change its name to technology education to reflect cultural reality." (DeVore, P., & Lauda, D., 1976, p. 145) To put this into perspective remember, Computer Integrated Manufacturing had just been defined by Joseph Harrington/Gene Merchant. Texas Instruments developed the first hand held calculator. UNIX had been

published just two years earlier. Viking 1 with a robotic arm had just landed on Mars and personal computers were just starting to become available.

The definition of the term "industrial arts" evolved further with the publication of Jackson's Mill Industrial Arts Curriculum Theory in 1981. The main focus of this publication was the study of industrial arts as a "comprehensive" study. The Jackson's Mill document defined four fundamentals: education, technology, industry, and society. Additionally, "the curriculum taxonomy that has evolved from Jackson's Mill focuses content on four adaptive systems: manufacturing, communication, construction, and transportation." (Erekson, 1992) These four systems comprise four of the six major areas of the American economy. Only the service sector and information sector are missing from the present economic base.

Evolving from the study of manual labor, to the integration of industrial arts into the school system as a comprehensive study, industrial arts would soon take the next step in evolution in 1985. The American Industrial Arts Association issued this definition of technology education:

> *...a comprehensive, action-based educational program concerned with technical means, their evolution, utilization, and significance; with industry, its organization, personnel systems, techniques, resources, and products; and their socio-cultural impacts.* (1985, p. 25)

This is the first definition of technology education. This marks the birth of technology education from the industrial arts programs.

In 1985 American Industrial Arts Association became the International Technology Education Association. "ITEA is a professional association for technology education teachers who teach a curriculum called "technology education" which is problem-based learning utilizing math, science and technology principles."(ITEA, http://www.iteawww.org/A1.html)

Virginia Department of Education develops the Technology Education program for its middle schools. This program moved away from the Jackson Mill study of the four adaptive systems while retaining the four fundamentals of education, technology, industry and society. The curriculum focuses on problem solving, systems, impact and recourses. Additionally this program specified what constitutes technological literacy. (Virginia Department of Education, 1989)

The goal of the Technical Foundation of America project led by the International Technology Education Association was to update the Jackson's Mill model. This project also identified four universal content reservoirs or technological processes. (ITEA, 1990, p. 17) These four technological processes are: bio-related, communications, production, and, transportation. The four-adaptive systems from Jackson's Mill where changed to the following: manufacturing and construction are now production. Communication and transportation remained the same in both plans. Bio-related processes are the new addition under the universal content reservoirs.

National Science Foundation singled out Technology for one of its three areas of special attention. Additionally the National Science Foundation suggested, "Technology is a field of study." (National Science Foundation, 1990, p. 273)

The 1992 Secretary's Commission on Achieving Necessary Skills (SCANS) report from the United States Department of Labor listed five competencies that present and future workers should attain. These competencies have been identified into five domains: resources, interpersonal, information, systems and technology. (US Dept. of Labor, 1992)

In 1993 the ITEA's definition stated that technology education is:

> *... an educational program that helps people develop an understanding and competence in designing, producing, and using technology products and systems, and in assessing the appropriateness of technological actions. (Wright, Israel, & Lauda, 1993, p. 4)*

The significance of this definition is that it eliminates the idea of industry from the definition of technology education. The shaping of technology education has society being replaced by the assessment of technology. Production remains the same field. Education has become developing, understanding, and competence in technology products and systems. The four universal content reservoirs or technological processes are not mentioned in the ITEA's definition of technology education.

ITEA and its Technology for All Americans Project released the Standards for Technological Literacy: Content for the Study of Technology in April 2000, defining what students should know and be able to perform to be considered technologically literate. It provides standards that prescribe what the outcomes of the study of technology in grades K-12 should be.

Perceived Attitudes Towards Technology

With the establishment of technology education as a field of study it became clear that a definition of technological literacy was needed. Additionally, an understanding of the current level of technological literacy was required. In April of 2000 the International Technology Education Association released its Standards for Technological Literacy. These standards could be considered the "professional" standards for technological literacy. These standards established the guidelines for assessing and teaching technology literacy among educators. These standards defined technology and technology education as the following:

> *Technology is the modification of the natural environment to satisfy perceived human wants and needs. Technology Education (sometimes referred to as technological studies) is "a study of technology which provides an opportunity for students to learn about the processes and knowledge related to technology that are needed to solve problems and extend human potential" As a result of studying technology in grades K-12, students gain a level of technological literacy, which*

may be described as one's ability "to use, manage, assess, and understand technology. (ITEA, 2000, pp. 9 & 242)

The next step was to determine the publics' general understanding of technology and technological literacy. The International Technology Education Association conducted a Gallup Poll in the spring of 2002, of the public to determine their attitude in the following four areas: public understanding of technology, attitude toward technology, technology and education, and should technological literacy be a part of the requirements for high school graduation.

The major conclusions that were drawn from the data in this study were:

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

There is near total consensus in the public sampled that schools should include the study of technology in the curriculum. 92 percent believe that ensuring technological literacy should be a goal for all schools.

When hearing the word "technology," approximately two-thirds think of only computers and matters related to the Internet... When asked about the term "design" in relation to technology, over half of the public (59%) viewed it in more of a traditional perspective of blueprints and drawings rather than in the contemporary perspective of being a creative process for solving problems...

Three-fourths of Americans consider themselves, to at least some extent, able to use and understand technology. (Rose and Dugger, 2002, p. 1)

After determining the general publics opinion of technology, the next poll conducted by the ITEA was to determine if the professional educators were implementing the Standards for Technological Literacy. The International Technology Education Association conducted an e-mail survey of teachers, department head, and state supervisor members of ITEA in the late spring of 2002. The survey asked the following questions:

> *Feeling about the new standards? Are the standards being implemented? Are the standards viewed as important, and why? Are they seen as having the potential to significantly impact the field, the education of youth in grades K-12? ... 93% who completed the survey thought the standards were important. The primary themes offered were that Standards for Technological Literacy:*
>
> *1. Helps to validate the profession.*
>
> *2. Gives direction to the curriculum.*
>
> *3. Facilitates movement toward more standardization of technology education across the country.*
>
> *4. Provides for a better understanding of expectations and goals.*
>
> *5. Identifies the essential content that students need to learn.*
>
> 6. *Provides a vision for technological literacy.* (Russell, 2003, p. 29)

After obtaining the data on the general public and then the professional educator, the ITEA wanted to collect data from decision makers at the state level. In the final poll State Education Supervisors' were asked about technology education at the state level. The International Technology Education Association's Technology for All Americans Project

conducted a poll of State Technology Education Supervisors which "included three questions: (1) Is technology education in your state framework? (2) Is technology education required in your state, and if so, at what grade levels? ... 57.7% reported that technology education is in the state framework of education." The survey's second question, "Is technology education required in your state, and if so, at what grade levels?" 27% of the states reported that technology education is required (in some form) in their states. (Newberry, 2001, pp. 8 & 9)

The above polls and surveys revealed the attitudes and opinions of the professionals in the education field. How does the general public think of technology? No surveys or polls were found that specifically addressed parental attitudes concerning technology. Numerous polls were found that parents correlated technology with computers and the Internet.

The above-mentioned polls were conducted by the ITEA. How do other polls compare with the polls conducted by the ITEA? A 1996 Michigan Education Poll revealed the following:

> Respondents feel very good about the level of technology in public school classrooms. A majority of nearly every demographic subgroup believes that computers improve education and that it is important for every student to have access to a computer at school." (Public Sector Consultants, Dec. 1996)

This is one of many polls and surveys in which the general public equates computers and the Internet with technology.

Not surprisingly considering the Michigan Education Poll, computers, software and the Internet defined technological literacy in 1996. Technological literacy should have these goals: "Teachers and students will have modern multimedia computers in their classrooms. Every classroom will be connected to the information highway. Effective software and on-line resources will be an integral part of every school's curriculum." (Trotter, 1996, p. 25) Trotter (Education Week on the Web), The ITEA, and the Michigan Education Poll were conducted by organizations with an educational ideology.

The remaining two polls deal more with the use of technology in the work force and as a part of daily life. A poll of New Jersey residents when asked about technology in the work forces responded with "Sixty-five percent of working New Jersey residents report that they use a computer in their jobs. Moreover, a whopping 59% of New Jerseyans say that their jobs have changed "a great deal" in the last ten years due to "technology such as computers."" (The Star-Ledger/Eagleton-Rutgers Poll, Dec. 1999) Notice the same linking of computers as technology.

NPR in conjunction with the Kennedy School of Technology conducted a survey of the general public in the area of technology. The results of the poll revealed the following: "Virtually all Americans under age 60 say they have used a computer (92%), Americans say computers are a necessity at work. More than two-thirds (68%) of working Americans use a computer at work, and 84% of them say it is essential for their jobs." (NPR, Feb. 2000)

Along with a lack of studies on parental attitudes towards technology and the definition of technology, there was a lack of studies on whether technology requirements should be a part of graduation requirements for high school students.

The public opinion polls, conducted by Kiley & Co. for the Massachusetts Teachers Association, showed 53 percent of the public favoring the graduation requirement in August 2000 and only 38 percent favoring it in February 2001, a 15-point drop in six months. Opposition to the requirement grew from 43 percent in August to 59 percent in February, with the remainder "not sure." (Massachusetts Teachers Association, May 2001 http://www.massteacher.org/issues/mcas/mcas_opposition.cfm)

These polls show that the public is increasingly against graduation requirement testing based on the results of a "single test." MTA President Stephen E. Gorrie, who noted that the overwhelming majority of teachers – about 85 percent oppose the MCAS graduation requirement." (Massachusetts Teachers Association, http://www.massteacher.org/issues/mcas/mcas_opposition.cfm)

Summary

The history of technology education has been presented. Technology Education has Industrial Arts as its roots. Technology Education's split from the Industrial Arts program accelerated rapidly in the mid 1980s and early 1990s. At this same time the general public started questioning whether schools were teaching the appropriate technologies. The results of three surveys (a general public, teachers and department heads and lastly

state technology education supervisors) conducted by the International Technology Education Association were presented. No survey information on parental attitudes towards technological literacy or technology in the school curriculum was found.

In the next chapter, the methods and procedures used to determine parental attitudes toward understanding of technology, the effect of technology on society, parental attitudes towards technological literacy and the school curriculum, and finally comparing the results of this research study to the ITEA Spring 2002 Gallup poll will be discussed.

CHAPTER III

METHODS AND PROCEDURES

The purposes of this chapter is to explain the methods and procedures used to create and conduct the survey and compile the data used in this study. The items discussed in this chapter include: population, instrument design, data collection methods and data analysis.

Population

The population for this study consisted of 101 students taking the following courses at Ocean Lakes High School in Virginia Beach, Virginia: Communications Technology, Photography and Print, and Basic Mechanical Drafting with AutoCAD. The survey was administered with the assistance of Tim Axley, Technology Education Department Head, at Ocean Lakes High School.

Instrument Design

The survey was a modified version of a Gallup survey conducted for the International Technology Education Association in the spring of 2001 to research American citizens' knowledge of and attitudes about technological literacy. Permission to use the modified poll was obtained from Dr. Dugger of the International Technology Education Association. The poll questions were modified to be conducted as a survey vice a phone interview. The poll questions were developed to gather information regarding the

attitudes of parents toward understanding of technology, attitudes toward technology, the extent to which they agreed or disagreed with selected statements regarding technology, the amount of input people want in decisions that involve technology, the extent to which they feel prepared to explain simple technological processes, testing their understanding of four technological processes, and the study of technology and technological literacy as part of the school curriculum. Additional demographic questions were included to allow a comparison of this study to the results of the poll conducted by the International Technology Education Association.

Data Collection Procedures

Survey questionnaires and consent forms were distributed to each student on May 27 and 28, 2003, with June 4, 2003, set as the end date for responses. Students then had the parents fill out the survey. Surveys were then returned via the student. Upon collection, the consent form was separated from the survey form. Shuffling the survey forms then randomized the surveys.

Statistical Analysis

The responses for each question were compiled and tabulated to provide general information about parents understanding of technology, input towards decisions regarding technology, the curriculum regarding technology and technological literacy. The data were compiled into three groups: Responses, Total %, and Group %. The first

group (Responses) was the number of responses. The "Total %" group was the percent of answers from the total number of responses. The "Group %" was the percent of responses from within that data group.

Summary

This chapter provided information on how the research was conducted. The population, instrument design, and procedure for gathering, compiling and analyzing the survey data were all discussed.

CHAPTER IV

FINDINGS

The purpose of this study was to determine how parents define technological literacy and their perceived attitudes toward technological literacy. The data were used to determinate the following research goals:

1. Determine the parent's understanding of technology.
2. Determine the parent's attitude towards the effect of technology on society.
3. Determine the parent's attitude toward technological literacy and the school curriculum.
4. Compare the results of this research with the results of the International Technology Education Association's Technology for All Americans Project Gallup Poll of spring 2002.

Survey Response

One hundred and one surveys were sent to the parents of the students taught by Charles Thomas during his student teaching internship. These students were enrolled in the following courses taught at Ocean Lakes High School: Photography and Printing, Basic Technical Drawing and Communication Technology. Thirty-one surveys were returned for a response rate of 31 percent. All data and results in the following sections were computed based on the total (31) responses that were returned.

Data on the Respondents

Ninety percent of the respondents were aged 30-49; the remaining were aged 18-29. One respondent did not provide any age information. No respondent was older than age 49 (see Table 1). The grayed out area of the table indicates that no responses were received for that field.

All respondents (31) had completed high school. Seventy-seven percent of the respondents had completed some training beyond high school. Sixty-one percent had at least some college (see Table 1).

Race fields were defined as the following: White, African-American/Black, Asian, Hispanic, Native American and Other. These fields are identified through the remainder of this chapter as the following: White, Black, Asian, Hispanic, Native American, and Other. Seventy-seven percent of the respondents identified themselves as white, thirteen percent as black. All other race fields were comprised of one person in each field. One respondent identified themselves with two race fields. All responses from this person were recorded under the "other category" (see Table 1).

Occupational fields were defined as the following: 1. Computers, such as programming, information systems or design, 2. Physical sciences, such as chemistry or physics, 3. An other area of technology, 4. Some other occupation, and 5. Not employed. These fields are identified through the remainder of this chapter as the following: Computers,

	Responses	Total %
Men	20	64.52%
Women	11	35.48%
Total	31	
Age 18-29	3	10.00%
Age 30-49	27	90.00%
Age 50-64		
Age 65-99		
Total	30	
>High School		
High Grad	7	22.58%
Some College	6	19.35%
College Grad	9	29.03%
Trade	5	16.13%
Post Grad	4	12.90%
Total	31	
White	24	77.42%
Black	4	12.90%
Asian	1	3.23%
Hispanic	1	3.23%
Native American		
Other	1	3.23%
Total	31	
Computers	7	22.58%
Physical		
Other Tech	4	12.90%
Other Occupation	20	64.52%
Not employed		
Total	31	

Table 1. Demographic Information

Physical, Other Tech, other Occupation, and Not employed. The occupation of 65% of the respondents was some other occupation. Additionally occupation was defined as either currently employed, retired or no longer working in the area (see Table 1).

The ITEA Association's Technology for All Americans Project Gallup Poll of spring 2002 was a telephone interview survey of the general public. The sample size of the poll was one thousand respondents. Demographic information for the ITEA poll is provided in Table 2.

Understanding of Technology

Questions 1 through 4 and Question 25 are designed to focus on parent's understanding of technology. Questions were asked that elicited the first thought of technology, use of technology, ability to use technology and meaning of "design".

The first question asked the respondent for the first thought that comes to mind when they hear the word "technology". For sixty-seven percent (67%) the first thought was computers (see Table 3 and 4). This percent is the same as the ITEA poll (67.4 %) computers, 1.3% Internet. No ITEA poll data table is provided due to the size of the data tables.

	Responses	Total %
Men	418	0.4
Women	582	0.6
Total	1000	
Age 18-29	207	0.2
Age 30-49	435	0.4
Age 50-64	191	0.2
Age 65-99	156	0.2
No Response	11	0.0
Total	1000	
>High School	95	0.1
High Grad	260	0.3
Some College	264	0.3
College Grad	181	0.2
Trade	78	0.1
Post Grad	118	0.1
No Response	4	0.0
Total	1000	
White	830	0.8
Black	95	0.1
Asian	21	0.0
Hispanic	21	0.0
Native American	5	
Other	22	0.0
No Response	6	0.0
Total	1000	
Computers	156	0.2
Physical	78	
Other Tech	95	0.1
Other Occupation	555	0.6
Not employed	113	
No Response	3	
Total	1000	

America's Level of Literacy Related to Technology.
Excerpted from Data Tables for Gallup Poll on
America's Level of Literacy Related to Technology.

Table 2. ITEA Demographic Information

computers	19	61.3%
the future	2	6.5%
advanced machinery and electronics	1	3.2%
advancement	1	3.2%
changing environment to meet needs	1	3.2%
computer	1	3.2%
computers information	1	3.2%
current and future advances to help human civilization	1	3.2%
electronics	1	3.2%
new inventions	1	3.2%
new ways of solving problems	1	3.2%
using knowledge to solve problems	1	3.2%
Total	31	

Please write what first comes to mind when you hear the word "technology".
Table 3. Question 1

	Responses	Total %	Group %	Total Demographic
Men	15	48.4%	75.0%	20
Women	6	19.4%	54.5%	11
Total	21	67.7%		31
Age 18-29	3	10.0%	100.0%	3
Age 30-49	17	56.7%	63.0%	27
Age 50-64				
Age 65-99				
Total	20	66.7%		30
>High School				
High Grad	7	22.6%	100.0%	7
Some College	4	12.9%	66.7%	6
College Grad	6	19.4%	66.7%	9
Trade	1	3.2%	20.0%	5
Post Grad	3	9.7%	75.0%	4
Total	21	67.7%		31
White	16	51.6%	66.7%	24
Black	3	9.7%	75.0%	4
Asian	1	3.2%	100.0%	1
Hispanic	0	0.0%	0.0%	1
Native American				
Other	1	3.2%	100.0%	1
Total	21	67.7%		31
Computers	4	12.9%	57.1%	7
Physical				
Other Tech	4	12.9%	100.0%	4
Other Occupation	13	41.9%	65.0%	20
Not employed				
Total	21	67.7%		31

Response for term Computer, Computers, Computers information.

Table 4. Question 1

The second question asked if the respondents thought that it was very or somewhat important to develop some ability to understand and use technology. (see Table 5, ITEA Table 6) One hundred percent of the respondents thought it was somewhat or very important to understand and use technology.

The third question asked when you hear the word "technology" do you think of computers and the Internet or changing the natural world to satisfy our needs. (see Table 7, ITEA Table 8) Respondents were divided, 67 percent in favor of computer and the Internet vice 32 percent in favor of changing the natural world.

Thirty percent of the respondents thought they were able to understand and use technology to a great extent; 50 percent felt they understood and used technology to some extent. (see Table 9, ITEA Table 10)

Parents were evenly split on the fifth question as to whether design is a creative process for solving problems or blueprints and drawings from which you construct something. (Table11, ITEA Table 12)

Attitudes Toward Technology

The next six questions concern parental attitudes toward technology.

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Very important			Somewhat important			Not very important			Not important at all			No response			Total
Men	14	45.2%	70.0%	6	19.4%	30.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	20
Women	7	22.6%	63.6%	4	12.9%	36.4%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	11
Total	21	67.7%		10	32.3%		0	0.0%		0	0.0%		0	0.0%		31
Age 18-29	3	10.0%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	18	60.0%	66.7%	9	30.0%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	27
Age 50-64																
Age 65-99																
Total	21	70.0%		9	30.0%		0	0.0%		0	0.0%		0	0.0%		30
>High School																0
High Grad	5	16.1%	71.4%	2	6.5%	28.6%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	6
College Grad	6	19.4%	66.7%	3	9.7%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	9
Trade	4	12.9%	80.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Total	21	67.7%		10	32.3%		0	0.0%		0	0.0%		0	0.0%		31
White	14	45.2%	58.3%	10	32.3%	41.7%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	24
Black	4	12.9%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																0
Other	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	21	67.7%		10	32.3%		0	0.0%		0	0.0%		0	0.0%		31
Computers	6	19.4%	85.7%	1	3.2%	14.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech	4	12.9%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	11	35.5%	55.0%	9	29.0%	45.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	20
Not employed																
Total	21	67.7%		10	32.3%		0	0.0%		0	0.0%		0	0.0%		31

How important is it, for people at all levels to develop some ability to understand and use technology?

Table 5. Question 2

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very Import	75.5	73.7	77.2	76.6	75.1	72	79.9	77.5	79.7	77.1	74.7	75.8
Somewhat Import	23.2	23.2	21	22.6	24.3	27.1	18.7	20.9	18.6	20.3	21.8	23.9
Not Veryt Import	0.9	0.9	1.3	0.8	0.3	0.3	1.2	0.8	1.7	2	2.2	0.3
Not import	0.4	0. 4	0.4		0.3	0.6	0.2	0.7		0.6	1.2	0.1
No Respsonse												

How important is it, for people at all levels to develop some ability to understand and use technology?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 6. ITEA Response to Question 2

	Responses	Total %	Group %	Responses	Total %	Group %	Responses
	Computers and the internet			Changing the natural world			Total
Men	16	51.6%	80.0%	4	12.9%	20.0%	20
Women	5	16.1%	45.5%	6	19.4%	54.5%	11
Total	21	67.7%		10	32.3%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%	3
Age 30-49	19	63.3%	70.4%	8	26.7%	29.6%	27
Age 50-64							0
Age 65-99							0
Total	20	66.7%		10	33.3%		30
>High School							0
High Grad	6	19.4%	85.7%	1	3.2%	14.3%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%	6
College Grad	6	19.4%	66.7%	3	9.7%	33.3%	9
Trade	2	6.5%	40.0%	3	9.7%	60.0%	5
Post Grad	3	9.7%	75.0%	1	3.2%	25.0%	4
Total	21	67.7%		10	32.3%		31
White	17	54.8%	70.8%	7	22.6%	29.2%	24
Black	4	12.9%	100.0%		0.0%	0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%	1
Native American							0
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	21	67.7%		10	32.3%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%	7
Physical							0
Other Tech	4	12.9%	100.0%		0.0%	0.0%	4
Other Occupation	13	41.9%	65.0%	7	22.6%	35.0%	20
Not employed							0
Total	21	67.7%		10	32.3%		31

Which of the following two definitions more closely fits with what you think of when you hear the word "technology". Do you think of computers and the internet or changing the natural world to satisfy our needs.

Table 7. Question 3

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Computers and the internet	62.9	58.2	67.2	56.1	62.7	59.1	66.1	70.8	58.6	57.9	57.2	66.9
Changing the natural world	36.4	40.8	32.4	43.9	36.8	40.5	32.4	28.6	39.9	41	42	32.7
No Response	0.1	0.1	0.3				0.3	0.2	0.4	0.5		

Which of the following two definitions more closely fits with what you think of when you hear the word "technology". Do you think of computers and the internet or changing the natural world to satisfy our needs.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 8. ITEA Response to Question 3

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Great extent			Some extent			Limited extent			Not at all			No response			Total
Men	5	16.1%	25.0%	10	32.3%	50.0%	4	12.9%	20.0%		0.0%	0.0%	1	3.2%	5.0%	20
Women	4	12.9%	36.4%	5	16.1%	45.5%	2	6.5%	18.2%		0.0%	0.0%		0.0%	0.0%	11
Total	9	29.0%		15	48.4%		6	19.4%		0	0.0%		1	3.2%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	8	26.7%	29.6%	12	40.0%	44.4%	6	20.0%	22.2%		0.0%	0.0%	1	3.3%	3.7%	27
Age 50-64																
Age 65-99																
Total	9	30.0%		14	46.7%		6	20.0%		0	0.0%		1	3.3%		30
>High School																0
High Grad	2	6.5%	28.6%	5	16.1%	71.4%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	1	3.2%	16.7%	3	9.7%	50.0%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%	6
College Grad	2	6.5%	22.2%	3	9.7%	33.3%	3	9.7%	33.3%		0.0%	0.0%	1	3.2%	11.1%	9
Trade	2	6.5%	40.0%	3	9.7%	60.0%	0	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Total	9	29.0%		15	48.4%		6	19.4%		0	0.0%		1	3.2%		31
White	7	22.6%	29.2%	13	41.9%	54.2%	4	12.9%	16.7%		0.0%	0.0%		0.0%	0.0%	24
Black	1	3.2%	25.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%	1	3.2%	25.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																0
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	9	29.0%		15	48.4%		6	19.4%		0	0.0%		1	3.2%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical																0
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	9	29.0%	45.0%	6	19.4%	30.0%		0.0%	0.0%	1	3.2%	5.0%	20
Not employed								0.0%			0.0%			0.0%		0
Total	9	29.0%		15	48.4%		6	19.4%		0	100.0%		1	3100.0%		31

To what extent do you consider yourself to be able to understand and use technology?

Table 9. Question 4

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Great Extent	27.7	33.5	22.3	38.7	30.1	15	33.1	42.1	59.2	45.9	34	20.2
Some Extent	46.6	45.3	47.8	51.3	50.2	47.6	51.3	44.4	31.7	39.2	46	51.4
Limited Extent	20.1	16,4	23.6	8. 5	17.2	28.8	14	12	7.9	13.1	17.7	22.6
Not at All	5.6	4.8	6.3	1.5	2.5	8.6	1.7	1.5	1.2	1. 8	2.3	5.8
No Respsonse												

To what extent do you consider yourself to be able to understand and use technology?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 10. ITEA Response to Question 4

	Responses	Total %	Group %	Responses	Total %	Group %	
	Creative process			Blueprints and drawings			Total
Men	10	32.3%	50.0%	10	32.3%	50.0%	20
Women	5	16.1%	45.5%	6	19.4%	54.5%	11
Total	15	48.4%		16	51.6%		31
Age 18-29	0	0.0%	0.0%	3	10.0%	100.0%	3
Age 30-49	15	50.0%	55.6%	12	40.0%	44.4%	27
Age 50-64							0
Age 65-99							0
Total	15	50.0%		15	50.0%		30
>High School							0
High Grad	2	6.5%	28.6%	5	16.1%	71.4%	7
Some College	3	9.7%	50.0%	3	9.7%	50.0%	6
College Grad	5	16.1%	55.6%	4	12.9%	44.4%	9
Trade	3	9.7%	60.0%	2	6.5%	40.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%	4
Total	15	48.4%		16	51.6%		31
White	12	38.7%	50.0%	12	38.7%	50.0%	24
Black	2	6.5%	50.0%	2	6.5%	50.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%	1
Native American		0.0%			0.0%		
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	15	48.4%		16	51.6%		31
Computers	3	9.7%	42.9%	4	12.9%	57.1%	7
Physical							
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%	4
Other Occupation	9	29.0%	45.0%	11	35.5%	55.0%	20
Not employed							
Total	15	48.4%		16	51.6%		31

When you hear the word design used in relation to technology which are you more likely to think of: Creative process or Blueprints and drawings?

Table 11. Question 25

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Creative process	40.9	39.5	42.2	41.8	44.1	33.8	40.9	54.5	47.4	42.5	38.1	42.1
Blueprints and drawings	58.6	59.8	57.5	58.2	55	65.1	58.8	44.9	52.6	56.7	60.4	57.4

When you hear the word design used in relation to technology which are you more likely to think of Creative process or Blueprints and drawings?

Table 12. ITEA Response to Question 25

Question 5 asked, "Which of the following statements best describes your attitude towards the various forms of technology you use in your everyday life? I don't care how it works just as long as it works. I would like to know something about how it works." Sixty-one percent of parents do not care how it works just as long as it works. Thirty-five percent would like to know something about how it works. (see Table 13, ITEA Table 14)

Question 6 asked if, "Technology is a small factor in your everyday life." Eighty percent of the parents disagree that technology is a small factor in everyday life. One hundred percent of Asians, Hispanics and other races strongly disagree that technology is a small part of everyday life (see Table 15, ITEA Table 16)

Question 7 asked is "engineering and technology basically one and the same thing", nineteen percent of the respondents did not respond to the question. Fifty-eight percent of parents did disagree that engineering and technology are basically one and the same thing. (see Table 17, ITEA Table 18)

Question 8 asked if "the results of the use of technology can be good or bad." Ninety percent agreed that the results of technology can be good or bad. (see Table 19, ITEA Table 20)

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	I don't care how it works			Something about how it works			No response			Total
Men	12	38.7%	60.0%	7	22.6%	35.0%	1	3.2%	5.0%	20
Women	7	22.6%	63.6%	4	12.9%	36.4%		0.0%	0.0%	11
Total	19	61.3%		11	35.5%		1	3.2%		31
Age 18-29	3	10.0%	100.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	16	53.3%	59.3%	10	33.3%	37.0%	1	3.3%	3.7%	27
Age 50-64										0
Age 65-99										0
Total	19	63.3%		10	33.3%		1	3.3%		30
>High School										0
High Grad	4	12.9%	57.1%	2	6.5%	28.6%	1	3.2%	14.3%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	0.0%	6
College Grad	6	19.4%	66.7%	3	9.7%	33.3%		0.0%	0.0%	9
Trade	4	12.9%	80.0%	1	3.2%	20.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	0.0%	4
Total	19	61.3%		11	35.5%		1	3.2%		31
White	14	45.2%	58.3%	9	29.0%	37.5%	1	3.2%	4.2%	24
Black	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Native American										0
Other	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Total	19	61.3%		11	35.5%		1	3.2%		31
Computers	6	19.4%	85.7%	1	3.2%	14.3%		0.0%	0.0%	7
Physical										0
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	0.0%	4
Other Occupation	10	32.3%	50.0%	9	29.0%	45.0%	1	3.2%	5.0%	20
Not employed								0.0%		0
Total	19	61.3%		11	35.5%		1	3.2%		31

Which of the following statements best describes your attitude towards the various forms of technology you use in your everyday life?
I don't care how it works just as long as it works or I would like to know something about how it works.

Table 13. Question 5

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Don't care to know	23.8	22B	25.1	15.9	22,I	29.1	20.4	25.2	15.6	16.4.	17.1	26.3
Would like to know	75.5	76.1	74.9	84.1	76.7	70.3	79.1	74.3	82.9	82.7	82.6	73.0
No Respsonse	0.3				0.6	0.6			0.6	0.3		0. 3

Which of the following statements best describes your attitude towards the various forms of technology you use in your everyday life?
I don't care how it works just as long as it works or I would like to know something about how it works.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 14. ITEA Response to Question 5

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Strongly agree			Agree			Disagree			Strongly disagree			No response			Total
Men	2	6.5%	10.0%	0	0.0%	0.0%	9	29.0%	45.0%	8	25.8%	40.0%	1	3.2%	5.0%	20
Women	0	0.0%	0.0%	3	9.7%	27.3%	2	6.5%	18.2%	6	19.4%	54.5%		0.0%	0.0%	11
Total	2	6.5%		3	9.7%		11	35.5%		14	45.2%		1	3.2%		31
Age 18-29		0.0%	0.0%		0.0%	0.0%	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%	3
Age 30-49	2	6.7%	7.4%	3	10.0%	11.1%	10	33.3%	37.0%	11	36.7%	40.7%	1	3.3%	3.7%	27
Age 50-64																
Age 65-99																
Total	2	6.7%		3	10.0%		11	36.7%		13	43.3%		1	3.3%		30
>High School																
High Grad	1	3.2%	14.3%		0.0%	0.0%	4	12.9%	57.1%	1	3.2%	14.3%	1	3.2%	14.3%	7
Some College		0.0%	0.0%		0.0%	0.0%	1	3.2%	16.7%	5	16.1%	83.3%		0.0%	0.0%	6
College Grad		0.0%	0.0%	1	3.2%	11.1%	3	9.7%	33.3%	5	16.1%	55.6%		0.0%	0.0%	9
Trade		0.0%	0.0%	1	3.2%	20.0%	2	6.5%	40.0%	2	6.5%	40.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%	1	3.2%	25.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%	4
Total	2	6.5%		3	9.7%		11	35.5%		14	45.2%		1	3.2%		31
White	2	6.5%	8.3%	3	9.7%	12.5%	9	29.0%	37.5%	9	29.0%	37.5%	1	3.2%	4.2%	24
Black		0.0%	0.0%		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%	4
Asian		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Native American																0
Other		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Total	2	6.5%		3	9.7%		11	35.5%		14	45.2%		1	3.2%		31
Computers	1	3100.0%	14.3%		0.0%	0.0%	2	6.5%	28.6%	4	12.9%	57.1%		0.0%	0.0%	7
Physical																0
Other Tech		0.0%	0.0%	1	3.2%	25.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%	4
Other Occupation	1	3100.0%	5.0%	2	6.5%	10.0%	7	22.6%	35.0%	9	29.0%	45.0%	1	3.2%	5.0%	20
Not employed								0.0%			0.0%					0
Total	2	6.5%		3	9.7%		11	35.5%		14	45.2%		1	3.2%		31

Technology is a small factor in your everyday life.

Table 15. Question 6

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Strongly Agree	17.1	17.8	16.5	18.5	15.3	23.7	13.2	12.3	15.8	15	14.2	18.8
Mostly Agree	23.7	19.5	27.5	16.4	20.5	32.1	23.7	13.7	17.8	15.8	13.9	24.1
Mostly disagree	25.2	26.1	24.3	26.1	27.5	22,4	27	28.1	20.4	22.4	24.2	28.5
Strongly Disagree	33.7	36.3	31.3	39	36,5	21.6	36.1	45.6	46	46.7	47.4	28.4
No Respsonse	0. 1		0.1			0.2	9.2					0.1

Technology is a small factor in your everyday life.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 16. ITEA Response to Question 6

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Total
	Strongly agree			Agree			Disagree			Strongly disagree			No response			
Men	1	3.2%	5.0%	5	16.1%	25.0%	7	22.6%	35.0%	2	6.5%	10.0%	5	16.1%	25.0%	20
Women	1	3.2%	9.1%		0.0%	0.0%	7	22.6%	63.6%	2	6.5%	18.2%	1	3.2%	9.1%	11
Total	2	6.5%		5	16.1%		14	45.2%		4	12.9%		6	19.4%		31
Age 18-29		0.0%	0.0%	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	2	6.7%	7.4%	4	13.3%	14.8%	11	36.7%	40.7%	4	13.3%	14.8%	6	20.0%	22.2%	27
Age 50-64																
Age 65-99																
Total	2	6.7%		5	16.7%		13	43.3%		4	13.3%		6	20.0%		30
>High School																
High Grad		0.0%	0.0%	1	3.2%	14.3%	4	12.9%	57.1%	1	3.2%	14.3%	1	3.2%	14.3%	7
Some College		0.0%	0.0%		0.0%	0.0%	2	6.5%	33.3%	1	3.2%	16.7%	3	9.7%	50.0%	6
College Grad		0.0%	0.0%	3	9.7%	33.3%	4	12.9%	44.4%	2	6.5%	22.2%		0.0%	0.0%	9
Trade	2	6.5%	40.0%		0.0%	0.0%	3	9.7%	60.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%	2	6.5%	50.0%	4
Total	2	6.5%		5	16.1%		14	45.2%		4	12.9%		6	19.4%		31
White	2	6.5%	8.3%	4	12.9%	16.7%	10	32.3%	41.7%	3	9.7%	12.5%	5	16.1%	20.8%	24
Black		0.0%	0.0%		0.0%	0.0%	3	9.7%	75.0%		0.0%	0.0%	1	3.2%	25.0%	4
Asian		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%	1
Native American																
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	2	6.5%		5	16.1%		14	45.2%		3	9.7%		7	22.6%		31
Computers	2	6.5%	28.6%	2	6.5%	28.6%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech		0.0%	0.0%	1	3.2%	25.0%	2	6.5%	50.0%		0.0%	0.0%	1	3.2%	25.0%	4
Other Occupation		0.0%	0.0%	2	6.5%	10.0%	9	29.0%	45.0%	4	12.9%	20.0%	5	16.1%	25.0%	20
Not employed																
Total	2	6.5%		5	16.1%		14	45.2%		4	12.9%		6	19.4%		31

Engineering and technology is basically one and the same thing.

Table 17. Question 7

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Strongly Agree	20.7	24.9	16.8	17.1	20.8	20.3	2.5	15.7	28.7	28	27.4	16. 0
Mostly Agree	40.1	37.5	42.5	49.4	37.3	47.8	34.4	39. 3	37	34.9	33	42.5
Mostly disagree	27.5	25.1	29. 6	25.4	28.6	25.1	25.7	34.2	22	23.3	24.3	30.7
Strongly Disagree	8.9	11.1	6. 9	7.1	11.8	3.7	14.4	9.4	12.1	13.6	14.9	7.0
No Respsonse	0.1	0.1	0.1		0.2	0.2		0.2			0.4	0.4

Engineering and technology is basically one and the same thing.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 18. ITEA Response to Question 7

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Strongly agree			Agree			Disagree			Strongly disagree			No response			Total
Men	5	16.1%	25.0%	12	38.7%	60.0%	2	6.5%	10.0%		0.0%	0.0%	1	3.2%	5.0%	20
Women	4	12.9%	36.4%	7	22.6%	63.6%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	11
Total	9	29.0%		19	61.3%		2	6.5%		0	0.0%		1	3.2%		31
Age 18-29		0.0%	0.0%	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	8	26.7%	29.6%	17	56.7%	63.0%	1	3.3%	3.7%		0.0%	0.0%	1	3.3%	3.7%	27
Age 50-64																
Age 65-99																
Total	8	26.7%		19	63.3%		2	6.7%		0	0.0%		1	3.3%		30
>High School																
High Grad	2	6.5%	28.6%	4	12.9%	57.1%		0.0%	0.0%		0.0%	0.0%	1	3.2%	14.3%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	6
College Grad	1	3.2%	11.1%	7	22.6%	77.8%	1	3.2%	11.1%		0.0%	0.0%		0.0%	0.0%	9
Trade	2	6.5%	40.0%	2	6.5%	40.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	4	12.9%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Total	9	29.0%		19	61.3%		2	6.5%		0	0.0%		1	3.2%		31
White	7	22.6%	29.2%	16	51.6%	66.7%		0.0%	0.0%		0.0%	0.0%	1	3.2%	4.2%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Total	9	29.0%		19	61.3%		2	6.5%		0	0.0%		1	3.2%		31
Computers	4	12.9%	57.1%	2	6.5%	28.6%	1	3.2%	14.3%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	14	45.2%	70.0%	1	3.2%	5.0%		0.0%	0.0%	1	3.2%	5.0%	20
Not employed																
Total	9	29.0%		19	61.3%		2	6.5%		0	0.0%		1	3.2%		31

The results of the use of technology can be good or bad.

Table 19. Question 8

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Strongly Agree	59	61.4	56.8	60.9	61. 1	53.8	62	66.4	66.7	66.3	65.9	57.6
Mostly Agree	35.2	32 .4	37.8	36.4	32 .9	39.3	31. 8	30. 4	26.9	27.3	27. 6	36.6
Mostly disagree	3.1	3.7	2.6	1. 1	4. 8	3.4	3.7	1. 1	3.8	3. 0	2.4	3.6
Strongly Disagree	1.4	1.5	1.3		0.9	1	1.4	1. 1	0.4	1. 4	2.4	1.1
No Respsonse	0.5	0.4	0.6	0.7	0.7	1.7		0. 2	0.9	0. 6	0.4	

The results of the use of technology can be good or bad.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 20. ITEA Response to Question 8

Question 9 asked if "technology is a major factor in the innovations developed within a country"; 80 percent agreed that technology is a major factor in innovations within a country. Thirteen percent did not respond to the question. (see Table 21, ITEA Table 22)

Question 10 asked if "science and technology is basically the same thing"; 58 percent of the parents disagreed that science and technology is basically the same thing. Thirty-two percent agreed that science and technology is basically the same thing. Percentages across all the data fields remained consistent. (see Table 23, ITEA Table 24)

The Importance of Technology

Question 11 asked to which of the following do you feel technology is of the most importance and has the greatest effect on the individual, our society, or our environment. Seventy-one percent felt that technology has the most importance and greatest effect on society; twenty-two percent felt that the technology has the most importance and greatest effect on the environment. (see Table 25, ITEA Table 26)

Amount of Civic Input into Technology

The next four questions, 12 through 15, concerned parental attitudes toward the amount of civic input into the implementation or development of technology into the community. Two community placement questions, one transportation question and a food question round out this category of questions.

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Strongly agree			Agree			Disagree			Strongly disagree			No response			Total
Men	4	12.9%	20.0%	11	35.5%	55.0%	2	6.5%	10.0%		0.0%	0.0%	3	9.7%	15.0%	20
Women	2	6.5%	18.2%	8	25.8%	72.7%		0.0%	0.0%		0.0%	0.0%	1	3.2%	9.1%	11
Total	6	19.4%		19	61.3%		2	6.5%		0	0.0%		4	12.9%		31
Age 18-29		0.0%	0.0%	3	10.0%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	6	20.0%	22.2%	15	50.0%	55.6%	2	6.7%	7.4%	0	0.0%	0.0%	4	13.3%	14.8%	27
Age 50-64																
Age 65-99																
Total	6	20.0%		18	60.0%		2	6.7%		0	0.0%		4	13.3%		30
>High School																
High Grad		0.0%	0.0%	6	19.4%	85.7%		0.0%	0.0%		0.0%	0.0%	1	3.2%	14.3%	7
Some College	1	3.2%	16.7%	3	9.7%	50.0%		0.0%	0.0%		0.0%	0.0%	2	6.5%	33.3%	6
College Grad	3	9.7%	33.3%	5	16.1%	55.6%		0.0%	0.0%		0.0%	0.0%	1	3.2%	11.1%	9
Trade	1	3.2%	20.0%	3	9.7%	60.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Total	6	19.4%		19	61.3%		2	6.5%		0	0.0%		4	12.9%		31
White	4	12.9%	16.7%	16	51.6%	66.7%	1	3.2%	4.2%		0.0%	0.0%	3	9.7%	12.5%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%	1
Native American																
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	6	19.4%		19	61.3%		2	6.5%		0	0.0%		4	12.9%		31
Computers	2	6.5%	28.6%	5	16.1%	71.4%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	3	9.7%	15.0%	11	35.5%	55.0%	2	6.5%	10.0%		0.0%	0.0%	4	12.9%	20.0%	20
Not employed																
Total	6	19.4%		19	61.3%		2	6.5%		0	0.0%		4	12.9%		31

Technology is a major factor in the innovations developed within a country.

Table 21. Question 9

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Strongly Agree	60.6	61.4	59.9	64. 6	61.5	52.2	65.7	52.2	67.2	66.5	65.8	59,4
Mostly Agree	34	33	35	33.2	32.5	42.1	27.6	42.1	26.2	29.4	32.3	34.9
Mostly disagree	2.5	2.7	2.4	2.1	2.7	2.9	4.5	2.9	4.6	2 .4	0.4	2.4
Strongly Disagree	1	1.8	0. 3		2.1	1.4	1.3	1.4		0.5	1	1.3
No Respsonse	0.1	0.2	0.1		0.2	0.2		0.2		0.2	0.5	0.1

Technology is a major factor in the innovations developed within a country.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 22. ITEA Response to Question 9

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Strongly agree			Agree			Disagree			Strongly disagree			No response			Total
Men		0.0%	0.0%	7	22.6%	35.0%	10	32.3%	50.0%	2	6.5%	10.0%	1	3.2%	5.0%	20
Women	1	3.2%	9.1%	2	6.5%	18.2%	4	12.9%	36.4%	2	6.5%	18.2%	2	6.5%	18.2%	11
Total	1	3.2%		9	29.0%		14	45.2%		4	12.9%		3	9.7%		31
Age 18-29		0.0%	0.0%		0.0%	0.0%	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	0.0%	3
Age 30-49	1	3.3%	3.7%	9	30.0%	33.3%	11	36.7%	40.7%	3	10.0%	11.1%	3	10.0%	11.1%	27
Age 50-64																
Age 65-99																
Total	1	3.3%		9	30.0%		13	43.3%		4	13.3%		3	10.0%		30
>High School																
High Grad		0.0%	0.0%	1	3.2%	14.3%	5	16.1%	71.4%	1	3.2%	14.3%		0.0%	0.0%	7
Some College		0.0%	0.0%	2	6.5%	33.3%	2	6.5%	33.3%	1	3.2%	16.7%	1	3.2%	16.7%	6
College Grad		0.0%	0.0%	4	12.9%	44.4%	4	12.9%	44.4%	1	3.2%	11.1%		0.0%	0.0%	9
Trade	1	3.2%	20.0%	2	6.5%	40.0%	1	3.2%	20.0%	1	3.2%	20.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%		0.0%	0.0%	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%	4
Total	1	3.2%		9	29.0%		14	45.2%		5	16.1%		2	6.5%		31
White	1	3.2%	4.2%	7	22.6%	29.2%	11	35.5%	45.8%	2	6.5%	8.3%	3	9.7%	12.5%	24
Black		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Asian		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Total	1	3.2%		9	29.0%		14	45.2%		4	12.9%		3	9.7%		31
Computers	1	3.2%	14.3%	3	9.7%	42.9%	2	6.5%	28.6%	1	3.2%	14.3%		0.0%	0.0%	7
Physical																
Other Tech		0.0%	0.0%	3	9.7%	75.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%	4
Other Occupation		0.0%	0.0%	3	9.7%	15.0%	12	38.7%	60.0%	2	6.5%	10.0%	3	9.7%	15.0%	20
Not employed																
Total	1	3.2%		9	29.0%		14	45.2%		4	12.9%		3	9.7%		31

Science and technology are basically the same thing.

Table 23. Question 10

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Strongly Agree	19.7	24	15.7	21.3	18.7	18.9	17.6	16	25.3	26.1	26.9	16.2
Mostly Agree	39.2	36.5	41.7	43.5	38	46.3	36.1	32.9	40.8	35.8	31.4	39. 6
Mostly disagree	27.5	25.4	29.5	23.2	29.8	22	32.4	33.8	24.7	24	23.3	29.9
Strongly Disagree	11.9	12.7	11.2	11	13	8.8	12.9	17.3	7.9	13.5	18.5	12.5
No Respsonse	0.1		0.1			0.1						

Science and technology are basically the same thing.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 24. ITEA Response to Question 10

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	Total
	The individual			Our society			Our environment			No response		
Men	0	0.0%	0.0%	14	45.2%	70.0%	5	16.1%	25.0%	1	5.0%	20
Women	1	3.2%	9.1%	8	25.8%	72.7%	2	6.5%	18.2%		0.0%	11
Total	1	3.2%		22	71.0%		7	22.6%				31
Age 18-29		0.0%	0.0%	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	3
Age 30-49	1	3.3%	3.7%	19	63.3%	70.4%	6	20.0%	22.2%	1	3.7%	27
Age 50-64												
Age 65-99												
Total	1	3.3%		21	70.0%		7	23.3%				30
>High School												
High Grad	0	0.0%	0.0%	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	7
Some College	0	0.0%	0.0%	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	6
College Grad	1	3.2%	11.1%	6	19.4%	66.7%	1	3.2%	11.1%	1	11.1%	9
Trade	0	0.0%	0.0%	4	12.9%	80.0%	1	3.2%	20.0%		0.0%	5
Post Grad		0.0%	0.0%	4	12.9%	100.0%		0.0%	0.0%		0.0%	4
Total	1	3.2%		22	71.0%		7	22.6%				31
White	1	3.2%	4.2%	19	61.3%	79.2%	3	9.7%	12.5%	1	4.2%	24
Black		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Asian		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Native American												
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Total	1	3.2%		22	71.0%		7	22.6%				31
Computers		0.0%	0.0%	6	19.4%	85.7%	1	3.2%	14.3%		0.0%	7
Physical												
Other Tech		0.0%	0.0%	2	6.5%	50.0%	1	3.2%	25.0%	1	25.0%	4
Other Occupation	1	3.2%	5.0%	14	45.2%	70.0%	5	16.1%	25.0%		0.0%	20
Not employed												
Total	1	3.2%		22	71.0%		7	22.6%				31

To which of the following do you feel technology is of the most importance and has the greatest effect?
The individual Our society Our environment

Table 25. Question 11

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
The individual	16.6	19.7	13.9	15.4	16.8	17.1	20	16.2	19.6	15.5	11.8	18.6
Our society	61.5	61.8	61.6	62.3	68	58.8	61.5	68.6	59.1	62.4	65.3	60.9
Our environment	20.5	17.4	23.3	20.8	14.7	22.9	17.3	13.3	21.7	22	22.6	18.6
No Respsonse	0.1		0.2	0.3	0.1			0.4		0.2	0.4	

To which of the following do you feel technology is of the most importance and has the greatest effect?

The individual Our society Our environment

Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 26. ITEA Response to Question 11

	Responses	Total %	Group %	Responses	Total %	Group %	
	TRUE			FALSE			Total
Men	12	38.7%	60.0%	8	25.8%	40.0%	20
Women	6	19.4%	54.5%	5	16.1%	45.5%	11
Total	18	58.1%		13	41.9%		31
Age 18-29		0.0%	0.0%	3	10.0%	100.0%	3
Age 30-49	17	56.7%	63.0%	10	33.3%	37.0%	27
Age 50-64							
Age 65-99							
Total	17	56.7%		13	43.3%		30
>High School							0
High Grad	4	12.9%	57.1%	3	9.7%	42.9%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%	6
College Grad	6	19.4%	66.7%	3	9.7%	33.3%	9
Trade	2	6.5%	40.0%	3	9.7%	60.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%	4
Total	18	58.1%		13	41.9%		31
White	15	48.4%	62.5%	9	29.0%	37.5%	24
Black	2	6.5%	50.0%	2	6.5%	50.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%	1
Native American							
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	18	58.1%		13	41.9%		31
Computers	3	9.7%	42.9%	4	12.9%	57.1%	7
Physical							
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%	4
Other Occupation	13	41.9%	65.0%	7	22.6%	35.0%	20
Not employed							
Total	18	58.1%		13	41.9%		31

Using a portable phone while in the bathtub creates the possibility of being electrocuted?

Table 42. Question 21

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
True	45.5	35.5	54.9	55.6	40.7	49.5	47.1	39.3	44.8	42.3	40	46.0
False	51.3	62.5	41	42.6	58.3	45.6	50.5	57.2	52.4	55.5	58.3	50.5
No Response												

Using a portable phone while in the bathtub creates the possibility of being electrocuted?

Table 43. ITEA Response to Question 21

Question 12 asked to what degree of input should parents have on where to locate roads in the community. Eighty-three percent of parents feel they should have some input into the decision on where to locate roads in the community (see Table 27, ITEA Table 28).

Question 13 asked to what degree of input should parents have on the development of genetically modified foods. Parents by 57 percent felt that they should have input into the development of genetically modified foods. Thirty-two percent felt they should not have much input into the development of genetically modified foods (see Table 29, ITEA Table 30).

Question 14 asked to what degree of input should parents have on the development of fuel-efficient cars. Sixty-four percent of parents felt they should have input into the development of fuel-efficient cars. One hundred percent of Asians, Hispanics and other races felt they should have a great deal of input (see Table 31, ITEA Table 32).

Question 15 asked to what degree of input should parents have on the designation of neighborhood community centers. This was a concern for 80 percent of the parents (see Table 33, ITEA Table 34).

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Great Deal			Some			Not Very much			None at All			No response			Total
Men	6	19.4%	30.0%	12	38.7%	60.0%	2	6.5%	10.0%	0	0.0%	0.0%		0.0%	0.0%	20
Women	1	3.2%	9.1%	7	22.6%	63.6%	1	3.2%	9.1%	2	6.5%	18.2%		0.0%	0.0%	11
Total	7	22.6%		19	61.3%		3	9.7%		2	6.5%		0	0.0%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%	0	0.0%	0.0%	0	0.0%	0.0%		0.0%	0.0%	3
Age 30-49	6	20.0%	22.2%	17	56.7%	63.0%	2	6.7%	7.4%	2	6.7%	7.4%		0.0%	0.0%	27
Age 50-64																
Age 65-99																
Total	7	23.3%		19	63.3%		2	6.7%		2	6.7%		0	0.0%		30
>High School																0
High Grad	3	9.7%	42.9%	4	12.9%	57.1%	0	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	2	6.5%	33.3%	2	6.5%	33.3%	1	3.2%	16.7%	1	3.2%	16.7%		0.0%	0.0%	6
College Grad	1	3.2%	11.1%	5	16.1%	55.6%	2	6.5%	22.2%	1	3.2%	11.1%		0.0%	0.0%	9
Trade	1	3.2%	20.0%	4	12.9%	80.0%	0	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	4	12.9%	100.0%	0	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Total	7	22.6%		19	61.3%		3	9.7%		2	6.5%		0	0.0%		31
White	3	9.7%	12.5%	17	54.8%	70.8%	3	9.7%	12.5%	1	3.2%	4.2%		0.0%	0.0%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	0	0.0%	0.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																0
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	0	0.0%	0.0%		0.0%	0.0%	1
Total	7	22.6%		19	61.3%		3	9.7%		2	6.5%		0	0.0%		31
Computers	2	6.5%	28.6%	4	12.9%	57.1%	0	0.0%	0.0%	1	3.2%	14.3%		0.0%	0.0%	7
Physical																0
Other Tech	1	3.2%	25.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	13	41.9%	65.0%	2	6.5%	10.0%	1	3.2%	5.0%		0.0%	0.0%	20
Not employed																0
Total	7	22.6%		19	61.3%		3	9.7%		2	6.5%		0	0.0%		31

Where to locate roads in your community?

Table 27. Question 12

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Great Deal	44	43.8	44.2	43.9	45.6	45.9	46.4	36.9	48.2	45.4	42.8	42.9
Some	43.5	44.6	42.5	43.1	44	41.5	42.5	50.3	35.9	42.4	48.2	44.7
Not Ver Much	8.5	7.8	9.1	9.9	7.6	8.1	8.4	9.8	9.9	8.2	6.7	8.7
None at All	3.5	3.7	3.3	3.1	2.7	3.8	2.7	2.3	6	3.9	1.9	3.1
No Respsonse	0.5	0.1	0.9		0.1	0.7				0.2	0.4	0.5

Where to locate roads in your community?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 28. ITEA Response to Question 12

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Great Deal			Some			Not Very much			None at All			No response			Total
Men	7	22.6%	35.0%	7	22.6%	35.0%	5	16.1%	25.0%	1	3.2%	5.0%		0.0%	0.0%	20
Women	1	3.2%	9.1%	3	9.7%	27.3%	5	16.1%	45.5%	2	6.5%	18.2%		0.0%	0.0%	11
Total	8	25.8%		10	32.3%		10	32.3%		3	9.7%		0	0.0%		31
Age 18-29		0.0%	0.0%		0.0%	0.0%	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%	3
Age 30-49	7	23.3%	25.9%	10	33.3%	37.0%	9	30.0%	33.3%	1	3.3%	3.7%		0.0%	0.0%	27
Age 50-64																
Age 65-99																
Total	7	23.3%		10	33.3%		10	33.3%		3	10.0%		0	0.0%		30
>High School																0
High Grad	1	3.2%	14.3%	2	6.5%	28.6%	3	9.7%	42.9%	1	3.2%	14.3%		0.0%	0.0%	7
Some College	3	9.7%	50.0%	2	6.5%	33.3%	0	0.0%	0.0%	1	3.2%	16.7%		0.0%	0.0%	6
College Grad	2	6.5%	22.2%	2	6.5%	22.2%	4	12.9%	44.4%	1	3.2%	11.1%		0.0%	0.0%	9
Trade	2	6.5%	40.0%	2	6.5%	40.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Total	8	25.8%		10	32.3%		10	32.3%		3	9.7%		0	0.0%		31
White	5	16.1%	20.8%	9	29.0%	37.5%	10	32.3%	41.7%		0.0%	0.0%		0.0%	0.0%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%	4
Asian		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																0
Other		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%	1
Total	8	25.8%		10	32.3%		10	32.3%		3	9.7%		0	0.0%		31
Computers	2	6.5%	28.6%	2	6.5%	28.6%	1	3.2%	14.3%	2	6.5%	28.6%		0.0%	0.0%	7
Physical																0
Other Tech	2	6.5%	50.0%		0.0%	0.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	8	25.8%	40.0%	7	22.6%	35.0%	1	3.2%	5.0%		0.0%	0.0%	20
Not employed																0
Total	8	25.8%		10	32.3%		10	32.3%		3	9.7%		0	0.0%		31

Development of genetically modified foods.

Table 29. Question 13

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Great Deal	41	38	43.4	41.1	43.1	39.3	42.1	39.5	42.4	42.8	43.2	41.0
Some	37	36.7	37.3	38.3	35.2	32.8	39.1	40.1	34.6	36.1	37.4	37.4
Not Ver Much	10.1	11.9	8.4	11.9	10.3	13.1	7.6	11.8	10.4	9.4	8.4	11.8
None at All	10.7	11.3	10.1	7.5	10.6	13.9	9.7	8.1	12.2	9.9	7.9	9.0
No Respsonse	0.1		0.7		0.9	0.9	0.2	0.2	0.4			0.4

Development of genetically modified foods.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 30. ITEA Response to Question 13

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Total
	Great Deal			Some			Not Very much			None at All			No response			
Men	9	29.0%	45.0%	5	16.1%	25.0%	5	16.1%	25.0%	1	3.2%	5.0%		0.0%	0.0%	20
Women	2	6.5%	18.2%	4	12.9%	36.4%	2	6.5%	18.2%	2	6.5%	18.2%	1	3.2%	9.1%	11
Total	11	35.5%		9	29.0%		7	22.6%		3	9.7%		1	3.2%		31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	8	26.7%	29.6%	8	26.7%	29.6%	7	23.3%	25.9%	3	10.0%	11.1%	1	3.3%	3.7%	27
Age 50-64																0
Age 65-99																0
Total	10	33.3%		9	30.0%		7	23.3%		3	10.0%		1	3.3%		30
>High School																0
High Grad	3	9.7%	42.9%	1	3.2%	14.3%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%	7
Some College	3	9.7%	50.0%	1	3.2%	16.7%		0.0%	0.0%	1	3.2%	16.7%	1	3.2%	16.7%	6
College Grad	3	9.7%	33.3%	3	9.7%	33.3%	2	6.5%	22.2%	1	3.2%	11.1%		0.0%	0.0%	9
Trade	1	3.2%	20.0%	4	12.9%	80.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%		0.0%	0.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%	4
Total	11	35.5%		9	29.0%		7	22.6%		3	9.7%		1	3.2%		31
White	6	19.4%	25.0%	8	25.8%	33.3%	7	22.6%	29.2%	2	6.5%	8.3%	1	3.2%	4.2%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American								0.0%			0.0%			0.0%		
Other	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	11	35.5%		9	29.0%		7	22.6%		3	9.7%		1	3.2%		31
Computers	2	6.5%	28.6%	3	9.7%	42.9%	1	3.2%	14.3%	1	3.2%	14.3%		0.0%	0.0%	7
Physical								0.0%			0.0%			0.0%		
Other Tech	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	7	22.6%	35.0%	5	16.1%	25.0%	5	16.1%	25.0%	2	6.5%	10.0%	1	3.2%	5.0%	20
Not employed								0.0%			0.0%			0.0%		
Total	11	35.5%		9	29.0%		7	22.6%		3	9.7%		1	3.2%		31

Development of fuel-efficient cars.

Table 31. Question 14

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Great Deal	37.2	37.2	37.2	37.2	34.2	41.1	35	31.9	37.9	35.8	34	37.1
Some	44.4	43.3	45.5	44.7	47.3	39.8	47.7	45.7	43.2	45.5	47.7	44.3
Not Ver Much	9.9	9.9	9.9	13.3	10	7.9	11.7	13.3	8.8	10.6	12.2	9.9
None at All	7.6	8.7	6.5	3.8	7.7	10.1	4.4	8.6	8.1	7.1	6.2	7.7
No Respsonse	0.1		0.1				0.2					0.1

Development of fuel-efficient cars.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 32. ITEA Response to Question 14

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Total
	Great Deal			Some			Not Very much			None at All			No response			
Men	8	25.8%	40.0%	10	32.3%	50.0%	2	6.5%	10.0%		0.0%	0.0%		0.0%	0.0%	20
Women		0.0%	0.0%	7	22.6%	63.6%	3	9.7%	27.3%	1	3.2%	9.1%		0.0%	0.0%	11
Total	8	25.8%		17	54.8%		5	16.1%		1	3.2%		0	0.0%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	6	20.0%	22.2%	15	50.0%	55.6%	5	16.7%	18.5%	1	3.3%	3.7%		0.0%	0.0%	27
Age 50-64																0
Age 65-99																0
Total	7	23.3%		17	56.7%		5	16.7%		1	3.3%		0	0.0%		30
>High School																0
High Grad	2	6.5%	28.6%	4	12.9%	57.1%	1	3.2%	14.3%		0.0%	0.0%		0.0%	0.0%	7
Some College	3	9.7%	50.0%	2	6.5%	33.3%		0.0%	0.0%	1	3.2%	16.7%		0.0%	0.0%	6
College Grad	3	9.7%	33.3%	4	12.9%	44.4%	2	6.5%	22.2%		0.0%	0.0%		0.0%	0.0%	9
Trade		0.0%	0.0%	3	9.7%	60.0%	2	6.5%	40.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	4	12.9%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Total	8	25.8%		17	54.8%		5	16.1%		1	3.2%		0	0.0%		31
White	6	19.4%	25.0%	14	45.2%	58.3%	4	12.9%	16.7%		0.0%	0.0%		0.0%	0.0%	24
Black	2	6.5%	50.0%		0.0%	0.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	8	25.8%		17	54.8%		5	16.1%		1	3.2%		0	0.0%		31
Computers	1	3.2%	14.3%	3	9.7%	42.9%	2	6.5%	28.6%	1	3.2%	14.3%		0.0%	0.0%	7
Physical																
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	5	16.1%	25.0%	12	38.7%	60.0%	3	9.7%	15.0%		0.0%	0.0%		0.0%	0.0%	20
Not employed																
Total	8	25.8%		17	54.8%		5	16.1%		1	3.2%		0	0.0%		31

Designation of neighborhood community centers.

Table 33. Question 15

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Great Deal	43.1	40.2	45.8	42.3	47.7	48.5	44.3	39.6	41.2	41	40.8	44.4
Some	46.8	47.9	45.8	46.6	43.1	42.2	45.4	51	45.4	48	50.3	46.4
Not Ver Much	6.2	7.6	4.8	6.5	5.7	6.1	5.6	6.8	5.4	5.5	5.5	6.5
None at All	3.2	3.4	3	4.1	2.8	2.8	4.8	4.5	8	4.3	1	2.3
No Respsonse	0.2	0.3		0.6	0.1	0.4		0.2		0.5	0.9	

Designation of neighborhood community centers.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 34. ITEA Response to Question 15

Ability to Explain Technology

The next five questions concerned the ability to explain how technology works. Parents were asked if yes they could explain the technology or no they could not explain the technology. For the next five questions, the women had a non-response rate of 9 percent.

Question 16 asked parents to explain how a flashlight works? Sixty-seven percent answered they could explain how a flashlight worked. Postgraduates were split 50/50 on being able to explain how a flashlight works (see able 35, ITEA Table 38).

Question 17 asked parents to explain how to use a credit card to get money out of an ATM? Eighty-seven percent of the respondents could explain how to get money out of an ATM. Only 67 percent of respondents with some college could explain how to get money from an ATM (see Table 36, ITEA Table 38).

Question 18 asked parents to explain how a home heating system works? Fifty-two percent of parents felt they could explain a home heating system. Twenty percent of trade school graduates did not think they could explain a home heating system. A larger percent of the women (63%) could explain a home heating system than men (45%) (see Table 37, ITEA Table 38).

Question 19 asked parents to explain how a telephone call gets from point A to point B? Sixty-one percent could explain how a telephone call can get from point A to point B.

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	14	45.2%	70.0%	6	19.4%	30.0%		0.0%	20
Women	7	22.6%	63.6%	3	9.7%	27.3%	1	9.1%	11
Total	21	67.7%		9	29.0%				31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	3
Age 30-49	18	60.0%	66.7%	8	26.7%	29.6%	1	3.7%	27
Age 50-64									0
Age 65-99									0
Total	20	66.7%		9	30.0%				30
>High School									
High Grad	7	22.6%	100.0%		0.0%	0.0%		0.0%	7
Some College	5	16.1%	83.3%	1	3.2%	16.7%		0.0%	6
College Grad	4	12.9%	44.4%	5	16.1%	55.6%		0.0%	9
Trade	3	9.7%	60.0%	1	3.2%	20.0%	1	20.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Total	21	67.7%		9	29.0%				31
White	17	54.8%	70.8%	6	19.4%	25.0%	1	4.2%	24
Black	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Total	21	67.7%		9	29.0%				31
Computers	5	16.1%	71.4%	1	3.2%	14.3%	1	14.3%	7
Physical									
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Other Occupation	13	41.9%	65.0%	7	22.6%	35.0%		0.0%	20
Not employed									
Total	21	67.7%		9	29.0%				31

Could you explain how a flashlight works?

Table 35. Question 16

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	19	61.3%	95.0%	1	3.2%	5.0%		0.0%	20
Women	8	25.8%	72.7%	2	6.5%	18.2%	1	9.1%	11
Total	27	87.1%		3	9.7%				31
Age 18-29	3	10.0%	100.0%		0.0%	0.0%		0.0%	3
Age 30-49	23	76.7%	85.2%	3	10.0%	11.1%	1	3.7%	27
Age 50-64									
Age 65-99									
Total	26	86.7%		3	10.0%				30
>High School									
High Grad	7	22.6%	100.0%		0.0%	0.0%		0.0%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	6
College Grad	8	25.8%	88.9%	1	3.2%	11.1%		0.0%	9
Trade	4	12.9%	80.0%		0.0%	0.0%	1	20.0%	5
Post Grad	4	12.9%	100.0%		0.0%	0.0%		0.0%	4
Total	27	87.1%		3	9.7%				31
White	20	64.5%	83.3%	3	9.7%	12.5%	1	4.2%	24
Black	4	12.9%	100.0%		0.0%	0.0%		0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Native American									
Other	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Total	27	87.1%		3	9.7%				31
Computers	6	19.4%	85.7%		0.0%	0.0%	1	14.3%	7
Physical									
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Other Occupation	18	58.1%	90.0%	2	6.5%	10.0%		0.0%	20
Not employed									
Total	27	87.1%		3	9.7%				31

How to use a credit card to get money out of an ATM?

Table 36. Question 17

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	9	29.0%	45.0%	11	35.5%	55.0%		0.0%	20
Women	7	22.6%	63.6%	3	9.7%	27.3%	1	9.1%	11
Total	16	51.6%		14	45.2%				31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	3
Age 30-49	14	46.7%	51.9%	12	40.0%	44.4%	1	3.7%	27
Age 50-64									
Age 65-99									
Total	16	53.3%		13	43.3%				30
>High School									
High Grad	6	19.4%	85.7%	1	3.2%	14.3%		0.0%	7
Some College	1	3.2%	16.7%	5	16.1%	83.3%		0.0%	6
College Grad	4	12.9%	44.4%	5	16.1%	55.6%		0.0%	9
Trade	3	9.7%	60.0%	1	3.2%	20.0%	1	20.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Total	16	51.6%		14	45.2%				31
White	13	41.9%	54.2%	10	32.3%	41.7%	1	4.2%	24
Black	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Total	16	51.6%		14	45.2%				31
Computers	4	12.9%	57.1%	2	6.5%	28.6%	1	14.3%	7
Physical									
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Other Occupation	10	32.3%	50.0%	10	32.3%	50.0%		0.0%	20
Not employed									
Total	16	51.6%		14	45.2%				31

How a home heating system works?

Table 37. Question 18

Question 16	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	89.5	96.4	83.2	91.7	90.9	86.5	89.4	92.9	91.2	94.4	97.2	87.9
Could you explain how a flashlight works?												

Question 17	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	89	91.8	86.5	94.7	93.4	83.2	94.4	90.9	92.5	92.9	93.1	88.1
How to use a credit card to get money out of an ATM?												

Question 18	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	69.8	86.1	54.8	63.9	74.6	70.5	67.7	74.2	81.1	81.7	82.2	66
How a home heating system works?												

Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 38. ITEA Response to Question 16-18

Post graduates were evenly split 50/50 on being able to explain a phone call. (see Table 39, ITEA Table 39A)

Question 20 asked could you explain how energy is transferred into electrical power. Fifty-six percent of parents felt they could not explain how energy is transferred into electrical power. Those parents employed in some other occupation were evenly split on explaining the transfer of energy. (see Table 40, ITEA Table 41)

Knowledge of Technology

The next four questions test the technical knowledge of the parents. The parents were asked to answer true or false to a series of questions concerning the operation of common technology devices.

Question 21 asked whether it was true or false that using a portable phone while in the bathtub creates the possibility of being electrocuted. Fifty-eight percent answered true to the possibility of being electrocuted while using a portable phone in the bathtub. Those aged 18-29 answered 100 percent false to electrocution with a portable phone. (see Table 42, ITEA Table 43)

Question 22 asked whether it was true or false that FM radios operate free of static. Ninety percent of those surveyed answered false to FM radios operate static free. Again

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	11	35.5%	55.0%	9	29.0%	45.0%		0.0%	20
Women	8	25.8%	72.7%	2	6.5%	18.2%	1	9.1%	11
Total	19	61.3%		11	35.5%				31
Age 18-29		0.0%	0.0%	3	10.0%	100.0%		0.0%	3
Age 30-49	19	63.3%	70.4%	7	23.3%	25.9%	1	3.7%	27
Age 50-64									
Age 65-99									
Total	19	63.3%		10	33.3%				30
>High School									
High Grad	5	16.1%	71.4%	2	6.5%	28.6%		0.0%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	6
College Grad	4	12.9%	44.4%	5	16.1%	55.6%		0.0%	9
Trade	4	12.9%	80.0%		0.0%	0.0%	1	20.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Total	19	61.3%		11	35.5%				31
White	15	48.4%	62.5%	8	25.8%	33.3%	1	4.2%	24
Black	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Total	19	61.3%		11	35.5%				31
Computers	5	16.1%	71.4%	1	3.2%	14.3%	1	14.3%	7
Physical									
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Other Occupation	11	35.5%	55.0%	9	29.0%	45.0%		0.0%	20
Not employed									
Total	19	61.3%		11	35.5%				31

How a telephone call gets from point A to point B?

Table 39. Question 19

Question 19	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	64.6	75.5	54.5	65.5	70	59.9	68	71.6	77.9	77.9	78	59.3
How a telephone call gets from point A to point B?												

Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 39A. ITEA Response to Question 19

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	6	20.0%	30.0%	14	46.7%	70.0%		0.0%	20
Women	6	20.0%	54.5%	3	10.0%	27.3%	1	9.1%	10
Total	12	40.0%		17	56.7%				30
Age 18-29	1	3.4%	33.3%	2	6.9%	66.7%		0.0%	3
Age 30-49	11	37.9%	40.7%	14	48.3%	51.9%	1	3.7%	26
Age 50-64									
Age 65-99									
Total	12	41.4%		16	55.2%				29
>High School									0
High Grad	5	16.1%	71.4%	2	6.5%	28.6%		0.0%	7
Some College	2	6.5%	33.3%	4	12.9%	66.7%		0.0%	6
College Grad	2	6.5%	22.2%	6	19.4%	66.7%	1	11.1%	9
Trade	2	6.5%	40.0%	2	6.5%	40.0%	1	20.0%	5
Post Grad	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	4
Total	12	38.7%		17	54.8%				31
White	9	30.0%	37.5%	13	43.3%	54.2%	1	4.2%	23
Black	2	6.7%	50.0%	2	6.7%	50.0%		0.0%	4
Asian	1	3.3%	100.0%		0.0%	0.0%		0.0%	1
Hispanic		0.0%	0.0%	1	3.3%	100.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.3%	100.0%		0.0%	1
Total	12	40.0%		17	56.7%				30
Computers	5	16.1%	71.4%	1	3.2%	14.3%	1	14.3%	7
Physical									
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	4
Other Occupation	5	16.1%	25.0%	14	45.2%	70.0%	1	5.0%	20
Not employed									
Total	12	38.7%		17	54.8%				31

How energy is transferred into electrical power?

Table 40. Question 20

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	53.4	72.3	36	53.2	56.6	46.6	54.2	61.8	60.2	70.6	79.9	45.7

How energy is transferred into electrical power?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 41. ITEA Response to Question 20

those aged 18-29 answered 100 percent false; also six other groups answered 100 percent false (see Table 44, ITEA Table 45).

Question 23 asked whether it was true or false that a car operates through a series of explosions in the engine. Fifty-eight percent of parents answered true to an automobile engine operating through a series of explosions. One hundred percent of women answered true, while only 35 percent of men answered true. (see Table 46, ITEA Table 47)

Question 24 asked whether it was true or false that microwaves heats food from the outside to the inside. Fifty-eight percent of parents answered true that food heats from the outside to the inside in a microwave. All race groups except for white answered true. (see Table 48, ITEA Table 49)

Shortages of Technically Illiterate Persons

Question 26 deals with shortages of technically illiterate persons or shortages of technically trained persons. The question asked was, when a national shortage of qualified people occurs in a particular area of technology, which of the following solutions would you feel is the most appropriate course of action for the U.S. to take: bring in technologically literate people from other countries or take steps through our schools to increase the number of technologically literate people. Eighty-three percent of

	Responses	Total %	Group %	Responses	Total %	Group %	
	TRUE			FALSE			Total
Men	2	6.5%	10.0%	18	58.1%	90.0%	20
Women	1	3.2%	9.1%	10	32.3%	90.9%	11
Total	3	9.7%		28	90.3%		31
Age 18-29		0.0%	0.0%	3	10.0%	100.0%	3
Age 30-49	3	10.0%	11.1%	24	80.0%	88.9%	27
Age 50-64							
Age 65-99							
Total	3	10.0%		27	90.0%		30
>High School							
High Grad		0.0%	0.0%	7	22.6%	100.0%	7
Some College		0.0%	0.0%	6	19.4%	100.0%	6
College Grad	1	3.2%	11.1%	8	25.8%	88.9%	9
Trade	1	3.2%	20.0%	4	12.9%	80.0%	5
Post Grad	1	3.2%	25.0%	3	9.7%	75.0%	4
Total	3	9.7%		28	90.3%		31
White	2	6.5%	8.3%	22	71.0%	91.7%	24
Black	1	3.2%	25.0%	3	9.7%	75.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%	1
Native American							
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	3	9.7%		28	90.3%		31
Computers		0.0%	0.0%	7	22.6%	100.0%	7
Physical							
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%	4
Other Occupation	1	3.2%	5.0%	19	61.3%	95.0%	20
Not employed							
Total	3	9.7%		28	90.3%		31

FM radios operate free of static?

Table 44. Question 22

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
True	25.9	30.9	21.4	11.4	18.54	27	22.6	26.2	26	24.6	23.4	25.0
False	71.7	67.8	75.3	87.2	79.9	71.2	73.6	71	70.9	73.6	76.1	72.5
No Response	0.1		0.1			0.2						0.1

FM radios operate free of static?

Table 45. ITEA Response to Question 22

	Responses	Total %	Group %	Responses	Total %	Group %	
	TRUE			FALSE			Total
Men	7	22.6%	35.0%	13	41.9%	65.0%	20
Women	11	35.5%	100.0%		0.0%	0.0%	11
Total	18	58.1%		13	41.9%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%	3
Age 30-49	17	56.7%	63.0%	10	33.3%	37.0%	27
Age 50-64							
Age 65-99							
Total	18	60.0%		12	40.0%		30
>High School							
High Grad	4	12.9%	57.1%	3	9.7%	42.9%	7
Some College	3	9.7%	50.0%	3	9.7%	50.0%	6
College Grad	6	19.4%	66.7%	3	9.7%	33.3%	9
Trade	3	9.7%	60.0%	2	6.5%	40.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%	4
Total	18	58.1%		13	41.9%		31
White	15	48.4%	62.5%	9	29.0%	37.5%	24
Black	2	6.5%	50.0%	2	6.5%	50.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%	1
Native American							
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	18	58.1%		13	41.9%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%	7
Physical							
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%	4
Other Occupation	11	35.5%	55.0%	9	29.0%	45.0%	20
Not employed							
Total	18	58.1%		13	41.9%		31

A car operates through a series of explosions in the engine?

Table 46. Question 23

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
True	81.8	92.4	72	79.4	83.8	75.7	86.7	82.7	83.6	87.5	90.9	80.6
False	15.2	6.6	23	16.8	14.4	18.9	11.8	14.9	13.3	10.6	8.1	16.6
No Response	0.1	0.1			0.1			0.2		0.2	0.4	

A car operates through a series of explosions in the engine?

Table 47. ITEA Response to Question 23

	Responses	Total %	Group %	Responses	Total %	Group %	
	TRUE			FALSE			Total
Men	14	45.2%	70.0%	6	19.4%	30.0%	20
Women	4	12.9%	36.4%	7	22.6%	63.6%	11
Total	18	58.1%		13	41.9%		31
Age 18-29	3	10.0%	100.0%		0.0%	0.0%	3
Age 30-49	14	46.7%	51.9%	13	43.3%	48.1%	27
Age 50-64							
Age 65-99							
Total	17	56.7%		13	43.3%		30
>High School							
High Grad	5	16.1%	71.4%	2	6.5%	28.6%	7
Some College	5	16.1%	83.3%	1	3.2%	16.7%	6
College Grad	4	12.9%	44.4%	5	16.1%	55.6%	9
Trade	1	3.2%	20.0%	4	12.9%	80.0%	5
Post Grad	3	9.7%	75.0%	1	3.2%	25.0%	4
Total	18	58.1%		13	41.9%		31
White	11	35.5%	45.8%	13	41.9%	54.2%	24
Black	4	12.9%	100.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%	1
Native American							
Other	1	3.2%	100.0%		0.0%	0.0%	1
Total	18	58.1%		13	41.9%		31
Computers	3	9.7%	42.9%	4	12.9%	57.1%	7
Physical							
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%	4
Other Occupation	14	45.2%	70.0%	6	19.4%	30.0%	20
Not employed							
Total	18	58.1%		13	41.9%		31

Microwaves heats food from the outside to the inside?

Table 48. Question 24

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
True	36.5	33.5	39.4	47.2	30.4	39.9	40.5	31.7	37.9	30.3	23.4	40.1
False	62	65.4	58.9	52.5	68.8	58.6	59.1	66.8	60.8	69.1	76.6	58.6
No Response	0.1		0.2									

Microwaves heats food from the outside to the inside?

Table 49. ITEA Response to Question 24

the parents felt we should increase the number of technologically literate people. (see Table 50, ITEA Table 51)

Technology and Education

The next three questions deal with the teaching of technology.

Question 27, using a broad definition of technology as "modifying our natural world to meet human needs", do you believe the study of technology should be included in the school curriculum or not? Ninety percent of parents answered yes to technology being included in the school curriculum. One hundred percent of high graduates and six other groups answered a 100 percent yes. (see Table 52, ITEA Table 53)

Question 28, should the study of technology be made part of other subjects like science, math, and social studies or should it be taught as a separate subject? Sixty-three percent of parents felt that technology should be taught as part of other subjects. One hundred percent of trade school educated persons felt technology should be part of other subjects. (see Table 54, ITEA Table 55)

Question 29, if the subject of technology were taught should it be required or optional? Fifty-one percent of parents answered that technology education should be optional. Post graduate educated persons and those employed in other occupations answered at a even 50/50 split on the question. (see Table 56, ITEA Table 57)

	Responses	Total %	Group %	Responses	Total %	Group %	
	Bring in tech literate people			Increase number of tech literate			Total
Men	4	12.9%	20.0%	16	51.6%	80.0%	20
Women	1	3.2%	9.1%	10	32.3%	90.9%	11
Total	5	16.1%		26	83.9%		31
Age 18-29		0.0%	0.0%	3	10.0%	100.0%	3
Age 30-49	4	13.3%	14.8%	23	76.7%	85.2%	27
Age 50-64							
Age 65-99							
Total	4	13.3%		26	86.7%		30
>High School							
High Grad	1	3.2%	14.3%	6	19.4%	85.7%	7
Some College	1	3.2%	16.7%	5	16.1%	83.3%	6
College Grad	2	6.5%	22.2%	7	22.6%	77.8%	9
Trade	1	3.2%	20.0%	4	12.9%	80.0%	5
Post Grad		0.0%	0.0%	4	12.9%	100.0%	4
Total	5	16.1%		26	83.9%		31
White	4	12.9%	16.7%	20	64.5%	83.3%	24
Black	1	3.2%	25.0%	3	9.7%	75.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%	1
Native American							
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	5	16.1%		26	83.9%		31
Computers	1	3.2%	14.3%	6	19.4%	85.7%	7
Physical							
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%	4
Other Occupation	3	9.7%	15.0%	17	54.8%	85.0%	20
Not employed							
Total	5	16.1%		26	83.9%		31

When a national shortage of qualified people occurs in a particular area of technology, which of the following solutions would you feel is the most appropriate course of action for the U.S. to take: Bring in technologically literate people from other countries or take steps through our schools to increase the number of technologically literate people.

Table 50. Question 26

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Bring in tech literate people	6.3	9.1	3.6	8.2	7.3	2.9	5.9	10.5	10.2	9.2	8.3	4.4
Increase number of tech literate	92.5	89.4	95.4	91.5	90.8	97.1	93.3	87.2	89	89.7	90.63	94.5
No Response	0.6	1	0.2	0.3	0.9		0.3	1.2	0.4	0.6	0.7	0.7

When a national shortage of qualified people occurs in a particular area of technology,
Bring in technologically literate people from other countries or take steps through our schools to increase the number of technologically literate people.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 51. ITEA Response to Question 26

	Responses	Total %	Group %	Responses	Total %	Group %	
	Yes			No			Total
Men	18	58.1%	90.0%	2	6.5%	10.0%	20
Women	10	32.3%	90.9%	1	3.2%	9.1%	11
Total	28	90.3%		3	9.7%		31
Age 18-29	3	10.0%	100.0%		0.0%	0.0%	3
Age 30-49	25	83.3%	92.6%	2	6.7%	7.4%	27
Age 50-64							
Age 65-99							
Total	28	93.3%		2	6.7%		30
>High School							
High Grad	7	22.6%	100.0%		0.0%	0.0%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%	6
College Grad	9	29.0%	100.0%		0.0%	0.0%	9
Trade	4	12.9%	80.0%	1	3.2%	20.0%	5
Post Grad	4	12.9%	100.0%		0.0%	0.0%	4
Total	28	90.3%		3	9.7%		31
White	22	71.0%	91.7%	2	6.5%	8.3%	24
Black	3	9.7%	75.0%	1	3.2%	25.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%	1
Native American							
Other	1	3.2%	100.0%		0.0%	0.0%	1
Total	28	90.3%		3	9.7%		31
Computers	7	22.6%	100.0%		0.0%	0.0%	7
Physical							
Other Tech	4	12.9%	100.0%		0.0%	0.0%	4
Other Occupation	17	54.8%	85.0%	3	9.7%	15.0%	20
Not employed							
Total	28	90.3%		3	9.7%		31

Using a broad definition of technology as "modifying our natural world to meet human needs", do you believe the study of technology should be included in the school curriculum or not?

Table 52. Question 27

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	96.8	97.1	96.6	98.7	96.4	97.2	98.1	95.9	98.4	98	97.7	96.2
No	2.6	2.3	2.9	0.9	3	2.3	1.7	3.5	1.6	1.6	1.6	3.1
No Response	0.4	0.5	0.3		0.7	0.3		0.4		0.4	0.7	0.3

Using a broad definition of technology as "modifying our natural world to meet human needs",
do you believe the study of technology should be included in the school curriculum or not?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 53. ITEA Response to Question 27

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Part of other subjects			Separate subject			No response		Total
Men	12	38.7%	60.0%	7	22.6%	35.0%	1	5.0%	20
Women	8	25.8%	72.7%	3	9.7%	27.3%		0.0%	11
Total	20	64.5%		10	32.3%				31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	3
Age 30-49	18	60.0%	66.7%	8	26.7%	29.6%	1	3.7%	27
Age 50-64									
Age 65-99									
Total	20	66.7%		9	30.0%				30
>High School									
High Grad	5	16.1%	71.4%	2	6.5%	28.6%		0.0%	7
Some College	3	9.7%	50.0%	3	9.7%	50.0%		0.0%	6
College Grad	4	12.9%	44.4%	4	12.9%	44.4%	1	11.1%	9
Trade	5	16.1%	100.0%		0.0%	0.0%		0.0%	5
Post Grad	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Total	20	64.5%		10	32.3%				31
White	16	51.6%	66.7%	8	25.8%	33.3%		0.0%	24
Black	3	9.7%	75.0%		0.0%	0.0%	1	25.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Total	20	64.5%		10	32.3%				31
Computers	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	7
Physical									
Other Tech	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	4
Other Occupation	13	41.9%	65.0%	6	19.4%	30.0%	1	5.0%	20
Not employed									
Total	20	64.5%		10	32.3%				31

Should the study of technology be made part of other subjects like science, math, and social studies or should it be taught as a separate subject?

Table 54. Question 28

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Part of other subjects	62.7	62	63.3	54.9	64.9	53.2	63.6	73.6	65.2	65	64.9	63.3
Separate subject	35.7	36.6	34.8	44.1	33.9	44.5	35.6	24.8	32.8	33.6	34.4	34.8
No response	0.1		0.2	0.3		2		0.4		0.2	0.4	

Should the study of technology be made part of other subjects like science, math, and social studies or should it be taught as a separate subject?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 55. ITEA Response to Question 28

	Responses	Total %	Group %	Responses	Total %	Group %	
	Required			Optional			Total
Men	7	22.6%	35.0%	13	41.9%	65.0%	20
Women	8	25.8%	72.7%	3	9.7%	27.3%	11
Total	15	48.4%		16	51.6%		31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%	3
Age 30-49	13	43.3%	48.1%	14	46.7%	51.9%	27
Age 50-64							
Age 65-99							
Total	15	50.0%		15	50.0%		30
>High School							
High Grad	5	16.1%	71.4%	2	6.5%	28.6%	7
Some College	2	6.5%	33.3%	4	12.9%	66.7%	6
College Grad	3	9.7%	33.3%	6	19.4%	66.7%	9
Trade	3	9.7%	60.0%	2	6.5%	40.0%	5
Post Grad	2	6.5%	50.0%	2	6.5%	50.0%	4
Total	15	48.4%		16	51.6%		31
White	11	35.5%	45.8%	13	41.9%	54.2%	24
Black	3	9.7%	75.0%	1	3.2%	25.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%	1
Native American							
Other		0.0%	0.0%	1	3.2%	100.0%	1
Total	15	48.4%		16	51.6%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%	7
Physical							
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%	4
Other Occupation	10	32.3%	50.0%	10	32.3%	50.0%	20
Not employed							
Total	15	48.4%		16	51.6%		31

If the subject of technology were taught should it be required or optional?

Table 56. Question 29

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Required	50.6	44.8	56.3	46.1	56.8	43.1	56.7	67.1	50.7	56.8	62.1	47.4
Optional	49.1	55.2	43.1	53.9	43.2	55.9	43.3	32.9	49.3	43.2	37.9	52.0

If the subject of technology were taught should it be required or optional?
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 57. ITEA Response to Question 29

Understanding of Technology

The next three questions deal with the teaching of technology or how well schools prepared students in the following areas. The parents were asked to evaluate this question using one of five values. These values being: very important, fairly important, not very important, not important at all and no response.

Question 30 asked about the relationship between technology, mathematics and science. Eighty-six percent of the parents thought that the relationship between technology, mathematics and science was fairly important. (see Table 58, ITEA Table 59)

Question 31, the role of people in the development and the use of technology was thought to be important. Postgraduates were evenly split between fairly important and not very important. (see Table 60, ITEA Table 61)

Question 32, knowing something about how products are designed was thought to be important by 64 percent of the parents. (see Table 62, ITEA Table 63)

Question 33, the ability to select and use products was an even split between being very and fairly important with only 15 percent who thought is was not very important or not important at all. (see Table 64, ITEA Table 65)

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Very important			Fairly Important			Not Very Important			Not important at all			No response			Total
Men	6	19.4%	30.0%	11	35.5%	55.0%	3	9.7%	15.0%		0.0%	0.0%		0.0%	0.0%	20
Women	6	19.4%	54.5%	4	12.9%	36.4%		0.0%	0.0%		0.0%	0.0%	1	3.2%	9.1%	11
Total	12	38.7%		15	48.4%		3	9.7%		0	0.0%		1	3.2%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	11	36.7%	40.7%	13	43.3%	48.1%	2	6.7%	7.4%		0.0%	0.0%	1	3.3%	3.7%	27
Age 50-64																0
Age 65-99																0
Total	12	40.0%		15	50.0%		2	6.7%		0	0.0%		1	3.3%		30
>High School																0
High Grad	3	9.7%	42.9%	4	12.9%	57.1%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	3	9.7%	50.0%	1	3.2%	16.7%	1	3.2%	16.7%		0.0%	0.0%	1	3.2%	16.7%	6
College Grad	2	6.5%	22.2%	7	22.6%	77.8%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	9
Trade	2	6.5%	40.0%	2	6.5%	40.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Total	12	38.7%		15	48.4%		3	9.7%		0	0.0%		1	3.2%		31
White	8	25.8%	33.3%	13	41.9%	54.2%	2	6.5%	8.3%		0.0%	0.0%	1	3.2%	4.2%	24
Black	3	9.7%	75.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	12	38.7%		15	48.4%		3	9.7%		0	0.0%		1	3.2%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	6	19.4%	30.0%	10	32.3%	50.0%	3	9.7%	15.0%		0.0%	0.0%	1	3.2%	5.0%	20
Not employed																
Total	12	38.7%		15	48.4%		3	9.7%		0	0.0%		1	3.2%		31

The relationship between technology, mathematics and science.

Table 58. Question 30

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very important	78.7	76.5	80.8	71	80.8	78.8	76.1	75.6	86.6	83.9	81.4	75.4
Fairly Important	19.2	21.2	17.4	27.5	16.7	19.4	22.2	21.9	12	14	15.9	22.5
Not Very Important	1.5	1.6	1.3	1.5	2.2	1.6	0.9	1.5	0.9	1.4	1.8	1.5
Not important at all	0.4	0.5	0.3		0.4		0.6	0.8	0.4	0.5	0.5	0.4
No response							0.2	0.3				

The relationship between technology, mathematics and science.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 59. ITEA Response to Question 30

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Very important			Fairly Important			Not Very Important			Not important at all			No response			Total
Men	6	19.4%	30.0%	7	22.6%	35.0%	7	22.6%	35.0%		0.0%	0.0%		0.0%	0.0%	20
Women	3	9.7%	27.3%	7	22.6%	63.6%	1	3.2%	9.1%		0.0%	0.0%		0.0%	0.0%	11
Total	9	29.0%		14	45.2%		8	25.8%		0	0.0%		0	0.0%		31
Age 18-29	2	6.7%	66.7%	1	3.3%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	7	23.3%	25.9%	13	43.3%	48.1%	7	23.3%	25.9%		0.0%	0.0%		0.0%	0.0%	27
Age 50-64																0
Age 65-99																0
Total	9	30.0%		14	46.7%		7	23.3%		0	0.0%		0	0.0%		30
>High School																0
High Grad	3	9.7%	42.9%	4	12.9%	57.1%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	2	6.5%	33.3%	2	6.5%	33.3%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%	6
College Grad	3	9.7%	33.3%	3	9.7%	33.3%	3	9.7%	33.3%		0.0%	0.0%		0.0%	0.0%	9
Trade	1	3.2%	20.0%	3	9.7%	60.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Total	9	29.0%		14	45.2%		8	25.8%		0	0.0%		0	0.0%		31
White	6	19.4%	25.0%	12	38.7%	50.0%	6	19.4%	25.0%		0.0%	0.0%		0.0%	0.0%	24
Black	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Native American								0.0%			0.0%			0.0%		
Other	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	9	29.0%		14	45.2%		8	25.8%		0	0.0%		0	0.0%		31
Computers	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical								0.0%			0.0%			0.0%		
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	8	25.8%	40.0%	8	25.8%	40.0%		0.0%	0.0%		0.0%	0.0%	20
Not employed								0.0%			0.0%			0.0%		
Total	9	29.0%		14	45.2%		8	25.8%		0	0.0%		0	0.0%		31

The role of people in the development and the use of technology.

Table 60. Question 31

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very important	71.7	71.7	71.8	64.7	71.4	72.4	72.1	67.7	79.5	79	78.7	68.3
Fairly Important	24.6	24	25.1	29.7	251	25.3	23.2	27.8	16.5	18.5	20.3	26.8
Not Very Important	2.9	3.8	2	4.5	3	1.5	3.5	3.7	4	1.9		3.7
Not important at all	0.6	0.3	0.9	1.1	0.2	0.5	1.2	0.5		0.3	0.5	0.9
No response												

The role of people in the development and the use of technology.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 61. ITEA Response to Question 31

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Very important			Fairly Important			Not Very Important			Not important at all			No response			Total
Men	3	9.7%	15.0%	9	29.0%	45.0%	8	25.8%	40.0%		0.0%	0.0%		0.0%	0.0%	20
Women	2	6.5%	18.2%	6	19.4%	54.5%	2	6.5%	18.2%	1	3.2%	9.1%		0.0%	0.0%	11
Total	5	16.1%		15	48.4%		10	32.3%		1	3.2%		0	0.0%		31
Age 18-29	1	3.3%	33.3%	1	3.3%	33.3%	1	3.3%	33.3%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	4	13.3%	14.8%	14	46.7%	51.9%	8	26.7%	29.6%	1	3.3%	3.7%		0.0%	0.0%	27
Age 50-64																0
Age 65-99																0
Total	5	16.7%		15	50.0%		9	30.0%		1	3.3%		0	0.0%		30
>High School																0
High Grad	4	12.9%	57.1%	2	6.5%	28.6%	1	3.2%	14.3%		0.0%	0.0%		0.0%	0.0%	7
Some College		0.0%	0.0%	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%	6
College Grad	1	3.2%	11.1%	4	12.9%	44.4%	3	9.7%	33.3%	1	3.2%	11.1%		0.0%	0.0%	9
Trade		0.0%	0.0%	3	9.7%	60.0%	2	6.5%	40.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad		0.0%	0.0%	2	6.5%	50.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Total	5	16.1%		15	48.4%		10	32.3%		1	3.2%		0	0.0%		31
White	3	9.7%	12.5%	13	41.9%	54.2%	7	22.6%	29.2%	1	3.2%	4.2%		0.0%	0.0%	24
Black	1	3.2%	25.0%	1	3.2%	25.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Total	5	16.1%		15	48.4%		10	32.3%		1	3.2%		0	0.0%		31
Computers	1	3.2%	14.3%	4	12.9%	57.1%	2	6.5%	28.6%		0.0%	0.0%		0.0%	0.0%	7
Physical								0.0%			0.0%			0.0%		
Other Tech		0.0%	0.0%	4	12.9%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	4	12.9%	20.0%	7	22.6%	35.0%	8	25.8%	40.0%	1	3.2%	5.0%		0.0%	0.0%	20
Not employed								0.0%			0.0%			0.0%		
Total	5	16.1%		15	48.4%		10	32.3%		1	3.2%		0	0.0%		31

Knowing something about how products are designed.

Table 62. Question 32

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very important	40.6	39.8	41.3	34.5	37.2	44.9	36	33	41.6	44.9	47.8	38.1
Fairly Important	44.7	43.5	45.8	52.5	47.7	40.3	51.1	51.6	44.9	42.3	39.9	46.0
Not Very Important	12.4	13.9	11.1	10.2	13.9	11.4	11.6	13.6	12	11.9	11.8	13.4
Not important at all	1.7	2.5	1	2.7	1.2	1.5	1.3	1.6	1.6	1	0.5	2.0
No response	0.1							0.3				

Knowing something about how products are designed.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 63. ITEA Response to Question 32

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	
	Very important			Fairly Important			Not Very Important			Not important at all			No response			Total
Men	8	25.8%	40.0%	10	32.3%	50.0%	2	6.5%	10.0%		0.0%	0.0%		0.0%	0.0%	20
Women	5	16.1%	45.5%	3	9.7%	27.3%	2	6.5%	18.2%	1	3.2%	9.1%		0.0%	0.0%	11
Total	13	41.9%		13	41.9%		4	12.9%		1	3.2%		0	0.0%		31
Age 18-29	1	3.3%	33.3%	1	3.3%	33.3%	1	3.3%	33.3%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	12	40.0%	44.4%	11	36.7%	40.7%	3	10.0%	11.1%	1	3.3%	3.7%		0.0%	0.0%	27
Age 50-64																0
Age 65-99																0
Total	13	43.3%		12	40.0%		4	13.3%		1	3.3%		0	0.0%		30
>High School																0
High Grad	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	4	12.9%	66.7%	2	6.5%	33.3%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	6
College Grad	2	6.5%	22.2%	4	12.9%	44.4%	2	6.5%	22.2%	1	3.2%	11.1%		0.0%	0.0%	9
Trade	2	6.5%	40.0%	2	6.5%	40.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Total	13	41.9%		13	41.9%		4	12.9%		1	3.2%		0	0.0%		31
White	8	25.8%	33.3%	13	41.9%	54.2%	2	6.5%	8.3%	1	3.2%	4.2%		0.0%	0.0%	24
Black	3	9.7%	75.0%		0.0%	0.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%	1
Total	13	41.9%		13	41.9%		4	12.9%		1	3.2%		0	0.0%		31
Computers	4	12.9%	57.1%	2	6.5%	28.6%	1	3.2%	14.3%		0.0%	0.0%		0.0%	0.0%	7
Physical								0.0%			0.0%			0.0%		
Other Tech	2	6.5%	50.0%	1	3.2%	25.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	7	22.6%	35.0%	10	32.3%	50.0%	2	6.5%	10.0%	1	3.2%	5.0%		0.0%	0.0%	20
Not employed								0.0%			0.0%			0.0%		
Total	13	41.9%		13	41.9%		4	12.9%		1	3.2%		0	0.0%		31

The ability to select and use products.

Table 64. Question 33

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very important	65.8	61.5	69.8	59.2	64.2	71.3	67.8	55.1	65.1	65.7	66.3	65.5
Fairly Important	27.1	29.1	25.3	32.5	28.1	23.3	25.9	36	25.4	24.9	24.4	28.5
Not Very Important	5.3	7.4	3.3	6.7	6.4	3.3	5	6.3	9.1	8.3	7.6	3.9
Not important at all	1.6	1.6	1.5	1.6	1.3	1.4	1.3	2.4	0.4	1.1	1.7	1.7
No response								0.2				

The ability to select and use products.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 65. ITEA Response to Question 33

Question 34, an understanding of the advance and innovations in technology was important to 80 percent of the respondents. (see Table 66, ITEA Table 67)

Technology Literacy Graduation Requirement

The final question, Question 35 asked should students be evaluated for technological literacy as part of the high school graduation requirement? Sixty-one percent thought technology literacy should not be part of a graduation requirement. (see Table 68, ITEA Table 69)

Summary

Thirty-one parents responded to the survey providing a return rate of thirty-one percent. Data were presented that provided information on the attitudes of parents toward the understanding of technology, the effect of technology on society, technological literacy and the school curriculum, confusing technology with technical and finally to compare the results of this research with the results of the International Technology Education Association's Technology for All Americans Project Gallup Poll of spring 2002. The next chapter will provide a summary of this research along with conclusions drawn from this data. Finally the researcher will provide recommendations for further research.

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Total %	Group %	Total
	Very important			Fairly Important			Not Very Important			Not important at all			No response			
Men	5	16.1%	25.0%	12	38.7%	60.0%	3	9.7%	15.0%		0.0%	0.0%		0.0%	0.0%	20
Women	4	12.9%	36.4%	4	12.9%	36.4%	3	9.7%	27.3%		0.0%	0.0%		0.0%	0.0%	11
Total	9	29.0%		16	51.6%		6	19.4%		0	0.0%		0	0.0%		31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	3
Age 30-49	8	26.7%	29.6%	14	46.7%	51.9%	5	16.7%	18.5%		0.0%	0.0%		0.0%	0.0%	27
Age 50-64																0
Age 65-99																0
Total	9	30.0%		16	53.3%		5	16.7%		0	0.0%		0	0.0%		30
>High School																0
High Grad	4	12.9%	57.1%	3	9.7%	42.9%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Some College	2	6.5%	33.3%	3	9.7%	50.0%	1	3.2%	16.7%		0.0%	0.0%		0.0%	0.0%	6
College Grad	1	3.2%	11.1%	6	19.4%	66.7%	2	6.5%	22.2%		0.0%	0.0%		0.0%	0.0%	9
Trade	1	3.2%	20.0%	3	9.7%	60.0%	1	3.2%	20.0%		0.0%	0.0%		0.0%	0.0%	5
Post Grad	1	3.2%	25.0%	1	3.2%	25.0%	2	6.5%	50.0%		0.0%	0.0%		0.0%	0.0%	4
Total	9	29.0%		16	51.6%		6	19.4%		0	0.0%		0	0.0%		31
White	6	19.4%	25.0%	13	41.9%	54.2%	5	16.1%	20.8%		0.0%	0.0%		0.0%	0.0%	24
Black	1	3.2%	25.0%	2	6.5%	50.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Hispanic	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Native American																
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	1
Total	9	29.0%		16	51.6%		6	19.4%		0	0.0%		0	0.0%		31
Computers	3	9.7%	42.9%	4	12.9%	57.1%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	7
Physical																
Other Tech		0.0%	0.0%	3	9.7%	75.0%	1	3.2%	25.0%		0.0%	0.0%		0.0%	0.0%	4
Other Occupation	6	19.4%	30.0%	9	29.0%	45.0%	5	16.1%	25.0%		0.0%	0.0%		0.0%	0.0%	20
Not employed																
Total	9	29.0%		16	51.6%		6	19.4%		0	0.0%		0	0.0%		31

An understanding of the advance and innovations in technology.

Table 66. Question 34

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Very important	66.5	65.4	67.5	61.1	63.8	68.1	63.9	62.9	67.9	69.3	70.7	64.6
	29.5	30.3	28.7	34.9	33	25.6	32.6	33.5	28	27.5	27	30.2
Fairly Important	3.5	3.7	3.2	3.5	3	5.6	2.6	3	4.1	2.9	1.9	4.4
Not important at all	0.4	0.5	0.3	0.5	0.2	0.4	0.6	0.5		0.3	0.5	0.6
No response												

An understanding of the advance and innovations in technology.
Excerpted from Data Tables for Gallup Poll on America's Level of Literacy Related to Technology.

Table 67. ITEA Response to Question 34

	Responses	Total %	Group %	Responses	Total %	Group %	Responses	Group %	
	Yes			No			No response		Total
Men	5	16.1%	25.0%	14	45.2%	70.0%	1	5.0%	20
Women	4	12.9%	36.4%	7	22.6%	63.6%		0.0%	11
Total	9	29.0%		21	67.7%				31
Age 18-29	1	3.3%	33.3%	2	6.7%	66.7%		0.0%	3
Age 30-49	8	26.7%	29.6%	18	60.0%	66.7%	1	3.7%	27
Age 50-64									
Age 65-99									
Total	9	30.0%		20	66.7%				30
>High School									
High Grad	2	6.5%	28.6%	5	16.1%	71.4%		0.0%	7
Some College		0.0%	0.0%	6	19.4%	100.0%		0.0%	6
College Grad	3	9.7%	33.3%	5	16.1%	55.6%	1	11.1%	9
Trade	3	9.7%	60.0%	2	6.5%	40.0%		0.0%	5
Post Grad	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	4
Total	9	29.0%		21	67.7%				31
White	7	22.6%	29.2%	17	54.8%	70.8%		0.0%	24
Black	1	3.2%	25.0%	2	6.5%	50.0%	1	25.0%	4
Asian	1	3.2%	100.0%		0.0%	0.0%		0.0%	1
Hispanic		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Native American									
Other		0.0%	0.0%	1	3.2%	100.0%		0.0%	1
Total	9	29.0%		21	67.7%				31
Computers	2	6.5%	28.6%	5	16.1%	71.4%		0.0%	7
Physical									
Other Tech	1	3.2%	25.0%	3	9.7%	75.0%		0.0%	4
Other Occupation	6	19.4%	30.0%	13	41.9%	65.0%	1	5.0%	20
Not employed									
Total	9	29.0%		21	67.7%				31

Should students be evaluated for technological literacy as part of the high school graduation requirements?

Table 68. Question 35

	Total	Men	Women	18-29	30-49	HS Grad	Some College	College Grad	Computer	Physical	Other Tech	Other Occupation
Yes	61	63.5	58.8	49.8	60.6	57.2	63.7	60.3	63.9	65	65.9	59.1
No	37.6	35.1	39.9	48.9	38.6	42	33.6	39.1	36.1	34.8	33.7	38.8

Should students be evaluated for technological literacy as part of the high school graduation requirements?

Table 69. ITEA Response to Question 35

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes a summary, conclusions, and recommendations. The summary will contain an overview of the study. Answering the research goals using the data collected during the study will draw conclusions. Recommendations for future research will be made based upon the results of the study.

SUMMARY

The research goals used to guide this problem were to determine the parent's understanding of technology, the effect of technology on society, attitudes towards technological literacy and the school curriculum, and finally to compare the results of this research with the results of the International Technology Education Association's Technology for All Americans Project Gallup Poll of spring 2002. In order to assess the parents' attitudes toward technological literacy, a modified ITEA survey on technological literacy was used. Students of the researcher (during his student teaching internship) were given a survey for their parents to complete. The survey was distributed to one hundred and one parents at Ocean Lakes High School in Virginia Beach, Virginia; thirty-one parents responded.

CONCLUSIONS

The first research goal for this study — Determine the parents understanding of technology, has been answered by surveying parents in the targeted school. The data gathered indicated that parents (67%) identify technology with computers. Parents (100%) felt that people at all levels need to develop an ability to understand and use technology. When choosing a definition to fit the word technology, 67% choose computers and the Internet. Seventy-seven percent felt they had the ability to understand and use technology to some or great extent. Parents were split 48 to 51 percent in deciding whether design was a creative process or blueprints and drawings used to build something.

The second research goal — Determine the parent's attitude towards the effect of technology on society. Sixty-one percent of parents did not care how things work as long as the device works. Eighty percent felt technology is not a small factor in everyday life. Fifty-eight percent felt that engineering was not basically the same thing as technology. Ninety percent of parents felt that the results of technology can be good or bad. Eighty percent of parents felt that technology is a major factor in the innovations developed within a country. Sixty-seven percent of parents did not believe science and technology are the same. Seventy-one percent of parents did not feel that technology has the greatest effect on society. When asked four questions on the amount of input into the implementation or development of technology into the community parents felt they should have some or a great deal of input.

The third research goal — Determine the parent's attitude toward technological literacy and the school curriculum. A majority of parents (90%) believed the study of technology should be included in the school curriculum. Sixty-five percent felt that technology should be taught as part of other subjects. Parents were split between teaching the subject of technology as a required (48%) or optional (51%) course. Parents felt it was important for schools to prepare students in the following areas: 84% believed that the relationship between technology, mathematics, and science was important, 64% believed how products were designed was important, 84% believed the ability to select and use products was important, 80% felt an understanding of the advance and innovations in technology was important. Parents were opposed (68%) to making technological literacy a high school graduation requirement.

The fourth research goal — Compare the results of this research with the results of the International Technology Education Association's Technology for All Americans Project Gallup Poll of spring 2002. The researchers demographics differed from the ITEA poll in the following areas: No respondent had less education than high school graduation; only the 18-29 and 30-49 age groups had responses. No Native Americans responded to the survey. No unemployed persons responded to the survey.

Both parents and the general public agree on computers as the first word when thinking of technology and on the ability to use and understand technology. Their opinions split on whether design is a creative process or blueprints and drawings. The general public

(75%) would like to know how technology works vs. 35% of the parents. Both disagree that technology is a small factor in everyday life. ITEA (agreed) and parents (disagreed) felt differently on the question of engineering and technology being basically the same thing and science and technology being the same. The results of technology can be good or bad. Technology is a major factor in innovations. Both groups believe technology has the greatest effect on society, then the environment and finally on the individual. Both groups are comparable on the civic input in the implementation and development of technology in the community. Both groups displayed the same ability to explain technology. On the knowledge of technology, parents agreed with the ITEA survey on two of the four questions. Parents agreed with the ITEA survey on the issue of solving shortages of technically illiterate persons by increasing the number of technically literate persons. On the issue of technology and education the parents agreed with the general public on two of three questions. The parents did feel technology should be an optional subject vice a required subject. On how well the educational system was preparing students for understanding technology, parents and the public agreed on the importance of these tasks. Parents disagreed (68% against) with the public survey (61% in favor of) on whether technology literacy should be a graduation requirement.

Recommendations

Based on the information gathered from the surveys and the conclusions drawn, the researcher has made the following recommendations:

1. Conduct a survey of the parents at the beginning and ending of the academic school year to determine if there is any impact or change generated as a result of their children's participation in the class.
2. Conduct research to determine parental/the public attitude towards graduation requirements vs. technology as a graduation requirement.
3. Conduct a survey with a tracking mechanism to increase the number of respondents.
4. Conduct research into how to increase parental participation in student learning and whether this will increase parental understanding of technology.
5. Conduct research into how parents/the public thinks technology should be taught as part of other subjects.
6. Conduct further research into how parents/the public thinks technology should be included in the school curriculum.
7. Conduct research into how parents/the public feels the number of technically literate persons should be increased.

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Appendices

A. Survey Questionnaire

B. Cover Letter

C. Permission to use ITEA Gallup Poll Format

Survey Questionnaire

Parents Define Technological Literacy And Their Perceived Attitudes Toward It

Purpose: To determine parents understanding of technology.

Directions: For the first question please write in your answer. For all other questions/statements please fill in which answer bubble most correctly matches your opinion.

Please write what first comes to mind when you hear the word "technology".

_____

How important is it, for people at all levels to develop some ability to understand and use technology?
O Very important, O Somewhat important, O Not very important, O Not important at all,
O No response.

Which of the following two definitions, more closely fits with what you think of when you hear the word "technology". Do you think of
O Computers and the Internet. O Changing the natural world to satisfy our needs.

To what extent do you consider yourself to be able to understand and use technology?
O Great extent, O Some extent, O Limited extent, O Not at all, O No response

Which of the following statements best describes your attitude towards the various forms of technology you use in your everyday life?
O I don't care how it works just as long as it works.
O I would like to know something about how it works.

Do you strongly agree, agree, disagree, strongly disagree, or are neutral to the following statements?

	SA	A	D	SD	N
Technology is a small factor in your everyday life.	O	O	O	O	O
Engineering and technology is basically one and the same thing.	O	O	O	O	O
The results of the use of technology can be good or bad.	O	O	O	O	O
Technology is a major factor in the innovations developed within a country.	O	O	O	O	O
Science and technology are basically the same thing.	O	O	O	O	O

To which of the following do you feel technology is of the most importance and has the greatest effect?
O The individual O Our society O Our environment

Tell me how much input do you think you should have in decisions in each of the following areas?
Great Deal, Some, Not Very much, None at All, No response.

	GD	S	NV	NA	N
Where to locate roads in your community.	O	O	O	O	O
Development of genetically modified foods.	O	O	O	O	O
Development of fuel-efficient cars.	O	O	O	O	O
Designation of neighborhood community centers.	O	O	O	O	O

Could you explain each of the following to a friend.	Yes	No
Could you explain how a flashlight works?	O	O
How to use a credit card to get money out of an ATM?	O	O
How a home heating system works?	O	O
How a telephone call gets from point A to point B?	O	O
How energy is transferred into electrical power?	O	O

Tell me if each of the following statements is true or false	True	False
Using a portable phone while in the bathtub creates the possibility of being electrocuted.	O	O
FM radios operate free of static.	O	O
A car operates through a series of explosions in the engine.	O	O
A microwave heats food from the outside to the inside.	O	O

When you hear the word design used in relation to technology which are you more likely to think of?

O A creative process for solving problems.

O Blueprints and drawings from which you construct something.

When a national shortage of qualified people occurs in a particular area of technology, which of the following solutions would you feel is the most appropriate course of action for the U.S. to take:

O Bring in technologically literate people from other countries.

O Take steps through our schools to increase the number of technologically literate people.

Using a broad definition of technology as "modifying our natural world to meet human needs", do you believe the study of technology should be included in the school curriculum or not?

O Yes, taught in the curriculum. O No, not taught in the curriculum.

Should the study of technology be made part of other subjects like science, math, and social studies or should it be taught as a separate subject?

O Part of other subjects O Separate subject

If the subject of technology were taught should it be required or optional?

O Required O Optional

How important is it for schools to prepare students in the following areas?
Very important, Fairly Important, Not Very Important, Not important at all, No response.

	VI	FI	NV	NI	N
The relationship between technology, mathematics and science.	O	O	O	O	O
The role of people in the development and the use of technology.	O	O	O	O	O
Knowing something about how products are designed.	O	O	O	O	O
The ability to select and use products.	O	O	O	O	O
An understanding of the advance and innovations in technology.	O	O	O	O	O

Should students be evaluated for technological literacy as part of the high school graduation requirements?

O Required O Not Required

The following demographic information is requested to enable a comparison between this survey, other surveys, polls and information gathering devices.

O Male O Female Age: O 18-29 O 30-49 O 50-64 O 65-99

Highest Level of education completed:

O Less than High school O High school graduate O Trade/Technical/ Vocational training
O Some College O College graduate O Postgraduate work/degree

Race:

O White O African-American/Black OAsian O Hispanic
O Native American O Other

Employment background, are you currently employed, or if retired or no longer working, have you ever been employed, in any of the following areas?

O Computers, such as programming , information systems or design.
O Physical sciences, such as chemistry or physics.
O An other area of technology.
O Some other occupation.
O Not employed.

Cover Letter

Dear Parent,

Charles Thomas of the Department of Occupational and Technical Studies Old Dominion University is conducting a study in order to better understand how parents define technology and their perceived attitudes toward technological literacy. This research will help technology education teachers and those who train technology educators to better understand how to address parental concerns about their child's technology education. This research is also one of the graduation requirements for my masters' degree in science.

Please take the time to fill out the enclosed survey and return it by June 4th. You should be able to complete this survey in ten minutes. Since the validity of the results depend on obtaining a high response rate, your participation is crucial to the success of this study. Your input is also very important because we need to obtain a broadly representative sampling of parent's opinions on these matters. Thank you in advance for your cooperation and the valuable information you will provide with completion of this survey.

Your return of this survey indicates your consent to participate in this study. Please be assured that your responses will be held in the strictest confidence. To preserve your privacy and anonymity please do not write your name or any information that could specifically identify you on this survey. As soon as I receive your completed survey, I will remove any identifying information accidentally placed on the survey. All surveys will be destroyed immediately after successfully completing the requirements of the research project. If the results of this study were to be written for publication, no identifying information will be used

If you have any questions about this study, you can contact the person(s) below:

Charles Thomas
Old Dominion University
Hampton Boulevard
Norfolk, Virginia 23529
(757) 430-8720
cthom037@odu.edu

Dr. John Ritz
Old Dominion University
Hampton Boulevard
Norfolk, Virginia 23529
(757) 683-4305
jritz@odu.edu

I hope that you will be able to participate in this study.
Sincerely,

Charles Thomas

From: "William E. Dugger, Jr." <duggerw@itea-tfaap.org>

To: "C.L. Thomas" <charleslthomas@cox.net>

Subject: RE: Charles Thomas Research Project

Date: Tue, 1 Apr 2003 09:17:48 -0500

X-Mailer: Microsoft Outlook IMO, Build 9.0.2416 (9.0.2910.0)

Importance: Normal

Charles,

This is to grant permission to you to use the ITEA Gallup Poll for your research in Dr. Ritz's class. Please send me a copy of your findings and final report.

Bill

William E. Dugger, Jr., Ph.D.

Director, Technology for All Americans Project

International Technology Education Association

1997 South Main Street, Suite 701

Blacksburg, VA 24060

(540) 953-0203 (Voice)

(540) 953-0014 (Fax)

URL: <http://www.iteawww.org/TAA/TAA.html>

-----Original Message-----

From: C.L. Thomas [mailto:charleslthomas@cox.net]

Sent: Friday, March 21, 2003 9:18 PM

To: duggerw@itea-tfaap.org

Subject: Charles Thomas Research Project

Dear Dr. Dugger:

I am a graduate student of Dr. John Ritz. His course requires a research project. I will be conducting my research under the guidance of Dr. Ritz. My research project is to determine how parents define technology and their perceived attitudes toward technological literacy. My research objectives used to guide this problem were:

1. Determine the parent's understanding of technology.
2. Determine the parent's attitude towards the effect of technology on society.
3. Determine the parent's attitude towards technological literacy and the school curriculum.
4. Determine if parents confuse technology with technical or instructional technology.
5. Compare the results of this research with the results of the International Technology Education Association Technology for All Americans Project Gallup Poll of spring 2002.

My methodology will be to send a survey to the caregiver of those students (Ocean Lakes High School, Virginia Beach, Va.) that I am student teaching.

I am requesting permission to use the attached modified International Technology Education Association Technology for All Americans Project Gallup Poll of spring 2002.

The poll has been modified to be used as a survey vice a phone interview.

Answers bubbles have been provided for most of the answers.

Please feel free to contact either Dr. Ritz or myself.

Thank you,

Charles Thomas

charleslthomas@cox.net

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