

**PERCEPTIONS OF TEACHERS, GUIDANCE PERSONNEL AND  
ADMINISTRATORS AT BADGER HIGH SCHOOL OF  
TECHNOLOGY AND TECHNOLOGY EDUCATION**

**By**

**Glen J. York**

**A Research Paper**

**Submitted in Partial Fulfillment of the  
Requirements for the  
Master of Science Degree  
With a Major in**

**Industrial/Technology Education**

**Approved: 2 Semester Credits**

---

**Investigation Advisor**

**The Graduate College  
University of Wisconsin- Stout  
December 2002**

The Graduate College  
University of Wisconsin-Stout  
Menomonie, Wisconsin 54751

ABSTRACT

York  
(Writers)(Last)

Glen  
(First)

J.  
(Initial)

Perceptions of Teachers, Guidance Personnel and Administrators at Badger High School  
of Technology and Technology Education

(Title)

Technology Education  
(Graduate Major)

Dr. John Burningham  
(Research Advisor)

12/2002  
(Month/Year)

43  
(No. of Pages)

American Psychological Association (APA) Publication Manual: Fourth Edition

(Name of Style Manual Used in this Study)

The purpose of this study was to determine the perceptions of teachers, guidance personnel and administrators at Badger High School of technology and technology education. All teachers, guidance personnel and administrators were given the opportunity to participate in a descriptive survey which asked about their perceptions of technology and technology education.

The study examined the perceptions of the American public in areas of comfort with technology, beliefs in its importance to society, the need for students to understand technology and the way in which technology literacy should be provided. The descriptive survey of Badger's teachers, guidance personnel and administrators was based on a survey done in 2002 by the International Technology Education Association.

The results of the survey were collected, analyzed and reported. Differences between different demographics were reported as well as differences between Badger

teachers, guidance personnel and administrators and the results for the American public as a whole.

The results of the study indicated general agreement on most issues between the different demographics at Badger and the American public as a whole. There was almost unanimous agreement at Badger about the importance of technology for the future of the country. The respondents also were nearly unanimous in their support for technology education for students. The delivery methods of technology education produced some interesting results. Almost all believed the study of technology should be integrated with other subjects and 67% agreed it should be required.

The recommendations of the study are to inform the Badger staff that their views are very similar when it comes to technology and technology education, strong beliefs in the importance of technology and technology education were demonstrated, and integrating technology education with other areas was strongly supported. Badger staff also indicated that they feel they have an effect on future student class enrollment so it is important that they realize the effect they are having on students' education choices.

The study also determined an area where further study is recommended. The issue of how technology education is integrated and delivered showed the potential for further study.

## Acknowledgement

The completion of this study was the result of many people and I would like to acknowledge them for their support. First and foremost I'd like to acknowledge my wife Janice for her support and patience throughout this process. She, as well as my four children Melissa, Ryan, David and Leslie provided the inspiration I needed to complete the study. My research advisor Dr. John Burningham helped to keep me focused on the main issues and kept me from straying from the main topic. The faculty and staff at Badger helped me whenever needed and provided the data for the research. I'd also like to thank the professors at U.W.-Stout who have helped me to attain my goal of completing this study. Thank you all!

## TABLE OF CONTENTS

ABSTRACT	1
ACKNOWLEDGEMENT	3
CHAPTER	
1. INTRODUCTION	6
Statement of the problem	9
Research questions	10
Methodology	10
Significance of the study	10
Limitations of the study	11
Assumptions of the study	11
Definition of terms	12
Methodology	12
2. REVIEW OF LITERATURE	13
Introduction	13
Perceptions of technology	13
Technology education	14
3. METHODOLOGY	20
Introduction	20
Subjects	20
Instruments	20
Procedures	21
Unknowns	21
Limitations	22
4. DATA ANALYSIS	23
Introduction	23
Results	23
5. SUMMARY	33
Introduction	33
Restatement of the problem	33
Methods and procedures	33
Major findings	34
Conclusions	36
Recommendations	36
Recommendations related to this study	36
Recommendations for further study	37

REFERENCES	38
APPENDICES	40
Consent form	40
Survey	41

## CHAPTER 1

### Introduction

Technology Education is the primary discipline for integrating curriculum towards the advancement of technological literacy (ITEA, 1990). The International Technology Education Association states that Technology Education:

- Is an essential learning experience for all students at all grade levels, abilities, and backgrounds, so that they may confidently use, manage, assess, and understand technology.
- Provides the basic knowledge and technical skills needed to participate in society. It increases the economic capacity of nations and allows students to understand and apply advanced technologies so they will be prepared for either post-secondary education or entering the workforce.
- Enhances the opportunity for students to develop career awareness or career path preparation. It provides exposure to a variety of technology related careers – from professional to industrial or service worker. The knowledge base learned through technology education is important to everyone, as all members of society must continually learn in a changing society that is influenced by technology.
- Provides for academic, technical, and social growth. It employs involvement with tools, machines, materials, and systems of technology. It enables all students to derive meaning from concrete experiences that result from integration of mathematics, science, humanities, and engineering concepts. Through direct experience with a wide array of processes, knowledge, and contexts, it helps to develop technological literacy.

- Provides a wholesome change in learners by enhancing the understanding of how technology is changing the human-made world and the natural environment. It allows learners to experience the activities and habits of a designer, scientist, technologist, engineer, architect, producer, historian, and social critic as they engage in technological problems and issues of the present and future.
- Develops self-evaluation of attitudes toward constructive work and how this work can be used for health, recreation, or economic value. It helps to develop favorable attitudes toward creative thinking, and to character improvement – knowing and making the most of one’s environment.
- Requires competence, compassion, a desire for excellence, and a vision from its educators. Teachers must possess creativity, ingenuity, enjoy working with people, and maintain a high degree of personal and professional integrity (ITEA, 1995).

Technology Education is an extremely valuable part of the education process. In order to assure the broadest education of students it is important that technology education is offered to all. Professional staff must understand what technology education is and has to offer students in order for them to see the value for their students. There is confusion among teachers over what technology education is about (Maley, 1989).

In a real sense technology education competes with other subjects for class time (Stern, 1999). With increased emphasis on the core academic subjects (math, science, english, and social studies) class time is becoming limited. The post-secondary requirements limit the time available for elective courses (Hill, Wicklein, & Daugherty, 1996).

It is not clear if education decision-makers understand the curriculum and programs (Hill, et al., 1996). In order for Technology Education to survive, this confusion must be addressed



(Wenig, 1989). This study will address the issues of technology and technology education at Badger High School.

Badger High School in Lake Geneva, Wisconsin is located in southeastern Wisconsin about 45 miles southwest of Milwaukee and 70 miles northwest of Chicago. The enrollment in 2002- 2003 is approximately 1250 students in grades 9-12 (Lake Geneva Schools, 2002). Lake Geneva is a tourist area that caters to residents of the Milwaukee and Chicago area. Lake Geneva has a mix of small business and some agriculture, which adds to the economic mix. The area has shown a steady population rise. The district serves the city of Lake Geneva, the village of Genoa City as well as several surrounding townships. The district residents approved and recently completed an 18 million-dollar addition to the high school and have shown solid support of the school. “Honoring the unique talents of all, We, the Lake Geneva Area Schools, Families, and community commit to providing for EVERY student an excellent education that ensures the development of responsible respectful citizens and inspires life long learning” is the schools mission (Lake Geneva Schools, 2002).

Badger High School offers a wide range of courses in traditional academic areas (math, science, english, and social studies) a large offering of the arts, foreign languages, family and consumer education as well as technology education. The technology education offerings are based in several different labs. The labs are drafting/Cisco, woods, electronics, metals, autos, power, modular and graphic productions. There are currently seven teachers who teach approximately 650 students per year in technology education. The Technology Education program at Badger is very strong having just won the International Technology Education Association’s International Program of Excellence award. This is one of approximately 30 awards given world wide to exemplary technology education programs.

The Technology Education program sees students from many different backgrounds. All Technology Education classes at Badger are elective, which makes it very important to understand why students are or are not enrolling in technology education classes. It is not uncommon to hear student in their senior year make comments like “Wow, you have programs like that down here, I wish someone would have told me about this class.”

The professional staff of a high school contributes to the perception of programs in the school (Daugherty, & Wicklein, 1993). It appears some teachers, guidance personnel and administration feel technology education is appropriate for only some students. Technology education in general has an image problem (Daugherty, & Wicklein, 1993). In fact, Technology Education is still often referred to as shop (Clark, 1989). Teachers, guidance personnel and administration at Badger must understand technology education so that an honest assessment of its merits can be achieved. Furthermore, the success of technology education depends on our interaction with other disciplines (Barnett, 1999). Technology education in general has an image problem (Daugherty, & Wicklein, 1993).

### Statement of the Problem

The problem to be addressed is what are the perceptions of technology and technology education by Badger teachers, administration and guidance personnel. Do they feel that technology is important to the students and the country in general? Are they interested in understanding technology and do they feel students need to learn about technology. What do they believe technology education is and how should it be taught? How much of an effect do the teachers, guidance personnel and administrators believe they have on student enrollment in courses?

## Research Questions

The questions are divided into five sections. The first section covers demographics. What subjects are taught, duties of the respondent, what is their main job requirement (guidance, teaching, administration etc.) as well as gender. The second section asked about the respondent's views of technology and its importance to the individual and country. Third they were asked to define the role of technology and what subjects it may be similar to. Next technology education is examined and those surveyed were asked to respond to questions about its content and delivery. The last question asked how much of an effect they believe they have on the courses the students enroll in.

## Methodology

All teachers, guidance personnel and administration at Badger High School were asked to participate in the survey between October 16<sup>th</sup> and October 23<sup>rd</sup>, 2002. The responses were analyzed to determine what the perceptions were by different demographics and were there substantial differences between the groups? These responses provided the information required to see what the perceptions of technology and technology education are at Badger.

## Significance of the Study

The study is significant to students and staff at Badger High School for the following reasons:

1. The Technology Education program can identify the perceptions of teachers, guidance personnel, and administration about technology and technology education. Changes to the program can be made or a clearer understanding of the program can be promoted if necessary.

2. The faculty of Badger will have a better understanding of their views as a whole about technology and technology education.
3. The administration will better understand the perceptions of technology and technology education.
4. All staff at Badger will understand the perceptions of technology and technology education and will be able to act on those perceptions accordingly.
5. Differences in perceptions by demographics can be explored and evaluated.
6. The effects on enrollments can be explored.
7. The delivery methods of technology education can be explored.

#### Limitations of the Study

The limitations of the study are as follows:

1. The study utilizes a survey instrument designed by the researcher.
2. The results of the study are limited to teachers, guidance personnel, and administration at Badger High School.
3. The financial resources are limited.
4. The timeframe of the study may not be convenient for all survey respondents.

#### Assumptions of the Study

1. The respondents will feel free to answer the questions honestly.
2. The responses will not be influenced by political or other influences.

## Definition of Terms

ITEA: International Technology Education Association (Lewis, 1993)

Technology: An expression of human imagination; it is not discovered it is created (Karnes, 1999)

Technology Education: The primary discipline for integrating curriculum toward the advancement of technological literacy (ITEA, 1990)

## Methodology

The researcher surveyed all teachers, guidance personnel, and administrators at Badger High School in Lake Geneva, Wisconsin to obtain their views on technology and technology education. In the next chapter the literature review is presented.

## CHAPTER 2

### Review of Literature

#### Introduction

In this chapter the perceptions of technology and technology education will be explored. The perceptions of technology will be addressed first followed by the perceptions of technology education.

#### Perceptions of technology

In order to get a feel for the perceptions of technology education it is necessary to also review the perception of technology in general. The desire for solid technological literacy will hinge on the public's perception of technology in general. Do they feel it is important to understand technology and therefore feel it is important for students?

A study was completed in the spring of 2002, which explores in depth the perceptions of technology, of the American people. The study was conducted by ITEA and Gallup and was titled "*What Americans think About Technology*" (ITEA, 2002). A quick review of the findings provides interesting insight into what the public perceives about technology and technology education.

In the survey the public is asked its perceptions of technology in general and whether they feel knowledgeable about technology. The public is nearly unanimous in its feelings that technological literacy is important to people at all ages and three-fourths of the population consider themselves at least somewhat technologically literate (ITEA, 2002). This would indicate that since most are technologically literate they feel they understand technology and understand the importance of this literacy for all.

Since they are technologically literate the survey then asks what subjects are technology related to. The public said it felt that engineering and technology and science and technology are somewhat related (ITEA, 2002).

### Technology Education

The ITEA survey deals directly with technology education and if or how it should be delivered. The public stated overwhelmingly (92%) if there is a need for qualified technologically literate people then the schools should work toward educating them to fill the need. Almost all (97%) believe that the study of technology should be included in the curriculum. There is some disagreement over how technology should be taught with two-thirds stating it should be integrated with other subjects. Others state it should be taught as a separate subject and over one-half believe it should be a required subject (ITEA, 2002).

The public has shown widespread support for technology education for students and the need for technological literacy. The next issue to be addressed is what exactly is technology education. There is confusion among teachers over what technology education is (Maley, 1989).

The idea of what exactly technology education is about is widely debated among technology educators. While most recent graduates of technology education programs would agree with a broad-based definition that does not stress vocational skills many veteran technology education teachers may have a view of technology education as a more vocational program. If the technology educators have not put forth a unified voice about what technology education really is, it is not unexpected that those outside of the profession may be confused about technology education.

The International Technology Education Association provides one of the definitions of technology education. The association states, “Technology Education is the primary discipline for integrating curriculum towards the advancement of technological literacy (ITEA, 1990).” In 1995 the association expanded on the definition by including among others the following statements (ITEA, 1995).

Technology Education:

- Is an essential learning experience for all students at all grade levels, abilities, and backgrounds so that they may confidently use, manage, assess, and understand technology.
- Provides the basic knowledge and technical skills needed to participate in society.
- Provides a wholesome change in learners by enhancing the understanding of how technology is changing the human-made world and the natural environment.
- Develops self-evaluation of attitudes toward constructive work and how this work can be used for health, recreation, or economic value.

These statements about what technology education should include can be very helpful in defining in the public's mind what technology education is. Using the above definitions and explanations of what technology education is about is very beneficial in determining if programs are delivering on the promises of technology education.

Whether the technology education programs are living up to these definitions is not known. The expectation would be that some programs are meeting the goals of technology education while others lag behind or maintain a more vocational emphasis.



Based on the fact that technology educators are somewhat divided about what technology is or should be, it is expected that those outside of the profession may not understand technology education's unique strengths. The research indicates it is important for a unified voice about the strengths of technology education be provided.

The impact teachers, guidance personnel, and administration have on enrollment is very important. The professional staff of a high school contributes to the perception of programs in the school (Daugherty, & Wicklein, 1993). The administration must have a clear understanding of what the strengths of technology education is in order for the program to be offered. Economics do not permit programs to continue if they do not substantially contribute to the education of the child. Hopefully most schools are child centered with their number one goal being the advancement and education of the child. This goal requires the money that is spent be used in a way that benefits the students the most. The administration must understand the benefits of the technology education program in order for it to be offered.

Guidance personnel are the traffic police of the school; they help direct students in different directions. Often the student does not know what classes to take or they defer the decision to the guidance personnel. Guidance personnel must be keenly aware of the strengths of the technology education program and what it offers every student. Administrators and guidance personnel have an effect on those who enroll in technology education classes (Hill, et al., 1996).

Technology teachers have a very strong influence on those who enroll in technology education. Technology educators must make sure their programs deliver what is promised from technology education. If technology educators don't deliver what

is expected and needed there is no reason for these classes to be offered or taken.

Teachers of other subjects also have an effect on enrollment in technology education classes. They direct their students into classes that they believe will benefit the students the most. Technology education must deliver the best value to the student and make sure that other teachers understand the strengths of the program. It is not clear if education decision-makers understand the curriculum and programs in technology education (Hill, et al., 1996).

In the current atmosphere of standardized testing and increased emphasis on the traditional core classes (math, science, english, and social studies) technology education must state its case for helping to improve performance in these areas as well. It is also important to distinguish between technology education programs and the use of technology (computers). In a real sense technology education competes with other subjects for class time (Stern, 1999).

The post secondary institutions are also increasing their requirements for admission and they rarely require technology education classes for admission. Each time a new class is required or highly recommended it limits what classes high school students feel they can take. Many high school students put a large emphasis on college recommendations when it comes to class selection. Perhaps technology education should educate colleges about what they are teaching and how it would benefit their students who will soon enroll in their institutions. The post-secondary requirements limit the time available for elective classes (Hill, et al., 1996).

It is clear that teachers, guidance personnel and administration do have an effect on those who take technology education classes. The success of technology education

depends on our interaction with other disciplines (Barnett, 1999). What is not clear however is if these professionals understand what technology education is. According to Betts, Yuill, and Bray (1989) “The problem appears to be that those who make decisions affecting our programs do not have a positive image of our program” (pg. 27).

The fact that teachers, guidance personnel and administration don't always have a positive image about technology education should not come as a surprise. There is very little standardization about what is taught. Very few schools in Wisconsin have names or programs that could be interchanged. The idea of each district adapting to its own needs is fine but there should be standards that each program is expected to meet. In order for Technology Education to survive, the public does expect a certain level of performance out of the students. A certain level of proficiency should be maintained across the state. A very high level of education may be being provided in one district while another district is struggling to provide a quality Technology Education program. Technology education in general has an image problem (Daugherty, & Wicklein, 1993). Without some form of standardization it is not possible for other professionals to feel confident about technology education as a whole. If technology education seeks universal acceptance from other professionals some standards must be adhered to across the state and nation. There is confusion about what technology education is. In order for technology education to survive the confusion must be addressed (Wenig, 1989).

It is apparent that the perceptions of teachers, guidance personnel, and administration do have an impact on enrollments of technology education. What became apparent in the research however is a mixed and sometimes unfavorable perception of technology education by these teachers, guidance personnel and administration. The

main reason for these perceptions appears to be a lack of understanding of what technology education is. The misunderstanding of what technology education is appears to come from technology educators themselves who are offering hundreds of different programs to their students. There is no standardization of classes or goals so the teachers, guidance personnel and administration don't know what to expect from technology education. Technology education will only benefit from the perceptions of teachers, guidance personnel and administration when it defines clearly what it is, delivers on those definitions and shows what it has to offer students. Teachers, guidance personnel and administration want what is best for the students and when technology education delivers on its promises of technological literacy everyone will benefit.

The literature provides an interesting backdrop to the study. We can see from the literature that technological literacy is a valued attribute of the American population. People feel it is important to know how to use and understand technology and that it has a profound impact on the success of a nation. How that education is delivered is not as clearly agreed upon and there are different opinions on how it should be delivered. In the next chapter the methodology of the study is documented.

## Chapter 3

### Methodology

#### Introduction

The purpose of the research is to determine the perceptions of teachers, guidance personnel, and administrators at Badger High School of technology and technology education. A descriptive survey was used to determine these perceptions.

#### Subjects

All teachers, administrators, and guidance personnel working at Badger High School in Lake Geneva, Wisconsin on October 16, 2002 were given a self-report descriptive survey. There were 100 surveys distributed. The entire population for the study was delivered a survey.

#### Instruments

The survey was based on a survey done by ITEA/Gallup in 2002. The survey name was "*What Americans Think about Technology*"(ITEA, 2002). Questions from the survey that were relevant to this study were used. The demographic questions were designed to determine similarities or differences between subject areas as well as gender. A question was also added to determine if the participants felt they had an effect on future student enrollment in classes.

All questions except the demographics were answered on a scale ranging from strongly agree (1), mostly agree (2), mostly disagree (3) to strongly disagree (4). The lower the mean score the more strongly the statement was agreed with. The higher the score the more the statement was disagreed with. A score of 2.5 indicated a neutral response.

Reliability was not calculated since only one survey was administered. The validity should be high since the questions are based on previous research conducted by the ITEA.

### Procedures

The survey was distributed to the participants by placing them in their mailboxes at Badger High School on October 16<sup>th</sup> 2002. A cover letter accompanied the survey asking for their participation and stressing the value the survey will have for Badger students. An envelope was attached to the survey along with instructions to place the completed survey in the envelope, seal it and place in Glen York's mailbox at school. The fact that the survey was voluntary and confidential was stressed in the cover letter and a plea for honest participation was included in the letter. On Monday October 21, 2002 an oral announcement was read at school reminding participants that the survey needed to be turned in by 3 P.M. October 23, 2002 to be included in the research. On October 22<sup>nd</sup> and 23<sup>rd</sup> a written announcement was included in the school faculty announcements. An e-mail was also sent to all participants reminding them of the due date.

### Unknowns

Every attempt was made to reduce the number of unknowns but some factors remained that could effect the results. The timing of the research was after homecoming and before the end of the quarter to help with the time crunch for the participants. Some people probably found the timing poor for them however as so much takes place at school. Dr. Mark Pienkos (school principal) and staff were very helpful in getting the message out about the importance of the study and provided assistance.

## Limitations

The limitations of the study were money, honest responses of the participants, response rate and the survey instrument. Money limits how extensively the survey instrument was studied as well as limiting printing, distributing and analyzing the results. A major limitation was the degree to which the participants felt comfortable in expressing their true feelings. Since the study was limited to Badger some respondents may have felt concerned with the effects of the study. They may have been uneasy about how their responses would make their department or Badger as a whole look. Response rate was also a limiting factor but with a response rate of 51% the survey should be valid. The final limiting factor is the survey instrument. Since the majority of the survey was taken from a previous instrument this limitation was minimized.

The results of the research apply directly to Badger High School but the results could prove externally valid to other like institutions.

## CHAPTER 4

### Data analysis

#### Introduction

The purpose of the study was to determine the perceptions of teachers, guidance personnel and administrators of technology and technology education. The results of the descriptive survey are presented below with a brief explanation of how the items were rated. The response rate was 51%.

#### Results

##### 1. My primary responsibility is

	Count	Count Percentage	Respondent Percentage
A. English, Foreign Lang. or Social Studies	14	29%	29%
B. Math ,Science or Agriculture teacher	15	31%	31%
C. Art, Theatre or Music teacher	2	4%	4%
D. Face, Business, Phys. Ed., Health teacher	6	12%	12%
E. Technology Education teacher	6	12%	12%
F. Administration or Guidance personnel	6	12%	12%

##### 2. I am

	Count	Count Percentage	Respondent Percentage
A. Female	22	44%	44%
B. Male	28	56%	56%

##### 3. It is important for people at all levels to develop some ability to understand and use technology.

	Count	Percentage
A. Strongly Agree	41	80%
B. Mostly Agree	10	20%
C. Mostly Disagree	0	0%
D. Strongly Disagree	0	0%



4. I don't care how technology works as long as it works.

	Count	Percentage
A. Strongly Agree	4	8%
B. Mostly Agree	21	41%
C. Mostly Disagree	19	37%
D. Strongly Disagree	7	14%

5. I would like to know something about how technology works.

	Count	Percentage
A. Strongly Agree	13	25%
B. Mostly Agree	29	57%
C. Mostly Disagree	7	14%
D. Strongly Disagree	2	4%

6. Technology is a small factor in my life.

	Count	Percentage
A. Strongly Agree	0	0%
B. Mostly Agree	7	14%
C. Mostly Disagree	14	27%
D. Strongly Disagree	30	59%

7. Engineering and technology are basically one and the same thing.

	Count	Percentage
A. Strongly Agree	1	2%
B. Mostly Agree	11	22%
C. Mostly Disagree	20	39%
D. Strongly Disagree	19	37%

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

	Count	Percentage
A. Strongly Agree	29	57%
B. Mostly Agree	20	39%
C. Mostly Disagree	1	2%
D. Strongly Disagree	1	2%

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

	Count	Percentage
A. Strongly Agree	32	63%
B. Mostly Agree	19	37%
C. Mostly Disagree	0	0%
D. Strongly Disagree	0	0

10. Science and technology are basically one and the same thing.

	Count	Percentage
A. Strongly Agree	1	2%
B. Mostly Agree	14	27%
C. Mostly Disagree	24	47%
D. Strongly Disagree	12	24%

11. When a national shortage of qualified people occurs in a particular area of technology, bringing in technologically literate people from other countries is an appropriate action for the United States to take.

	Count	Percentage
A. Strongly Agree	5	10%
B. Mostly Agree	24	47%
C. Mostly Disagree	17	33%
D. Strongly Disagree	5	10%

12. When a national shortage of qualified people occurs in a particular area of technology, the United States should take steps through its schools to increase the number of technologically literate people in this country.

	Count	Percentage
A. Strongly Agree	35	69%
B. Mostly Agree	16	31%
C. Mostly Disagree	0	0%
D. Strongly Disagree	0	0%

13. Using the broad definition of technology as "modifying our natural world to meet human needs" the study of technology should be included in the school curriculum.

	Count	Percentage
A. Strongly Agree	26	51%
B. Mostly Agree	23	45%
C. Mostly Disagree	1	2%
D. Strongly Disagree	1	2%

14. The study of technology should be made a part of other subjects like science, math, and social studies.

	Count	Percentage
A. Strongly Agree	32	63%
B. Mostly Agree	16	31%
C. Mostly Disagree	3	6%
D. Strongly Disagree	0	0%

15. The study of technology should be taught as a separate subject.

	Count	Percentage
A. Strongly Agree	4	8%
B. Mostly Agree	18	36%
C. Mostly Disagree	25	50%
D. Strongly Disagree	3	6%

16. If technology is taught as a separate subject it should be a required class.

	Count	Percentage
A. Strongly Agree	8	16%
B. Mostly Agree	25	51%
C. Mostly Disagree	11	22%
D. Strongly Disagree	5	10%

17. It is important for schools to teach the relationship between technology, mathematics and science.

	Count	Percentage
A. Strongly Agree	24	47%
B. Mostly Agree	24	47%
C. Mostly Disagree	3	6%
D. Strongly Disagree	0	0%

18. It is important for schools to teach the role of people in the development and the use of technology.

	Count	Percentage
A. Strongly Agree	17	33%
B. Mostly Agree	32	63%
C. Mostly Disagree	2	4%
D. Strongly Disagree	0	0%

19. It is important for schools to teach something about how products are designed.

	Count	Percentage
A. Strongly Agree	11	22%
B. Mostly Agree	29	57%
C. Mostly Disagree	11	22%
D. Strongly Disagree	0	0%

20. It is important for schools to teach the ability to select and use products.

	Count	Percentage
A. Strongly Agree	17	33%
B. Mostly Agree	28	55%
C. Mostly Disagree	6	12%
D. Strongly Disagree	0	0%

21. It is important for the schools to teach an understanding of the advances and innovations in technology.

	Count	Percentage
A. Strongly Agree	18	35%
B. Mostly Agree	30	59%
C. Mostly Disagree	3	6%
D. Strongly Disagree	0	0%

22. Students should be evaluated for technological literacy as part of the high school graduation requirements.

	Count	Percentage
A. Strongly Agree	10	20%
B. Mostly Agree	26	52%
C. Mostly Disagree	10	20%
D. Strongly Disagree	4	8%

23. I personally have an influence over which classes students enroll in.

	Count	Percentage
A. Strongly Agree	10	20%
B. Mostly Agree	24	47%
C. Mostly Disagree	11	22%
D. Strongly Disagree	6	12%

The survey was set up with a ranking of 1 to 4. The four choices were.

Strongly Agree - 1

Mostly Agree - 2

Mostly Disagree - 3

Strongly Disagree - 4

A score of 2.5 would indicate a neutral response. The lower the score the more agreement with the statement and the higher the score the less agreement with the statement. The following statements were rated with low scores and indicate there was widespread agreement with them:

- Question 3. It is important for people at all levels to develop some ability to understand and use technology.

Mean score - 1.2, maximum - 2, minimum -1.

- Question 12. When a national shortage of qualified people occurs in a particular area of technology, the United States should take steps through its schools to increase the number of technologically literate people in this country.

Mean score - 1.31, maximum - 2, minimum -1.

- Question 9. Technology is a major factor in the innovations developed within a country.

Mean score - 1.37, maximum - 2, minimum - 1.

- Question 14. The study of technology should be made a part of other subjects like science, math, and social studies.

Mean score - 1.43, maximum - 3, minimum - 1.

- Question 8. The results of the use of technology can be good or bad.

Mean score - 1.49, maximum - 4, minimum - 1.

- Question 13. Using the broad definition of technology as "modifying our natural world to meet human needs" the study of technology should be included in the school curriculum.

Mean score - 1.55, maximum - 4, minimum - 1.

- Question 17. It is important for schools to teach the relationship between technology, mathematics and science.

Mean score - 1.59, maximum - 3, minimum - 1.

- Question 18. It is important for schools to teach the role of people in the development and the use of technology.

Mean score - 1.71, maximum - 3, minimum - 1.

- Question 21. It is important for the schools to teach an understanding of the advances and innovations in technology.

Mean score - 1.71, maximum - 3, minimum - 1.

- Question 20. It is important for schools to teach the ability to select and use products.

Mean score - 1.78, maximum - 3, minimum - 1.

- Question 5. I would like to know something about how technology works.

Mean score - 1.96, maximum - 4, minimum - 1.

- Question 19. It is important for the schools to teach something about how products are designed.

Mean score - 2.00, maximum - 3, minimum - 1.

The following statements received the highest scores indicating general disagreement with them.

- Question 6. Technology is a small factor in my life.

Mean score - 3.45, maximum - 4, minimum - 2.

- Question 7. Engineering and technology are basically one and the same thing.

Mean score - 3.12, maximum - 4, minimum - 1.

- Question 10. Science and technology are basically one and the same thing.

Mean score - 2.92, maximum - 4, minimum - 1.

There was slight agreement with the following statements:

- Question 22. Student should be evaluated for technological literacy as part of the high school graduation requirements.

Mean score - 2.16, maximum - 4, minimum - 1.

- Question 23. I personally have an influence over which classes students enroll in.

Mean score - 2.25, maximum - 4, minimum - 1.

- Question 16. If technology is taught as a separate subject it should be required.

Mean score - 2.27, maximum - 4, minimum - 1.

- Question 11. When a national shortage of qualified people occurs in a particular area of technology, bringing in technologically literate people from other countries is an appropriate action for the United States to take.

Mean score - 2.43, maximum - 4, minimum - 1.

There was slight disagreement with the following two statements.

- Question 4. I don't care how technology works as long as it works.

Mean score - 2.57, maximum - 4, minimum - 1.

- Question 15. The study of technology should be taught as a separate subject.

Mean score - 2.54, maximum - 4, minimum - 1.

The following problem statements were answered by this survey.

1. Do Badger teachers, administration and guidance personnel feel technology is important to the students and the country in general?

Questions 3,9,12 and 13 address this question and all are answered almost unanimously positive. Yes, technology is important to students and the country in general.

2. Are the respondents interested in technology and is it necessary for students to learn about it?

Questions 4,5,6,8,11,17,18,19,20,21 address this and the response is yes they are interested in technology and it is important for the student to learn.

3. What is technology and how should it be taught?

Question 7 shows an opinion that technology is not the same as Engineering.

Question 10 shows that the respondents do not believe it is the same as Science.

Question 14 shows an overwhelming support for technology being integrated with other subjects.

Question 15 shows slight disagreement with technology being taught as a separate subject. However, question 16 recommends that technology is a required subject and question 22 recommends that technological literacy be a part of the high school



graduation requirements.

4. Does the staff have an effect on student class enrollment?

Question 23 shows that 67% believe they do have an effect on student class enrollment.

The responses were very uniform between the different demographics there were however some differences that are noted below.

1. The English, Foreign Language, and Social Studies teachers agreed with the statement "I don't care how technology works as long as it works" with an agree or strongly agree rate of 85%. The whole population of the survey had a score of 49%.

The Face, Business, Phys. Ed, Health teachers response to this question was 100% disagree or strongly disagree while the Technology education teachers response was 83% disagree or strongly disagree.

2. Both the Administration or Guidance and the Face, Business, Phys. Ed. Health teachers had a score of 83% agree or strongly agree with the statement "technology should be taught as a separate subject" while the total population showed a 44% agree or strongly agree.

3. Art, theatre and music teachers had a score of 100% disagree or strongly disagree with the statement "Students should be evaluated for technological literacy as part of the high school graduation requirement". The entire population score was 28% disagree or strongly disagree.

4. The Technology education teachers had a score of 100% agree or strongly agree with the statement "I personally have an influence over which classes students enroll in" while the general population had a score of 67% agree or strongly agree.

In the last chapter summary, conclusions and the recommendations are presented.

## CHAPTER 5

### Summary

#### Introduction

The summary section will be divided into four sections. Restatement of the problem, major finding, conclusions, and recommendations will be presented.

#### Restatement of the problem

The problem addressed by the research was what are the perceptions of technology and technology education by Badger teachers, administrators, and guidance personnel. Do they feel that technology is important to the students and the country as a whole? Are they interested in understanding technology? Do they feel students need to learn about technology? What do they believe technology is and how should it be taught? Do they feel they have an effect on student enrollment in classes?

#### Methods and procedures

All teachers, administrators and guidance personnel at Badger High School were given a descriptive survey and asked to respond to 23 questions. The entire population of the study received a survey. The surveys were distributed to the staff in their mailboxes. After four days several different announcements were made reminding them the surveys needed to be returned by October 23<sup>rd</sup>. The surveys were returned in sealed envelopes to Glen York's mailbox and all the data was recorded using a statistical software program. The results were analyzed to determine if there were major statistical differences between the demographic groups. Only a few differences were identified and they are recorded in chapter four.

## Major Findings

One of the major results of the survey was the fact that there were so few differences between the demographic groups. The responses in most instances were very consistent between different demographic groups whether it was gender or area of responsibility. The instances of variance are documented in chapter four.

The response to the question of the importance of technology for students and the country was overwhelmingly positive. All of the responses dealing with this showed the population believes technology is extremely important to students and to the country.

The second problem to be determined was, does this population show an understanding of technology and do they feel students need to learn about technology. A large percentage of the questions were used to gauge this important aspect of the study. Again we see very strong support demonstrated for the need for technological literacy. Since the population believes it is technologically literate they also demonstrated the importance for students to become literate.

The next area of study produced some interesting results. The questions addressed the area of technology education. What is it and how should it be taught. As the literature review showed this was an area where there is some confusion. Most respondents stated that technology is not engineering or science. When asked if technology defined as "modifying our natural world to meet human needs" should be included in the school curriculum ninety six percent agreed or strongly agreed. Ninety four percent agreed or strongly agreed that technology should be integrated with Science, Math and Social Studies. Seventy two percent also agreed or strongly agreed that technological literacy should be evaluated as part of the high school graduation

requirement.

What are a little hard to understand are the following responses but perhaps it can be explained. When asked should technology be taught as a separate subject fifty six percent disagreed or strongly disagreed. That seems straightforward enough but the next question asked, "if technology is taught as a separate subject should it be required." The response to this question was sixty seven percent agreed or strongly agreed. This seems contradictory. The researcher believes that the placement of the questions may have had an effect on the responses. The order of the questions were. 14. The study of technology should be made a part of other subjects like science, math, and social studies. Question 15. The study of technology should be taught as a separate subject. Question 16. If technology is taught as a separate subject it should be a required class. There may have been the assumption that question 14 and 15 were an either or question. If the response was yes, I believe the study of technology should be a part of other subjects then I can't also agree it should be a separate subject. The respondents could have agreed with both questions but maybe the location of the questions should have been different. In any case the responses show a very strong desire for technology education and a belief that it should be integrated with other subjects. Many people would argue that you must integrate with other subjects in order to teach technology since you need a content area to demonstrate technology. This area would be a great area for expanded study. Should technology education be a separate subject or is it better taught as part of a specific content area and how can technology education be better integrated into other subject areas.

The last question was how much of an effect do the respondents have on student class

enrollment. Sixty seven percent stated they agree or strongly agree that they have an influence over student course enrollment.

### Conclusions

The conclusions of the study are:

1. This group of respondents showed a very homogeneous response
2. The population surveyed believes technology is important to students and the nation
3. They feel comfortable with technology and believe it is important for student to also
4. Technology education is very important and should be integrated with other subjects
5. They have an influence over students class choices

### Recommendations

Two types of recommendations will be presented. The first is recommendations related to the study and the second is recommendations for further study.

#### Recommendations Related to This Study:

1. It is noteworthy how similar members of different departments view the education of students. It is important that the staff recognize they have very similar goals for the students and work together to help achieve those goals.
2. The respondents demonstrated a very strong belief in the need to remain technologically literate both for themselves and the students. Opportunities to remain technologically literate should be provided.
3. Technology education is very important and the staff believes it should be integrated with other subjects. The possibilities of integrating technology education with other subjects should be explored.
4. The staff needs to be cognizant of the effect they have on student class enrollment and

make sure they are using this influence for the benefit of the students.

Recommendations for Further Study:

The integration of technology education with other subjects merits further study. This study identified a possible conflict between technology education and other areas of study. Is it best to provide technology education in the context of another area? Should other areas of study be presented more in depth in a technology education class?

## REFERENCES

- Barnett, Elazer J. (1999) Critical Changes in Technology Education. In Karnes M. Ray  
Technology Education in Prospect: Perceptions, Change, and the Survival of the  
Profession. *Journal of Technology Studies*. V25n1 11-35
- Betts, R.M., Yuill, R.D. & Bray, R.P. (1989). Building a positive image. The  
*Technology Teacher*, 48(4), 27-30.
- Daugherty, M., & Wicklein, R. (1993). Mathematics, Science, and technology teachers'  
Perceptions of technology education. *Journal of Technology Education*, 4(2), 31-46.
- Clark, S. (1989). The industrial arts paradigm: Adjustment, replacement or extinction?  
*Journal of Technology Education*, 1(1), 7-21.
- Hill, Roger B., Wicklein Robert C., & Daugherty, Michael K. (1996). Technology  
Education in Transition: Perceptions of Technology Education Teachers,  
Administrators and Guidance Counselors. *Journal of Industrial Teacher Education*,  
V33n3, 6-22.
- International Technology Education Association. (1990). *The ITEA strategic plan*.  
Reston, VA.
- International Technology Education Association (1995). This we believe. [On-line].  
Available: <http://www.iteawww.org/A5.html>
- International Technology Education Association (2002). ITEA/Gallup Poll. [On-line].  
Available: <http://www.iteawww.org/A5.html>
- Karnes, M. Ray (1999) Technology Education in Prospect: Perceptions, Change, and the  
Survival of the Profession. *Journal of Technology Studies*. V25n1 11-35.
- Lake Geneva Schools (2002). [On-Line]. Available: <http://lakegenevaschool.com>

- Lewis, Theodore (1993). Reform of Technology Teacher Education-A study of the Perceptions of the Industrial Teacher Educators. *Journal of Industrial Teacher Educators*. V30n2 6-29.
- Maley, D. (1989). Teacher Recruitment. Wondering can be dangerous. *Industrial Education*, 78(8), 18-20.
- Stern, Sam (1999) In Technology Education in Prospect: Perceptions, Change and the Survival of the Profession. *Journal of Technology Studies*. V25n1 11-35.
- Wenig, R. (1989). Focus: A key ingredient for change. *The Technology Teacher*, 48(7), 3-4.



## Appendix A

Dear Badger Staff,

I am asking for your help with the following research survey. I'm hoping to determine your perceptions of technology and technology education. I've identified parts of a survey produced by the International Technology Education Association which will help me identify your thoughts on technology and technology education.

You can be assured that your responses are anonymous and confidential. No attempt will be made to identify any respondents. The survey should take about ten minutes. Thanks so much for helping me with this research.

By filling out this survey, you are giving your consent to participate in this research. Your decision to participate in this survey is completely voluntary. You are not required to participate, and your decision to not participate will not provide any negative consequences. All of your responses will be anonymous, and confidential. To ensure your anonymity, you should not write your name or any identifying information on the questionnaire. When all surveys have been collected, averages and correlations will be computed. All results will be presented in a way that no individual can be identified.

Any research may involve unforeseeable risks to participants, although I do not foresee any significant risks to you. If completing the survey makes you uncomfortable, you can withdraw from the study without any negative consequences. You may contact the primary investigator listed below if you experience any negative reactions as a result of taking this survey, and a professional will assist you with your concerns, if you desire.

If you have any questions about your participation in this research, please ask before completing the survey. By completing the questionnaire, you will have given your informed consent to participate in this research. This means that you understand the nature of the research, have had an opportunity to ask and obtain satisfactory answers to your questions, and have voluntarily agreed to participate in this research.

The University of Wisconsin-Stout Institutional Review Board for the Protection of Human Subjects has approved this survey. If you have any questions or concerns about the nature of this study, contact me at 262-348-2000-2350. Dr. John Burningham my research advisor is also available at (715)-232-5610. If you have questions regarding your treatment as a participant in this study contact Sue Foxwell, Human Protections Administrator, 11 HH, UW-Stout, Menomonie, WI 54751, (715)-232-1126.

Thanks so much for your contribution to this research.

Glen York

## Appendix B

### What Badger teachers, guidance personnel, and administration feel about technology and technology education.

Please answer the following questions about yourself; please provide only one answer to each question.

1. My primary responsibility is

- English, Foreign Language or Social Studies teacher
- Math, Science or Agriculture teacher
- Art, Theatre or Music teacher
- Face, Business, Physical Education, or Health teacher
- Technology Education teacher
- Administration or Guidance personnel

2. I am

- Female
- Male

In the following section you will be asked to rate your feelings on several items related to technology and education. Please give your opinion using the scale of strongly agree, mostly agree, mostly disagree and strongly disagree. Only mark one rating per item.

3. It is important for people at all levels to develop some ability to understand and use technology.

- Strongly Agree
- Mostly Agree
- Mostly Disagree
- Strongly Disagree

4. I don't care how technology works as long as it works.

- Strongly Agree
- Mostly Agree
- Mostly Disagree
- Strongly Disagree

5. I would like to know something about how technology works.

- Strongly Agree
- Mostly Agree
- Mostly Disagree
- Strongly Disagree

6. Technology is a small factor in my life.

- Strongly Agree
- Mostly Agree
- Mostly Disagree
- Strongly Disagree

7. Engineering and technology are basically one and the same thing.

- Strongly Agree
- Mostly Agree
- Mostly Disagree
- Strongly Disagree

8. The results of the use of technology can be good or bad.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
9. Technology is a major factor in the innovations developed within a country.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
10. Science and technology are basically one and the same thing.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
11. When a national shortage of qualified people occurs in a particular area of technology, bringing in technologically literate people from other countries is an appropriate action for the United States to take.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
12. When a national shortage of qualified people occurs in a particular area of technology, the United States should take steps through its schools to increase the number of technologically literate people in this country.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
13. Using the broad definition of technology as "modifying our natural world to meet human needs" the study of technology should be included in the school curriculum.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
14. The study of technology should be made a part of other subjects like science, math, and social studies.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
15. The study of technology should be taught as a separate subject.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree
16. If technology is taught as a separate subject it should be a required class.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

17. It is important for schools to teach the relationship between technology, mathematics and science.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

18. It is important for schools to teach the role of people in the development and the use of technology.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

19. It is important for schools to teach something about how products are designed.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

20. It is important for schools to teach the ability to select and use products.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

21. It is important for the schools to teach an understanding of the advances and innovations in technology.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

22. Student should be evaluated for technological literacy as part of the high school graduation requirements.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

23. I personally have an influence over which classes students enroll in.  Strongly Agree  
 Mostly Agree  
 Mostly Disagree  
 Strongly Disagree

You have now completed the survey. Please put the survey in the envelope provided and place in Glen York's mailbox. Thanks so much for your opinions.