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A study to determine that if by establishing an equity awareness baseline that programs and activities can be identified to reduce levels of gender bias at the Westampton Township Middle School

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A STUDY TO DETERMINE THAT IF BY ESTABLISHING AN EQUITY AWARENESS BASELINE THAT PROGRAMS AND ACTIVITIES CAN BE INDENTIFIED TO REDUCE LEVELS OF GENDER BIAS AT THE WESTAMPTON TOWNSHIP MIDDLE SCHOOL

By
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Approved by_____
Professor

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Abstract

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Establishing an Equity Awareness Baseline
2000
Dr. Gini Doolittle
Educational Leadership (Administration)

The purpose of this study was to develop a gender, bias-free environment for students at the Westampton Township Middle School utilizing an action research survey model in order to establish a staff and student equity awareness baseline. Using this baseline, resources will be identified and committed to programs and activities to address and reduce levels of identified gender bias.

To establish the baseline, surveys were developed. One survey was developed for staff and another for students. Thirty-nine of forty-two teachers participated in the staff survey. Three hundred out of three hundred and six 6^{th}, 7^{th} and 8^{th} grade students participated in the student survey. Additionally, selected teachers and students were also interviewed.

An analysis of teacher and student responses was done by using a Paired t Test to determine if there was any correlation between the responses. Further analysis revealed that a substantial number of both teachers and students perceived that gender bias does occur. The percentage of students for this perception was significantly higher then the perception of teachers. The baseline information gathered was utilized to report recommendations to commit potential resources and programs to foster gender bias awareness.

Mini-Abstract

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The focus of this study was to develop a gender, bias-free environment at the Westampton Middle School utilizing an action research survey model to establish an equity awareness baseline. It was determined that resources should be identified and committed to programs and activities to address and reduce gender bias.

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Introduction

The public education in Westampton Township, New Jersey is provided through a kindergarten through eighth grade elementary school structure. The district consists of two schools. One of these schools is the Holly Hills School, which serves students in grade kindergarten through three. The other school in the district is the middle school, which serves students in grades four through eight. The district's students who are in high school attend Rancocas Valley Regional High School. The focus of this study will be on the Westampton Township Middle School, in particular on staff and student equity awareness.

A staff and student equity awareness baseline will be established to determine to the extent possible, staff and student attitudes toward gender equity awareness. The purpose of this baseline will be to assist in determining as to whether support programs are needed to create and maintain a bias-free learning and work environment. Further, the information will be utilized to develop programs that remove any identified inequities that may be primarily based on gender. The literature will be examined to assist in the review of support programs and will be used to determine if the baseline established for students and staff fits the norm. Additionally, the research will be utilized to assist the effect and awareness of gender factors that may have an impact on student learning and self-esteem. Finally, the research will be reviewed to see if staff awareness of these factors can be utilized to reduce or eliminate any gender inequities that may exist as described above.

The Board of Education, administration and teaching staff of the Westampton Township Public Schools are committed to a bias-free learning and work environment. It

is hypothesized however, that the staff and student awareness of equity and compliance is limited to a superficial knowledge. It is further hypothesized that by knowing current student and staff beliefs, relative to equity and compliance, that professional development and student awareness programs can be initiated to create and maintain a bias-free work and learning environment.

If it is determined that staff development is needed to increase staff knowledge and awareness and to ensure a gender bias-free learning and work environment, staff development programs will be reviewed and recommended for consideration to be implemented in the district. This study will build staff interest that has been generated by the district's equity and compliance committee and will serve as a catalyst to promote staff interest and involvement. Further, because the Board of Education and administration is committed to this initiative it is believed that a team effort will result in assuring a gender bias-free learning and work environment.

The research design will involve the development of staff and student surveys that will be administered to all of the Westampton Township Middle School teachers. The sample will contain approximately forty-two teachers. The middle school consists of students in grades four through eight, however the survey sample will be limited to students in grades six, seven, and eight. The sample will consist of approximately three hundred respondents. The outcome of the project will be to develop staff and student programs designed to eliminate gender bias and to provide a gender bias-free work and learning environment.

A survey instrument will be developed by the intern to determine real and perceived attitudes of staff and students for gender equity. The survey will be based on

information obtained through the review of related literature and of similar studies, based on an analysis of the staff and student surveys. Intervention programs will be reviewed and recommended for implementation.

Focus of the Study

A baseline will be established to determine the type of staff development and awareness programs that maybe needed to create a gender bias-free work and learning environment. Since a vast amount of the literature is focused on the impact of gender bias and learning, as well as learning opportunities for female students, the study will be concentrated primarily on the elimination of gender bias, specifically in the classroom.

The purpose of this study is to primarily determine the level of gender bias in the Westampton Middle School using a survey of staff and students to assist in the development of a series of programs. At this stage in the research, bias will generally be defined as gender beliefs that are formed without factual basis.

After establishing an equity awareness baseline for staff and students, the district's human and fiscal resources will be reviewed for possible programs and activities to reduce any levels of gender bias that is identified.

Definitions

Although the school district and community will be defined in greater detail in the section on demographics there are a number of relevant student and staff factors that must be included in the operational definitions that have been developed for this study. Key terminology such as bias, equity, and gender are defined specifically for use in this study and population. A review of the related research also influenced the definitions as well as their actual use in the study. Definitions are as follows:

Students – Westampton Township Middle School students who participated in this study attended grades six, seven, and eight during the 1999-2000 school year. These students ranged in age from eleven through fourteen, approximately fifty-one percent were females and forty-nine percent were male.

Teaching Staff – Forty-two teaching staff members participated in this study, thirty-seven were females and five were males. Less than ten members of the staff were under thirty years of age. The average age of the staff was approximately forty-two years of age.

Blue Collar – Parents or community members whose employment is manufacturing jobs or jobs requiring less than a baccalaureate degree.

White Collar – Parents or community members whose employment is in an office setting or one in which a baccalaureate degree or higher is required.

Bias – Gender beliefs that are formed without factual basis.

Equity – Equal opportunity to work or learn in an environment free of inequities that are related to gender.

Gender – Designates males or females.

Equity Benchmarks – Are used to survey staff and student beliefs for gender bias.

Sexual Harassment – Unwanted or unsolicited sexual advancements towards a member of the opposite gender.

Limitations of the Study

This survey will be limited to the sixth, seventh, and eighth grade students who attend the Westampton Township Middle School and to the teaching staff members of the

school. Although the sample will include all of the teaching staff, it will not include the fourth and fifth grade students.

Further, the study will not include the Holly Hills School, which serves students in grade kindergarten through third. This study's application therefore will be delimited to upper grade levels in the Westampton Township Middle School. Additionally, due to the fact that similar populations will not be compared, the application of the study's results will be confined to this middle school.

Staff development and equity awareness programs will be identified and implemented. Although they may be transferable, it will be totally focused only on the Westampton Township community and demographics. Additionally, the survey results will be confined to the Westampton Township Middle School for sixth, seventh, and eighth grade levels. Finally, because the survey was confined to adolescent and teaching staff awareness of attitudes toward gender equity, its' application is therefore confined to this population. Although this is a delimitating factor, research sources should prove to be valuable in regard permanent resources and should assist in establishing gender equity benchmarks for identifying programs to remove equity bias.

Setting of the Study

Westampton Township is located in the central eastern part of Burlington County, New Jersey. It is approximately thirty-five miles, northeast of Philadelphia. The township consists of an access of seven thousand residents whom are largely middle class, with a mix of blue and white collar workers.

From an historical perspective, the township was created from the township of Northampton by an act of the New Jersey General Assembly in 1850. Since the township

made up the western portion of Northampton, it was renamed Westampton Township. In 1854, a portion of Pemberton Township, known as Rancocas Village, was added and makes up the current day Westampton Township.

Today Westampton Township consists of twelve square miles. The southern boarder is the Rancocas Creek, the western boarder is Willingboro, the north side is Burlington Township, and on the east side is Eastampton Township and Mount Holly. Westampton has a slightly rolling surface with soil that is good and in some places brick clay is noted. In the 1700's, several brick yards existed for the purpose of producing bricks and drainage tiles.

The first inhabitants of Westampton Township were the Lenni-Lenape Delaware Indians. The first Quaker settlers arrived approximately in 1677, with some settling on the meadow bank of the Rancocas Creek. The Rancocas Village is a State and National Historic District and was developed around the Rancocas Friends Meeting House, which was originally erected in 1772. Until 1956, the village was divided between Westampton and Willingboro. Additionally, Tinbuctoo, the village that was founded on the Rancocas Creek by non-slaves and freed blacks in 1825, is alleged to have been a stop on the underground railroad. Some current residents still living in the area are believed to be descendants of the original settlers. Another small settlement called Tinkertown existed where the current route 541 bus terminal is now located.

The township also contains a pre-Revolutionary War historical site entitled, Peachfield Plantation. It is located on Burrs Road which was originally built in 1725 and claimed to be the ancestral home of the Burr family. In fact John Woolman , a grandson of Henry Burr, was a noted educator and abolitionist from the area.

The first noted area private school, Rancocas Friends School, was founded in 1807. Additionally, two other schools, the Bunker Hill School and the Union School were built during the Civil War. The Bunker Hill School is now part of the Municipal Building complex on Rancocas Road and is adjacent to the current Westampton Township Middle School. Union School, which was located on Burrs Road, is now a Charlie Brown restaurant site. These schools were closed in the early 1900's and Westampton Township students were then sent to the Mount Holly Schools until the current Westampton Township School was established in 1955.

The current Westampton Township includes considerable prime commercial acreage, numerous residential communities, a state park, a Rankokus Indian Reservation, a Nature Center, two Country Clubs with eighteen whole championship golf courses, and a County Complex is also located on Woodlane Road. This complex includes a County Vocational School, a County Special Services School District, a public library, a public health center and a public safety center.

The township is governed by a five member elected committee and the mayor. The municipal offices are fully staffed and a nineteen member police department serves the community. There is also a volunteer fire company with several emergency squads. There are numerous township recreational activities, some of which include tennis courts, a roller hockey court, three playgrounds and two baseball fields.

The township's two current schools are modern buildings serving students in kindergarten through eighth. These buildings have been expanded in the last five years and another planned expansion program has been approved.

The Board of Education consists of nine members representing a broad spectrum of the township's residents. This Board of Education focuses on the students and the programs and services that are offered to them. The Board is committed to providing high quality educational programs in a cost-effective manner. A mission statement adopted by the Board of Education (1999) for the school district is as follows:

> "The Westampton Township Public Schools will provide a high quality, age-appropriate educational experience that empowers children to reach their academic potential, become well rounded individuals, and develop a love for learning within a safe, secure, nurturing social and academic environment" (p. 3).

In support of their mission statement, the Board has made a tremendous commitment to the residents and students of the township by offering a wide variety of programs and services. Additionally, support programs include counseling services, basic skills programs, special education support programs and world language and English as a second language. Programs are also offered for academically talented students and a complete array of intramural and interscholastic athletic programs are offered to students. There are also club activities that include drama, newspaper, yearbook and a instrumental and choral music program. Further, the Board of Education works very closely with the township's committee and has generally received a high level of support from the community. In five of the last six years, the budget has been approved by the voters of the township.

Approximately nine hundred and eighty students are served in the township's two schools. The predominant language spoken in the schools is English. Further, during the 1997-1998 school year the students' average daily attendance rate was 95.6%, which

exceeded the state average. The average class size in this same year was 23 students, which was slightly above the state average.

The faculty to student ratio in the Westampton Middle School in 1997-1998 was 14.2:1. Further, the faculty attendance rate was 97.3%, which was also above the state average. The administrative ratio for the district's students is 436:1. Approximately, 91% of the district's faculty holds a baccalaureate degree and 19% have a master's degree. The average length of the school day is six hours and forty-five minutes, with student instructional time being five hours and eighteen minutes.

The 1999-2000 school budget has a zero increase in property tax, which follows a 11.5% decrease in the school tax rate for 1998-1999. The stability of the tax rate combined with the community's satisfaction in regards to the quality of the school district's programs, services and students' test scores has produced wide spread support for the district and its programs. Despite two consecutive years of no increase in the tax rate, the district has been able to maintain all current programs and services. Additionally, for the 1999-2000 budget funds have been allocated for bus routes to compensate for the increase in student enrollment, the world language program has been expanded, computers will be placed in every classroom, adoption of new textbooks for science and social studies classes and a remedial and enrichment summer program.

The district's administration consists of a superintendent of schools, school business administrator and a curriculum director. Each of the two buildings has a principal and the middle school has a vice principal. The district's building level administration work very closely together and are all committed to the implementation of the Board of Education's mission statement. Further, the administrators maintain a close

working relationship with the Board of Education, community leaders, parents and have a good rapport with the staff and students.

In the district there is a total of seventy teachers for which forty-two work in the middle school and twenty-eight in the Holly Hills School. The Westampton Middle School staff comes from a wide variety of backrounds and there is also considerable diversity among staff with regard to colleges and universities that they have been prepared by. The staff tends to live within thirty miles of the school, with many residing in and around the township. The average teacher's salary in 1997-1998 was $39,345.

Although the census data is somewhat skewed since it was last done in 1990 and the township has had tremendous growth over the past ten years, it is still generally reflective of the make-up of the community, the community's density and socioeconomic structure. The township's ethnic make-up consists of approximately five thousand five hundred Caucasian, one thousand one hundred African Americans, fifteen American Indians, two hundred fifty Asians/Pacific Islanders and five hundred Latinos. The average township age is 32.8 years and the majority of the population is under sixty-four years of age. More than half of the township's residents are either high school graduates and/or college graduates. The average family income in 1989 was $55,570, with approximately four thousand people in the civilian work force. From this work force, over thirteen hundred are mangers and professionals and fourteen hundred are technicians, sales or administrative support persons. Single family housing units continue to boom in the township and will continue to impact on the school's enrollment in at least the next five to seven years.

In 1990 the community was primarily considered a blue collar community, but it is now however moving toward a white collar community. International headquarters for Inductotherm Incorporated are located in Westampton Township. Henry Rowan, the chief executive officer and founder of this company donated one hundred million dollars to Glassboro State College, which was recently renamed Rowan University.

In summary, the Westampton Township Middle School itself fosters risk taking, the development of positive self-concepts, individuality, social consciousness, respect for diversity and encourages students to expand their roles as active participants in the community.

Significance of the Study

There are numerous studies to support the contention of gender inequity in the nation and in particular in schools all across the United States. The AAUW studies from 1993, 1996, 1997 and 1998 cite the importance of providing equal learning opportunities for both boys and girls. These studies indicate almost universally, although elementary teachers are primarily females, that teachers in general focus their attention on male students. In this study an attempt will be made to identify if there is equity bias in the Westampton Township Middle School.

In support of the contention that benchmarks are necessary before equity education can be developed is a study entitled *Equity Benchmarks for Vermont* (EBFB). This study was conducted by the Equity Advisory Committee for the Vermont Institute of Science, Mathematics, and Technology (VISMT) in 1994. The purpose of this study was to develop benchmarks to facilitate the implementation of an equitable learning

environment for the Vermont Public Schools. This study and the AAUW 1992 research will be utilized to develop the conceptual framework for the survey.

The goal of the study was to, "Promote equal opportunities for learning science, mathematics and technology by removing inequities based on gender, race, socioeconomic status, ethnicity, disabilities and other factors that may effect student learning and self-esteem" ("Equity Benchmarks", 1994). The equity benchmarks identified in the Vermont study included school and classroom climate, curriculum assessment, professional development, management and governance, community out reach and access to technology. Similar studies have been done by The American Association of University Women entitled *Hostile hallways: The AAUW survey on sexual harassment in America's schools;* (June 1993), was most relevant to this project. The AAUW survey found that 85% of the girls and 76% of the boys experienced some type of sexual harassment during their school years at sometime between kindergarten and twelfth grade. The study further indicated that harassment occurs throughout the schools in hallways, classroom, on the school grounds, in the cafeteria, on the school bus, in parking lots and in locker rooms. Nearly one in three girls reported unwanted sexual advances, as compared to one in five boys. Researchers in this study concluded that there is a climate in which tolerance for sexual harassment is often treated as typical adolescent behavior.

There are numerous other studies that support that there are inequities in our schools. The Vermont Equity Study (1994) and the AAUW (1992) and (1994) studies further indicate that the first step to fix the problem is to establish awareness through the development of a baseline. This project is designed to do just that. It is hypothesized

that by providing awareness of inequalities, that staff and students can be sensitized and that programs can be instituted to further improve both the work and learning environment.

As an outcome of this study if it is determined that inequity exists in the classroom, then programs will be identified to reduce the inequities and ultimately to eliminate them. Further, programs to address any inequities that may exist will be identified and implemented if they are needed. Finally, a model will be recommended for use throughout the school district.

Organization of the Study

In chapter two, an expanded review of the research will be provided. This review will be focused on the studies that have been conducted by the American University Women's Educational Foundation, the American Association of University Women, New Jersey State Employment Training Commission, Salem County Vocational Technical Schools and the Vermont Institute For Science, Mathematics and Technology. Studies that will be sited will both support the studies need, research methodology and solutions to address any inequities that may exist.

Since the purpose of the study is to establish a staff and student equity awareness baseline, in order to develop a bias-free learning and work environment, in chapter three the intern will describe the data gathering procedures and the analytical process. The literature indicates that the first step in removing bias or inequities related to gender and/or diversity is awareness. Therefore it was determined that teachers would be surveyed in order to provide a sufficient sample size. In all, there will be forty-two staff members that are surveyed.

A short written instrument will be designed to take no more than ten minutes to complete. It was determined that similar questions stated in an affirmative matter would be asked to randomly selected staff members in an one-on-one interview situation. The process is being followed to validate the survey information.

In chapter three, the intern will present the methodology that will be utilized to survey students and staff for the purpose of establishing an equity awareness baseline. After the surveys are collected, the data will be tabulated and analyzed.

In chapter four, the intern will present the results of the staff and student surveys regarding equity beliefs. Further, the intern will provide an interpretation as to the application of this data for the township's schools and specifically for students in the sixth, seventh and eighth grade and the staff members that teach these students. If these surveys yield information that identifies equity bias then interpreted remedies will be identified.

In chapter five, conclusions and implementations will be presented, as well as any recommendations for further study. This chapter will focus on any staff development programs or educational strategies that will be followed to implement programs to eliminate bias caused by gender inequities. It will be accomplished by first identifying a problem, if one exists and then forming programs and solutions to remedy any of these problems.

Chapter Two

Gender equity in the United States has a long statutory history that dates back to the passage of the fourteenth amendment of the United States constitution in 1868. This amendment was the first to focus on the rights of citizens, that included both employees and students. Other important federal statutes that have impacted on gender equity progress include the Equal Pay Act of 1963 and the Title XI and Title XII of the Civil Rights Act of 1964. Title XI specifically prohibits discrimination against students based on their race, color and national origin and Title XII is targeted to employee discrimination based on race, sex, color, national origin and religion. (Carelli, 1988)

Gender equity progress in education and in particular, public education grades kindergarten through twelve, was significantly influenced by Title IX of the Education Amendments of 1972 and the implementing regulations of 1975. This federal act was enacted to address discrimination in education and to provide redress. Title IX requires that males and females not be treated differently or separately. Specifically, the act prohibits discrimination including exclusion, denial, limitation or separation based on gender. The regulations as they relate to the K-12 environment address admissions, recruitment, facilities, course offerings, access to counseling and financial aid. These regulations prohibit discrimination in student health, insurance benefits, marital and parental status of students, interscholastic athletics, physical education, educational programs and employment. The Federal regulations also require the establishment of a grievance procedure, approval and dissemination of policy for nondiscrimination, self-evaluation, appointment of an affirmative action officer and remedial and affirmative action steps if necessary. (Carelli, 1988)

New Jersey has its own equity laws and implementing regulations. These include, the New Jersey Constitution and New Jersey Statute 18A: 36-20, which guarantees that each student in the public schools of New Jersey receive an equal education opportunity regardless of his/her race, color, creed, religion, sex, ancestry, national origin, social or economic status. The New Jersey statute, which was adopted in 1973, addresses many of the same social and gender issues as Title IX of the Education Amendments of 1972. In 1975, the New Jersey State Board of Education approved administrative code to implement the New Jersey law. This code, known as N.J.A.C. 6:4-1.1 serves as New Jersey's regulations to address equity issues and gender equality. (New Jersey Statutes Title 18A, 1998 and New Jersey Administrative Code Title 6, 1998).

Since the adoption of the Education Amendments of 1972, the Rehabilitation Act of 1973 (Section 504) was passed to specifically prevent discrimination based on handicap of employees and students. The adoption of this law was followed by the passage of the Education for All Handicapped Children Act of 1976 that established the first required programs for disabled students and prohibited discrimination based on disability. Other landmark federal laws, which have impacted on gender equity, include the Pregnancy Discrimination Act of 1978, the Age Discrimination and Employment Act as amended in 1978 and the Carl D. Perkins Vocational Act of 1984. (Carelli, 1998) Further, although significant gender equity progress has occurred in education as a result of both the federal and state statutory commitments, societal attitudes and cultural influences have slowed progress. Additionally, there have been numerous interpretations of Title IX that have weakened its impact. (Love, 1993)

There have been several recent court decisions that could have a significant impact on equity issues in the future. These include the Supreme Court decisions in Franklin versus Gwinnett County Public Schools 1992 and Gebser versus Lago Vista Independent School District. In these decisions the Supreme Court determined that students could sue school districts under Title IX for both teacher to student and student to student sexual harassment. (Sendor, 1999) Even more noteworthy is the 1999 Supreme Court decision which makes it clear that students can sue districts for failing to respond adequately to reports of student to student sexual harassment. In this case, under Title IX, a school board, superintendent and principal were sued in federal district court because the school's authorities failed to respond adequately to a sexual harassment complaint. This most recent court decision could have far reaching implications on how school districts address sexual harassment and gender equity issues. (Sendor, 1999)

Previous researchers investigating sex equity and equal gender treatment opportunity seem to focus on three areas: sex role stereotyping, sex bias and sex discrimination. (Carelli, 1988; Barnett, Baruch and Rivers, 1979) These researchers define sex equity as equal treatment and opportunity for all students regardless of their gender. They also stress that equity pertains to both sexes. The researchers agree that when specific attitudes, customs, skills or interests are associated with a single sex, then gender stereotyping is occurring. Further, they agree that peers, teachers and parents culturally institutionalize these stereotypes. Researchers (Carelli 1988; Barnett, Baruch and Rivers, 1979; Sadker and Sadker, 1986, 1991 and 1994) agree that while numerous inequities in the schools have been eliminated because of federal and state legislative

mandates, subtle forms of stereotyping, sex bias and sex discrimination continue and that as a result, both male and female students suffer when opportunities and expectations are based on gender.

The focus of gender equity in the nineties can be traced directly to studies that were commissioned by the American Association of University Women Education Foundation. The first of these studies is entitled, *How Schools Shortchange Girls*, was published in 1992. Other significant studies commissioned by the AAUW Education Foundation include, *Hostile Hallways* (1993) *Girls in the Middle: Working to Succeed in School* (1996) *Gender and Race on the Campus and in the School: Beyond Affirmative Action* (1997) and *Gender Gaps: Where Schools Still Fail Our Children*(1998). Researchers of this era who contributed to the research base on gender equity issues in our schools and classrooms include Sadker and Sadker (1986), (1991) and (1994); Cohen and Sukey (1996); Klein and Ortman (1994), and Shaalvik (1990). The work of these researchers is focused primarily on the inequities that are experienced by female students. Each, however, clearly indicate in their literature that male students are also the victims of gender bias and even sexual harassment. Most of these researchers also tracked the progress and/or lack of gender equity progress that has been made since the enactment of Title IX in the 1972 Education Amendments.

Both Sadker and Sadker (1994) and Bailey and Jackson (1992) indicate that while numerous schools have made changes for better academic, vocational and athletic opportunities for girls, better does not always necessarily mean equal. Further, they indicate that between 1972 and 1991 no school district in the United States lost federal dollars because of sex discrimination. Specifically, Sadker and Sadker (1994) blame the

Reagan and Bush administrations for what they term as disappointing periods of progress. In their 1994 study, Sadker and Sadker focused on the classroom, the classroom structure and on the teacher's application of rules in a consistent manner for both males and females.

The 1992 AAUW Educational Foundation study that was conducted by the Wellesley College Center for Research on Women, focused on gender stereotyping. Other researchers also addressed parallel issues for teacher to student interaction in regard to gender bias and stereotyping. For example, according to Sadker and Sadker (1994), to preserve order, most teachers use established classroom conventions such as raising your hand if you want to talk. They indicate that while intellectually teachers know they should apply the rule consistently, when the discussion becomes fast paced, the rule is often abandoned. When this happens, control is lost and shouting begins. This, they claim, is an open invitation for male dominance. Sadker and Sadker state that their, "research shows that boys call out eight times more often than girls. Sometimes what they say has little or nothing to do with the teacher's questions." (Sadker and Sadker, 1994, p. 43)

This ratio of male dominance in the classroom is also reported in the 1992 American Association of University Women's Education Foundation study in which it is stated, that their examination of research spanning the past twenty years consistently reveals that males receive more teacher attention than females. It also indicated in this research that there is a tendency for schools to choose curriculum materials that will appeal more to the interest of boys and that the long-term combined message of both formal curriculum and informal classroom interaction patterns is at best a discouraging

one for girls and young women. (AAUW, 1992)

This leads the review of the literature and discussion of it into two areas, which are the interaction that takes place in the classroom between teachers and students and in particular, between the teacher and male students and the teacher and female students. The second issue is the development, selection and use of gender bias free curriculum, textbooks and instructional aids. With regard to the former, interaction between the teacher and student, in Sadker and Sadker, (1986), (1991) and (1994) it is well documented that there is disproportionate interaction between both male and female teachers and male students as compared to the interaction with female students. Shmurak and Fatliff (1994) and Shaalvik (1990) draw similar conclusions. Based on their research of middle school teacher perceptions regarding gender, Shmurak and Fatliff (1994) confirm that boys in mathematics and sciences classes are often asked higher order questions and are given additional time to answer questions than their female counterparts. They also concluded from their research that English and social studies teachers in general seem to be more concerned with equity issues than mathematics and science teachers.

Wellhousen and Yin (1997) found similar discrepancies as a result of their research. They indicate that the single greatest contrast between the education of male and female students is both the quantity and quality of teacher to student interactions. They confirm through their research that in academic situations boys are generally called on more frequently and are given more time to answer questions and are given questions of higher level magnitude. Similar findings were reported by Bailey and Jackson (1992), Blanc and Cohen (1996) and by the AAUW Education Foundation (1992), (1996) and

(1998) in three studies they commissioned. It is these studies, along with the Sadker and Sadker (1986, 1991 and 1994) that form the basis for much of the research regarding curriculum gender bias and stereotypes.

It was reported in the AAUW (1992) study that while sexism decreased in some school textbooks, that often by omission or tokenism, gender stereotyping was still quite common in references for both girls and women. As a follow-up to the AAUW 1992 study, Cohen and Sulkey (1996) confirmed that although progress had been made, many textbooks were still laced with gender bias imbalances. In the 1998 AAUW Education Foundation study that was conducted by the American Institute for Research, an equitable education or deficit model was reviewed as a possible remedy to address the disparities between gender treatment in both the classroom and curriculum.

The deficit model, according to the AAUW Education Foundation (1998) is designed to address the needs of both boys and girls rather than to challenge whether each receives the same type or level of instruction. The deficit model, AAUW (1998) claims, does not challenge the unequal distribution of resources but instead relies upon the theory that girls must overcome any deficits that they may have when compared to boys. AAUW (1998), Masucci (1995), and Klein and Ortman (1994) reject this model because of what they claim are the outer limits that are set when it is used. These researchers further state that this type of model focuses almost exclusively on what is wrong with either boys or girls rather than what is right with each.

Focusing specifically on the middle school, Masucci (1995) indicates that despite enlightenment, gender bias discrimination continues to flourish. Further, Masucci found that teachers, especially in the middle school, need both pre and post in-service training

on gender discrimination. Masucci also indicates that through their own empowerment teachers can empower students by pointing out the importance of addressing gender inequities in the middle schools. Masucci (1995) and Klein and Ortman (1994) agree that gender bias does not, however, originate in the schools, but rather has its deep-rooted beginnings in society itself and in the family. They hypothesized that both males and females need to be exposed to and receive valued skills even if these skills may be attributed only to one gender. These researchers claim that jobs, roles, expectations and achievements, when differentiated by gender, are exacerbated by sex segregation in education and by societal gender stereotyping. They further indicate that teachers and administrators have an obligation to remain objective and to consider both boys and girls as individuals rather than basing perceptions and educational decisions on stereotypes. Shaavlik (1990) supports this notion and the need for a sex stereotype free environment.

Sadker and Sadker (1991) sum up their rejection of the deficit model indicating that girls generally start school ahead of their male counterparts, but end up lagging behind prior to completing high school. They conclude from their studies in 1991 and 1994 that at about sixth grade the confidence of female students, in their ability to do mathematics, begins to decline and continues to do so relative to boys throughout their high school experience.

The largest discrepancies in curriculum and achievement between male and female students are in mathematics, science and technology. Research by Shmurak and Ratliff (1994), Bailey (1992), Blanc and Cohen (1996), Orenstein (1994), Sadker and Sadker (1991), (1994), Thorne (1993) and Bailey (1994) confirm the disparity between male and female students, with regard to mathematics and science achievement.

Shamurak and Ratliff (1994) explain some of these disparities by indicating that their research of middle school teachers shows that English and social studies teachers in general seem to be more concerned with equity issues than mathematics and science teachers. In the most recent research that was conducted for the AAUW Foundation (1998) by the American Institute for Research it was concluded that:

> Girls are more likely than boys to have their abilities overlooked in mathematics and science...a pattern that limits their future opportunities. On the other hand, girls are more likely than boys to be identified at a young age for gifted programs. However, girls fall off this gifted track at a higher rate than boys, particularly once they reach high school. (AAUW, 1998, p.25)

Campbell (1994) and Shashaani (1995) clearly show through their research that prior to 1992, despite the gains in gender equity, studies indicate that there had been little progress in female student gains in mathematics, science and technology at the grade school, secondary and collegiate levels. It seems clear from the research of the AAUW (1998), Allen (1995), Carelli (1988), Karp and Shakeshaft (1997), Mann (1994), Meece and Jones (1996) and Shmurak and Ratliff (1994) that although bias and stereotyping still exists these factors can account for much of the gender differences in mathematics, science and computer studies between boys and girls. It also appears from this research that the research itself, beginning with the series of AAUW studies in 1992, 1993, 1996 and 1998, brought attention to the problem and that progress has been made with regard to better opportunities for female students, especially at the grade school and high school levels.

Karp and Shakeshaft (1997) and Meece and Jones (1996) support this contention. Their focus, however, is on restructuring the schools to be more mathematics friendly to females, on the importance of positive role models and on the need to recruit and retain female students at the secondary level in higher order mathematics and science programs. These researchers found that female students who do enter the fields of mathematics, science and technology report the significance of the impact of their teacher on both encouraging them and on influencing career choices related to science, technology and mathematics. Karp and Shakeshaft stress the importance of positive role models and support the notion that girls respond more favorably, with regard to academic performance, through the use of cooperative settings as compared to competitive ones. Further, they claim that inconsistencies that occur with respect to treatment by gender often are created because of the competitive nature of the classroom. (Karp and Shakeshaft, 1997)

These conclusions are supported by the AAUW (1992) study, by Peterson and Fennema (1985) and Goldbert (1988). Meece and Jones (1996) and Hedges and Nowell (1995) further acknowledge in their work that since the 1970's there has been considerable effort to entice, recruit and retain high school girls in mathematics and science programs and that in the last twenty years, the gap has been significantly narrowed. They did, however, indicate that there is little change in the number of higher ability girls in mathematics and science programs. Hedges and Nowell (1995) confirm that boys still out number girls two to one in mathematics and seven to one in higher level science classes and that boys dominate the top five percent in national test scores, based on the national assessments in gender gap between 1970 and 1992. Meece and

Jones (1996) point out that most of these studies overlook the experience of girls from different racial, ethnical and socio-economic backgrounds.

Sullivan (1994), Shakeshaft (1995) and Linn and Hyde (1989) reviewed both patterns and opportunities at both the elementary and secondary levels, or the lack thereof, for female students. Shakeshaft (1995) specifically focuses on the need to reform science education to include female students. Her research also supports the fact that in the early elementary school years both boys and girls seem to be equally interested in science. For example, when younger female students are asked the question, "Are you going to be a scientist when you grow up?" the students responded almost equally in numbers. In 1989 Linn and Hyde found that when boys and girls reach the middle school they begin to move apart with regard to interest, participation and achievement in science. They also found that by the time these students graduate from high school, males express significantly more interest in science and are twice as likely to work in a science field. (Linn and Hyde, 1989)

With reference to avoidance of mathematics and science subjects, Sullivan (1994) confirms that the higher the level in the K-12 spectrum the more likelihood that female students will avoid mathematical subjects. Allen (1995), Karp (1988) and Shakeshaft (1995) reviewed the negative attitudes towards mathematics and science that are passed onto female students. Specifically, Karp (1988) found and Shakeshaft (1995) duplicated, in a work that was done separately by each researcher, that often because elementary school teachers are more likely to be female, they are likely to be science and mathematics phobic, as compared to male teachers who make up only a small percentage of elementary teachers. Thus they conclude that the attitudes of these teachers will be

passed onto female students relative to mathematics and science. This points, according to both Karp (1988) and Shakeshaft (1995) to the overriding impact that society and our culture has on the classroom teachers and thus, on the students.

Allen stated that, "Research indicates that changes in parenting techniques and teaching techniques that remove sex bias are necessary in order for the mathematically gifted female to feel confident in the math and science fields." (Allen, 1995, p.4) To prevent gender bias in mathematics and science classes for girls, Allen (1995) and Shakeshaft (1995) state that, the teachers need to be more open about problems that female students have in mathematics and sciences. Further, these researchers indicate that girls need to be encouraged and required to ask more questions; that girls have to be taught the processes for all aspects of mathematics and science and girls need to focus on problem solving. Finally, they indicate that gender training should be required of all teachers so that the social and emotional development of girls in mathematics and science courses can be improved.

Allen (1995), Karp (1988), Shakeshaft (1995) and Mann (1994) all reviewed the childhood influences on students and how learning habits occur independent of work on high level skills and tasks. They also stressed the link between self-confidence and mathematics competence and how the system must change. Mann specifically states, ". . . that there is a high correlation between student's achievement and how teachers treat them. . . with non-sexist teachers getting higher performance out of girls in math and science." (Mann, 1994, p. 3) While the researchers generally agree that to close the gender gap, teacher education and the preparation of teachers needs to be influenced as do parents and

society in general with respect to how they view females in careers related to mathematics, science and technology.

Specific research to support this contention is provided by Schmurak and Ratliff (1994), AAUW Education Foundation (1998) and Sharp (1994). As early as 1994, Schmurak, Ratliff and Sharp reported on the perceptions of teachers regarding gender. Schmurak and Ratliff focused specifically on training needed for the middle school teacher to address not only gender bias but phobics toward mathematics, science and technology. In 1998 the AAUW Education Foundation studied the use of technology to equalize opportunities for disadvantaged groups and in particular to address gender inequities. The AAUW study confirmed that girls tend to have greater exposure to technology based in schools than anywhere else.

The AAUW examination of mathematics software however, used in the elementary schools in 1995 showed that 40% of the software had gender identifiable characters and that only 12% of these characters were girls. The American Institute researchers, who conducted this study for the AAUW, point out that while progress has been made in regard to gender equity in the classroom, competition exacerbates problems and can cause student to student aggression. The researchers however, also concluded that the methods of teaching and learning need to be based on standards that are equally high for both boys and girls. (AAUW, 1998)

Michele Foster sums up a precaution that is clear throughout Shakeshaft (1995), Karp and Shakeshaft (1997) and the AAUW Education Foundation (1998) research work as follows:

> Attempts to treat girls the same as other individuals places them at an educational disadvantage if their school values a competitive ethos and if these girls have internalized the idea that girls should not demonstrate competitive or aggressive behavior. The classroom status quo, while it does not embody an international bias against girls, nevertheless values that still conflict with many girls perceptions of appropriate feminine behavior. To simply encourage the expression of everyone's experiences, or voices as Frances Maher says, "Is in fact to encourage the more privileged voices." The attainment of uniformly high standards by all students requires a more thoughtful approach. (AAUW, 1998, p. 49)

Both the AAUW (1998) and Sharp (1994) emphasize that counselors, teachers and administrators need to be prepared and encouraged to bring gender equity and awareness to all aspects of the schools. Further, they indicate that the school curriculum must continue to be changed to include experiences of both men and women from all types of socio-economic backgrounds and ethnicity. Sharp stresses the importance of not discouraging girls in particular courses and programs that will lead to further education and higher skill level employment. She concludes by stressing the need to promote equity training for classroom teachers in order to implement gender fair multicultural curriculum, whether it be in mathematics, science and technology, the arts or the humanities. (Sharp, 1994)

The research in this section is broken into four areas, some of which have already been integrated into the discussion by the reviewer. This includes gender bias and single sex classes, classroom interaction bias towards female students, classroom practices bias against male students and the teacher's role in sex bias. Due to the interrelationship of these topics, they cannot all clearly be separated.

To examine the classroom in general, Sadker and Sadker (1986), Carelli (1998) and Marshall and Reinhartz (1997), Burns and Kiker (1992) and Grossman and Grossman (1994) were used to formulate the basis for this framework. These researchers believe generally that our social system has built in sex bias that is directly related to the values of the culture. They further indicate that in the school environment, the sex-role is compounded by our societal expectations of boys and girls. Both Grossman and Grossman (1994) and Marshall and Reinhartz (1997) contend that in order to understand the gender bias on students, gender differences and teachers must be examined as well as their impact on the differences, on teaching and on teaching styles. These researchers conclude that teachers need to examine their instructional behavior by working with small groups of colleagues and through observation.

Specifically, Marshall and Reinhartz (1997) recommend that once teachers become aware of their own belief and philosophy that they can plan and implement strategies to provide equal learning opportunities for all students. The strategies that Marshall and Reinhartz (1997) and McDaniel (1994) stress are to provide equal learning opportunities for all students by connecting the curriculum with each student, by providing nontraditional speakers and support programs, as well as general sensitivity to address the needs of all students. They further indicate that teachers need to begin the process with an honest assessment of their own attitudes and classroom practices as they pertain to gender bias.

Carelli (1988) further adds that the importance of planning the implementation of the educational program is a flexible environment. He further describes this environment as one that encourages exploration, inquiry and one in which risk taking is encouraged. Carelli

(1998), Marshall and Reinhartz (1997) and McDaniel (1994) also indicate the importance of the teachers attitude toward sex fairness and how this will contribute to the student's awareness, attitudes and self-concept.

Same sex classes were discussed as a possible way to ameliorate gender inequities and have been reviewed by a variety of researchers. They include Bailey (1996), AAUW (1996), Wrigley (1992), Thorne (1992) and Carelli (1988). These researchers addressed single sex versus co-ed education. Bailey (1996) set the stage by indicating that co-ed education means a great deal more than students of both sexes attending the same institution or school. Further, Bailey reports that this should mean or be assumed to mean that both sexes will receive a balanced educational experience as compared to an all male or all female single sex class or institution. Additionally, Bailey asserts that the term co-ed itself can undercut the opportunity to provide equity in the classroom since it may be implied by the term itself. (Bailey, 1996) Other researchers however, including the AAUW in the 1996 study and Thorne in a 1992 collection edited by Wrigley entitled "Girls and Boys Together . . . But Mostly Apart: Gender Arrangements In Elementary Schools", report that when children are given a choice they arrange themselves in the same sex clusters such as lunch time, on the playground and even when they choose seats in the classroom. Thorne and Wrigley (1992) specifically assert that numerous studies support this contention and that these practices will carry on into adulthood in our culture. He also indicates that the differences are usually exaggerated and the similarities largely ignored. In the AAUW Education Foundation (1996) study, it is emphasized that gender issues will not disappear just because they are not addressed in the schools or classroom. Specifically, with regard to

single sex schools or institutions the AAUW (1996) study asserts that gender bias and stereotyping will surface in other venues and in non-related issues.

Thorne concluded that sex segregation is the result of deliberate activity and that its outcomes are visible when boys and girls separate themselves in various in school activities. Wrigley (1992) and Carelli (1988) believe that separation of children by sex is one of the hidden curriculums for the reinforcement of inequity. Carelli also believes that by its very nature this type of separation enhances differences between boys and girls. Both Thorne (1992) and Carelli (1988) support the need for teachers and adults to become more sensitized to equity in the classroom and to recognize that many current practices will have to change.

Numerous researchers, including Sadler and Sadler (1994), Masland (1997), Manning (1998), Sullivan (1994), Shepardson and Pizzini (1991), Higgins (1994), Foster (1998), Sharp (1994), Rosen (1995) and Pecoraro (1999) emphasize the importance of teacher preparation and teacher gender awareness in the classroom. Sadker and Sadker (1994) and Lundeberg (1997) emphasize the misconception that often occurs in a pre-service teacher who may well intend to be fair to female and male students, but who does not in fact behave in the way they believe they would act or conduct themselves in the classroom. Sadker and Sadker (1994) indicate that in reality males typically dominate discussions by a three to one ratio and that because teachers are accustom to listening to male voices more frequently, they themselves do not recognize the bias in classroom interaction. Lundeberg (1997) adds that pre-service teachers are not responsible for the bias in classroom interaction but that it is often the students themselves.

Shaalvik (1990) and Manning (1998) focus on the subtle gender biases that take place in the classroom as a direct result of both culture and pre-service teacher training. They

hypothesize that gender stereotypes and accepted societal sex roles frequently are used to justify gender gaps. They further indicate that middle school teachers and administrators have an obligation to remain objective and to consider both boys and girls as individuals rather than basing perceptions and educational decisions on stereotypes. Shepardson and Pizzini (1991) and Masland (1997) believe that the teacher factor can restrict a female student's potential to achieve or enhance their self-concept based on expected societal behaviors for boys and girls. Masland (1997) contends that despite efforts over the past twenty-five years these practices still continue.

Masland raises three questions that researchers have attempted to address with regard to gender bias and teacher behavior. They are, "What distinguishes the different ways that teachers interact with female and male students? What do we know about teachers' responses to sexual harassment of female students? What effect do these teacher behaviors have on female students?" (Masland, 1997, p.19) Sadker and Sadker (1986) and Shmurak and Ratliff (1994) indicate that the studies of the eighties and nineties indicate that boys are generally provided with eight times the amount of instruction given to girls. Further, they believe that female students receive considerably less interaction with teachers in regards to approval, disapproval, praise and listening. Masland (1997) specifically studied the types of questions that male and female students receive in the elementary grades and concluded that the research clearly indicates that there is greater academic rigor in the types of questions that are asked boys as compared to girls.

Sullivan (1994) and Shakeshaft (1995) and Linn and Hyde (1989) all focus on the pattern of female avoidance of math, science and technical subjects as being directly related to the stereotypical attitudes of teachers and parents. These researchers also point out the

importance of teacher encouragement and the need to create a classroom environment that reflects positive reinforcement and that provides girls with an opportunity to take risks without fear of embarrassment or complete failure. AAUW (1992) and (1998) and Rosen (1995) stress strategies that provide for equity, while promoting potential and high standards for all students. Sharp concluded that:

> The studies demonstrate that when achievement scores, curriculum design and teacher-student interactions were examined, girls were invisible. For example, when girls and minorities are under-represented in curricular materials, the omission implies that these groups are of less value and significance in our society. The study shows how this kind of invisibility impacts students' learning ability. (Sharp, 1994, p.8)

Sharp (1994) and Rosen (1995) go on to discuss teacher's attitudes in the middle school and their impact on gender equity. They indicate that most educators have begun to address gender bias in the classroom, but the core of the problem is the teacher's low expectation of girls. They stressed the need to get away from the mentality of girl's jobs and boy's jobs. They also discussed the need for successful strategies that work to provide gender equity for all. These include role modeling, the emphasizing of persistence, teachers that recognize different learning styles and even single gender programs. (Rosen, 1995)

Two recent New Jersey classroom studies that model Sadker and Sadker's (1986) research studies are a doctorate dissertation that was done at Seton Hall University by Karen Pecoraro on the frequency of gender bias behaviors of K-3 teacher educators and a master's thesis that was conducted at the Westampton Township School District, Burlington County, New Jersey by Patricia Higgins in 1994. Pecoraro, in her study, noted five behaviors of K-3 teachers that were significant to gender, which she described as adequate teaching attention,

wait time, classroom discipline, verbal evaluation of academic work and sex integration. (Pecoraro, 1999) Higgins also drew three conclusions from her study. Specifically, in the Westampton School District she found that male teachers initiate more interactions with male students than with female students, that female teachers initiate more interactions with male students than female students and that gender bias trends tend to increase with age and grade level.

There have been numerous studies that support the fact that male students, especially at the elementary level, receive more attention than female students. These include Sadker and Sadker (1986), AAUW (1998), Wellhousen and Yin (1997), Campbell (1994) and Shashaani (1995). These researchers conclude that male students in fact due receive greater attention from both male and female teachers and that boys are given more talk and verbal interaction time in the classroom. They also conclude that educators of both sexes are usually unaware of the presence of this bias or stereotype. These researchers also concluded that relatively short but focused training could reduce sex bias significantly from classroom interaction. Finally, they concluded that by increasing verbal interaction opportunities for both boys and girls that generally the effectiveness of the teacher is also increased.

Marshall and Reinhartz found that "Male teachers tend to be more direct with students, more subject centered and more inclined to use the lecture mode of instruction. Female teachers, on the other hand, appear more indirect, ask more questions and are more self-centered." (p.3334) Wellhousen and Yin (1997), Campbell (1994) and Shashaani (1995) confirmed the importance of the quality of teacher to student interactions and that in the academic environment, boys are not only called on more often, but that they tend to receive higher order questions and interactions with their teachers.

Although much of the literature focuses on gender bias in the classroom toward female students, there is a reverse side that is reported by Vail (1997) and Kleinfeld (1999). Judith Kleinfeld in particular has questioned the research of the AAUW Education Foundation. Kleinfeld contends that female students are doing very well and that the AAUW studies have actually caused male students to be neglected. Further, Kleinfeld cites a 1998 Women's Freedom Network report in which it is purported that female student scores in mathematics and science are improving. Vail (1997) questions the credibility of gender bias research and contends that the U.S. Department of Education's international math and science study that was released in November of 1996 supports the premise that there is little difference between how U.S. eighth grade boys and girls scored in both math and science. (Vail, 1997)

While this is one point of view, not all agree with it. Specifically, Janice Weinman, President of the AAUW, indicates that the AAUW research in 1992 and 1994 was the first national survey on the self-esteem of girls and that over 3,000 children ages nine to fifteen participated. Weinman further indicates that although the gender gap between boys and girls in mathematics and science has narrowed, there are still wide discrepancies. (Kleinfeld and Weinman, 1998)

In the 1994 Westampton Township study, Higgins found that gender bias or gender inequality for male students existed in the upper grade levels. (Higgins, 1994) It is based on Higgins conclusions that this researcher is pursuing the establishment of a staff and student equity baseline in the Westampton Township Middle School. Higgins conclusions are as follows:

> Professional educators in the Westampton School District should become aware of their own personal gender bias or gender inequity and take the responsibility to change those areas indicative of obvious bias.

Gender bias and gender inequity should be addressed on an individual level, organizational level and community level through the implementation of in-service programs throughout the school year.

Further research, using a different instrument, but the same sample, could provide exact causes of this gender bias or gender inequity.

Further, research on the topic of in-service for handling teacher gender bias and gender inequity should be conducted to determine how valuable the in-service program is in reducing and/or managing gender bias in the classroom. (Higgins, 1994, p.58-59)

CHAPTER THREE

The Design of the Study

Overview and Purpose

Chapter One introduced the study by stating the problem, purpose, hypothesis, scope and limitations; defined the terms; noted the source of data, and method of study and what method would be used to analyze the data. Then Chapter Two reported the review of the related research literature. The purpose of this chapter is to present an account of the procedures used to conduct the study: (1) secure the cooperation from school administration, staff, students and board of education; (2) for identification of subjects; (3) development of the survey; (4) collection of the data and (5) to analyze the data.

The purpose of this study is to develop a gender, bias-free environment for students at the Westampton Township Middle School utilizing an action research survey model to establish a staff and student equity awareness baseline. Using this baseline, resources will be identified and committed to programs and activities in order to address and/or reduce levels of any gender bias that may exist.

In 1994 Patricia B. Higgins conducted a study on gender bias demonstrated by professional educators in the Westampton Township School District. The purpose of that study was to determine if the teaching staff in the Westampton Township School District exhibited significant gender bias toward students. Within the limitations of that study it was determined that gender bias did exist toward both male and female students. (Higgins, 1995)

Over the past six years there has been considerable growth in the district, both in terms of the number of students who are enrolled and in the size of the staff. Further, during this period a number of staff members have retired. As a result, at the Westampton Township Middle School approximately 48.7% of the teaching staff have been employed for six or fewer years. Also, approximately 46% of this staff are forty years of age or younger. Based on the changing staff and student demographics and the need to continue to expand student opportunities through a gender bias-free learning environment, this study was undertaken.

This action research design includes a census of both the teaching staff and sixth, seventh and eighth grade student responses to questions regarding gender equity and gender harassment. It is believed that by establishing an equity awareness baseline for current staff and students that resources can be identified and committed to programs and activities to reduce any gender bias that may exist. This action research design will also allow for a comparison of student and staff responses to similar questions and for a comparison of responses between teaching staff who have been employed in the district for six years or less and those who have been employed for more than six years.

Context of the Study

Based on the diversity of the Westampton Township community and on the changing staff and student demographics, it was determined that a professional development program would be helpful to increase staff knowledge and awareness for a gender bias-free learning and work environment. In support of the contention that benchmarks are necessary before equity education can be developed, is a study entitled, *Equity Benchmarks for Vermont* (EBFV). The Equity Advisory Committee for the

Vermont Institute of Science, Mathematics and Technology (VISMT) conducted this study in 1994.

The purpose of the study was to develop benchmarks to facilitate the implementation of an equitable learning environment for the Vermont Public Schools. The goal of the study was to "promote equal opportunities for learning science, mathematics and technology by removing inequities based on gender, race, socio-economic status, ethnicity, disabilities and other factors that may affect student learning and self-esteem." (Equity Benchmarks, 1994) The equity benchmarks identified in the Vermont study included school and classroom climate, curriculum assessment, professional development, management and governance, community outreach and access to technology. This study, coupled with the Higgins Westampton study in 1994 led the researcher to believe that current information regarding staff and student knowledge about gender equity and gender bias in the classroom and workplace was needed.

The researcher further determined, based on a review of the literature, that although development of a survey utilizing a Likert scale would be appropriate, that such a survey would not yield specific information regarding classroom interaction or the impact of gender bias on learning and on providing equal opportunities for both male and female students to select and achieve in all subjects. Thus, a decision was made to survey staff and student beliefs based on information garnered from a review of the related literature. Although the primary focus of this research was to establish a knowledge baseline regarding gender equity and bias for both teaching staff and upper elementary grade level students in the Westampton Township Middle School, it was also the intent of the researcher to address related potential sexual harassment issues and their impact on

the learning process and on learning opportunities for students. Further, the changing demographics for teaching staff and the increase in district teaching staff from 55 teachers in 1994 to 70 teachers in 1998 provided the impetus for researchers to initiate this action research. The student enrollment increased from 803 pupils in 1994 to 950 pupils in 1998 also contributed to validating the need. In addition to these changing demographics, the district's equity and compliance committee identified the need to examine gender equity for all students in the middle school.

Observations and Data Collection Techniques

Based on the belief of the equity and compliance committee that staff and students may not be aware of equity and compliance issues, the literature was examined to determine if a baseline for staff and students, to establish the current district norm, could be established. The research was also examined to determine the impact of gender factors on student learning and self-esteem. The research was further reviewed to determine if staff awareness of these factors could be utilized to reduce or eliminate gender inequities should they exist.

Based on an examination of the literature as reported in Chapter Two, framing questions were developed as follows:

- What are staff and student beliefs relating to district equity and compliance?
- What is the staff and student knowledge base relating to equity and compliance?
- Do student and staff adequately understand what a bias-free work and learning environment is?
- To what extent is bias perceived to take place in the district by staff and students?

- To what extent does real or perceived sexual harassment take place in the district according to staff and students?

Based on these questions, preliminary discussions were held with the equity and compliance committee, the assistant principal and the principal of the Westampton Township Middle School and the superintendent of schools for the Westampton Township School District. From these discussions support for this action research study was enhanced, as was the belief that staff and students had only a superficial knowledge of gender equity and gender equity issues. From the related literature, it was established that this could have an impact on student learning.

It was hypothesized that by establishing a staff and student equity baseline, professional development and student awareness programs, as may be needed, could be initiated to create a bias-free learning and work environment. Therefore, it was determined that the first step in the action research model would be to develop a written survey for both staff and students. It was also determined that a question survey and question guide would be required. Further, it was determined that a census survey would be utilized so that all Westampton Township Middle School teachers and all sixth, seventh and eighth grade students attending the Westampton Township Middle School during the 1999-2000 school year would be surveyed.

In addition to the written survey, a small sample of the teaching and student respondents would be interviewed. To verify the honesty of the respondents, ten teaching staff members representing approximately one-fourth of the sample population and thirty students representing approximately one-tenth of the student population surveyed were selected to be interviewed. The selection of interviewees was accomplished using a

random table of numbers. Four letters were developed; one for teacher and student survey participants and one for student and teacher interview participants. It was also decided, after consultation with the building principal, that the initial presentation and discussion of the written survey would take place at a faculty meeting.

For the written teacher survey, since a majority of staff were of one sex and because many of the staff could be identified by their assignment, it was determined that the demographic information obtained from teachers would have to be sufficient to allow for analysis of the responses while protecting the anonymity of the responder. Thirty-eight of the forty-two faculty members at the Westampton Township Middle School were female; therefore, for the staff demographic data the action researcher did use this respondent information. Further, teachers were asked to indicate their age range as between twenty-one and thirty; thirty-one and forty; forty-one and fifty; fifty-one and sixty or sixty-one plus. Teachers were also asked to indicate their years of service in the district by range. The categories were zero to two, three to six, seven to eleven or twelve plus years.

Initially twenty questions were developed and piloted with fifteen New Jersey teachers from outside of the Westampton Township School District. Participants were initially contacted by mail and then by telephone. Participation was aided through assistance that was provided by building principals at the participating schools. Based on the pilot responses, five of the questions were modified and four questions were dropped from the survey. The revised survey was then presented to the principal and superintendent for review. After their review, four additional questions were dropped

from the survey and the survey was further modified before it was presented to the Board of Education for approval.

The final staff survey contained twelve questions. Three of the questions were worded so the respondents could answer yes, no or unsure. Three questions were structured so that the respondent teachers could answer male, female, unsure or equal. The two questions regarding the subjects that teachers believed females and males performed best in required four responses. They were English, mathematics, science or social studies. Based on a specific definition for the question regarding sexual harassment, respondents were requested to answer frequently, moderately, rare or unknown. In a seven part question regarding the selection of bias-free textbooks, curriculum and audiovisual materials, the respondents were given a choice of yes, no or not applicable. Finally, for two questions regarding classroom participation, the staff was given the choice of male, female or equal distribution.

The survey was distributed to staff in their school district mailbox. Teaching staff were requested to respond in one week. Several follow-up activities, including both public address and written reminders, resulted in thirty-nine of the forty-two eligible teaching staff responding. This amounted to a 92.85% response. The responses were tabulated and analyzed. Please see Appendix C, Tables 1, 2, 3, and 4.

The mean for expected or normal responses was established and the mean for teacher responses to questions was calculated. Further, from these means, the standard deviation was calculated. Based on the standard deviation, a T test was applied to the results to determine if there was any significance between the responses at the .05 level of confidence.

As a result of the literature review and in particular on the American University Women's Foundation studies over the past nine years, a decision was made not to utilize a Likert scale, but rather to ask students to respond specifically to a series of similar questions as those presented to the teaching staff. An initial survey of twenty questions was developed and piloted to thirty randomly selected students from Westampton Township Middle School six, seventh and eighth grade students. Ten students were selected using a random table of numbers from each class. Each class contains approximately 100 students.

Based on the pre survey responses, five questions were eliminated as being too difficult to comprehend by the sixth, seventh and eighth grade students. After further review by the principal and superintendent, an additional six questions were deleted from the survey. The administration felt that these questions were not appropriate for the action research and that they could create some unnecessary sensitivity in the community. The final survey of nine questions was prepared and presented to the Board of Education for approval. The Board of Education requested that several additional modifications be made so that reference to the school district was not included in the actual questions.

The nine question survey was administered to approximately 300 sixth, seventh and eighth grade students in the Westampton Township Middle School. The actual survey was administered to 98% of all sixth, seventh and eight grade Westampton Township Middle School students during their physical education and health class. Other than one make-up opportunity, no attempt was made to further survey the students who were absent either on the initial survey date or on the make-up date.

Student information questions included students identifying themselves as male or female and by current grade level. Four questions were designed so that students could answer yes, no or unsure. One of these questions was a three-part question regarding equity and inequity on school buses, in class and in extracurricular sports. Two questions were designed so that students could indicate both their favorite subject and the subject in which they performed the best. In one question students were asked to choose male, female or that it did not matter in response to the frequency that male and female teachers called upon them. Two other questions were formed in regards to which the students favorite teacher was and gender wise which teachers they earn better grades from when given the selection male, female or unsure.

To ensure that students understood the questions and that the responses were genuine, fifteen follow-up interviews were conducted with a random selection of five students from each grade level. Based on an analysis of the interviews and on a comparison of the census survey results, a matrix of the data for the survey was prepared from the statistical analysis. Please see Appendix C, Tables 23 and 25.

The results were tabulated and responses were examined by grade level and by male/female. In addition, percentages for responses were calculated. For some questions where norm means could either be established or assumed, means were calculated for student responses. Please see Appendix C, Tables 24 and 26. Standard deviations were then calculated and paired t tests applied for significance at the .05 levels of confidence. Please see Appendix C, Tables 27 to 44.

A mean for teacher survey responses was calculated and a mean for student responses to their survey questions was calculated. A standard deviation was calculated

and based on the standard deviation; a t test was applied to the results in order to determine if any correlation existed between the responses at the .05 level of confidence. Examining the data, I determined a need to compare teacher age and experience category responses for selected questions to find out if differences in perceived equity awareness and perceived sexual harassment exist between the categories.

The focus of Chapter Four will be to present the information that was found and to describe, to the extent possible, what it means. It is noted, however, because it was necessary to limit the teacher survey to twelve selected questions and the student survey to nine selected questions that the revised surveys posed some problems for the researcher with regard to gathering information concerning staff knowledge and attitude toward sexual harassment and student views regarding this subject. The surveys did yield ample data to review staff and student beliefs regarding gender equity.

After compiling the data, I utilized the Microsoft Word Excel spreadsheet to organize and tabulate the data and to obtain percentage calculations for responses to questions. The data was further analyzed utilizing the SYSTAT statistical package to obtain population response means, to determine the standard deviation between means, and compute t scores. Since I believed that there might be some difference in the way in which teacher respondents answered the questions based upon age and experience, the thirty-nine teacher responses were calculated and the staff was divided into two age groups. They consisted of eighteen teachers ages 21 to 40, who are labeled as teacher age group A, and group B which consisted of twenty-one teachers ages 41 and up. Further, teachers were divided into two categories for teaching experience. For Category A, teachers with 0-6 years of experience were listed. This category consisted of sixteen

teachers. For Category B, teachers with experience of 7 or more years were listed. In this category there were twenty teachers.

These findings will be reported to the equity and compliance committee and conclusions will be developed. Based on the conclusions, recommendations will be made as may be appropriate for staff development programs and for student awareness programs. Additionally, on Higgins' 1994 Westampton Township School District study on gender equity and staff attitudes and on the information gathered from the census survey and interviews, the equity and compliance committee was requested to make recommendations as to appropriate staff and student awareness programs.

Nature of Action Research

Wiersma (1995), described one form of applied research as action research. He further states that action research is generally conducted by educators in order to solve specific problems and to provide information to make local level decisions. Further, he indicates that action research is most likely to be quasi-experimental in nature and that students are very often the subjects of this type of research. (Wiersma, 1995) According to Argyis and Schon (1989) and Reinharz (1992) action or what might be better termed participatory research and the quality movement share the common notion that those within academia, and in particular the college and universities community, have access to basic concerns that practitioners face when understanding and identifying the materials and theories that may be best used to change practice.

As early as 1940, Kurt Lewin advocated action research to address relevant issues and problems in everyday life and as a bridge between experimental research. Lewin is generally credited with initiating action research. (Atkin, 1992) In the 1993 Education

Policy Analysis, Stephen Kemmis referred to critical or emancipatory action research as almost always connected to social action, to change in the social or educational world, to improve shared social practices and/or shared understanding of these practices. (Glass, 1993) Kemmis further indicates that, "action research offers ways in which people can improve social life through research on the here and now, but also in relation to wider social structures and processes as people whose interconnections constitute the wider webs of interaction which structure social life in discourses, in work, and in organizational and interpersonal relationships in which we recognize relations of power." (Glass, 1993, p. 3)

The Association for the Study of Higher Education (ASHE) Symposium state that the action research model is defined as a three-step methodology. Klugman and Fife (1997) indicate that the first step involves focus groups and a survey. They further indicate that focus groups with practitioners and researchers need to be conducted to identify possible gaps in the literature. It is this model that closely parallels the efforts that were undertaken in Westampton Township to establish a baseline at the middle school with respect to the understanding of gender equity and equity bias issues. This action research will lead to the equity and compliance committee identifying staff development and student awareness programs to promote gender fairness in the curriculum and in school activities. Further, through this action research it is believed that gender bias in the classroom will be further reduced.

Outcomes

When the analysis of the data is complete, the information will be shared with the equity and compliance committee for review and recommendations. The

recommendations in turn will be shared with the Westampton Township Middle School principal, the superintendent of schools and the board of education. Based on the analysis of data, recommendations will be made to review the staff development programs for the purpose of enhancing gender equity awareness, classroom interaction and the selection of textbooks and education materials and for extracurricular activities. Recommendations will also be presented concerning student awareness programs that may help to stimulate gender equity awareness and to enhance equal opportunities for both boys and girls in the classroom and in extracurricular activities.

CHAPTER FOUR

PRESENTATION OF THE RESEARCH FINDINGS

Introduction

Since I believed that staff and student awareness of gender equity and compliance was limited to a superficial knowledge and that professional development and student awareness programs were needed to create and maintain a bias-free work and learning environment, I developed five framing questions. These questions were based on my review of the related research. The questions were as follows:

(1) What are staff and student beliefs relating to district equity and compliance?

(2) Do student and staff adequately understand what a bias-free work and learning environment is?

(3)To what extent is bias perceived to take place in the district by staff and students?

(4) To what extent does real or perceived sexual harassment take place in the district according to staff and students?

Based on the framing questions, I determined that there was need to develop a staff survey to ascertain relative staff attitudes toward gender equity and compliance in the classroom. After developing and piloting the initial survey, I reviewed the survey with the building principal and superintendent. As a result of these reviews, the twelve-question survey was altered to address administrative and board concerns relative to the types of questions that would be asked of staff.

Concurrently, I developed a nine-question student survey in order to ascertain the relative gender equity awareness of the schools' sixth, seventh, and eighth grade students.

This initial survey was piloted and reviewed with the principal and superintendent of schools. After the review, the survey was altered to meet administrative and board of education concerns relative to the types of questions that would be asked of students. This was done to ensure that the survey would be reflective of the districts policies and goals; and that it would not be disruptive to the educational process.

The teacher surveys were distributed to all forty-two Westampton Township Middle School teachers. Further, the student surveys were distributed and administered to three hundred sixth, seventh, and eighth graders who attend the Westampton Township Middle School. These surveys are provided in Appendix A. Of the teaching staff, thirty-nine of forty-two possible responses were received and for the student group, three hundred of three hundred-six possible responses were received. The data was then compiled and analyzed for both teachers and students.

I reviewed the raw data that was compiled from the thirty-nine teacher surveys that were received, and noted some variances in the responses of teachers by age category. I, therefore, further analyzed the responses of eighteen teachers who were ages 21 to 40 and for twenty-one teachers who were ages 41 and up. The raw data that was obtained and the calculated percentage responses are provided in Appendix C, Tables 1 and 2.

I also discovered that there were some variances in the responses between teachers by experience; therefore, I further analyzed the data for nineteen teachers who had six or less years teaching experience, and for twenty teachers who had 7 or more years teaching experience. The raw data for both total responses and calculated percentage responses were reviewed and are provided in Appendix C, Tables 3 and 4.

For the student survey responses, I tabulated the results for all three hundred students to the nine questions that were asked. I noted during this process that there were some variances in the responses between male and female students and decided to further analyze the data by male and female student response and to calculate the percentage responses for each category. This data is provided in Appendix C, Tables 23 through 26.

Upon further analysis of the data, I determined that before applying a statistical analysis, that for selected questions I would prepare a questionnaire to administer in one-to-one interviews to ten teaching staff, representing approximately 25 percent of the total teacher sample and to thirty students, representing approximately 10 percent of the total student sample. Since there were some built-in redundancy in the questions, for the teacher interview questions, teacher survey questions 1, 2, 3, 6, and 11 were chosen. Further, for the student interview questionnaire, student survey questions 1, 2, 3, 5, and 7 were chosen. The questionnaire surveys are provided in Appendix B.

After the interviews were completed and the data initially analyzed, I determined that because of the similarities between the responses that it would not be necessary to do a statistical analysis between the survey questions and the interview questions. I further determined that for the statistical analysis that would be done on the survey questions, the interview responses would be utilized to corroborate or refute the results.

Analysis of Teacher Responses to Selected Survey Questions By Age and Experience

Based on further review of the twelve teacher survey questions and the interview questions, I determined that survey questions 1, 7, and 10 would be statistically analyzed utilizing a paired t-Test to see if there was a correlation between the responses of all teachers to these questions and the responses of teachers in the two age categories and

two experience categories that had been established. The purpose of this exercise was to determine where the focus of any staff development or staff in-service training should be.

I, therefore, determined that for questions 1, 7, and 10 the means would be calculated, the standard deviation obtained, the degrees of freedom computed, and a t statistic applied to ascertain if there was any significant difference at the .05 level of confidence between all teacher responses to this question and the responses of teachers by age category. I also determined that the same analysis would be conducted between the responses of all teachers and teachers by experience category. Finally, I determined that the responses between age categories A and B would be compared and that experience categories A and B would be examined utilizing the same statistical analysis. A decision was made when the survey was designed not to use a Likert scale, I determined, however, that for statistical purposes values would be assigned to the answers "yes", "no", or "unsure". The "yes" response was assigned a value of 5, the "unsure" response a value of 3, and the "no" response a value of 1. The process was applied to all three questions to ensure consistency in the statistical analysis. The test value of 5 was compared to a strongly agree response, the unsure response of 3 was equated to a neutral response, and a no response was equated to strongly disagree.

The three questions analyzed were as follows:

Question 1: Do you believe that the Westampton Township Middle School offers a gender bias-free work and learning environment? (Please check one.)

Yes_____ No_____ Unsure_____

Question 7: For the purpose of this survey, sexual harassment has been defined as unwanted or unsolicited sexual advancement toward a member of the opposite gender. In your experience at the Westampton Township Middle School, have you ever observed student-to-student sexual harassment? (Please check one.)

Yes_____ No_____ Unsure_____

Question 10: Do you believe at your grade level(s) that tolerance and diversity with regard to gender equity should be taught as part of the district's curriculum? (Please check one.)

Yes_____ No_____ Unsure_____

Based on the calculations performed for question 1, a clear majority of 77 percent of the teaching staff believed that the Westampton Township Middle School offers a gender bias-free work and learning environment. By percentage comparison, this belief is stronger at 89 percent for teachers in age category A, ages 21 to 40, then for teachers in age category B, ages 41 and up, at 67 percent. There was, however, no statistical proof of a correlation between these responses when the means of each variable are compared utilizing a non-directional paired t test. I concluded, therefore, that the differences in the responses by age category could have occurred simply due to chance. These statistical comparisons are provided in Appendix C, Tables 5 through 8.

Further, when the experience category responses to question 1 were compared to the overall responses of all teachers, there were no statistical differences at the .05 level of confidence to report for Category A or B responses. It is noted, however, for experience category A, 0 to 6 years, 95 percent of the staff believed that there was a bias-free work and learning environment, as compared to only 60 percent of those teachers

with 7 or more years experience. The response for all teachers was 77 percent. The statistical results, using a paired t test, are shown in Appendix C, Tables 8 and 9.

Although there was a slight correlation between the responses for experience Category A and the responses for experience Category B to question 1, the correlation between the responses was so slight it was not considered for reporting in the text. The actual data is provided in Appendix C, Table 10.

There were also some slight variances in the teacher responses in the interview. For example, it is noted that for question one, 80 percent of the teachers who were questioned directly in the interview process indicated that they believed that the district offered a gender bias-free work and learning environment. The differences, by both age and experience, were also compared in the interview questionnaire survey. For age Category A, 100 percent of the teachers indicated that they believed the school offered a gender bias-free work and learning environment, as compared to 66 percent in age Category B.

Based on experience, 75 percent of those teachers with 6 years or less experience stated that they believed the district offered a gender bias-free work and learning environment, as compare to 66 percent in the experience category of 7 years and up. Although only ten teachers were interviewed utilizing the questionnaire method, these responses seemed to be very definitive and supported the survey responses with regard to trend. The trend being that the younger, less experienced teachers were more apt to believe that the school offered a gender bias-free work and learning environment. I determined therefore that these demographics have implications for staff development programs.

The same statistical analysis was performed on teacher responses for question 7. For this question, teacher respondents were advised that for the purpose of the survey sexual harassment had been defined as "unwanted or unsolicited sexual advancement toward a member of the opposite gender". Specifically, teachers were asked, "In your experience at the Westampton Township Middle School, have you ever observed student-to-student sexual harassment?" Teachers were asked to respond "yes", "no", or "unsure". Based on the raw responses provided by teachers as shown in Appendix C, Tables 1 and 3 and the percentage responses as provided in Appendix C, Tables 2 and 4, the norm responses as established for all teachers were compared by the two age categories and two experience categories. Further, responses by age category were compared to each other and the responses by experience category were compared to each other.

For question 7, the actual responses of all teachers and for teachers in age Categories A and B are provided in Appendix C, Tables 1 and 3 and the percentage responses are provided in Appendix C, Tables 2 and 4. What was significant to note was that forty-nine percent of all teachers indicated that they had observed student-to-student sexual harassment. When compared by age category, however, only thirty-three percent of the teachers in age Category A, 21-40, indicated that they had observed student-to-student sexual harassment as compared to sixty-two percent of teachers in age category 41 and up.

For the experience category as shown in Appendix C, Table 4, the percentage responses were somewhat closer. Forty-two percent of the teachers in experience Category A, 0-6 years, answered that they had observed student-to-student sexual harassment as compared to fifty-five percent of the teachers in experience Category B, 7

years and up. The only statistical significance, however, for correlation between these variables occurred when the responses for age Category A, ages 21 to 40, were compared to the responses for age Category B, ages 41 and up. The correlation between the responses, however, was only considered slight to mild, indicating that this could have occurred due to chance.

Although not analyzed for statistical mean, teachers who responded "yes" to question 7 were asked to answer question 8 which was to, "Indicate the frequency of sexual harassment that they had observed." Of all teachers shown in Appendix C, Tables 2 and 4, fifty-one percent indicated "frequently - more than six times in the last two years." that they had observed student to student sexual harassment. Twenty-one percent answered "moderately - 2 to 5 times in the last two years." Ten percent answered "rare – once in the last two years." Forty-nine percent of the teachers did not respond to this question indicating that they had not observed student-to-student sexual harassment in the last two years. Since no further statistical analysis was utilized for question 8, comparisons between age Categories A and B and experience A and B are not discussed or reviewed in this text.

For teacher question 10, "Do you believe at your grade level(s) that tolerance and diversity with regard to gender equity should be taught as part of the district's curriculum?" Teachers were asked to respond "yes", "no", or "unsure". All response data to this question are provided in Appendix C, Tables 1 and 3 and the calculated percentage response data is provided in Appendix C, Tables 2 and 4. The data provided in Appendix C, Tables 1 and 3, also includes the responses by age Categories A and B. In Appendix C, Tables 2 and 4, responses are shown both in raw and calculated

percentage form for experience categories A and B. I also converted this data to a Likert like scale using 5 for a "yes" response, 1 for a "no" response, and 3 for an "unsure" response.

In question 10, Appendix C, Table 2, it is shown that seventy-two percent of all teachers answered "yes" to the question, "Do you believe at your grade level(s) that tolerance and diversity with regard to gender equity should be taught as part of the districts curriculum?" It is interesting to note that seventy-two percent of teachers in age Category A and seventy-one percent of teachers in Category B answered "yes". As shown in Appendix C, Table 4, when the experience factor is considered, there are some slight variances between seventy-two percent "yes" responses for all teachers as compared to sixty-eight percent for experience Category A and eighty percent for experience Category B.

For question 10, there is also a slight negative correlation between the responses of teachers in age Category A versus age Category B at the .05 level of confidence. I did not consider these differences significant since almost half the staff believed they had seen student-to-student sexual harassment in the last two years. Whether perceived or real, I determined this was a problem that needed to be addressed.

Analysis of Student Responses to Selected Survey Questions By Gender

Beginning with Appendix C, Tables 23 through Table 26, student responses for grades 6, 7, and 8 are shown by male and female category. Students responded to a nine question survey designed to elicit student beliefs regarding gender equity and sexual harassment. Since the survey was designed for sixth, seventh, and eighth graders, it was not possible to ask identical questions to those that were presented to the teaching staff.

Many of the questions, however, are related. Further, based on the pilot survey and on concerns expressed by the school districts administration, a number of questions were eliminated from the survey. A complete copy of the survey that was actually administered to the students is included as Appendix A. The interview questions are provided in Appendix B.

Three hundred sixth, seventh, and eighth graders participated in the survey which included 164 males and 136 females. Although gender was not considered as a variable in the teacher survey because a significant majority of the teachers were female, the student sample allowed for a comparison of male and female responses. Additionally, although data was gathered by each grade level, I determined that for purposes of this study, student responses would be reviewed in total for all grade levels combined. Student responses, therefore, are reported as total student responses, total male responses, and total female responses.

Because of the design of the study and survey, for selected questions 1, 6, 8a, 8b, 8c, and 9 student "yes", "no", and "unsure" responses were Likert equated. The "yes" response was valued as a 5 or strongly agrees, a "no" response as a 1 - strongly disagrees, and an "unsure" as a 3. The raw and calculated percentage student survey responses for all questions and by male and female student responses are provided in Appendix C, Tables 23 through 26.

For selected questions 1, 6, 8a, 8b, 8c, and 9,based on the Likert equivalencies that were applied to the "yes", "no", and "unsure" answers, the means were calculated for all students, for male students, and for female students. Standard deviations were also

calculated and a non-directional paired t test applied. The calculations were all performed using the SYSSTAT Statistical Package.

For survey question 1, students were asked, "Do you believe that your school offers a gender bias-free learning environment?" Of the three hundred students who responded, 141 indicated "yes", 54 "no", and 105 "unsure". When calculated into percentages, forty-seven percent of all students indicated that they believed the school offered a gender bias-free learning environment, while eighteen percent said "no", and thirty-five percent were "unsure." Responses for both male and female students were strikingly similar, in fact in the statistical analysis that was done; there were significant correlations between the responses of all students. Further, when the interview question was asked, students responded in about the same ratio with fifty percent believing strongly that the school district offered a gender bias-free learning environment. Of particular note, however, were the number of students who were "unsure" both when asked in the written survey and when questioned as to whether or not they believed that the school offered a gender bias-free learning environment. At the very least, this has implications as to the possible need for a student awareness program. A complete statistical analysis for question 1 is provided in Appendix C, Tables 27 through 29.

For question 6, students were asked, "Do you believe that you have ever experienced any type of discrimination because you are male or female?" Students were asked to check one of the following three responses: yes, no, or unsure. In Appendix C, Table 23, it is shown that of a total of 300 students who responded, 107 said "yes", 140 said "no", and 53 "unsure". Of the 164 male respondents, 48 responded "yes", 89 "no", and 27 "unsure". Utilizing a Likert type conversion scale, "yes" responses were

converted to a 5, "no" responses to a 1, and "unsure" responses to a 3. Means were then calculated between all student responses and male student responses.

For the female total population of 136 students, 59 students responded "yes", 51 "no", and 26 "unsure". In Appendix C, Table 26, responses are shown in calculated percentages. Of the total student population, thirty-six percent answered "yes", forty-seven percent "no", and eighteen percent "unsure". For the female population, forty-three percent answered "yes", thirty-eight percent "no", and nineteen percent "unsure". After the responses were Likert equated using 5 for "yes", 3 for "unsure", and 1 for "no", the means were calculated for all student responses and for female student responses to question 6.

Forty-three percent of all sixth, seventh and eighth grade female students, as shown in Appendix C, Table 26, believe they have experienced some type of discrimination in school as compared to twenty-nine percent of the male students, as shown in Appendix C, Table 24. This seems to support the negative correlation shown in Appendix C, Table 32, between male student and female student responses. From the student responses to question 6, it is clear that more than a third of students, thirty-six percent, believe that they have been gender discriminated against in some way. The figure for the male population is somewhat lower at twenty-nine percent. It is noted above, that for female students the figure is forty-three percent. This has implications, both with the need and type of awareness and diversity programs.

In question 8, students were advised that gender equity would be defined as an equal opportunity to work or learn in an environment that is free of inequities or biases that are related to being a male or female. Students were also advised that at their school

staff strive to provide this kind of environment. Based on these parameters, students were asked the question, "Do you believe that this kind of environment exists?" Further, students were asked to check "yes" if they believed that it does exist, and if they believed it does not exist they were asked to check "no", and if they were unsure to check this response. Question 8a was, "On the school bus coming to and from school". Question 8b was, "In any class" and in question 8c, "For extracurricular activities".

In Appendix C, Table 33 a comparison of the differences between the means for all student responses to question 8a and to male student responses to question 8a is provided. For this question, as shown in Appendix C, Table 23, of the 300 students who responded 124 said "yes", 135 "no", and 41 "unsure". Of the 164 males male students who responded, 73 said "yes", 74 "no", and 17 "unsure". For purposes of statistical analysis, "yes" responses were weighted as a 5 – strongly agree, "no" responses as a 1 – strongly disagree, and "unsure" which was used to represent the middle of the scale was assigned a 3 value.

In Appendix C, Table 34, a comparison of the differences between the means for all students and female students is presented for question 8a. In Appendix C, Table 25, the actual student responses for all 300 participants is presented for question 8a. One hundred twenty-four students indicated "yes" to the question, 135 "no", and 41 "unsure". For the 136 female students who responded from grades 6, 7, and 8, 51 said "yes", 61 "no", and 24 "unsure". These responses were also equated to a Likert type scale. "Yes" responses were given a value of 5, "no" responses a value of 1, and "unsure" responses a value of 3. The mean was then calculated for all students and for female students.

For questions 8b and 8c, the same statistical procedures were utilized. In Appendix C, Table 36, a comparison of the difference between the means for all students and for male students is shown. In Appendix C, Table 37, a comparison of the difference between the means for all students and for female students to question 8b is shown.

For question 8c, students were asked to respond as to whether they had experienced gender bias in extra curricular sports. In Appendix C, Table 39, a comparison of the difference between the mean response for all students and the mean response for male students is presented. In Appendix C, Table 40, a comparison of the difference between the means of all students and female student responses to question 8c is shown. In Appendix C, Table 41, a comparison of the difference between the means for male and female student responses to student question 8c are shown.

It is noted that for question 8a, forty-five percent of all students indicated that they did not believe their bus ride, to and from school, was free of gender inequities or biases. Forty-five percent of the male population felt this way, as did forty-five percent of the female population. When asked the same question regarding their classes, thirty-nine percent of all students answered "no". For males, forty-one percent answered "no", and for females thirty-six percent answered "no". For question 8c, extra curricular sports, thirty-seven percent of all students answered "no", and forty percent of male students and thirty-three percent of female students also responded "no". When combined with the "unsure" categories, over fifty percent of the students indicated some type of perceived gender bias in extra curricular sports.

Collectively, when questions 8a, b, and c are reviewed, the notion is supported that equity and diversity training is both needed and necessary. It is also clear that

student concern is not limited to the classroom and that it includes to and from school and extra curricular sports. A complete statistical analysis, in which strong correlations between student responses are shown, is provided in Appendix C, Tables 33 through 41.

The final student question that was analyzed was question 9. In this question students were asked, "Do you believe that your school generally provides you with an opportunity to learn and participate in extra-curricular activities equally whether or not you are a male or female?" This question was asked in part to verify the viability of the responses that were provided to questions 8a, 8b, and 8c. The raw data for question 9 responses are shown in Appendix C, Tables 23 and 25. Prior to performing a statistical analysis, the percentage responses were calculated for all students, male students, and female students and were examined. These calculations are shown in Appendix C, Tables 24 and 26. In Appendix C, Table 23, it is noted that for all students who responded to question 9, 195 said "yes", 54 "no", and 51 "unsure". For male students 106 said "yes", 25 "no", and 23 "unsure". In Appendix C, Table 25, 136 female responses are shown as follows: 89 "yes", 29 "no", and 18 "unsure". Although the responses seem to relate directionally to those of the students for questions 8a, 8b, and 8c, the number of the students answering "yes" for both male and female students was greater in each case in question 9.

For student question 9 the mean responses of all students were compared to male students and the responses for all students were compared to female students. Finally, the responses of male and female students compared to each other. In all three comparisons there was a significant relationship at the .05 level of confidence for each of the comparisons between the variables. It is also noted that the student responses regarding

their belief that the school generally provides them with an opportunity to learn and participate in extra-curricular activities equally, whether they are male or female, were higher than responses given to question 8a, 8b, and 8c. I have no explanation for these differences other than question 8 is more focused on three specific situations; student beliefs regarding a gender bias-free environment on the school bus, in class, and in for extra curricular sports. A complete statistical analysis for question 9 is provided in Appendix C, Tables 42 through 44.

Comparative Analysis Between Teacher and Student Responses To Selected Survey Questions

In order to determine if the perceived beliefs concerning gender equity between staff and students were related, an analysis was performed between the responses for teachers and the sixth, seventh, and eighth grade students that participated in this survey. Responses for teacher survey question 1 were compared to the responses of male and female students to student survey question 1. Teacher survey question 2 responses were also compared to student survey question 2 responses and teacher survey question 3 responses were compared student survey question 3 responses. Teacher survey question 6 responses were compared to student survey question 5 responses for both male and female students. Teacher survey question 11 responses were compared to male and female student survey responses to question 7.

In teacher survey question 1, teachers were asked to respond "yes", "no", or "unsure" to the question, "Do you believe that the Westampton Township Middle School offers a gender bias-free work and learning environment?" For student survey question 1, students were advised that the word gender would be used to designate male or female

and that the word bias in this context would mean gender beliefs that are formed without factual basis. The student survey question read, "Do you believe that your school offers a gender bias-free learning environment?" Students were requested to respond "yes", 'no", or "unsure". For this question 39 of 42 total teachers in the Westampton Township Middle School responded and 300 students responded. This represents the majority of the sixth, seventh, and eighth grade population in the Westampton Township Middle School.

Based on the design of the study, the survey, and interview questionnaire, it was necessary to convert both teacher and student responses to a Likert-type scale. "Yes" responses were assigned a weighted value of 5, "no" responses a weighted value of 1, and "unsure" responses a weighted value of 3 with 5 meaning strongly agree, 1 meaning strongly disagree, and 3 being the middle indicator. Of the thirty-nine teachers who responded to the question, "Do you believe that the Westampton Township Middle School offers a gender bias-free work and learning environment?" 30 teachers responded "yes", 4 teachers "no", and 5 teachers "unsure". The "yes" response was offered by seventy-seven percent of the 39 respondents indicating that they believed the district provided a bias-free learning and work environment.

Of the 300 hundred students who responded to the question, "Do you believe that your school offers a gender bias-free learning environment?" 141 said "yes", 54 "no", and 105 "unsure". Of the total student population, forty-seven percent of the students indicated they believed that the school provided a bias-free learning environment, while eighteen percent indicated that they did not believe that the school provided such an environment, and thirty-five percent were unsure. To determine if there was any

statistical correlation between the responses, I weighted the responses and obtained the means of the weighted responses as described in the preceding paragraphs.

In Table 1 a comparison of the difference between the means for teacher responses to their survey question 1 and student responses to their survey question 1 is presented. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 2.649 is 0.439 more or less the tabled value, I must conclude that there is some slight or mild correlation between the two variables. The variables being the mean response of teachers to their survey question 1 as compared to the mean response of students to their survey question 1.

Although statistically there is only a mild correlation between the responses, it is clear, however, that seventy-seven percent of the teachers believe the school offers a bias-free learning environment, while only forty-seven percent of the students believe this to be the case. Further, ten percent of the teachers believe this is not the case as compared to eighteen percent of the students. Again, an indication that the students at least perceive gender biases at a higher rate than teachers do. Finally, when the "unsure" category is examined, thirteen percent of the teachers are unsure regarding whether or not there is a gender bias-free environment, as compared to thirty-five percent of the students. This is almost a 3 to 1 ratio.

These responses were substantiated in the interview survey that was asked to selected teachers and students. For the question "Do you believe that the Westampton Township Middle School offers a gender bias-free work and learning environment?" of the teacher interviewees, eighty percent, or 8 out of 10, said they strongly agree to this

response. When students were asked the question "Do you believe that the school offers a gender bias-free learning environment?" only fifty percent indicated that they strongly agree. Although the statistical correlation between the responses is only mild, indicating that for the population sampled, these results could be somewhat due to chance, it is clear that students are a lot less sure that their learning environment is gender bias-free. Further, this seems to have implications that for any student awareness programs that are developed, there must also be corresponding teacher awareness programs. Table 1 follows:

TABLE 1

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR TEACHERS AND STUDENTS

TEACHER QUESTION 1 AND STUDENT QUESTION 1

MEAN1 Teachers	MEAN 2 Students	t STATISTIC	DEGREES FREEDOM
4.333	3.564	2.649*	38

*Significant at the.05 level

Teacher responses utilized for this comparison were the same responses that were utilized in comparison for all students. The male student responses, as shown in Appendix C, Table 24, look very similar to the overall student population responses, but do have some slight variances. Specifically, thirty-eight percent of the 164 males believe

that the school offers a gender bias-free learning environment, as compared to forty-seven percent for the total population. Nineteen percent of the male students, however, believe that this is not the case, as compared to eighteen percent of the total 300-student population. For the "unsure" category, thirty-three percent of the male students who responded provided this response, as compared to thirty-five percent of the total student population.

In Table 2 the comparison of the difference between the mean responses for teachers and for male students for teacher question 1 and student question 1 are shown. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.02 is required for significance. Since the calculated t statistic of 2.483 is 0.462 more than the tabled value, I must conclude that there is a slight or mild correlation between the two variables. The variables being the mean teacher response to question 1 as compared to the mean male student response to question 1. Although the statistical analysis shows only a slight or mild correlation between the male student responses to their survey question 1, when compared to the teacher responses to their survey question 1, virtually the same pattern as was established for all students also applies to the male student perception, as compared to that of teachers with regard to a gender bias-free learning environment. As I previously noted, the interview responses to this question support this notion. Table 2 follows:

TABLE 2

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR TEACHERS AND MALE STUDENTS

TEACHER QUESTION 1 AND STUDENT QUESTION 1

MEAN 1 Teachers	MEAN 2 Male Students	T STATISTIC	DEGREES FREEDOM
4.333	3.615	2.483*	38

*Significant at the .05 level.

The overall teacher responses to survey question 1 were also compared to the responses of the 136 sixth, seventh, and eighth grade female students. The female student responses also closely paralleled the total student responses. For the female students, 62, or forty-six percent, of these respondents answered "yes" to the question as to whether they believed the district provided a gender bias-free learning environment, as compared to forty-seven percent of the total student population who responded in the affirmative. Twenty-three female students, or seventeen percent, answered "no" as compared to eighteen percent of the total population and thirty-eight percent, or 51 of the total respondents, answered "unsure", as compared to thirty-five percent of the total student population answering "unsure". Male student responses were two percent lower in the "no" category, but were five percent higher than the "unsure" category.

As in the first two comparisons, although there was only a slight or mild correlation between the mean responses for female students and all teacher responses to question 1, clearly, like their male counterparts, female students felt at a higher rate then teachers that there were biases in the classroom due to gender. Further, a large number of female respondents, thirty-eight percent, were unsure indicating a need for both a student and staff awareness programs. Interview questions confirmed these differences. Eighty percent of all teachers believed that the school district provided a gender bias-free learning environment, as compared to fifty percent of the female sixth, seventh, and eighth grade students who participated in the questionnaire survey.

From a statistical perspective, in Table 3 the comparison of the difference between the means for teachers and female students is shown. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 2.649 is 0.208 more or less than the tabled value, I must conclude that there is a slight or mild correlation between the two variables. The two variables being the mean response for teachers as compared to the mean response of female students for the responses compared.

TABLE 3

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR TEACHERS AND FEMALE STUDENTS

TEACHER QUESTION 1 AND STUDENT QUESTION 1

MEAN 1 Teachers	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.333	3.564	2.649*	38

*Significant at the .05 level.

For each of the comparisons that were made, the difference between the means for teacher and student responses to teacher question 1 and student question 1, there was a mild or slight correlation between the variables indicating that both teacher and student responses were somewhat similar. It is noted, however, while a majority of the teacher responses supported the notion that teachers believe that the Westampton Township Middle School offer a gender bias-free work and learning environment, as shown in the raw data in Appendix C, Table 1, that only approximately half of the students believe this to be the case, as shown in Appendix C, Tables 23 and 25. The survey responses were basically the same as the questionnaire interview responses. I determined, therefore, that there was a need to examine further why only approximately half of the students believe that the school offered a gender bias-free learning environment and why a significant number of both male and female students were unsure.

It is also noted, that although for teachers seventy-seven percent of the staff believe a gender bias-free learning and work environment exist, ten percent of the staff does not believe this to be the case. Further, thirteen percent of the teachers indicate that

they are unsure. Thus, twenty-three percent or almost one-quarter of the staff also believe from a perception standpoint that they have strong to mild doubts as to whether the school offers a gender bias-free work and learning environment. In Appendix C, Table 2 and Table 4, a further breakdown by age category of staff and experience category is shown respectively in percentages. I determined, therefore, that teacher awareness and sensitivity training would also be beneficial.

For the comparison of differences between the means for subjects female students believe they do best in versus teachers perceived belief of subjects females do best in, an analysis was performed for teacher responses to question 2 and female responses to student question 3. Teacher question 2 was stated as follows: "Of the choices listed below, which subject do you believe girls do best in? Please check one." The choices were English, Mathematics, Science, and Social Studies. In student question 3, students were asked, "From the subjects listed below, in which do you do your best in and earn your highest grades? Please check only one." The choices were English, Mathematics, Science, and Social Studies. Based on the actual responses from each category, a comparison of the differences between the means for course subjects students believe they do best in versus teachers perceived belief of subjects female students do best in is shown in Table 4.

The course subjects are listed in column one. The mean response of teachers is shown in column two, the mean response for female students in column three, the t statistic in column four, and the degrees of freedom in column five. For English, the means between teacher and female responses are compared. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed,

a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 4.873 is 2.852 more or less than the tabled value, I must conclude that there is a correlation between the two variables for this sample population. The two variables being the rate at which teachers select English as being the subject that female students do best in versus female students indicating that English is the subject they do best in.

It is noted in Appendix C, Table 2, that sixty-nine percent of the 39 teacher survey respondents selected English as the subject that female students do best in. In Appendix C, Table 26, it is also noted that of the 136 female students in grades 6, 7, and 8 that responded, thirty-four percent indicated that English is their best subject. For the questionnaire survey, seventy percent of the teachers made this choice, while forty percent of the female students chose English as their favorite subject. I determined, therefore, that although there was a slight or mild negative statistical correlation between the responses, that the teachers clearly believed that female students do better in English, but that female students have other subject matter interests at a much higher rate than perceived by teachers.

A similar comparison was made for Mathematics. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –1.000 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a negative correlation between the two variables. There was insufficient evidence to state that there was a negative correlation between the number of teachers, twenty-three percent who indicated that they believe female students did best in Mathematics, as compared to twenty-one percent of female sixth, seventh, and eighth grade students who

selected Mathematics as their best subject. For the questionnaire interview survey, twenty percent of the teacher respondents indicated they believe that Mathematics was a subject that girls do best in versus twenty percent of the female students selecting Mathematics as their best subject. I determined that although the responses of teachers and female students were similar, the issue of perception needed further review.

The same statistical analysis was performed for the responses of teachers to survey question 2 and student question 3 with regard to Science. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of – 2.883 is only .862 more or less than the tabled value, I must conclude there is a slight or mild negative correlation between the two variables. It is noted in explaining this slight negative correlation from Appendix C, Table 2, that only eight percent of the 39 teachers who responded indicated that they believed that female students did best in Science. While in Appendix C, Table 26, twenty-three percent of the 136 female students who responded believed that they did best in Science. Since there was a slight negative correlation statistically, the equity attitude interview questionnaire responses were further reviewed. In the interview survey, twenty percent of the female students indicated that Science was their best subject, but only ten percent of the teachers indicated that they believed Science was a subject that female students do best in. This further supported the notion, whether real or perceived, that female students had a much greater desire to participate in Science courses then perceived by teachers.

The final responses compared for this category was for Social Studies. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is

performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.629 is only 0.608 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. The variables being the teacher selection of Social Studies as being the subject that female students do best in versus female students indicating Social Students as their best subject. It is noted here that in Appendix C, Table 2, it is shown that no teachers selected Social Studies as a subject in which female students do best in, as compared to Appendix C, Table 26, where it is shown that twenty-three percent of the 136 female respondents in grade 6, 7, and 8 selected Social Studies as their best subject. Again, there was a slight negative correlation between the teacher selection of Social Studies as a subject that female students do well in, as compared to female students selecting Social Studies as their favorite subject. It is interesting to note that not a single teacher in the written survey selected Social Studies as a subject that they believe female students do well in, while twenty-three percent of the 136 female students that responded selected Social Studies as their best subject. The interview questionnaire virtually supports this with only one of the teacher respondents selecting Social Studies as the subject he/she believed that female students do best in, as compared to twenty percent of the female student respondents in the interview who selected Social Studies as their best subject.

On both the survey responses and the questionnaire interview responses for English, there was a positive correlation between the responses of teachers and female students. For Mathematics, Science, and Social Studies, however, there was a slight to mild negative correlation between the responses. It was therefore determined that female students seem to have a more positive and broader perception with regard to the subjects

they do best in, as compared to the subjects that teachers believe female students do best in. Table 4 follows:

TABLE 4

COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR SUBJECTS FEMALE STUDENTS BELIEVE THEY DO BEST IN VERSUS TEACHERS PERCEIVED BELIEF OF SUBJECTS FEMALE STUDENTS DO BEST IN

TEACHER QUESTION 2 AND STUDENT QUESTION 3 FOR FEMALE STUDENTS

SUBJECTS	MEAN 1 Teachers	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
English	0.718	0.330	4.873*	38
Mathematics	0.231	0.256	-1.000	38
Science	0.077	0.256	-2.883*	38
Social Studies	0.000	0.154	-2.629*	38

*Significant at the .05 level.

The same analysis was performed for teacher question 3 and male student responses to student question 3. For teacher question 3, teachers were asked, "Out of the subjects listed below, what subject do you believe boys do best in? Please check one." The choices were English, Mathematics, Science, and Social Studies. Responses for

teachers were compared to male student responses to student question 3 which was, "From the subjects listed below, in which do you do your best work and earn your highest grades? Please check only one." The choices were English, Mathematics, Science, and Social Studies.

For English, no teachers indicated boys do best in this subject as shown in Appendix C, Tables 1 and 2. Eighteen of 164 male students, however, indicated that English was their best subject. This accounted for eleven percent of the 164 male respondents that answered the question. A statistical comparison between the mean response for teachers and the mean response for male students was performed. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.804 is only .0783 more or less of the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables.

For the interview questionnaire survey question 3, no teacher selected English as a subject they believe that male students do best in. Of the male students who were interviewed, however, 31.5 percent of the male students selected English as their favorite subject. I determined, because there was only a slight negative statistical significance, that the difference in responses could be due to chance. I also determined that the differences in perception of male students and teachers with regard to English, was still worthy of review when consideration was given to the selection of gender bias awareness programs for both staff and students.

Comparisons between the mean response for teachers who selected Mathematics, Science, and Social Studies as being the subjects male students do best in were also

compared to the sixth, seventh, and eighth grade male student selection for each of these subjects. For mathematics, at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 2.883 is only 0.862 more or less than the tabled value, I must conclude that there is a slight or mild correlation between the two variables. To verify the survey responses, I also reviewed the questionnaire responses in which sixty percent of the teacher respondents selected Mathematics as a subject they believe boys do best in. It is interesting, however, to note that for the male students who responded to the questionnaire, only 31.25 percent selected Mathematics as their best subject. This compares to thirty-three percent of the 164 male students who responded to the written survey that Mathematics was their best subject. It is again noted that the perception of teachers seems to be different than that of the perception of students with regard to subjects they believe that male students do best in versus male student's belief as to their best subject.

For the Science selection, at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.084 is only 0.063 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. Again, because there was only a slight negative variance in the correlation between the survey responses of teachers and students, I reviewed the questionnaire responses in which thirty percent of the teachers selected Science as the subject they believe boys do best in, as compared to 18.75 percent of the

male students surveyed who selected Science as a subject in which they do their best work and get their highest grades.

Finally, for the Social Studies response, at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –1.433 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a correlation between the two variables. The two variables being teachers who selected Social Studies and the male students who selected Social Studies. Although there was no correlation for statistical purposes between the selection of Social Studies by teachers as the subject they believe male students do best in versus male students belief that Social Studies is the subject they earn their highest grades in, I also reviewed the interview survey and found similar results. Only one teacher selected Social Studies as the subject he/she believed male students do best in. This amounts to about one percent of the responses, as compared to approximately 18.75 percent of the male interview respondents who selected Social Studies as a subject in which they earn their highest grades. Although the percentages were slightly higher then the survey, no conclusions could be drawn other than male students seem to believe they do better in a variety subjects as compared to a narrower range of subjects selected by teachers. Table 5 follows:

TABLE 5

COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR SUBJECTS MALE STUDENTS BELIEVE THEY DO BEST IN VERSUS TEACHERS PERCEIVED BELIEF OF SUBJECTS MALE STUDENTS DO BEST IN

TEACHER QUESTION 3 AND STUDENT QUESTION 3 FOR MALE STUDENTS

SUBJECTS	MEAN 1 Teachers	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
English	0.000	01030	-2.804*	38
Mathematics	0.538	0.359	2.883*	38
Science	0.282	0.385	-2.084*	38
Social Studies	0.103	0.154	-1.433	38

*Significant at the .05 level.

For the next set of comparisons, teacher question 6 responses were compared to female student question 5 responses and to male question 5 responses. In the teacher survey, question 6 was stated as follows: "Do male or female students tend to earn higher grades in classes you have taught?" Teachers were asked to check male, female, unsure, or equal. On student question 5, students were asked the question, "Do you believe you earn better grades from a male or female teacher?" They were asked to check either male, female, or unsure. In order to make the comparison, teacher responses unsure or equal responses to question 6 were combined.

In Table 6, a comparison of the differences between mean responses for teacher beliefs of whether male or female students earn higher grades versus student beliefs as to whether they earn higher grades from male or female teachers is shown for female

student responses to student question 5 and for teacher question 6 responses. Six sets of means were compared. Mean 1 is the mean teacher response for those teachers who selected male students as those students who tend to earn higher grades in classes that they have taught versus the female selection of males as the teachers they earn better grades from. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.084 is only 0.063 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. That is, those teachers who selected males as students who earned better grades in their classes as compared to female students selecting male teachers as those teachers they earn better grades from.

To understand the slight negative correlation, reference is made to Appendix C, Table 2, in which zero percent of the teachers selected male students as doing better in their classes. It is further noted that in Appendix C, Table 26, for question 5, thirteen percent of the female students selected male teachers as those whom they believe they receive better grades from. It is interesting to note that no teachers selected male students as earning higher grades than female students. Thirty-three percent selected female students as earning higher grades, as compared to sixty-seven percent of all teachers who said there was no difference between male and female students earned grades. Of the female students who responded, thirteen percent stated that they earned better grades from male teachers; forty-two percent indicated female teachers; fifty-six percent indicated they were unsure or it didn't matter. I determined, therefore, the slight negative correlation could have been attributed more to chance in this population. It still,

however, has some bearing on the overall perceptions of students with regard to gender bias.

The second set of comparisons that were made in this analysis was between Mean 3, teacher selection of female students as those students who they believe earn higher grades in the classes they have taught, as compared to Mean 4, the female student selection of female teachers as those teachers from whom they believe they earn higher grades from. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –1.000 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a correlation between the two variables.

To better understand the responses to this question, the interview question survey question 4 was reviewed. For teachers who responded to the question "Do you believe male or female students tend to earn higher grades in classes that you have taught?" none of the respondents selected males; thirty percent selected females; and approximately seventy percent indicated that it was equal. For the student interview question 4, "Do you believe you earn better grades from male or female teachers?" thirteen percent of the female students selected males; thirty-three percent females; and fifty-four percent indicated equally. The questionnaire responses seem to support the survey responses of both teachers and female students with approximately one-third of the teachers indicating that they believe females earn better grades in their classes then male students and approximately one-third of the female students indicating that they believe they earn better grades from female teachers. It is noted, however, that there are only four male teachers on the staff. Although there was a slight negative correlation between female

student responses and teacher responses concerning the selection of males, I determined that the variation was not worthy of a further, in-depth review. My overall conclusion, however, is that these responses support the need for a gender bias awareness program.

The final comparison shown in Table 6 is between Mean 5, those teachers who selected unsure or equal to teacher question 6, as compared to those female students who selected equal to the student question 5. At the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 1.433 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a correlation between the two variables. It is reported, however, that sixty-four percent of the teachers and fifty-four percent of the students were unsure. This could be construed as a positive indicator. Table 6 follows:

TABLE 6

COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR TEACHER BELIEFS OF WHETHER MALE OR FEMALE STUDENTS EARN HIGHER GRADES VERSUS STUDENT BELIEFS AS TO WHETHER THEY EARN HIGHER GRADES FROM MALE OR FEMALE TEACHERS

TEACHER QUESTION 6 AND FEMALE STUDENT QUESTION 5 RESPONSES

MEAN 1 Teacher for Male Students	MEAN 2 Female Student for Male Teacher	t STATISTIC	DEGREES FREEDOM
0.000	0.103	-2.084*	38

MEAN 3 Teacher for Female Students	MEAN 4 Female Student for Female Teacher	t STATISTIC	DEGREES FREEDOM
0.308	0.333	-1.000	38

MEAN 5 Teacher for Equal	MEAN 6 Female Student for Equal	t STATISTIC	DEGREES FREEDOM
0.615	0.564	1.433	38

*Significant at the .05 level.

For Table 7 a comparison of the differences between means for teacher beliefs of whether male or female students earn higher grades versus students beliefs as to whether they earn higher grades from male or female teachers is presented for male student responses. The same statistical procedures used to compute the data in Table 6 were also utilized for male student responses. Teacher responses are identical to those presented in Table 6. For Means 1 and 2 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.883 is only 0.862 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. For the questionnaire survey, nineteen percent of the males selected male teachers as teachers that they earn better grades from, while thirty-one percent selected female teachers and fifty percent said it didn't matter. Teachers, however, on their questionnaire did not select male students as the students who earn higher grades in their classes at all, while sixty-seven percent of the teacher respondents indicated that it was equal. I determined, therefore, that the slight negative correlation had no bearing on the study's conclusions other than that the raw data supported the need for broadening an equity awareness and gender bias program.

For Means 3 and 4 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 1.000 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a correlation between the two variables. It is noted that while no teachers selected male students as doing better in their classes, thirty-one percent of the male students indicated that they did better with

female teachers. It is pointed out again, however, that there are only four male teachers on the staff. For purposes of this study, this statistical information did not yield any new insights.

For Means 5 and 6 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 1.780 is less than the tabled value, I must conclude that there is insufficient evidence to state that there is a correlation between the two variables. From the data gathered, it is clear that a majority of both teachers and students felt that students earned grades equally regardless of their gender; however, there was a noted difference in selection of female students as earning higher grades then male students by teachers. This has implications with regard to the overall awareness of gender equity and gender bias on the part of both staff and students.

TABLE 7

COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR TEACHER BELIEFS OF WHETHER MALE OR FEMALE STUDENTS EARN HIGHER GRADES VERSUS STUDENT BELIEFS AS TO WHETHER THEY EARN HIGHER GRADES FROM MALE OR FEMALE TEACHERS

TEACHER QUESTION 6 AND MALE STUDENT QUESTION 5 RESPONSES

MEAN 1 Teacher for Male Student	MEAN 2 Male Student for Male Teacher	t STATISTIC	DEGREES FREEDOM
0.000	0.179	-2.883*	38

MEAN 3 Teacher for Female Student	MEAN 4 Male Student for Female Teacher	t STATISTIC	DEGREES FREEDOM
0.308	0.282	1.000	38

MEAN 5 Teacher for Equal	MEAN 6 Male Student for Equal	t STATISTIC	DEGREES FREEDOM
0.615	0.538	1.780	38

*Significant at the .05 level.

While I determined that for the purposes of this study the analysis performed and reported in Tables 6 and 7 did not yield sufficient information. The data and percentage responses, however, as contained in Appendix C, Tables 1 and 2 and Tables 23, 24, 25,

and 26 were helpful to the researcher in better understanding staff and student beliefs toward gender biases and for trend purposes.

In Table 8 a comparison of the differences between means for teacher beliefs of whether male or female students tend to respond more frequently to questions versus students beliefs as to whether male or female teachers call on them more to respond to questions is shown for female student responses. The specific comparison is between teacher question 11 means responses and female student question 7 means responses. Three sets of means are compared. In the first set Mean 1 represents teachers who selected male students as compared to female student respondents who selected male teachers. In the second comparison Mean 3 for teachers who selected female students is compared to Mean 4 the female students who selected female teachers. Finally, for Mean 5 teacher mean responses for those who selected equal are compared to female student responses for equal.

For Mean 1 and Mean 2 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 2.629 is only 0.608 more or less than the tabled value, I must conclude that there is a slight or mild correlation between the two variables. For this comparison, although there was a slight correlation between the teachers who selected male students who raise their hands more frequently in their class to respond to questions, as compared to female students who selected male teachers as those who would be more likely inclined to call upon them, I determined that there was little additional relevance yielded to support my hypothesis.

When Mean 3 is compared to Mean 4 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.084 is only 0.063 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. To this question, approximately thirteen percent of the teachers selected female students as raising their hands more frequently to respond to questions, as compared to twenty-one percent of the female students selecting male teachers. Although there was a slight negative correlation between the teacher responses and the student responses, I determined that there was no additional relevance added to the research question as a result of this statistical analysis.

Mean 5 and Mean 6 were then compared at the .05 level of confidence with 38 degrees of freedom. When a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.364 is only .0343 more or less than the tabled value, I must conclude that there is a slight or mild correlation between the two variables. For this analysis there was also a slightly negative correlation between the number of teachers who indicated that male or female students equally raised their hands, as compared to female responses that it did not matter whether they had a male or female teacher with regard to the frequency they were called upon.

These survey responses were verified through the questionnaire responses in which to the question "In your classes on average, do male or female students seem to raise their hand first to respond to questions?" twenty percent of the teachers indicated male students; ten percent female students; and an overwhelming seventy percent indicated that students raise their hands equally. For the sixth, seventh, and eighth grade

females who were interviewed and asked the question, "Based on your experience in school, do you believe male teachers or female teachers call on you more often?" sixth percent answered male teachers; twenty percent female teachers; and seventy-four percent said it didn't matter. This seems to indicate that a majority of the female students felt that they were treated equally in this regard.

TABLE 8

COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR TEACHER BELIEFS OF WHETHER MALE OR FEMALE STUDENTS TEND TO RESPOND MORE FREQUENTLY TO QUESTIONS VERSUS STUDENTS BELIEFS AS TO WHETHER MALE OR FEMALE TEACHERS CALL ON THEM MORE TO RESPOND TO QUESTIONS

TEACHER QUESTION 11 AND FEMALE STUDENT QUESTION 7 RESPONSES

MEAN 1 Teacher for Male Student	MEAN 2 Female Student for Male Teacher	T STATISTIC	DEGREES FREEDOM
0.205	0.051	2.629*	38

MEAN 3 Teacher for Female Student	MEAN 4 Female Student for Female Teacher	t STATISTIC	DEGREES FREEDOM
0.128	0.231	-2.084*	38

MEAN 5 Teacher for Equal	MEAN 6 Female Student for Equal	T STATISTIC	DEGREES FREEDOM
0.590	0.718	-2.364*	38

*Significant at the .05 level.

Since the t statistics were only mildly or slightly correlated either positively or negatively, actual raw responses and percentage responses were again reviewed. From appendix C, Table 2, it is noted that for question 11 twenty-three percent of the thirty-nine teacher respondents indicated that on average male students seem to raise their hand first to respond to questions. Forty-nine percent indicated female students and thirty-three percent indicated that students raise their hand first equally. In Appendix C, Table 26, it is shown that for question 7 in column three that of 136 female students seventy-one percent believe that the frequency they are called on does not matter as far as whether

they have a male or female teacher. Six percent, however, favored male teachers and twenty-four percent female teachers.

In Table 9 a comparison of the differences between the means for teacher beliefs as to whether male or female students tend to respond more frequently to questions versus student beliefs as to whether male or female teachers call on them more frequently to respond to questions is shown for male student responses to student question 7 as compared to teacher responses to question 11. Specifically, for Means 1 and 2 a comparison is made between those teachers who indicate on average male students seem to raise their hand first to respond to questions as compared to male students who believe male teachers are more likely to call upon them. Mean 3 represents the mean responses for those teachers who selected female students as those most likely to raise their hand first to respond to questions as compared to Mean 4 the male student responses that female teachers call on them first. Finally, Mean 5 is the teacher responses for equal male and female distribution are compared to the male student responses that it does not matter whether it is a male or female teacher with regard to whether they are called upon first.

For Means 1 and 2 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of 2.364 is only 0.393 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. Although there was a slight to mild negative correlation between the teacher respondents and the male student respondents to this question, it did not seem to add any additional meaning to the research. Specifically, in teacher question 11 twenty-

three percent of the teachers indicated that in their classes on average they believe that males raise their hands first to respond to questions. Of the 164 males who were surveyed, nine percent indicated that they believed that male teachers call on them first. I determined that this statistical analysis did not provide any additional information to assist with the research conclusions.

For Means 3 and 4 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.084 is only 0.063 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. For this question, twenty-three percent of the male students indicated that they believe female teachers called on them more often. Again, because there are only four male teachers on the staff, this statistical information yielded little additional data to assist in the preparation of my conclusions. Although there was a slight mild or negative correlation between male students who believed they were called upon equally by male and female teachers, and the teachers who believed that students raised their hands first equally, there is not much evidence to indicate that the differences between the student response and staff response is due to much more than chance.

Finally, for Means 5 and 6 at the .05 level of confidence with 38 degrees of freedom when a non-directional paired t test is performed, a t value of + or – 2.021 is required for significance. Since the calculated t statistic of –2.084 is only 0.063 more or less than the tabled value, I must conclude that there is a slight or mild negative correlation between the two variables. What was important in the survey question was that sixty-four percent of all teachers believed that students raise their hands equally.

For the male student respondents, sixty-eight percent believed that it does not matter whether they have a male or female teacher with regard to the frequency they are called upon. These responses are at about the same rate as for female responses in which seventy-one percent of the female students indicated that it does not matter. Of all 300 students who were surveyed, approximately sixty-nine percent believe that it does not matter whether they have a male or female teacher with regard to who calls upon them. This would tend to support the notion that, at least in this aspect of the classroom environment, that based on actual practice of teachers and the students perception that gender bias do not exist. This, however, does not address the issue with regard to awareness and understanding. Table 9 follows:

TABLE 9

MORE COMPARISON OF THE DIFFERENCES BETWEEN MEANS FOR TEACHER BELIEFS OF WHETHER MALE OR FEMALE STUDENTS TEND TO RESPOND MORE FREQUENTLY TO QUESTIONS VERSUS STUDENTS BELIEFS AS TO WHETHER MALE OR FEMALE TEACHERS CALL ON THEM TO RESPOND TO QUESTIONS

TEACHER QUESTION 11 AND MALE STUDENT QUESTION 7 RESPONSES

MEAN 1 Teacher for Male Student	MEAN 2 Male Student for Male Teacher	T STATISTIC	DEGREES FREEDOM
0.205	0.077	2.364*	38

MEAN 3 Teacher for Female Student	MEAN 4 Male Student for Female Teacher	T STATISTIC	DEGREES FREEDOM
0.128	0.231	-2.084*	38

MEAN 5 Teacher for Equal	MEAN 6 Male Student for Equal	T STATISTIC	DEGREES FREEDOM
0.590	0.692	-2.084*	38

*Significant at the .05 level.

Because for each of the three sets of two variables that were compared, there was only a slight positive or negative correlation between the variables, I again reviewed all data as shown in Appendix C, Table 1, for teachers and the percentage data shown in Appendix C, Table 2. Further, the researcher examined the raw male student data for question 7 from Appendix C, Table 23, and the calculated percentage data shown in Appendix C, Table 24.

It is noted that for question 11, twenty-three percent of the 39 teachers selected male students while thirteen percent selected female students and a majority or sixty-four percent indicated that in their classes on average male and female students seemed to

raise their hand first to respond to questions equally. Of the 164 sixth, seventh, and eighth grade male students who responded to question 7, nine percent indicated that they believe based on their experience in school that male teachers call on them more often, twenty-three percent selected female teachers, and sixty-eight percent or the majority indicated that it did not matter.

For the interview survey that was administered to teachers, in question 5 teachers were asked, "In your classes, on average do males or females raise their hand first to respond to questions?" Of the teachers who were interviewed, twenty percent said males; ten percent said females; and seventy percent answered equally. This question corresponded to teacher survey question 11. For the student interview questionnaire, question 5 was stated as follows: "Based on your experience in school, do you believe that male teachers or female teachers call on you more often?" Seven percent of the students indicated male; twenty-three females; and seventy percent said it didn't matter. This supports the concept that a majority of the staff and students believe gender does not enter into the frequency upon which students are called upon or which students raise their hands. There are, however, approximately thirty percent of both teachers and students that believe otherwise; indicating that there is room for the development of greater gender equity awareness.

Summary

It appears from the actual responses of teachers and students to the two surveys and the calculated percentage responses, that a majority of the teachers and about half the students believe that there is a gender bias-free learning environment in the Westampton Township Middle School. For the questions, however, that required specific responses to

given situations, both teacher and student positive responses as to a gender bias-free learning environment dropped. Further, some of the student favorable responses dropped significantly. It is also noted that the drop for students is greater than for teachers and for the more sophisticated analysis that was done to compare means using a t statistic, these observations were confirmed.

Although not part of the original design, the researcher found some interesting comparisons when teachers were bracketed by age group, age group A being ages being 21-40 and age group B 41 and up. These results were not for the most part statistically significant at the .05 level of confidence. There were, however, some statistically significant differences with regard to teacher experience level, when teachers with 0-6 years were compared to teachers with 7 or more years of experience. These differences, coupled with the drop in response to specific questions, leads me to believe that the perceived understanding of a gender bias-free environment and the actual understanding vary. Both the survey and questionnaire data indicate that large segments of the student population are unsure. With regard to student-to-student sexual harassment, the data indicated that this is a subject that needs further review and possible follow-up action. In Chapter Five I will provide conclusions and I will make specific recommendations based on the data that was presented.

CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, AND FURTHER STUDY

INTRODUCTION

Utilizing an action research survey model, I established a staff and student equity baseline to determine staff and student beliefs and knowledge regarding gender equity and compliance issues. I further wanted to determine whether students and staff adequately understood what a bias-free work and learning environment is and to what extent bias is perceived to take place in the district by staff and students. Finally, I attempted to determine the extent that real or perceived staff and student sexual harassment takes place in the district. This research is based upon the hypothesis that by establishing a staff and student equity baseline, that professional development and student awareness programs may be needed or initiated to create a bias-free work and learning environment.

From the data I learned that although a majority of the staff believe that there is a gender bias-free work and learning environment, there are differences in perceptions, based upon both age and teaching experience between the beliefs of teachers. I also learned that stated beliefs to general questions such as "Do you believe that a gender bias-free work and learning environment exists?" may differ from the actual responses when placed in the context of learning and the classroom environment. Further, I found that student beliefs differ from teacher beliefs in that almost half of all students surveyed, whether they were male or female students from grades six, seven, and eight are either unsure or believed in fact that they had experienced biases as a result of their gender. Both the written survey questions which were administered to 39 of 42 teaching staff

members, and the student surveys that were administered to 300 sixth, seventh, and eighth grade students which represent 300 of the 306 students enrolled at the time of the survey, support this conclusion. Further, interviews for selected questions that were conducted with ten of the teachers and thirty of the student's support the written survey responses.

From the data collected, seventy-seven percent of all teachers indicated that they believe that the Westampton Township Middle School provides a gender bias-free work and learning environment. The figure increases to eighty-nine percent of responses when teachers ages 21 to 40 are considered, as compared to sixty-seven percent when responses for teachers 41 and up are considered. For this same question, when experience is factored in, ninety-five percent of the teachers with 0-6 years experience believe that a gender bias-free work and learning environment exists, as compared to only sixty percent of the teachers with 7 or more years experience. Therefore, when recommendations are considered for staff development programs, both experience and age factors will have to be taken into consideration.

It is interesting to note that although a majority of the teaching perceive the learning environment to be gender bias-free, that when asked to indicate the subjects that they believe that girls do best in and the subjects that boys do best in, in reality English and Social Studies are selected as the subjects girls do best in, and Mathematics and Science the subjects boys do best in. This, however, is no different in what was indicated in the vast research that has been done, especially through the Foundation of the American Association of University Women as reported in Chapter Two. Although this is no different then the norm, the perceptions of the students themselves vary indicating

perhaps that while students may be more enlightened both in perception and possibly in reality, that both male and female students are stereotyped based upon gender with regard to subject selection and achievement in these subjects.

When asked the question regarding the frequency that students raise their hands in class by gender, more teachers selected male students. The vast majority of teachers, however, felt that students raised their hands equally. Student responses varied somewhat with female responses to this question actually showing a slight negative correlation. Again, however, when the data is reviewed against the research that has been done since the early 1990's, it appears that the trends in the Westampton Township Middle School are no different then the national trends, and that they are perhaps slightly ahead of these trends when the student responses are considered.

A major note of concern was the number of perceived student-to-student sexual harassment incidents over the past two years. It is noted that for this question there is no corresponding student question, since I was not permitted to ask this type of question to students. Further, it is also noted that the definition provided to teachers regarding student-to-student sexual harassment was "unwanted or unsolicited sexual advancement toward a member of the opposite sex". I believe in retrospect that this definition needs to be expanded and better defined. Nevertheless, observed and/or perceived observed incidents of student-to-student sexual harassment needs to be addressed in any professional development program that is offered to staff, and in any gender equity and/or diversity awareness programs that are provided to students.

Additionally, I argue that for this question in particular, forty-nine percent of the teachers surveyed indicated that they had observed some type of student-to-student

sexual harassment in the past two years. When the staff surveyed were compared by the two experience categories, only forty-two percent of those teachers with 0-6 years experience indicated they had observed student-to-student sexual harassment, as compared to fifty-five percent of the teachers with 7 or more years experience. When the same data was examined by age category, eighty-three percent of the teachers in the age category 21-40 noted that they had observed student-to-student sexual harassment in the last two years, as compared to sixty-two percent of teachers ages 41 and up. This too has implications for the type of staff development training that is considered. Finally, it is noted that in the research that was reported in Chapter Two on student-to-student sexual harassment, that a majority of both male and female students will at sometime during their school years experience this type of harassment. This is reported not to diminish the need to address student-to-student sexual harassment locally, but that it is nationwide concern as well.

IMPLICATIONS

Based on the knowledge and experience gained through the project, I recognize that as I seek a principalship position, I will need to consider the diversity and gender awareness of both the student and staff populations in the school district. Further, I will recognize that there can be a difference in the awareness level of staff based both on age and experience. While younger, less experienced staff seems to be less gender bias prone, they also seem to be less aware of actual bias and/or sexual harassment situations. Experienced staff, on the other hand, seems to have more traditional views regarding

gender bias and awareness and seem to be more conscience especially of student-to-student sexual harassment.

It is important that as a school leader/principal, that I recognize these differences and consider them as staff development programs are planned. It is also important to recognize that student perceptions of diversity, in particular gender bias awareness, may be and probably are different then that of the teaching staff. Further, students, because they are influenced by their home environment, community, and the school, are probably more gender bias-free in their views then the adult population that they deal with. Student awareness programs, therefore, need to be targeted to the needs of students. To do this, student views and attitudes need to be surveyed.

FUTURE – NEXT STEPS FOR THE WESTAMPTON TOWNSHIP MIDDLE SCHOOL

The survey and questionnaire results will be shared with the schools' Diversity Committee. Once the Diversity Committee has had a chance to review the information and provide input, the data and recommendations will be shared with building level administrative staff, including the principal and assistant principal. After review of the data with the principal and assistant principal, it will be presented to the superintendent for consideration and possible recommendation to the Board of Education.

Specifically, it is believed that the data supports the need to include diversity and gender equity awareness in the staff development-training program. It is further believed that consideration needs to be given to the age and experience of staff with regard to the level and type of professional development training that is offered. Further, it will also

be recommended that student diversity and gender bias awareness programs be developed for the sixth, seventh, and eighth grade student population.

Based on the data, it will be recommended that consideration be given to addressing gender bias concerns in four areas. These areas are on the school bus to and from school; in the classroom, in extra-curricular; and for intermural and intraschool athletics. Finally, it will be recommended that the Diversity Committee assist with the selection and implementation of specific diversity and gender bias awareness programs.

CONCLUSIONS

The related research as reported in Chapter Two clearly indicates gender bias is occurring throughout our school systems. It also indicates that since attention has been called to the problem, especially through the Foundation of the American Association of University Women in studies initiated in 1992, that as awareness through educational programs increases, that correspondingly gender biases decrease. The study that was done at the Westampton Township Middle School confirms this in that student views toward gender bias tend to be more enlightened then adult views.

Implications, therefore, for other schools should be on the need to provide all students with an equal opportunity to learn regardless of gender. To accomplish this, it is recommended that other schools consider the establishment of Diversity Committees consisting minimally of teaching staff, support staff, administrative staff, and possibly parents and/or students. It is also recommended to specifically determine what the attitudes of staff and students are toward gender bias that non-threatening surveys such as the ones that were utilized in this study be considered for both staff and students.

Before other schools attempt the same type of project, I recommend that the survey be simplified so that the data could be more easily analyzed. Further, I recommend that the definitions be defined and clearly discussed with both staff and students before either administering a questionnaire or written survey. To the extent possible, I additionally recommend that the same questions be asked to both teachers and students so that data analysis is simplified.

From a personal perspective, I believe that the simple analysis of responses by percentage yielded more valuable information then the actual statistical analysis that was conducted. This statistical analysis was helpful, but not as meaningful as I had anticipated when the actual research was initiated.

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Appendix A

Research Instruments

A B C

WESTAMPTON TOWNSHIP MIDDLE SCHOOL

Gender Equity and Compliance Staff Survey

Fall, 1999

This survey was designed to assist in better understanding teaching staff beliefs about opportunities in the school for students regardless of their sex. Your honest opinion is important. All responses you give will be confidential. No information will be revealed as to how you as an individual answered the questions.

Section I – Staff General Information

A. **Gender (please check one)** _____ Male _____ Female
1 2

B. **Age: (please check one)** 21-30 _____ 31 – 40 _____
1 2

41-50 _____ 51-60 _____ 61+ _____
3 4 5

C. **Years in district (please check one)**

0-2 _____ 3-6 _____ 7-11 _____ 12+ _____
1 2 3 4

Based on how you responded in Section I, please complete the self-reported code in the upper right hand corner. For line A, please place a 1 for male or a 2 for female. For line B, depending on how you answered the question regarding age, place a 1, 2, 3, 4 or 5. For line C, depending on your experience in the district, please place 1, 2, 3 or 4.

Section II – Survey Questions

These survey questions have been developed from several sources to assist in establishing a baseline for teaching staff beliefs regarding gender equity for students in the school and in the classroom.

- Bias has been defined as gender beliefs that are formed without factual basis.
- Equity has been defined as an equal opportunity to work or learn in an environment free of inequities that are related to gender.
- Sexual harassment has been defined as unwanted or unsolicited sexual advances toward a member of the opposite gender.

1. **Do you believe that the Westampton Township Middle School offers a gender bias free work and learning environment? (Please check one.)**

   Yes _____ No _____ Unsure _____

2. **Of the choices listed below, which subject do you believe girls do best in? (Please check one.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

3. **Out of the subjects listed below, what subject do you believe boys do best in? (Please check one.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

4. **Of the classes that you have taught at Westampton Township Middle School, do you experience more behavioral problems with male or female students? (Please check one.)**

   Male _____ Female _____ Unsure _____ Equal _____

5. **Do you give extra help or assistance more to male or female students? (Please check one.)**

   Male _____ Female _____ Unsure _____ Equal _____

6. **Do male or female students tend to earn higher grades in classes that you have taught? (Please check one.)**

   Male _____ Female _____ Unsure _____ Equal _____

7. **For the purpose of this survey, sexual harassment has been defined as unwanted or unsolicited sexual advancement toward a member of the opposite gender. In your experience at the Westampton Township Middle School, have you ever observed student-to-student sexual harassment? (Please check one.)**

   Yes _____ No _____ Unsure _____

If you answered yes to question No. 7, please answer question No. 8. If you answered no or unsure, please go directly to question No. 9.

8. **If you answered yes to question No. 7, please indicate the frequency of sexual harassment. (Please check one.)**

_____Frequently, more than 6 times in the last two years.
_____ Moderately, 2 to 5 times in the last two years.
_____ Rare, once in the last two years.

9. **In selecting textbooks, books, curriculum guides, audio visual materials, do you select materials that: (please answer yes, no or not applicable to each of the following:)**

   a. Avoid stereotyping behaviors, activities, life patterns, personality traits.

      Yes _____ No _____ Not Applicable _____

   b. Illustrate people in non-stereotyped roles.

      Yes _____ No _____ Not Applicable _____

   c. Conform to non-bias language guidelines.

      Yes _____ No _____ Not Applicable _____

   d. Include contributions of females and males of diverse cultures.

      Yes _____ No _____ Not Applicable _____

   e. Include factual and historical information pertaining to males and females of diverse cultures.

      Yes _____ No _____ Not Applicable _____

   f. Give adequate, up-to-date attention to social issues and problems that affect both males and females.

      Yes _____ No _____ Not Applicable _____

   g. Describes a wide variety of career options for all males and females.

      Yes _____ No _____ Not Applicable _____

10. **Do you believe at your grade level(s) that tolerance and diversity with regard to gender equity should be taught as part of the district's curriculum? (Please check one.)**

    Yes _____ No _____ Unsure _____

11. In your classes, on average do male or females seem to raise their hand first to respond to questions? (Please check one.)

Male _____ Female _____ Equally _____

12. Which students display more leadership qualities in your classroom? (Please check one.)

Male _____ Female _____ Equally _____

Please accept both my thanks and gratitude for taking the time to honestly respond to each of the questions. Your responses will help establish an equity benchmark that will be used to identify ways in which we can further insure that male and female students have an equal educational opportunity.

A B

STUDENT GENDER EQUITY ATTITUDE SURVEY

FALL, 1999

This survey was designed to assist us in better understanding how sixth, seventh and eighth graders feel about opportunities that male and female students have in the school regardless of their sex. Your honest opinion is important to us. The responses you give will be kept confidential. No information will be revealed as to how you as an individual answered the questions. However, we need to know some information about you in order to be able to better categorize and review your responses. In Section A below, all you need to do is indicate whether you are a male or female and your current grade level. You are also requested to fill in the self-reporting code at the top right hand corner of this page. On the line marked A fill in a 1 if you are male and 2 if you are a female. On line B please place your current grade level. This will help us to more easily sort the surveys when we review the results.

Before beginning, please look over the survey so that if you have any questions they can be answered by the teacher who is administering the survey to you.

Section A – Student Information

1. Gender (please check one) _____ Male _____ Female

2. Current grade level _____ (Please insert your grade level in the blank.)

Section B – Survey Questions

Please answer the questions that follow based on your experiences and on the definitions that are provided.

To answer question No. 1 below, please use the following definitions:

Gender – designates male or female.
Bias – gender beliefs that are formed without factual bases.

1. **Do you believe that your school offers a gender bias free learning environment?**

   Yes _____ No _____ Unsure _____

2. **From the choices given below, what is your favorite subject? (Please check only one.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

3. **From the subjects listed below, please check the subject in which you do your best work and get your highest grades. (Please check only one.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

4. **Is your favorite teacher a male or a female? (Please check one.)**

   Male _____ Female _____ Unsure _____

5. **Do you believe you earn better grades from a male or a female teacher? (Please check one.)**

   Male _____ Female _____ Unsure _____

6. **Do you believe that you have ever experienced any type of discrimination because you are male or female? (Please check one.)**

   Yes _____ No _____ Unsure _____

7. **Based on your experience in your school, do you believe that male teachers or female teachers call on you more often? (Please check one.)**

   Male _____ Female _____ Doesn't Matter _____

8. **For this question, gender equity is defined as an equal opportunity to work or learn in an environment that is free of inequities or bias that are related to you being a male or a female.**

   At your school we strive to provide this kind of environment. Do you believe that this kind of environment exists?

   For the following, please check yes if you believe that it does exist. If you believe that it does not exist because of some type of experience you have had, please check no. If you are not sure, than please check unsure.

a. **On the school bus coming to and from school.**

Yes _____ No _____ Unsure _____

b. **In any class.**

Yes _____ No _____ Unsure _____

c. **Extracurricular sports.**

Yes _____ No _____ Unsure _____

9. **Do you believe that your school generally provides you with an opportunity to learn and participate in extracurricular activities equally whether or not you are a male or female? (Please check one.)**

Yes _____ No _____ Unsure _____

Thank you for taking the time to honestly share your feelings and to assist us in trying to make your learning environment even better.

Appendix B

Research Interview Questions

A B C

WESTAMPTON TOWNSHIP MIDDLE SCHOOL

Gender Equity and Compliance Staff Interview Questionnaire

This questionnaire was designed to be administered through a one-to-one interview process; the purpose of which is to better understand and to confirm teacher staff beliefs as espoused in a written survey about opportunities in the school for students regardless of their sex. All responses are confidential. No information will be revealed as to how an individual interviewee responded.

Section I – Staff General Information

A. **Gender (please check one)** _____ Male _____ Female
1 2

B. **Age: (please check one)** 21-30 _____ 31 – 40 ____
1 2

41-50 _____ 51-60 _____ 61+ _____
3 4 5

C. **Years in district (please check one)**

0-2 _____ 3-6 _____ 7-11 _____ 12+ _____
1 2 3 4

Section II – Survey Questions

These survey questions have been developed from several sources to assist in establishing a baseline for teaching staff beliefs regarding gender equity for students in the school and in the classroom.

- Bias has been defined as gender beliefs that are formed without factual basis.
- Equity has been defined as an equal opportunity to work or learn in an environment free of inequities that are related to gender.
- Sexual harassment has been defined as unwanted or unsolicited sexual advances toward a member of the opposite gender.

1. **Do you believe that the Westampton Township Middle School offers a gender bias free work and learning environment? Please indicate whether you 1 - strongly agree, 2 - agree, 3 - unsure, 4 - do not agree, or 5 - strongly disagree.**

_____

2. **Of the choices presented, which subject do you believe girls do best in? (Please select English, Mathematics, Science, or Social Studies.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

3. **Out of the subjects presented, what subject do you believe boys do best in? (Please select English, Mathematics, Science, or Social Studies.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

4. **Do you believe male or female students tend to earn higher grades in classes that you have taught? (Please indicate male, female, unsure, or equal.) (Corresponds with question number 6 of staff survey.)**

   Male _____ Female _____ Unsure _____ Equal _____

5. **In your classes, on average do male or females seem to raise their hand first to respond to questions? (Please indicate male, female, or equally.) (Corresponds with question number 11 of staff survey.)**

   Male _____ Female _____ Equally _____

THANK YOU.

A B

STUDENT GENDER EQUITY ATTITUDE INTERVIEW QUESTIONNAIRE

This interview is designed to assist us in better understanding how sixth, seventh and eighth grade students responded to written survey questions about how you feel about opportunities that male and female students have in the school regardless of their sex. Your honest opinion is important to us. The responses you give will be kept confidential. No information will be revealed about how you, as an individual, or for how you answered the questions. For Section A, all you need to do is indicate whether you are a male or female and your current grade level.

Section A – Student Information

1. Gender (please check one) _____ Male _____ Female

2. Current grade level _____ (Please insert your grade level in the blank.)

Section B – Survey Questions

Please answer the questions that follow based on your experiences and on the definitions that are provided.

To answer question No. 1 below, please use the following definitions:

Gender – designates male or female.
Bias – gender beliefs that are formed without factual bases.

1. **Do you believe that your school district offers a gender bias free learning environment. (Please indicate whether you 1 - strongly agree, 2 - agree, 3 - unsure, 4 - disagree, or 5 - strongly disagree.)**

   _____

2. **From the choices given below, what is your favorite subject? (Please select English, Mathematics, Science, or Social Studies.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

3. **From the subjects listed below, please check the subject in which you do your best work and get your highest grades. (Please select English, Mathematics, Science, or Social Studies.)**

   _____ English
   _____ Mathematics
   _____ Science
   _____ Social Studies

4. **Do you believe you earn better grades from a male or female teacher? (Please select male, female, or unsure.) (Corresponds with question number 5 of student survey.)**

   Male _____ Female _____ Unsure _____

5. **Based on your experience in school, do you believe that male teachers or female teachers call on you more often? (Please select male, female, or doesn't matter.) (Corresponds with question number 7 of student survey.)**

   Male _____ Female _____ Doesn't Matter _____

   THANK YOU.

Appendix C

Research Tables

TABLE 1

ALL TEACHER RESPONSES TO THE SURVEY AND RESPONSES BY AGE CATEGORY

	TEACHERS				ALL STAFF BY AGE							
Question No.	N=39				N=18 (Age: 21-40)				N=21 (Age: 41 & Up)			
	A	B	C	D	A	B	C	D	A	B	C	D
1	30	4	5		16	2	0		14	2	5	
2	27	9	3	0	14	3	1	0	13	6	2	0
3	0	23	12	4	0	14	2	2	0	9	10	2
4	31	0	0	8	14	0	0	4	17	0	0	4
5	12	1	0	26	5	0	0	13	7	1	0	13
6	0	13	1	25	0	6	1	11	0	7	0	14
7	19	16	4		6	9	3		13	7	1	
8	8	8	4	19	3	3	1	11	5	5	3	8
9a	29	4	6		11	4	3		18	0	3	
9b	30	3	6		12	3	3		18	0	3	
9c	27	3	9		12	1	5		15	2	4	
9d	35	1	3		15	1	2		20	0	1	
9e	35	2	2		15	2	1		20	0	1	
9f	30	1	8		16	0	2		14	1	6	
9g	25	1	13		12	1	5		13	0	8	
10	28	4	7		13	1	4		15	3	3	
11	9	5	25		6	2	10		3	3	15	
12	7	19	13		5	8	5		2	11	8	

TABLE 2

ALL TEACHER RESPONSES TO THE SURVEY AND RESPONSES BY AGE CATEGORY IN PERCENTAGES

	TEACHERS				ALL STAFF BY AGE							
Question No.	N=39				N=18 (Age: 21-40)				N=21 (Age: 41 & Up)			
	A	B	C	D	A	B	C	D	A	B	C	D
1	77%	10%	13%		89%	11%	0%		67%	10%	24%	
2	69%	23%	8%	0%	78%	17%	6%	0%	62%	29%	10%	0%
3	0%	59%	31%	10%	0%	78%	11%	11%	0%	43%	48%	10%
4	79%	0%	0%	21%	78%	0%	0%	22%	81%	0%	0%	19%
5	31%	3%	0%	67%	28%	0%	0%	72%	33%	5%	0%	62%
6	0%	33%	3%	64%	0%	33%	6%	61%	0%	33%	0%	67%
7	49%	41%	10%		33%	50%	17%		62%	33%	5%	
8	21%	21%	10%	49%	17%	17%	6%	61%	24%	24%	14%	38%
9a	74%	10%	15%		61%	22%	17%		86%	0%	14%	
9b	77%	8%	15%		67%	17%	17%		86%	0%	14%	
9c	69%	8%	23%		67%	6%	28%		71%	10%	19%	
9d	90%	3%	8%		83%	6%	11%		95%	0%	5%	
9e	90%	5%	5%		83%	11%	6%		95%	0%	5%	
9f	77%	3%	21%		89%	0%	11%		67%	5%	29%	
9g	64%	3%	33%		67%	6%	28%		62%	0%	38%	
10	72%	10%	18%		72%	6%	22%		71%	14%	14%	
11	23%	13%	64%		33%	11%	56%		14%	14%	71%	
12	18%	49%	33%		28%	44%	28%		10%	52%	38%	

TABLE 3

ALL TEACHER RESPONSES TO THE SURVEY AND RESPONSES BY EXPERIENCE CATEGORY

	TEACHERS				ALL STAFF BY EXPERIENCE							
Question No.	N=39				N=19 (0-6 YRS)				N=20 (7 YRS & Up)			
	A	B	C	D	A	B	C	D	A	B	C	D
1	30	4	5		18	1	0		12	3	5	
2	27	9	3	0	16	2	1	0	12	7	1	0
3	0	23	12	4	0	13	3	3	0	10	9	1
4	31	0	0	8	14	0	0	5	17	0	0	3
5	12	1	0	26	8	0	0	11	4	1	0	15
6	0	13	1	25	0	6	1	12	0	7	0	13
7	19	16	4		8	9	2		11	7	2	
8	8	8	4	19	3	3	2	11	5	5	2	8
9a	29	4	6		13	3	3		16	1	3	
9b	30	3	6		13	3	3		17	0	3	
9c	27	3	9		11	2	6		16	1	3	
9d	35	1	3		17	1	1		18	0	2	
9e	35	2	2		16	2	1		19	0	1	
9f	30	1	8		15	0	4		15	1	4	
9g	25	1	13		11	1	7		14	0	6	
10	28	4	7		13	1	5		16	2	2	
11	9	5	25		5	1	13		4	4	12	
12	7	19	13		5	8	7		2	12	6	

TABLE 4

ALL TEACHER RESPONSES TO THE SURVEY AND RESPONSES BY EXPERIENCE CATEGORY IN PERCENTAGES

	TEACHERS				ALL STAFF BY EXPERIENCE							
Question No.	N=39				N=19 (0-6 YRS)				N=20 (7 YRS & Up)			
	A	B	C	D	A	B	C	D	A	B	C	D
1	77%	10%	13%		95%	5%	0%		60%	15%	25%	
2	69%	23%	8%	0%	84%	11%	5%	0%	60%	35%	5%	0%
3	0%	59%	31%	10%	0%	68%	16%	16%	0%	40%	45%	5%
4	79%	0%	0%	21%	74%	0%	0%	26%	85%	0%	0%	15%
5	31%	3%	0%	67%	42%	0%	0%	58%	20%	5%	0%	75%
6	0%	33%	3%	64%	0%	32%	5%	63%	0%	35%	0%	65%
7	49%	41%	10%		42%	47%	1%		55%	35%	10%	
8	21%	21%	10%	49%	16%	16%	11%	58%	25%	25%	10%	40%
9a	74%	10%	15%		68%	16%	16%		80%	5%	15%	
9b	77%	8%	15%		68%	16%	16%		85%	0%	15%	
9c	69%	8%	23%		58%	11%	32%		80%	5%	15%	
9d	90%	3%	8%		89%	5%	5%		90%	0%	10%	
9e	90%	5%	5%		85%	11%	5%		95%	0%	5%	
9f	77%	3%	21%		79%	0%	21%		75%	5%	20%	
9g	64%	3%	33%		58%	5%	37%		70%	0%	30%	
10	72%	10%	18%		68%	5%	26%		80%	10%	10%	
11	23%	13%	64%		26%	5%	68%		20%	20%	60%	
12	18%	49%	33%		26%	42%	37%		10%	60%	30%	

TABLE 5

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 1

MEAN 1 All Teachers	MEAN 2 Age Category 21-40	t STATISTIC	DEGREES FREEDOM
4.333	4.778	-1.458	17

Not significant at the .05 level.

TABLE 6

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 1

MEAN 1 All Teachers	MEAN 2 Age Category 41 and up	t STATISTIC	DEGREES FREEDOM
4.333	4.143	0.623	20

Not significant at the .05 level.

TABLE 7

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR TEACHERS FOR AGE CATEGORIES

TEACHER QUESTION 1

MEAN 1 Age 21-40	MEAN 2 Age 41 and up	t STATISTIC	DEGREES FREEDOM
4.556	4.333	0.622	17

Not significant at the .05 level.

TABLE 8

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 1

MEAN 1 All Teachers	MEAN 2 Experience Category 0-6 years	t STATISTIC	DEGREES FREEDOM
4.368	4.789	-1.287	18

Not significant at the .05 level.

TABLE 9

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 1

MEAN 1 All Teachers	MEAN 2 Experience Category 7 years and up	t STATISTIC	DEGREES FREEDOM
4.300	3.900	1.073	19

Not significant at the .05 level.

TABLE 10

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS OF TEACHERS FOR EXPERIENCE CATEGORIES

TEACHER QUESTION 1

MEAN 1 EXPERIENCE 0-6	MEAN 2 EXPERIENCE 7 years and up	t STATISTIC	DEGREES FREEDOM
4.789	3.947	2.191*	18

*Significant at the .05 level.

TABLE 11

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 7

MEAN 1 All Teachers	MEAN 2 Age Category 21 to 40	t STATISTIC	DEGREES FREEDOM
3.222	2.667	1.426	17

Not significant at the .05 level.

TABLE 12

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 7

MEAN 1 All Teachers	MEAN 2 Age Category 41 and up	t STATISTIC	DEGREES FREEDOM
3.095	3.571	-1.420	20

Not significant at the .05 level.

TABLE 13

COMPARISON OF THE DIFFERENCE BETWEEN MEANS OF TEACHERS FOR AGE CATEGORIES

TEACHER QUESTION 7

MEAN 1 Age 21-40	MEAN 2 41 and up	t STATISTIC	DEGREES FREEDOM
2.667	3.889	-2.170*	17

*Significant at the .05 level.

TABLE 14

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 7

MEAN 1 All Teachers	MEAN 2 Experience Category 0-6 years	t STATISTIC	DEGREES FREEDOM
3.105	2.895	1.000	18

Not significant at the .05 level.

TABLE 15

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 7

MEAN 1 All Teachers	MEAN 2 Experience Category 7 years and up	t STATISTIC	DEGREES FREEDOM
3.200	3.400	-1.000	19

Not significant at the .05 level.

TABLE 16

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS OF TEACHERS FOR EXPERIENCE CATEGORIES

TEACHER QUESTION 7

MEAN 1 EXPERIENCE 0-6	MEAN 2 EXPERIENCE 7 years and up	t STATISTIC	DEGREES FREEDOM
2.895	3.421	-1.424	18

Not significant at the .05 level.

TABLE 17

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 10

MEAN 1 All Teachers	MEAN 2 Age Category 21-41	t STATISTIC	DEGREES FREEDOM
4.222	4.333	-1.000	17

Not significant at the .05 level.

TABLE 18

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY AGE CATEGORY

TEACHER QUESTION 10

MEAN 1 All Teachers	MEAN 2 Age Category	t STATISTIC	DEGREES FREEDOM
4.238	4.143	1.000	20

Not significant at the .05 level.

TABLE 19

COMPARISON OF THE DIFFERENCE BETWEEN MEANS OF TEACHERS FOR AGE CATEGORIES

TEACHER QUESTION 10

MEAN 1 Age 21-40	MEAN 2 Age 41 and up	t STATISTIC	DEGREES FREEDOM
2.667	3.889	-2.170*	17

*Significant at the .05 level.

TABLE 20

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 10

MEAN 1 All Teachers	MEAN 2 Experience Category 0-6 years	t STATISTIC	DEGREES FREEDOM
4.263	4.263	0.000	18

Not significant at the .05 level.

TABLE 21

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL TEACHER RESPONDENTS AND FOR TEACHERS BY EXPERIENCE CATEGORY

TEACHER QUESTION 10

MEAN 1 All Teachers	MEAN 2 Experience Category 7 years and up	t STATISTIC	DEGREES FREEDOM
4.200	4.400	-0.623	19

Not significant at the .05 level.

TABLE 22

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS OF TEACHERS FOR EXPERIENCE CATEGORIES

TEACHER QUESTION 10

MEAN 1 EXPERIENCE 0-6	MEAN 2 EXPERIENCE 7 years and up	t STATISTIC	DEGREES FREEDOM
2.895	3.421	-1.424	18

Not significant at the .05 level.

TABLE 23

ALL STUDENT RESPONSES TO THE SURVEY AND RESPONSES BY MALE STUDENTS

	STUDENT SURVEY							
	Grades 6, 7, 8							
	N=300 Total Students				N=164 Male			
Question No.	A	B	C	D	A	B	C	D
1	141	54	105		79	31	54	
	Yes	No	Unsure		Yes	No	Unsure	
2	60	94	104	42	18	58	65	23
	English	Math	Science	Social Studies	English	Math	Science	Social Studies
3	94	80	58	68	49	54	28	33
	English	Math	Science	Social Studies	English	Math	Science	Social Studies
4	39	218	46		27	109	28	
	Male	Female	Unsure		Male	Female	Unsure	
5	46	91	163		29	48	87	
	Male	Female	Unsure		Male	Female	Unsure	
6	107	140	53		48	89	27	
	Yes	No	Unsure		Yes	No	Unsure	
7	22	70	208		14	38	112	
	Male	Female	Doesn't	Matter	Male	Female	Doesn't	Matter
8a	124	135	41		73	74	17	
	Yes	No	Unsure		Yes	No	Unsure	
8b	122	116	62		71	67	26	
	Yes	No	Unsure		Yes	No	Unsure	
8c	103	111	77		50	66	39	
	Yes	No	Unsure		Yes	No	Unsure	
9	195	54	51		106	25	33	
	Yes	No	Unsure		Yes	No	Unsure	

TABLE 24

ALL STUDENT RESPONSES TO THE SURVEY AND RESPONSES BY MALE STUDENTS IN PERCENTAGES

	STUDENT SURVEY							
	Grades 6, 7, 8							
	N=300 Total Students				N=164 Male			
Question No.	A	B	C	D	A	B	C	D
1	47%	18%	35%		48%	19%	33%	
	Yes	No	Unsure		Yes	No	Unsure	
2	20%	31%	35%	14%	11%	35%	40%	14%
	English	Math	Science	Social Studies	English	Math	Scienc e	Social Studies
3	31%	27%	19%	23%	30%	33%	17%	20%
	English	Math	Science	Social Studies	English	Math	Scienc e	Social Studies
4	13%	73%	15%		16%	66%	17%	
	Male	Female	Unsure		Male	Female	Unsure	
5	15%	30%	54%		18%	29%	53%	
	Male	Female	Unsure		Male	Female	Unsure	
6	36%	47%	18%		29%	54%	16%	
	Yes	No	Unsure		Yes	No	Unsure	
7	7%	23%	69%		9%	23%	68%	
	Male	Female	Doesn't	Matter	Male	Female	Doesn't	Matter
8a	41%	45%	14%		45%	45%	10%	
	Yes	No	Unsure		Yes	No	Unsure	
8b	41%	39%	21%		43%	41%	16%	
	Yes	No	Unsure		Yes	No	Unsure	
8c	34%	37%	26%		30%	40%	24%	
	Yes	No	Unsure		Yes	No	Unsure	
9	65%	18%	17%		65%	15%	20%	
	Yes	No	Unsure		Yes	No	Unsure	

TABLE 25

ALL STUDENT RESPONSES TO THE SURVEY AND RESPONSES BY FEMALE STUDENTS

	STUDENT SURVEY							
	Grades 6, 7, 8							
	N=300 Total Students				N=136 Female			
Question No.	A	B	C	D	A	B	C	D
1	141	54	105		62	23	51	
	Yes	No	Unsure		Yes	No	Unsure	
2	60	94	104	42	42	36	39	19
	English	Math	Science	Social Studies	English	Math	Scienc e	Social Studies
3	94	80	58	68	46	28	31	31
	English	Math	Science	Social Studies	English	Math	Scienc e	Social Studies
4	39	218	46		212	109	18	
	Male	Female	Unsure		Male	Female	Unsure	
5	46	91	163		17	44	76	
	Male	Female	Unsure		Male	Female	Unsure	
6	107	140	53		59	51	26	
	Yes	No	Unsure		Yes	No	Unsure	
7	22	70	208		8	32	96	
	Male	Female	Doesn't	Matter	Male	Female	Doesn't	Matter
8a	124	135	41		51	61	24	
	Yes	No	Unsure		Yes	No	Unsure	
8b	122	116	62		52	49	36	
	Yes	No	Unsure		Yes	No	Unsure	
8c	103	111	77		53	45	38	
	Yes	No	Unsure		Yes	No	Unsure	
9	195	54	51		89	29	18	
	Yes	No	Unsure		Yes	No	Unsure	

TABLE 26

ALL STUDENT RESPONSES TO THE SURVEY AND RESPONSES BY FEMALE STUDENTS IN PERCENTAGES

	STUDENT SURVEY							
	Grades 6, 7, 8							
	N=300 Total Students				N=136 Female			
Question No.	A	B	C	D	A	B	C	D
1	47%	18%	35%		46%	17%	38%	
	Yes	No	Unsure		Yes	No	Unsure	
2	20%	31%	35%	14%	31%	26%	29%	14%
	English	Math	Science	Social Studies	English	Math	Science	Social Studies
3	31%	27%	19%	23%	34%	21%	23%	23%
	English	Math	Science	Social Studies	English	Math	Science	Social Studies
4	13%	73%	15%		9%	80%	13%	
	Male	Female	Unsure		Male	Female	Unsure	
5	15%	30%	54%		13%	32%	56%	
	Male	Female	Unsure		Male	Female	Unsure	
6	36%	47%	18%		43%	38%	19%	
	Yes	No	Unsure		Yes	No	Unsure	
7	7%	23%	69%		6%	24%	71%	
	Male	Female	Doesn't	Matter	Male	Female	Doesn't	Matter
8a	41%	45%	14%		38%	45%	18%	
	Yes	No	Unsure		Yes	No	Unsure	
8b	41%	39%	21%		38%	36%	26%	
	Yes	No	Unsure		Yes	No	Unsure	
8c	34%	37%	26%		39%	33%	28%	
	Yes	No	Unsure		Yes	No	Unsure	
9	65%	18%	17%		65%	21%	13%	
	Yes	No	Unsure		Yes	No	Unsure	

TABLE 27

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 1

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
4.439	3.488	6.208*	163

*Significant at the .05 level.

TABLE 28

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 1

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
5.009	3.574	11.248	135

*Significant at the .05 level.

TABLE 29

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 1

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
3.588	3.574	0.114	135

Not significant at the .05 level.

TABLE 30

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 6

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
3.610	2.500	6.223*	163

*Significant at the .05 level.

TABLE 31

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 6

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.147	3.118	5.170*	135

*Significant at the .05 level.

TABLE 32

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 6

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
2.412	3.118	-6.565*	135

*Significant at the .05 level.

TABLE 33

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 8a

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
4.024	2.988	6.370*	163

*Significant at the .05 level.

TABLE 34

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 8a

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.647	2.853	9.653*	135

*Significant at the .05 level.

TABLE 35

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 8a

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
3.147	2.853	1.908	135

Not significant at the .05 level.

TABLE 36

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 8b

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
3.976	3.049	5.429*	163

* Significant at the .05 level.

TABLE 37

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 8b

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.588	3.044	8.544*	135

* Significant at the .05 level.

TABLE 38

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 8b

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
3.088	3.044	0.284	135

Not significant at the .05 level.

TABLE 39

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 8c

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
3.512	2.805	3.736*	163

*Significant at the .05 level.

TABLE 40

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 8c

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.029	3.118	4.485*	135

*Significant at the .05 level.

TABLE 41

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 8c

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
2.765	3.118	-4.711*	135

*Significant at the .05 level.

TABLE 42

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND MALE STUDENTS

STUDENT QUESTION 9

MEAN 1 All Students	MEAN 2 Male Students	t STATISTIC	DEGREES FREEDOM
5.000	3.988	8.674*	163

*Significant at the .05 level.

TABLE 43

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR ALL STUDENTS AND FEMALE STUDENTS

STUDENT QUESTION 9

MEAN 1 All Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
5.000	3.882	7.915*	135

*Significant at the .05 level.

TABLE 44

COMPARISON OF THE DIFFERENCE BETWEEN THE MEANS FOR MALE AND FEMALE STUDENTS

STUDENT QUESTION 9

MEAN 1 Male Students	MEAN 2 Female Students	t STATISTIC	DEGREES FREEDOM
4.191	3.882	2.373*	135

*Significant at the .05 level.

Biographical Data

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