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The effects of gender bias on instructional computing

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Abstract

Technology has brought great empowerment and influence to the human environment throughout modern history. Computers are appearing to play an important role in our society in a variety of functions (Bannon and Marshall, 1988). Many activities in our daily lives such as shopping and banking have been dramatically affected by computer usage (Arenz and Lee, 1989; Henry, 1993).

THE EFFECTS OF GENDER BIAS ON INSTRUCTIONAL COMPUTING

**A Research Paper Submitted to the
Department of Curriculum and Instruction
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**In Partial Fulfillment of the Requirements
for the Degree of Master of Arts**

by

Mei-Lin Chen

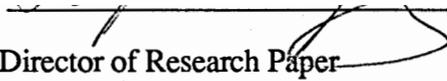
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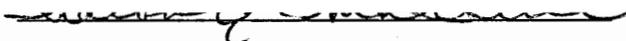
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CHAPTER I

Introduction

Technology has brought great empowerment and influence to the human environment throughout modern history. Computers are appearing to play an important role in our society in a variety of functions (Bannon and Marshall, 1988). Many activities in our daily lives such as shopping and banking have been dramatically affected by computer usage (Arenz and Lee, 1989; Henry, 1993).

Sanders (cited in Arenz and Lee, 1989) show that the U.S. Department of Labor conducted a survey that reveals that 50-70% of jobs involve computers. Today the computer industry and related fields provide many professional employment opportunities for our society (Loyd and Munger, 1989). At the same time, computer knowledge is becoming a requirement for most technical occupational fields (Campbell and Williams, 1990). As a result, schools need to prepare students to learn about computers to secure a job in the current job market. Schools have a responsibility to teach students to apply technology in society (Henry, 1993).

During the early 1980's, technology was beginning to be used for instruction. Computers were placed in schools to change ways of learning for children (Fasick, 1992; Daiute and Morse, 1992). It became apparent that technology could increase the quality of both teaching and learning (Sutton, 1991). According to Hasselbring (cited in Henry, 1993), there are between 1.5 and 2.1 million computers in the nation's public schools. He also indicated that there is one computer for about every 30 students in K-12 schools.

Once computers were accepted for instructional use, many educators were concerned about gender equality in the curriculum (Cooper, Hall and Huff, 1990; Forsyth and Lancy,

1989). Differences in responses between boys and girls to the technology were observed (Broihire, Fleetwood and Krendl, 1989).

Many studies demonstrate that there are gender-differences in computer access and achievement (Thurston, 1989). Generally, female students received fewer opportunities to use technology in schools. In the curriculum, the problem of gender bias in access to computer resources seriously affected female learners (Arenz and Lee, 1989; Janssen and Plomp, 1993). The educational system did not provide for girls' needs (Kay, 1989). It became important for administrators, and educators to begin to understand why girls get turned off from using technology (Koch, 1994).

Fennema and Sherman (cited in Kay, 1989) found that at early ages when girls and boys first enter schools, both genders demonstrated almost equal ability in using technology. Several studies showed that as the students progressed through school, males were dominant in various high-technical and scientific-related fields. These result might be due to their attitudes toward using computers. Many factors in and out of the classrooms affect girls' avoidance of computer learning (Koch, 1994).

Many studies reviewed in this paper have demonstrated that there was a difference in socialization between genders. Society provided an unequal expectation for boys and girls. Klopper and Schleyper (cited in Janssen and Plomp, 1993) indicated that males were hoping to be more involved in the technical professional occupations. Hawkins, Linns, Sanders, Ware (cited in Broihier, Fleetwood and Krendle, 1989) show that on the other hand, females lacked confidence in their own ability and had anxiety in using technology. Parents' attitudes should be more positive toward both genders while they are involved in computer learning (Koch, 1994).

It has been determined that males had more access to computers than females (Broihier, Fleetwood and Krendl, 1989). Boys had more computer experiences and practical skills than girls (Janssen and Plomp, 1993). Boys were willing to take more time and enjoy computers more than girls; boys are more interested in programming the machines (Broihier, Fleetwood and Krendl, 1989). Girls were found to dislike the computer after regular school hours, and they had fewer computers at home. Females felt insecure with technology. Girls also liked to work in pairs in order to become more comfortable with the machine (Communications of the Association Computing Machinery, 1990).

Another important factor contributing to gender bias in computer learning is culture differences in math and science learning. The perception that computers were associated with math and science as part of the curriculum has had serious implications for females because they transferred the math anxiety into computer learning (Loyd and Munger, 1989). Females mistakenly concluded that computers were a hard science subject (Janssen and Plomp, 1993). Research suggests that non-programming applications would help learners be more comfortable with computer learning. Graphics and word processing tools might attract and encourage female learners to participate in computer learning (Loyd and Munger, 1989).

Those factors of gender bias which included media influence, socialization difference, parents' and teachers' attitudes, computer access and culture differences in math and science learning have caused a gender gap in computer-based learning. It is important to discuss and provide appropriate support to all learners within their learning processes.

Context of the Problem

An excellent educational system cannot be achieved without equality. In the curriculum, girls have received fewer advantages. Many studies indicate that teachers gave more encouragement and attention to male students than female students (The American Association of University Women, 1992). Boys received instruction in a form that would help them achieve mechanical and technical skills (Kirk, 1992).

Much evidence indicates cultural attitudes that promote the computer as a male machine. Most technical jobs or related fields are male dominated (Sutton, 1991). Culley (cited in Kirk, 1992) reported that computers are now seen as a male activity which is not appropriate for girls. Reinmann (cited in Kirk, 1992) believed that sexist advertising of software and texts create a gender bias. Levin (cited in Kirk, 1992) found that children often had the concept that computers are a male's domain. These attitudes have found their way to classrooms. There is much research that studies how gender is related to differences in computer skills, achievement of computer learning and level of interest (Forsyth and Lancy, 1989; Janssen and Plomp, 1993; Kay, 1989; Thurston, 1989). The reports indicated that male students were more confident in computer learning; they also felt more comfortable about using computers and showed less computer anxiety than female students (Daiute and Morse, 1992).

Female students seem to have accepted the idea that males were much better in using technology. Liein (cited in Communications of the Association Computing Machinery, 1990) show that girls were afraid to use computers. They demonstrated more insecurity and less self-confidence in math or science-related subjects from middle school through high school. Girls and women felt uncomfortable in fitting into a computer culture. Kramer,

Lehman and Morse (cited in Daiute and Morse, 1992) thought that the situation of gender bias looked unclear in computer-based learning between both genders . Campbell and Williams (1990) claim that women and girls tried to avoid using computers.

Broihier, Fleetwood and Krendl (1989) reported a three-year study of middle-school and high-school students that indicated girls had little confidence in their computer skills. They did not spend extra time in computing and showed less interest in using computers even when they had as much experience as boys . Another study by International Association for the Evaluation of Educational Achievement (IEA) (cited in Janssen and Plomp, 1993) surveyed students and teachers in schools in many countries . The results showed that most computer users were males. Female teachers have less regard for their computer knowledge and skills when compared to their male colleagues. IEA also found that less than half of the selected countries had special school policies to provide equal opportunities for both genders in using computers. Most policies only provided support for educated females to become science teachers or computer coordinators. There was no support for these women to become regular computer classroom teachers (Janssen and Plomp, 1993). The National Science Foundation (cited in Janssen and Plomp, 1993) reported that 49% of all women professionals comprised only 30% of the computer scientists in technical jobs.

In some elementary schools, the school policy does require that students get equal opportunities to participate in computer classes (Arenz and Lee, 1989). Even so, educators still need to consider ways to help build up female learners' confidence. Teachers have to face the problem of computer avoidance by female students (Forsyth and Lancy, 1989). The problem of gender inequity has to be improved because it affects students' achievement and their career decision making (Arenz and Plomp, 1989).

Purpose of the Study

The purpose of this study is to identify the existing problem of gender bias in computing instruction. The issue of access to computers and learning about them has become an important topic in education. It is important to be concerned that all children have equal opportunities and appropriate support in using technology. The questions that would be addressed in this paper are as follows:

What factors cause gender bias in computer-based learning?

How to overcome gender bias in computer-based learning?

CHAPTER II

Review of literature

Factors Causing Gender Bias in Computer Learning

Gender bias in computer use involves many factors, that affect gender equity in computer education. These factors include: 1) Media influence, 2) Socialization differences and parents'/teacher's bias, 3) Computer access; and 4) Cultural difference in math and science learning.

Media Influence. Mass media has a great influence in the gender equity issue in computer learning. Many messages presented indicate that males have advantages over females in using computers. An example of this is that there were not many advertisements in computer magazines which portrayed females in a positive light (Bannon and Marshall, 1988).

Bannon and Marshall also researched about both race and sex equity in computer advertising. They concluded that most magazines showed men as the major users of computers.

Television is a strong influence on today's values. Televised violence can make children become more aggressive. Messages from media have been affecting males more than females. The majority of computer productions and activities were designed to target the male population. Kay (cited in Communications of the Association Computing Machinery, 1990) asserted that most of the computer companies believed their target market was male. He tried to convince these companies that females could be a viable market to the companies. Most of companies disagreed that they could make money from female audiences .

Binns and Branch (1995) showed another example of gender bias found in the clip-art libraries of computer graphics software packages. They also indicated that women and men were portrayed differently when connected with technology. Males were usually in the

position of authority and leadership and females were often shown as in a subordinate role assisting others.

The message of male images provided in clip-art libraries might communicate the idea that males were more powerful than females. Clip-art libraries should include images which were fair to both genders (Binns and Branch, 1995). Boyer and Semarau (cited in Binns and Branch, 1995) suggested that instructional designers need to be more concerned about gender equality issues in their instructional design. They have a responsibility to provide balanced images of both men and women.

DeVaney (cited in Binns and Branch, 1995) indicated that children acquire their ideas of the world primarily from images, particularly those seen in popular culture media. Advertising, films and television have a powerful effect on their audiences. Images found in computer-assisted learning materials, can also implicate unfair gender images. Kilbourne (cited in Binns and Branch, 1995) studied how advertising portrayed differences between genders. They reported that the roles depicted of a woman in advertising convey direct characteristics to other women. Media contributed an important message to the perception of its audiences.

Socialization Differences and Parents'/ Teacher's Bias. For this paper socialization will be explained as physical and mental development for both genders. It will also include the influence of learners' attitudes because of social expectation. Girls tend to mature more quickly than boys both physically and mentally. They are generally more advanced than boys at an early age. Mann (1994) found that after they leave high school, girls show lower scores on standardized test and exhibit lower self-esteem. Fennema and Peterson (cited in Mann, 1994) maintained that boy's learning styles which were more dependent on high-level

tasks achieved better performance in science and related areas. They found that adults encouraged boys to work more independently than girls. Girls tended to be less independent and also needed more assistance to accomplish their tasks. They became less self-reliant and needed to get more help when they were working.

Kooper and Schleyper (cited in Janssen and Plomp, 1993) believed that differential socialization could affect gender-differences. They found that socialization played an important role in child behavior. This means that gender differences could be caused by imitation of parents and teachers. In general, males showed they were more interested in practical matters. They were motivated by how things worked. The concept of technical involvement could lead males to have a more positive attitude in computer-based learning. Women were seen as more artistic and less involved in technical jobs (Janssen and Plomp, 1993). Turkle and Papert (cited in Daiute and Morse, 1992) studied both males and females in their levels of interest toward computer learning. They identified that females preferred to use computer software that had graphic components. Males preferred programs that involved an aggressive and risk-taking style.

It has been shown that the sex-related differences can result from differential socializations. Until now technical job have been identified with the male's domain. These assumptions could be changed by giving equal opportunity and encouragement for girls to learn about technology (Broihier, Fleetwood and Krendl, 1989). These changes can begin at home, where parents should be able to help their children get involved with technology.

Some studies showed that gender bias in computer-based learning came from parents. Most parents were more interested in purchasing computers for their sons than for their daughters. They also encouraged boys to enroll in computer classes. Particularly, parents

would often set up computers in boys' rooms so they had more chances to play with computers (Communication of the Association Computing Machinery, 1990; Janssen and Plomp, 1993). Parents' attitudes greatly influenced their children when they were first involved with computers. Learners could get used to using computers if they started from an early age. Parents should approach a computer as a convenience tool for their children's learning (Arenz and Lee, 1989).

Gordon and Levin (cited in Kirk, 1992) found that girls did not get exposure to using computers. They argued that girls should have support for using computers that is equal boys. Kirk (1992) found that girls who had computers at home had similar attitude towards computer learning as boys. They were just as motivated as boys when they got used to the home access of computers. When they felt familiar with computers their learning attitudes were affected. Gordon and Levin (cited in Kirk, 1992) showed that parents should provide better home access to computers usage for girls. Reinmann (cited in Kirk, 1992) said that some communities and schools have provided workshops to involve parents in using computers at home. This can make parents more aware of the gender issues and offer equal chances in home computer use.

On the other hand, in the classroom, teachers also asked boys more technical questions. Girls lacked confidence in their skills to solve practical problems during instruction. Family and society often have different life goals and expectations for girls and boys. It is important to improve the situation and emphasize equal access to both genders in computer use. Female students especially need to be offered more patience and have their attitudes changed about computer technology (Broihier, Fleetwood and Krendl, 1989).

Kirk (1992) also thinks that teachers need to plan teaching strategies for helping improve the male dominated situation in the classroom. He found teachers interacted more with boys than girls. Myra and Sadker (cited in Mann, 1994) indicated that many studies showed that teachers gave less attention to girls than boys. They did not have effective responses and gave less detailed information to girls. Most of the teachers showed more communication with male students. Teachers trained boys for high-skilled, high-paying and high-technology life goals. When boys did not perform well, teachers often blamed their lack of effort. However, girls got different messages which imply that more effort would not improve their work.

Fennema (cited in Mann , 1994) conducted a study that measured the achievement of learners with relation to treatment by teachers in the classroom. The discouraging attitude of teachers could have a great impact on girls' attitudes toward math or science-related subjects. Teachers often turned girls away from learning math and science related areas. Teachers should instead provide positive models to the girls. Girls need to be encouraged when they are in math and science. Girls should be provided role models and sincere praise for good work. The value of computer and science subjects could help them choose a high-technical career should be explained.

Computer Access. Computer access in this paper will be addressed as computer interest-level and learning attitudes. The number of microcomputers is growing quickly in our society. In education, schools must consider both genders' response to the computer (Broihier, Fleetwood and Krendl, 1989). Most of the studies reported that boys of all ages have access to computer-based instruction (Janssen and Plomp, 1993). Boys also spent more time in outside computer activities such as playing video games or using a home

computer. On the other hand, girls felt threatened by using technology. They were not willing to take time outside of class time (Broihier, Fleetwood and Krendl, 1989; Communications of the Association Computing Machinery, 1990). The reason is that boys dominated access to using computers over girls.

Male students are more likely to learn and enjoy using computers, especially for programming (Broihier, Fleetwood and Krendl, 1989). Janssen and Plomp (1993) found that women were less confident and positive about computer use. Durndell, Macleod and Siann (cited in Janssen and Plomp, 1993) found that men and boys spent more time and had more experience related to computers. Women felt insecure about their technological skills and computer knowledge. Most of the time, few women have computers at home compared to men.

Male students were found to have more enthusiasm for participating in computer courses (Kay, 1989). They were often dominant in computer clubs and more likely to stay in computer labs than female students. Different learning behaviors and styles could impact female learners' avoidance of computers. Girls were found to blame their failure in solving problems on their personal lack of ability. On the other hand, boys attributed failure to other external reasons (Mann, 1994).

Another difference in learning attitudes between genders was that girls preferred to work with computers in a group. They also performed better when they worked on computers with a partner (Communications of the Association Computing Machinery, 1990). Krysten (cited in Kirk, 1992) showed that computer learning should provide a wider emphasis on cooperation than competition. Working together could be more advantageous to female learners than males. But Siann (cited in Fasick, 1992) studied children working in

pairs with computer activities. Boys tend to physically disturb girls. Therefore, the results showed that adults play an important role in ensuring equal access in mixed-gender classes. Teachers should prevent boys from crowding the girls out when they are using computers.

Janssen and Plomp (1993) suggested that after school, teachers could make sure females were willing to spend time learning computers. Female learners could be attracted and motivated through the exploration of computer applications of art, music or word processing instead of math or science. Girls often showed preference for simulations in computer-based instruction (Kirk, 1992).

Culture Difference in Math and Science Learning. Campbell and Williams (1990) said that traditionally, computers have been often associated with math or science related curriculum. Marconlides (cited in Campbell and Williams, 1990) showed that most students felt that computers required strong math skills . The students' views of computer use influenced students' learning attitude and decisions to take computer courses (Campbell and Williams, 1990).

According to Postlethwaite and Wiley (cited in Janssen and Plomp, 1993) boys performed better in math and science subjects. Damarin (cited in Janssen and Plomp, 1993) found females' anxiety about learning math and science-related courses transferred to how they respond to studying computers. Part of the reasons which cause the problem is the teachers in the math and science areas are also teaching in computer education classes. Kramer and Lehamen (cited in Daiute and Morse , 1992) also indicate that math attitudes and behaviors of women are reflected in their attitudes toward computer learning.

Another problem is that secondary computer science courses are often offered by the math department. Some schools even organized programming in computer learning

associated with math and science as an important part within the curriculum (Pelgrum, 1992). Basically, programming was not just programming language itself, but also the development of problem-solving skills (Janssen and Plomp, 1993). In the curriculum, boys tended to take more programming courses than girls. The reason was possibly because programming was associated with math courses. But actually, computer programming could also be of interest to females learners. Fasick (1992) studied the use of Logo programming in preschool and found that both male and female learners improved their math and programming skills. Preschool girls were also found to use more computer terminology than boys.

Females did not believe in themselves and mistakenly concluded the need for a strong mathematics background to learn computers. In the curriculum, it was important to be aware of letting computer education become a hard science subject (Janssen and Plomp, 1993).

How to overcome Gender Bias in Computer-Based Learning

To overcome gender bias in computer-based learning, the literature to be addressed includes: 1) teachers' attitudes; 2) all-girls classroom; 3) reviewing software and video game design.

Teacher's Attitudes. Teachers have to be fully aware of differences in socialization between sexes in terms of computer learning. They need to provide equal opportunities for both genders in their learning experience. Teachers should give more encouragement to females by explaining the purpose of using computers (Pelgrum, 1992).

Teachers, themselves, should have good a working knowledge and refined computer skills to work with the students. They may need to be specifically trained to change their instruction and motivate female students (Communications of the Association Computing Machinery, 1990).

Teachers should start a class by introducing the purpose of computer instruction to the learners. The computer could be a valuable tool for saving time in many functions. Many software programs were designed for increasing learning quality (Pelgrum, 1992). Teachers could show many different computer applications to learners (Janssen and Plomp, 1993). It is not necessary to relate computers to only math or programming (Daiute and Morse, 1992). For example, drill or tutorial programs which can assist instruction and word processing tools, spreadsheets, graphics or instructional games can be given to learners. By using those software applications, girls could take more time to create things and less time to relate with math subjects (Janssen and Plomp, 1993).

Teachers should provide real-life examples to learners to help them make decisions about their lives and careers (Campbell and Williams, 1993). Providing role models for female students will help them gain confidence while they are learning technology. Some programs could invite women professionals in technical fields to present their own experiences to girls. Females need to have more of these opportunities to have contact with successful female role models involved with technology (Janssen and Plomp, 1993).

Contact with role models can help students understand what these people had gone through to succeed in their careers. These professionals could describe their own experiences to help students make life goals decisions. Role models will help the learners build self-confidence and be a guiding light for students. Role models can give female learners great influence and improve their impressions of using technology (Koch, 1994). All-Girls Classroom. There is another way to help females participate in using computers. Some educators suggest that all-girl classrooms could be created to avoid gender bias in the classroom. Educators suggest that all-girl classrooms could provide a more comfortable

environment for female learners. In the mixed-gender classroom, girls tend to give away their assigned computing time to boys. The girls complained that boys often disturbed them when they were using computers (Koch, 1994).

Boys tended to take over the leadership role and answer all the questions. Girls felt ignored. All-girl classrooms would force female students to be involved in using computers. It would also allow female students to work as cooperative pairs in the classroom (Koch, 1994).

Mann (1994) suggested that all-girl classrooms give students a comfortable environment in which to express themselves. These classrooms are designed to address girls' learning styles by teaching to their strengths. Traditionally, math and science-related areas have been found to be weak in girls' learning.

According to Mann's (1994) research, math and science as it has been taught requires a direct right or wrong response within the short period of time. Each learner has to solve the problem and get his or her own answer. Normally, girls learn better working with a partner. The strategies which teachers use for teaching math or computer subjects to girls are more successful through cooperation rather than individual work. Team exercises provide girls with better experiences.

It was also found, however that girls were more interested in information that was relevant to their daily lives. For example, all-girl classrooms used math concepts to show girls how to apply computing to balance their checkbooks and manage their income. Another example was when teachers explained percentages by letting girls design the floor plan of the house. They had to make the architectural layout, figure out the materials, and learned geometric concepts to apply in wall papering rooms.

Teachers can avoid gender bias in their curriculum while achieving their teaching goals. All-girl classrooms can provide other effective techniques such as assigning reading by women authors or explaining the role of women in the society. The goal is these assignments is to build up self-confidence in female students.

All schools and teachers need to commit themselves to the concept providing all children equal chances to get their education. Teachers must develop their teaching styles to address the gender issues in the classroom. The content of lessons should emphasize collaboration rather than competition. They need to encourage girls to enroll in high level math, science, and computer courses. Those subjects are just as appropriate to the girls as to the boys.

Software and Video Games Design. Another important step in overcoming gender bias in the classroom is the proper selection of computer software. Having the students review software programs and instruction on programming would enhance learning for both genders. The proper choice of software programs could be beneficial to both sexes. Some studies show sex bias in instructional software. Cooper, Hall and Huff (1990) found that most software is more attractive to boys than to girls. Boys were the target market of the computer companies.

Selecting software which involves cooperative learning activities can motivate female learners. Software design should appeal to girls as well as boys. It is better to design the software to involve and motivate the learners rather than for it to be too challenging (Koch, 1994). Many computer programs have been designed as highly competitive and addressed more to males than females (Fasick, 1992).

Teachers have to encourage and provide equal opportunities of leadership relating to using software. Designers should share the responsibility by making early learning programs which incorporate well-designed pictures and graphics and use animation and sound effects (Pelgrum, 1992). Software programs could stimulate learner computer interest without a math and science background. Creative software can help learners overcome their computer anxiety. A well-designed program could help learners achieve the learning goals (Communications of the Association Computing Machinery, 1990; Koch, 1994).

Computer games are important for both genders in the learning process. Some factors affect both genders in game playing. Computer game-playing is important for both genders. Communications of the Association Computing Machinery (1990) conducted a study in which educators were asked about programming experience to design game-based instructions for students. Educators tended to design the software with only boys in mind.

CHAPTER III

Conclusion

In general, males dominate most of the technical job markets. Females feel that the computer is viewed as a male tool. It is important to create equal learning in the classroom for both genders. A number of studies have found that educators believe that gender equity is important when involving children in technology, but computer activities in school were usually biased towards males not females.

In this paper, several factors which cause gender bias in instructional computer use were addressed. Gender bias negatively influences learners' attitudes and their achievement.

One of the factors which promotes gender bias is society's difference in expectations of boys and girls. While males are encouraged to be more involved with technical jobs, women are encouraged into the non-technical fields. This attitude causes females to show less confidence in learning technical skills. Parents' attitudes have a major effect on how a child learns to use a computer. Parents are purchasing computers more often for boys than girls. Most parents prefer to put the computers in boy's room. Boys are encouraged more to take computer courses than girls. Boys are given more attention in the classroom. This often turns girls away from computers.

Boys have higher interest in learning computer activities and therefore show greater success in computer use. Girls tend to avoid using the computer and are found to be less dominant in computer labs. Girls feel insecure unless they work with a partner.

Another factor which causes gender bias is that computers are often associated with math and science-related subjects. These subjects are often dominated by males. Many studies show that women share their math anxiety with computer learning.

Once aware of these factors, parents' attitudes at home about using computers can also influence the learners in using the computer. They need to have the same expectation for boys and girls when they are learning about technology. They should also create equal opportunities for both genders to be involved with computer activities. It was important that all learners have positive attitudes toward computer learning.

In addition, teachers must provide opportunities and help learners deepen their interests so a higher level of achievement may follow. Teachers have the responsibility to clarify that computers have been mistakenly tied to math and science-related subjects. This may prevent female learners from turning math anxiety into computer anxiety. Teachers should create more computer activities which are not totally related with math and science. The organization of the classroom should offer equal chances to both genders. It is important to help female learners build their confidence and assist in their participation in computer learning.

To overcome the gender bias many educators have suggested all-girl classrooms to make girls feel more comfortable. This will enable females to have an equal opportunity to use computers and further their confidence to get involved with technology.

Software design should not always focus on math and science subjects. Teachers need to choose proper computer applications for the learners which could be useful to them. Girls prefer to use graphics and word processing software. They like to work with friends while learning the computers. Teachers should provide an easy start in instructions with clear goals when using technology.

The problem of gender bias in computer-based learning existed for more than a decade in America's curriculum. It had a damaging influence on girls. Different researchers

have suggestions to overcome the problems. These were addressed in this paper. It will take the effort of both parents and teachers. The schools' policy will also help the learning environment and learners' achievement. Technology has a great potential in assisting the learning of young learners but it depends on adults to ensure that they provide equal opportunities to make the instruction valuable for all children.

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