Women And Computing Essay, Research Paper

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Computer science has become one of the fastest growing careers in the past few years. With the advancement in technology and the high demand for those with a solid knowledge in computing, more and more people are choosing computer science as their field of interest. But in the past few years, people are drawing their attention to the fact that most computer scientists these days are men. It seems that women have been excluding themselves from the field of computer science for as long as we can remember. Although computer science is still one of the most popular majors in many universities, women only make up a small percentage of computer science graduates. Have women just been ignored or are they just trying to stay away from these technical careers? Many researchers have been trying to find the reasons as to why there are so few women getting a degree in computer science or are working in the computer industry.

The small number of women majoring in computer science can be directly tied to the difficulties that women face in becoming computer scientists. There are many cultural and societal factors that contribute to women’s experience in computing. The earliest computer software that children are exposed to reflect the gender biases and stereotypes of the software designers. For example, studies show that educational software is designed to appeal to boys [6]. Another study of computer science students finds that women students feel much less confident, comfortable and successful in the curriculum than men even though they all perform equally in the subject matter [4]. The main challenges facing women in pursuing careers in computer science are lack of mentoring and role models, difficulties in self-esteem, gender discrimination, and difficulty in balancing family and career responsibilities.

It is well known that women have been underrepresented in scientific fields for a long time. During 1987 and 1988, women only made up thirty percent of employed computer scientists and only ten percent had doctoral-level degrees in computer science [2]. There are several reasons as to why women are underrepresented in the many technical fields. It may be possible that the field of computer science functions in ways that discourage women from becoming a part of it [2]. Another reason for the underrepresentation of women in computer science relates to how women were not recognized for their contributions in science. For example, most contributions to the history of computing were all made by men. Women were rarely or almost never mentioned in the history of computing or any other scientific discoveries [7]. There are quite a few women who contributed to mathematical and scientific discoveries, but they never received the same recognition and attention as men did. As a result, many women were somehow being ignored and isolated even though they made significant contributions to the history of computing and science.

For years, women were thought of as not having the qualifications or knowledge that men have to pursue a career in technical fields. This problem can be associated with the stereotypes that our society has about women and what their roles should be. The media often portrays women either as teachers or housewives taking care of children, but never anything related to technical careers. Societal, familial, and educational factors are also involved. For instance, girls have either been denied or discouraged from pursuing careers in science, mathematics, and engineering. But this may be because many girls fear being thought of as “nerds” by the boys [6]. For this reason, many girls feel uncomfortable when working with computers. Moreover, the lack of experience with computers may also be a factor in indicating why the number of female computer science students has dropped significantly [7]. It seems that young women are avoiding computer science classes the same way their mothers and grandmothers avoided woodworking and automotive courses in the 1950’s and 1960’s [4]. Researchers have also noted that many girls were discouraged from taking math and computer classes in elementary school because of how females were portrayed in television as well as in real life [6].

For generations, studies have shown that girls from grade school to high school are losing interest in computing. The stereotype of computer professionals as hackers often makes women avoid careers in computing [2]. They fear that computer-related professions might require “all-night hacking sessions and obscene amounts of caffeine” [8]. On the other hand, many females seldom enroll in computer science or other technical subjects while in high school and in college [1]. For example, girls are starting to drop out of their math and science courses even though they are doing well in them [3]. The way educators treat boys and girls differently in the classroom can often lead them to lose interest in a particular subject. Some teachers say that they are treating both boys and girls the same way, but they don’t realize that they are actually treating them differently. According to research, these educators seem to make computerized learning extremely exciting for boys, whereas the girls felt anxious throughout the whole time they are in front of a computer [1]. Furthermore, parents and teachers play a role in underestimating girls’ potential to do well in the math and science courses that they take [3]. The main problem is that social stereotyping denies girls the encouragement given to boys to try science and math. Many girls believe that they must follow whatever is being portrayed about females in the media. According to Robin Abrams, general manager of Apple Asia, the majority of women are not yet convinced that home computing will make their lives a lot easier and gives them more free time [2]. Studies have shown that men are “seduced by technology itself and…brag about the size of their ‘disks’ and the speed of their microprocessors” [2]. Women, on the other hand, view computers mainly as a tool, and often care less about how they work and more about what problems they can solve [2].

There is also evidence that many women who pursue a career in computer science usually drop out of the curriculum or choose not to get advance degrees. One major factor is the assumed level of computer experience and knowledge in a first computer science course. Many computer science courses state that they assume no computer knowledge is required, yet there are hidden prerequisites to these classes [8]. In addition, many women enter college with much less knowledge about computers than do males [8]. Nancy Leveson, an associate professor of information and computer science at the University of California at Irvine, states that women who do get computer science degrees are not pursuing careers in academic computer sciences [5]. She explains that these women are either not being offered or are not accepting faculty positions. In Leveson’s 1986 report to the National Science Foundation, women earned only twelve percent of computer science doctorates compared to thirty percent of all doctorates awarded to women in the sciences. Levenson also points out that the number of female faculty in the computer science and engineering departments are very low, at about 6.5 percent [5]. In addition, studies using videotapes and observation of college classrooms have shown that men and women are treated differently by their professors. For example, the professors remembered the names of men better, called on them more, asked them more challenging questions, and gave positive responses to them more often [8].

Many women are facing problems in employment, especially in the field of computer science. Many businesses are trying to diversify their workplace by offering more opportunities for both women and minorities. But due to the higher percentage of men with computing backgrounds, employers often find it difficult to locate qualified female computer professionals [4]. Even though women are hired in computer industries, they are often assigned to be an assistant to their male co-workers instead of working by themselves [8]. In addition, female computer professionals are paid significantly less than male computer professionals are even though they have the same level of education.

Several schools are now working to introduce females to the discipline of computer science as well as engineering. In recent years, more women are starting to consider majoring in computer science. There is a significant increase in the number of women in the field of computer science. For instance, at Carnegie Mellon University in Pittsburgh, the percentage of women in the computer science program increased from eight percent to twenty percent during the past three years [7]. Their presence in the computer science curriculum has raised issues concerning sex discrimination in employment, equity and workplace ethics [3]. They have also contributed to the creation of programs that promote diversity in the workplace and to improve the role of women in computing and other technical fields [3]. This increase is partly because the school has become more flexible about the different courses that students have to take. However, men still make up the majority of computer science graduates as well as computer scientists in the work force. Despite the increase in the number of women entering the computer science field, they are still having problems in the work force. It is still obvious that women are paid less than men for same amount of work. Women who are planning on pursuing a career in any technical field have to work around the stereotypes that had prevented them from reaching their goals in the first place.