Project03

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  Today, women comprise approximately only 25% of individuals in the computer science workforce, in comparison to men.  This is very low when considering that women make up 47% of the general workforce (Statistics). In previous years, the number of women in the computer science field were increasing until approximately 1984, when they reached their peak. From 1984 until now, this trend has reversed and a statistically significant decline has taken place.  Though there is much speculation, it is difficult to determine whether these decreasing numbers are influenced by education, inequality in the workplace, or other uncontrollable factors. Without continued effort to improve the gender gap in computer science, there will likely be no change and it is even possible the number of women will continue to decline. "Underrepresentation leads to continued underrepresentation" as quoted by Margo I. Seltzer, the Herchel Smith Professor of Computer Science at SEAS (Closing The Gender Gap).

As time has progressed, computing and other IT related careers have exponentially increased in comparison to other areas of study. Surprisingly, although these areas of study increase, the number of women in these fields have decreased. Does this stem from the education we are taught at young ages? Based on the article "Creating More Women Coders" the inequality in education seems to occur at a young age where most teachers don't pay attention to gender issues. These gender issues in turn can lead to the decrease in women in engineering, and technical fields. More incentives need to be created for women in order to increase the number of females in related fields. As these lessons are taught, it is important to not represent women to "act like men" but rather give them the opportunity to take part in other programs they normally wouldn't. "The Issues Of Gender Inequality" suggests that "Information and Communications Technology (ICT) needs to be reconceptualized into an environment that women would naturally embrace. According to The National Girls Collaborative Project (NGC) men outnumber women 6 to 1 in grades K-12 in the likelihood of taking engineering. From 1982 the number of women studying computer science has decreased from 4.2 to 0.3 percent according to The New York Times. ”Research indicates the number of women earning computer science degrees continues to decline, even though women are earning college degrees in increasing numbers in science and engineering”(Gender). One consideration for the pattern that is seen in the increase/decrease of women studying computer science may be related to the introduction and use of personal computers in society as a whole. When computers were first introduce, they were primarily given to boys and had games that were very male oriented, like NBA basketball, Madden football and military shooting games. It was many years before games like SIMS and Barbie, which are female oriented, were designed and available to play. This created a almost a generation gap in the knowledge of technology in the classroom. While in the classroom, if computers were available, the males were generally more likely to have computer time (Stross). As computer classes became available in schools, boys had significantly more hands-on experience with them than girls did because they had started playing games at a much younger age due to what there was available to play. This caused a significant learning curve for female students. This gap would not have been observed by the generation of students that came before them because everyone was exposed to the technology at the same time. No one had computers during their childhood (When Women Stopped Coding).

It does appear women receiving a higher education have improved to 51 percent in 2004-5 from 39 percent in 1984-85. This can provide hope that as time progresses, the number of women in computing will increase.

It is believed the gender gap in computing has a significant connection to education to the point where it is theorized that men show more interest than women in computer science which has even been theorized to become a "self fulfilling prophecy". This concept creates stereotypical gender roles which lead women to rate themselves lower than men whom gain a high self confidence and positive attitude towards computers and computer science, simply based on the idea that women feel less apt in computing sciences (Gender).

The inequality in pay may also attributes to the decline in women in computer science. Is this because of the ideology that women are held under a glass ceiling? Wirth (2001:1) defines the glass ceiling as '...the invisible barriers, created by attitudinal and organizational prejudices, to block women from senior executive positions'" in the article Work, Employment & Society written by Susan Durbin. In other words, the concept of the glass ceiling is when women feel as though they may not advance in their career due to this theory that there is a glass ceiling above them not allowing them to further their organizational position. Although it is invisible, it is rigid and strong not allowing women to grow within the company. Studies have been done which provide evidence that women still have to try harder than men do in order to get credit for things that they deserve. Many times women are less valued for their skill in comparison to men, leading to inequality in pay as well. According to the article "Working On The Pay Gap", women earn 92 cents for every dollar men earn in technology careers and only 73 cents for every dollar men earn in overall jobs, on average. Could these pay differences be one of the contributing factors for women? Approximately 60 percent of women believe the glass ceiling is a contributing factor in IT jobs based on gender bias, stereotypes and knowledge base all play a role (Gender).

Today, many attempts have been made to break the glass ceiling. Women are now taking higher positions in technical companies including Google, Yahoo, Microsoft and Facebook. With the help of their colleagues, conferences have been set up and keynotes are given to promote the idea that women can succeed in computing. Another consideration affecting the number of women in the computing sciences field for non work related reasons. As quoted by Amy Yin, co-founder of Harvard Women in Computer Science, “..a lot of women think you can't be social if you're in computer science, that people will stigmatize you as a nerd, that guys will be intimidated by you, that you won't find a boyfriend or a husband."  Because of opinions like this, Harvard now offers programs to help encourage women to reach into technology and to try and think technically. Women have a different way of thinking than men which can potentially lead to new ideas in computing sciences (Closing The Gender Gap).

The decline in the number of women in the computer science field has become an issue recognized at the highest levels in the United States. In a memo released from the Executive Office of the President in February 2013, President Barack Obama stated *“One of the things that I really strongly believe in is that we need to have more girls interested in math, science, and engineering. We’ve got half the population that is way underrepresented in those fields and that means that we’ve got a whole bunch of talent ... that is not being encouraged…”* (White House).

This type of initiative will help to bring more equity into the computer science field and reverse the trend of declining participation by women. It is a multi faceted problem, but recognizing its an issue is the first step to solving it.

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