Outside the Sameness/Difference Debate: Feminist Participatory Action Research

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Abstract. The sameness/difference approach constitutes much research in addressing the low participation of women in computer science. In this paper, I will describe the differences between these two approaches and suggest an alternative, feminist Participatory Action Research. This approach may provide clues on how to design interventions to engage women in the production of technology.

Introduction

The low participation of women in computer science in the United States and Western Europe has been a recognized problem for over two decades (Aspray & Cohoon, 2005; Gürer & Camp, 2002; Margsolis & Fisher, 2002). Although the inclusion of women in the production of computation has been mostly positioned in terms of fairness and bringing diverse perspectives, there is also another argument. In terms of knowledge and power, it is not enough just to have access to technology. The production and manipulation of technology is necessary in order to engage in social debate, discussion, and economic opportunities (Arias, Eden, Fischer, Gorman, & Scharff, 1999).

However, a sameness or difference approach constitutes much of the research and interventions in order to address this problem (Faulkner, 2000). The sameness approach, or a liberal feminist approach, focuses on broadening women's

participation in the existing fields of computing in order to provide equal opportunities with men. However, this approach breaks down when considering sex based differences such as pregnancy or gendered experiences unique to women, where women may have different needs such as maternity leave. The difference approach, also known as cultural feminism, posits that research and interventions should focus on the different interests and experiences of women. But there are problems with this approach as well. This approach may be risky in terms of essentializing women or assuming that "Woman" is a homogenous category (Singh, Allen, Scheckler, & Darlington, 2007). Moreover, even if differences are valued, it may not help advancement in the workplace. Woodfield studied a computing firm where women were assumed to have stronger interpersonal skills than men. However, this perceived strength did not translate into career advancement (Woodfield, 2000).

In this paper, I will discuss how gender is performed differently according to different groups in relation to technology, and how using a feminist Participatory Action Research model could help design interventions for women and girls outside the sameness/difference approach.

Doing Gender and Technology

Along with others, we view gender as something that is "performed" and is constantly shifting and reproduced according to culture and experiences (Butler, 2006; hooks, 1999; West & D. H. Zimmerman, 1987). Moreover, Corneliussen suggests that this emphasis on change is also needed when looking at gender and technology (Corneliussen, 2009). Supporting this perspective, research has provided evidence that not all women are uninterested in computing, specifically among different groups of ethnic and socioeconomic status women.

African American women in computer science tend to persist at the same rates as African American men (Lopez Jr & Schulte, 2002). Contrary to other studies that show women think computer science majors are geeky and loners (Margolis and Fischer, 2002), Knight and Steinbach found that not all girls view people who work in computing this way (Grant, Knight, & Steinbach, 2007). The authors found that African American girls in high school were especially less likely to have these views than Latinas and Whites. Varma looked at women who were already pursuing CS and found that Latinas and African American women were more likely to persist in computer science compared with white women (Varma, 2007). Varma found that non-white women felt more of a need to persist in order to support themselves and their families. Zarrett found a difference between African American women of high SES and low SES (Zarrett & Malanchuk, 2005a). Zarrett suggests that African American women of low SES viewed IT as a pathway to a good career, whereas African American women of middle and high SES, wanted careers that they perceived as respected, such as a doctor or lawyer. Finally, Lagesen looked at perceptions of gender and computing in

Malaysia. They found that developing software was perceived as a good career for women because it was a desk job and had good pay (Lagesen, 2008). However, there is gender stratification within computer software and hardware, as hardware is seen as a more masculine area.

Although low SES African American women and Latinas may not view technology production as something for "geeks", there are still issues in terms of access to knowledge about producing technology for both men and women of these groups (Margolis, 2008). There are additionally effects of technology being built mostly by white males, as they become imbued with a particular value system, which is described in more detail in the section on "Technofeminism."

Technofeminism

We reject the idea of techno-determinism, or that technology is neutral and value free (Bijker, 1995; Du Gay, 1997). Wajcman's technofeminism puts forth the notion that gender and technology are simultaneously co-constructed, or that "technology is both a source and consequence of gender relations" (Wajcman, 2004). As an example, Cowan illustrates that the industrial revolution created domestic technology that changed gender roles for middle class, white women in the U.S. (Cowan, 1976). New technologies such as the washing machine, created new expectations for cleanliness and actually created "more work for mother." Further, Wajcman states that gender and technology relations are constantly in flux and dependent upon the technology and context. Gender theory, such as technofeminism, provide a good lens for bringing to light gender and inequalities that are built into technology and social structures. But, how do we use a feminist approach in order to design interventions to address gaps in technology production and knowledge?

Feminist Participatory Action Research

Feminist Participatory Action Research (PAR) provides some answers but also some challenges (B. Gatenby & M. Humphries, 2000). Drawing from architecture, urban design and planning, and psychology, PAR and empowerment models focuses on participation of the community to understand what assets they bring to their efforts, how they are already handling and understanding their own problems, what activities and outside resources are necessary in order to further their aims, and how their current efforts extend their capabilities for further action (Perkins & M. A. Zimmerman, 1995). Feminist PAR then goes further to recognize the diversity of experiences of participants, the fact that the researcher cannot possibly be neutral, and that research is a political process (Bev Gatenby & Maria Humphries, 2000).

The goal of a technology feminist PAR project would put the power and expertise of technology into the hands of the participants. The researcher would then show participants how technology could be used in order to address problems in the participants' lives and to be as reflective as possible with regards to power relations. A challenge for the researcher is not to become the technology expert, caretaker/nurturer, or knowledge expert. Rather than design interventions that help women become computer scientists (a sameness approach) or assume that all women want to design technology to address "female" desires such as social applications (a difference approach), a feminist PAR approach puts the choice of the technological project in the hands of the participant. In doing so, these projects do not make assumptions about the interests and experiences of women and also does not offer computer science as the only option. Also, a feminist PAR approach recognizes that the experiences of girls and women are different. Allowing the participants to choose their own project then makes learning personally relevant.

However, a critique of a feminist PAR approach is that not all participants know what kind of projects can be done with technology. It is thus the researcher or educator's role to show what is possible, and expand what constitutes computing. Further, the shared goals and values should be articulated up front and the researcher should work with participants and community to reach a consensus. This then could create a positive feedback loop -- to broaden who participates in computing and what is considered computing.

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