Solidarity, Voice, and Margins: Framing Work and Designed Intersectionality

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Abstract

The margins of any intellectual endeavor or theory, of empirical investigation, or of activism are always in flux. More often than not, these shifts are designed – they are a result of purposive action on part of individuals, groups, and communities. The important questions then become - who does the design and why (power), what is the message (framing), and how this resonates with others (intersectionality)? I illustrate this framework using findings from studies of different social media campaigns related to STEM education, in particular, engineering and computer science (CS) education. In particular, I highlight the diverse nature of these campaigns – even though the overarching goal is to increase the participation of women and other underrepresented minorities in engineering and CS. The messages, participants, vary, and so do self-expressions of identity and identification. Whose voice counts and who can make their voice count?

Author Keywords

STEM education; social media campaigns; intersectionality; equity; diversity.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction

Women's participation in the U.S. engineering workforce has a long lineage starting in earnest in the 1940-50s with the need to fill positions necessitated by World War II. It was also around this time, in 1950, that the Society for Women in Engineering (SWE) was formed. However, since then the representation of women in U.S. engineering education and workforce has stayed remarkably low at less than 25% [1, 2]. It is also increasingly evident that given the role of engineering, computing, and technology, in everyday life a more diverse workforce is needed by companies to remain competitive in the future by recruiting the most capable workforce [3, 4]. Diversity of workforce is critical for designing a broad range of products that serve different users. Yet, efforts, including policy making [5, 6], to encourage and support women's participation into STEM workforce are undercut by the inherent and implicit bias against women.

As we approach a year since the appearance of the hashtag #MeToo, it is important to reflect on the new modes of activism that are now being employed to shed light on issues of abuse of power and disenfranchisement of women and other minorities and the role they are playing or can potentially play in shifting the conversation around the professional formation of engineers. Social media now provides an avenue to make inequity more visible for participants and to coalesce around issues they care about. Social media activism relies on connective action – the idea that it can bring together disparate actors across geographical boundaries – and enables activists in disseminating information quickly to a larger audience through a multitude of channels [7]. It can be used not only for creating and sharing information but for forming public opinion, planning and calling for action, protecting activists, and for mobilizing both online and offline resources [8].

In particular, the use of social media for hashtag activism campaigns related to engineering and technology, such as #ILookLikeanEngineer, #WomenWhoCode, and #GirlsWhoCode, demonstrates the utility of these platforms for users as well as for understanding engineering issues. Hundreds of thousands of messages are shared by thousands of users on these platforms, not just by individuals but also by organizations that have an interest in engineering diversity [9].

I briefly look at three popular hashtags to the nature of power (who does the framing) and intersectionality (multiple voices). They are all hashtags and campaigns in solidarity of engineering diversity, yet there are variations among them highlighting the differential nature of solidarity and opening up the question – who is at the margins and who is the most vocal?

#ILookLikeanEngineer

The #ILookLikeAnEngineer was created by Isis Anchalee in July 2015. At that time she was working as an engineer in the company called OneLogin. Her image was used by her company in a billboard recruitment campaign displayed in the California Bay Area, especially at the BART train stations. Her image led to discussions online about the veracity of the campaign as some people found it unlikely that she was really an engineer. Users also commented that she was used for the campaign only because she was an attractive woman. As a response, she created the hashtag and invited other engineers to post their image to showcase

the diversity of engineering. Companies, NGOs and universities along with individuals were the active users across this hashtag. News outlets also helped this hashtag to reach many people. The top keywords in the tweets were engineering, women, girl, and female. One of the main topics was women's coding experience The most common other hashtags were: #WomenInTech, #WomenInStem and #STEM. Overall, the hashtag encouraged women to participate in tech industry.

#GirlsWhoCode

In June 2011, Reshma Saujani started this hashtag that is also a name for a NGO she founded to close the gender gap in computer science for young people in the U.S. Individuals are the most active users (>50%) but NGOs and companies are active as well. The top keywords in the tweets are girls, women, code, and learn. One of the topics in the tweets is about girls' coding experience for the first time. The next one is about a learning code camp in summer, called Summer Immersion Program. Another one is about the events for introducing the girls to coding. The first three most common other tagged hashtags: #WomenInTech, #STEM and #Coding. An analysis of co-tagged hashtags reveals five popular categories of information: coding in Python, web development, Java developer, girls in STEM, HourOfCode camp for girls, and 100DaysOfCode camp. Overall, #GirlsWhoCode is the combination of self-promotional content from the users and some personal experience about the coding camps like 100DaysOfCode and HourOfCode.

#WomenWhoCode

Few months later after #GirlsWhoCode, #WomenWhoCode was created and an NGO after this hashtag was founded was founded by three people: Zassmin Montes de Oca, Michele Titolo and Alaina Percival. Individuals are the most active users under this hashtag and provide technical information and events to encourage more women in coding. Companies, who actively promote themselves on #GirlsWhoCode, are not a major player. The top keywords in the tweets are women, code, and learn. Women commonly share their personal experiences related to coding. The three most commonly tagged hashtags are: #WomenInTech, #100DaysOfCode and #Coding. The hashtag #100DaysOfCode was created to motivate women to get a jumpstart on their coding skills. #WomenWhoCode is different from the other two hashtags and it is more focused on technical knowledge sharing and personal experiences related to coding and contains little self-promotion by companies.

Discussion

An analysis of three interrelated hashtags provides some evidence that even in solidarity there is variance. Different people started the hashtags for different purposes and not surprisingly they have been used in common ways but also quite diverse ways. I want to suggest that the reality we need to grapple with for any movement towards solidarity is how we decide who or what gets a voice and what remains at the margin. Is there ever a space that does not have any margins?

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