AC 2009-467: RACIAL INEQUALITY EXISTS IN SPITE OF OVERREPRESENTATION: THE CASE OF ASIAN AMERICAN STUDENTS IN ENGINEERING EDUCATION

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Racial Inequality Exists in Spite of Over-Representation: The Case of Asian American Students in Engineering Education

Abstract

While Asian American students are not under-represented in engineering, they are still members of a minority population. In the last three years we interviewed 165 engineering students in a large scale research project that identifies factors leading to differential rates of student success among four minority populations including Asian Americans. The Asian American participants reported experiences with racially-based discrimination that were related to the most common stereotypes of Asians, including forever foreigners and the model minority. Participants' response to discrimination experiences were usually denying that the experience had happened, dismissing their feelings, and making excuses for inappropriate racially-based behavior. The failure to recognize the experiences could be the result of low levels of racial identity development. Dismissing feelings and making excuses for racially-based behavior may be participants living out one aspect of the model minority stereotype. The message from the Asian American participants is that over-representation does not remove racially-based stereotyping and discrimination in our society. Five recommendations for making engineering institutions more equitable are presented.

Introduction

Under-representation of minority groups in engineering endangers our society's ability to recruit a sufficiently large population of engineers[1], it robs engineering of the unique perspectives that a diverse talent pool can provide[2], and is socially unjust. However, solving the problem of under-representation may not remove racial inequality from engineering education. While Asian American students are not under-represented in engineering, they are still members of a minority population and face both discrimination and stereotyping. Since they are not under-represented in engineering, they may have reduced social support infrastructure (scholarships, ethnically/racially specific technical societies, support staff), and encounter less understanding of their minority status. Asian American students also have to negotiate the double edged sword of stereotypes that are superficially positive, such as the model minority stereotype.

This work will explore racially-based discrimination experiences related to stereotyping from a population of Asian American engineering students. Our hope in presenting these experiences is to allow engineering faculty to understand the impact of being a minority, independent of equitable representation.

Research Methodology

In the last three years we have interviewed 165 engineering students in an large scale funded research project (NSF DUE-0431642) that identifies factors leading to differential rates of student success among four minority populations: African Americans, Hispanic Americans,

Native Americans (American Indians), and Asian Americans. Of these students, 40 were Asian Americans, with 37 persisting in our engineering program.

Our research methodology is longitudinal, qualitative and quantitative, similar to those of Seymour and Hewitt[3], and Margolis and Fisher[4]. Students provided academic transcripts, completed a comprehensive demographic survey, completed a modified version of the Pittsburgh survey[5], and were interviewed using a semi-structured protocol focused on factors known from the literature to influence minority student success. Students were interviewed yearly, up to three times during the period of the research, for a total of 56 interviews of Asian American students. The interview tapes were transcribed, verified, and coded using NVivo qualitative data analysis software using an iterative-inductive methodology[6], where coding categories are created based on the interview data. Quotes were selected for inclusion from NVivo searches on nodes related to racial issues including discrimination, racial isolation, and the model minority stereotype.

When quoting students we use the following conventions. Statements from the participant are prefixed by a *P*. An *I* preceding a statement indicates that it was said by the interviewer. Quotes without a preceding *I:* or *P:* come from the participant. Ellipses (…) are used to indicate that words or statements irrelevant to the current discussion have been removed. Conversational fillers (e.g. you know, um) are removed without notation. Words are placed in parentheses to indicate that in spite of our best efforts, the transcription remains uncertain. Words in square brackets were added by the authors to clarify the context or meaning, or to generalize information that might identify the participants. For example, we would replace "Korean" with [Asian ethnicity].

For each quote, we'll give the gender and major of the student. Although we have complete demographic information for each of the participants, in this work we conceal ethnicity, generational status, and their academic classification to protect their identity. This is necessary because of the relatively small number of Asian American students enrolled in some engineering majors.

Results and Discussion

Participants discussed experiences with racial discrimination both within the college community and the community at large. Discriminatory experiences between friends, with students and faculty in the academic community, and people outside of the academic community were reported. Many of these experiences appear to have a foundation in U.S. racial stereotypes of Asian Americans.

One student reported racial discrimination by a faculty member.

> P: One of my electives was [a general education course] and my teacher was [of Asian ethnicity] and he blatantly said he was going to be more strict on the Asian students

because "I know you guys came from Asian families and I know you guys study more" and he said that in class …

I: Yeah, how did that make you feel?

P: I don't know. I laughed at first and then I just blew it off.

I: In the end was he really serious about that?

P: I don't know. I don't know. He might have been; every time at the conclusion he made comments if I got something wrong. I don't know if he did that to everybody else. (Male, electrical engineering)

The basis for this instructor's behavior references two facets of the model minority stereotype, where Asians are presumed to be smarter and more hard working than other races[7]. While this stereotype appears to be superficially positive, particularly when compared with stereotypes of other racial and ethnic groups, the instructor's comments demonstrate that it can unfairly prompt higher expectations solely on race.

The student's response to this experience also bears discussion. While this student said that he "blew it off," he means he chose not to cause the professor trouble by going to a department chair, for example. However, he chose to discuss the experience with our interviewer. This indicates this experience was not one of the minor slights of life that is initially annoying but soon forgotten like being cut off in traffic. Also, this experience changed his interaction with his professor, specifically his interpretation of the faculty member's actions.

The same student also reported discrimination while doing team work in a class:

You know how sometimes you're put into groups, and you have to introduce yourself? And something as small as somebody saying, and I don't think they mean anything by it but they say something like, "So do you eat dogs?" What the [expletive]? (Male, electrical engineering)

Leaving aside the question of whether dogs are ever eaten in rural areas in Asia[8], dog eating is not a cultural trait of Asian Americans in the U.S. Given the level of affection for dogs in the U.S., inquiring whether someone has eaten a pet is not an appropriate introductory question. As with his first quote, this student excused this behavior too. The pattern of denying and excusing experiences with discrimination was common among the participants.

The student below, the only female student quoted in this paper, reports on discrimination caused by having a foreign name.

You know how my last name is [similar to a sexual obscenity]? I remember pretty recently at the gym I gave the guy my ID card when I came to get my towel and at the end I gave [the towel] back to him. He asked me what my last name was so he could get [my ID card]. I think he was around some girl and then he was trying to say my last name really loud. "What is it again?" He made me say it a couple of times loud, trying to be funny. But I didn't think it was funny. (Female, electrical engineering)

Some Asian names are homophones of obscenities in English. Chow provides a more complete explanation of naming challenges for Asian Americans[9]. By using her last name to ridicule the participant, the gym worker was amusing his audience at her expense. A possible subtext to this student's experience reflects another stereotype: Asian women are sexual objects, called exotification[10]. The corresponding stereotype for Asian men is being effeminate or asexual[11].

The quote below comes from the same male, electrical engineering participant who provided the first two quotes.

I remember one time one guy told me to go back to my country. He said "Get off American soil, blah, blah, blah" … And I found out that Filipinos…[had] come to Florida (before) pilgrims came to America and I told that dude, "Hey dude, why don't you go back to Europe? We've been here longer than you." And he said "Nu uh" and I go "Yeah." I told him: "You heard of those Spanish people in Florida? The Filipinos escaped [from them] before you guys even decided to come across the Atlantic" and that dude was like "Oh." (Male, electrical engineering)

In spite of being born in the U.S., the participant was presumed not to belong in the U.S. as a result of his race. The stereotype related to this experience is that everyone of Asian race is a foreigner either by birth or by allegiance, known as the forever foreigners stereotype[12]. While being presumed to be foreign may seem insignificant, this stereotype is responsible for the relocation and detention of Japanese Americans during the Second World War[10]. This quote also highlights how the U.S. education system's focus on the history of Whites affects people of color.

This participant's response to this event was not like his passive responses to other events. He utilized his knowledge of U.S. history to combat discrimination. This was one of only a handful of examples where a participant directly responded to discrimination.

Another aspect of the forever foreigner stereotype is the expectation that all Asians speak with an accent and lack fluency in English. Two participants discussed their frustration with this assumption.

I am very proud of who I am. I'm damn proud of my [Asian ethnicity] heritage. But, when I go outside [of his ethnic community] that's not what I can see. [Whites] look at you and automatically they judge you: Oh, you're that typical [Asian ethnicity]. You

can't talk. You can't speak English correctly. I feel that in society if you grow up in a predominantly White community, I hate to say it but it's kind of a disadvantage. (Male, mechanical engineering)

This participant's reluctance to admit that being assumed to be foreign is a disadvantage, is part of the pattern of downplaying discrimination against Asians. This is particularly poignant since the lack of English language fluency is often used to imply a lack of U.S. cultural fluency. This may be a factor that causes difficulty for Asian Americans to break through the glass ceiling and take on leadership roles.[13]

Another participant links the perception of Asians Americans' English speaking ability to how Asian Americans are portrayed in the media, a topic that Chung discusses at length [14].

> My parents came and visited over the summer and my friend, she is [a member of another racial group], she told me she was surprised at how well my dad spoke... which I took to mean she was surprised [he doesn't] have an accent... [My Dad] graduated from college and has a good job...When they see an Asian on TV, they all have accents. It seems like that is most people's exposure to Asians. (Male, petroleum engineering)

A recent immigrant gave us his perspective on the language issue.

> I: Do you feel people get angry at you or don't like you because of your accent?
>
> P: Yeah. I feel things like that sometimes. I feel like that because in class I saw someone and want to talk with them and it would be like they don't want to hear or something like that. Just feel like that but I'm not sure…They just say a little bit, but they don't talk back…Like in the class…you got in a group of friends. But you talk with different ones you don't know. It's just in class.…Whenever I ask [classmates], "What's going on. How to do homework?" like that. And then they not answer, so I feel like they don't want to talk….When I talk to them, they're not really like eye contact or like that. They just…look away like that maybe after they answer a little bit. And then I think they don't want to…so I just walk away. (Male, civil engineering)

At the time of the interview, the participant had been a resident of the U.S. for five years and graduated from a U.S. high school. He reported that his first and primary language is his native language, not English. This participant's peers ignore him primarily because of his English speaking ability. This is unfortunate because interacting with foreign born people or those with

different language abilities could benefit students who may have had limited opportunities to gain a global perspective from someone who was not raised in the U.S.

The quotes below describe troubling experiences that Asian American students have had in the community surrounding our institution. The first quote is from the same male electrical engineering student who has been previously quoted.

> [My Asian American fraternity brothers] were in [a national restaurant chain]… [T]here were 4 or 5 of us and there was a big group of, I don't know if they were high schoolers or country boys, but they blatantly squinted their eyes going, "Ching, chang, chong, There's the Chinese brothers" and laughing…[My Asian fraternity brother] didn't realize it; he didn't know what was going on….I said "Dude, they're making fun of us." And he was like "Why?" And I said "Because we're Asian." And he said "Nu uh" and he looked over at them and they pointed again and he was like "What's so funny?" (Male, electrical engineering)

The inability of this participant's fraternity brother to recognize blatant discrimination might seem surprising. However, it parallels many of the other participants' claims to not experiencing racially-based discrimination.

Another student reported a similar experience at the same restaurant chain. This participant has also been previously quoted.

> P: My brother, he dated a White girl, and we walk into [a national restaurant chain]. They hold hands like couples hold hands but it was just like White people were like "Oh". …We were eating you know and like these White people would be like…eye-balling us, you know, just because like they were a couple…Like this one girl and… she was in college because she was wearing [university logo] stuff and she was eyeballing the whole time, not just a little bit… like mad-dogging us….I was like: "What? You got a problem?" …I feel that I've got to become better than them, better than White people. Show White people what I'm made of…. I don't hate all Whites… I have good friends who are White. I'm not too entirely racist, but I feel versus White people, see I said "versus." I kind of feel like it's a competition …I have to become better than them. (Male, mechanical engineering)

The frustration and anger of this student towards Whites is palpable. He observes that some Whites disapprove of interracial relationships, particularly where a White woman is romantically associated with an Asian man. The opposite relationship of an Asian woman with a White man is more widely accepted. The rejection of Asian men as appropriate partners for White women is partially due to the gender stereotype that Asian men are not masculine. For a young man to be seen as effeminate, particularly as he is coming to maturity, threatens his gender identification as a man. The coupling of threats to his masculinity and the continual stream of racially-based

infractions that this racially aware participant clearly sees, fuels his continuous competition with Whites.

Analysis

Typical participant responses to discrimination experiences were denying that they happened, dismissing their feelings, and making excuses for inappropriate racially-based behavior, even though a handful of participants reported frustration and other reactions. The failure to recognize the experiences could be the result of low levels of racial identity development. Participants may be living out one aspect of the model minority stereotype when dismissing feelings and making excuses for racially-based behavior.

Two other patterns are apparent in the data: several of the most interesting quotes come from two male participants and only one quote comes from a female participant. Both of these patterns can be explained by the racial identity development of participants. Just as professors work to help engineering students develop their feeling of belonging in engineering, people also develop facets of their identity as a member of their gender and their race. While some would like to naively believe that our world is post-racial and race no longer matters, the fact that others in our society see race as salient makes it salient[15].

Just as developing engineering identity might follow a different path than developing identity as a historian, each race has typical patterns of racial identity development. For Asian Americans, racial identity development can be explained in five stages[16]:

1. Ethnic Awareness: identification with country of family origin

2. White Identification: racial identification changes from country of origin to White, feels personally responsible for racial discrimination

3. Awakening to Social Political Consciousness: changes racial identification to minority, and resists White values and domination

4. Redirection to an Asian American Consciousness: changes racial identification to Asian American, feels a sense of belonging and pride

5. Incorporation of Asian American Identity: Asian American identity gets incorporated with other identities such as being an engineer.

Many of the participants are in the early stages of racial identity development. Students in these early stages are less able to identify discriminatory experiences, particularly the small daily indignities called micro-infractions. The two students in this paper who are quoted most often are in more advanced stages of racial identity development (in Stage 3) than other participants, and therefore more able to recognize discrimination experiences.

We believe the absence of quotes from female participants is due to the lack of racial identity development of female participants interviewed. While young male Asians have to confront the perception of being feminine when masculine identity is also developing, young Asian women do not have this tension. Personal experiences with discrimination are one of the factors that lead to racial identity development, particularly the transition from seeing oneself as White in stage 2 to recognizing minority status. Since these Asian women participants were more able to be accepted into White society, they were less likely to see racially-based infractions.

Many participant quotes were focused on the forever foreigner stereotype. This stereotype also diminishes racial identity acceptance, an important part of the later stages of racial identity development, since it identifies participants as outsiders. The feelings of the new immigrant participant about being excluded and ignored demonstrate this. Being labeled as an outsider also denies the participants one of the three basic interpersonal needs: affection, control, and inclusion[17].

While stage models are widely used to frame discussions of issues like identity development, they have well known shortcomings. People have free will, and don't tend to make crisp transitions along a prescribed path. More often, people are in several stages simultaneously to a given degree, and there is both progress and regression among stages as life churns.

In addition to a lack of racial identity development, in the Asian American community there is a strong social prohibition against complaining about unequal treatment based on race. This is another facet of the model minority stereotype[7, 18]. Like many members of the dominant society, many Asian Americans want to believe in racial equality. Each wave of Asian immigrants believes that they will be treated better than previous immigrants and will escape discrimination, even though that plan of working hard, getting educated, and adopting belief systems of the dominant culture[7] has not consistently worked for previous waves[19]. Assimilation is more difficult for immigrants with identifiable phenotypes or different cultural systems. When the desire to believe in racial equality conflicted with experiences of participants, most participants clung to the promise of racial equality and dismissed their experiences.

Conclusions

The message from the Asian American participants is that over-representation does not remove racially-based stereotyping and discrimination in our society. Even if all groups had equitable representation, individuals that are members of minority groups may still have difficulties with discrimination and stereotyping, just like the Asian American engineering students.

Based on this research, we offer the following recommendations for engineering educators.

- When building institutional infrastructure, consider the need to provide support for all minority groups, not just those that are under-represented.

- Educate both faculty and students about the existence and danger of common stereotypes of all racial/ethnic groups including Asians, such as forever foreigners, dog eating, sexual stereotypes, and the model minority myth.

- When having students work together on group work, try to schedule introductory work sessions during class time to allow faculty to observe group interactions, and correct inappropriate and discriminatory racially-based behavior.

- If any racial or gender stereotyping occurs in the classroom, use the opportunity to educate students about the dangers and inaccuracy of racial stereotyping

- Don't assume that the absence of reported discrimination experiences implies that there is no racially-based discrimination at an institution.

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