

ISSUES OF DIVERSITY

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What Is Diversity?

One dictionary definition of diversity is: "The fact or quality of being distinct in kind, having variety in form; a point or respect in which things differ."¹

My personal observation is that "diversity" is just the newest fad. As a black woman I find this particularly amusing because black culture has always been diverse. We come in all shapes, sizes, and colors, from all backgrounds, religions, economic groups, levels of education, and geographical locations. Being different has always seemed much more acceptable to us than it seems to be in the Anglo male world. Being different for black women (and, I think, also for women in general) is a point of interest rather than a point of exclusion.

Why Diversity Now?

History gives us many examples of civilizations that made great advances but then became complacent. While resting on their laurels, they were overcome by other civilizations that were trying harder. The United States has a history of being reactive. When the Soviets launched Sputnik, the U.S. threw billions into its space program so that we could be the leader in that field. U.S. automakers relaxed, and Japan took the lead in the automotive field. Suddenly the U.S. is in danger of losing its position as the "The World Leader" and those in power have come to realize that the only way to prevent that loss is to better utilize its most neglected human resources--minorities and women.

Demographics have changed tremendously. Researchers predict that in the year 2000 one-third of the employable U.S. citizens will be minorities and women. They will represent the pool from which the "saviors" will have to come. The knight in

shining armor that saves the U.S. will probably be a Hispanic, a black, a Native American, or a woman with a high-tech sword in one hand and a baby in the other.

What Are the Issues?

Professional women remain a small portion of the total female work force, and approximately 20 percent of all women in the labor force are minorities (black, Hispanic, Asian, and Native American). Sex stereotypes and the absence of role models make it difficult for women to advance into higher paid, more prestigious jobs. In addition, on the average, women's earnings remain 60-65 percent of men's. Although legislation has been passed to provide token equality, laws covering women workers change slowly because they reflect widely held norms of appropriate sex roles in our society. Pursuing a traditionally males-only technical career involves major issues that relate to preparation, obstacles, and women's special needs.

Preparation

In order for women to fill the technological positions in which they are needed, they must be informed about the opportunities and the education necessary to prepare for them. Early intervention strategies must be used to interest young girls in math and science and convince both males and females that math and science are not fields for "boys only." Girls must have the opportunity to study in supportive environments that provide positive reinforcement for the behavior that will lead them to engineering careers.

Obstacles

The biggest obstacles have to do with psycho-social issues. Nina Colwill, a professor of business administration, points out that women are viewed as "nurturing, emotional, and nimble-fingered, while men are seen as aggressive, adventuresome, and physically strong. These beliefs prejudice how we think of men and women and how we expect them to perform on the job, thus producing discrimination against women in certain job assignments."² Much of the concentration of men and women in certain careers has been deliberate. Women have been encouraged to enter the nurturing professions, such as teaching and nursing, and discouraged from entering the sciences.

Most current engineering faculty members were educated in a "woman-less" environment and therefore are ill-prepared to deal with women in the technical environment. Males were accustomed to using profanity, telling off-color jokes, climbing around on equipment, and getting dirty--activities that were not considered appropriate for women in mixed company. Male faculty felt uncomfortable sending women on internship assignments where they would be working at a refinery in overalls and a hard hat with a bunch of men chewing tobacco and talking about their latest romantic escapades. And if a woman with a problem began to cry, he simply didn't know how to handle the situation. Many male faculty have now become accustomed to having women in their classes and have accepted women faculty as their peers. However, older faculty still resist change and resent having women in what they perceive as a male's domain.

The situation is similar in the workplace where men have been accustomed to relating to women as "helpers" who can type, make good coffee, arrange meetings, and walk flirtatiously in high heels, but not solve mathematical equations, manage others, solve technical problems, and head corporations. Since the Reagan years it seems to have become acceptable to express, rather than control, hostile feelings about ethnic groups different from one's own. This makes things especially difficult for black women. While white women may not be taken seriously and may have to work extremely hard to prove themselves, black women are more often actively discriminated against and seldom even get the opportunity to prove themselves. As one black female Howard engineering alumnus explained:

Hiring blacks and women seemed to be largely an affirmative action response. They did not really want us or need us. The men wanted to hold on to that good ole boy network. Further a lot of the men were on ego trips and power trips and unnecessarily abuse blacks and women. My work is always under close scrutiny. There is never any encouragement, and it doesn't seem to be easy for me and my supervisor to have an easy rapport. The white males seem to be uncomfortable around blacks and expect women to act a certain way--flirty, weak and stereotypic.

Changing male attitudes about women is critical to achieving our goals. We must begin with our sons, our brothers,

our husbands, and our fathers. Acceptance of women in technological areas--by peers, educators, parents, and employers--is essential if women are to move into the positions in which their skills are needed.

Women can bring diversity to technology. They can bring different approaches to solving problems, different management styles, and different perspectives. They can bring creativity and futuristic thinking and may well work harder to find solutions that will be both cost effective and environmentally safe. There should be a place in engineering for a "softer" approach. You do not always have to kill the beast in order to tame it. Women, taught early in life to nurture, develop the ability to look far ahead and see positive aspects of a situation that may be obscured for the moment by limited vision. Different must no longer mean inferior. Views must be changed so that when people visualize "an engineer" they are as likely to visualize a female as they are to visualize a male.

Special Needs

We cannot deny that men and women are different, and that women have some special needs that must be considered. According to author Linda Adams, women have been socialized to think of others' needs before their own. A major step in breaking out of this straightjacket "is the realization that women have the right to meet their important needs. This and the subsequent step of becoming more aware of [exactly] what some of their important needs are often require the peeling back of layer after layer of socially imposed demands and expectations."³ On first consideration it might seem to be ideal to have these needs (leave for childbirth, childcare, parent care, etc) addressed in the general policies of employers without specific reference to sex. However, we must carefully consider whether equal treatment is an appropriate standard or whether policy should specifically address the different roles men and women play.

Some environments facilitate women's growth and the pursuit of technical careers by providing preparation with minimal obstacles and adequate attention to special needs. Howard University is one of these environments.

Howard University

Howard University is a historically black institution founded in Washington, D.C., in 1866. It currently consists of 18

schools and colleges offering degrees in more than 200 specialized subjects. It enrolls approximately 12,000 students of which approximately 40 percent are female.

The School of Engineering offers undergraduate engineering degrees in five majors--electrical, mechanical, chemical, civil, and computer systems and has an enrollment of approximately 800 students. The enrollment of women increased significantly from 25 when I began working there in 1972 to 267 in 1985 and has remained fairly constant, representing about one-fourth of the total enrollment. Graduation rates for students in engineering at Howard reflect the high national attrition rates, but for women appear to be higher than national norms. There were only seven female graduates in 1980, but by 1985 the number had reached 32. May 1990 women graduates numbered 36 (34 percent) out of a graduating class of 108 students.

When I first began working at Howard, there was hostility toward me as the only professional female in the school, and toward women students by both faculty and male students. Females were treated as if they were oddities who really didn't belong there and who, if pressured enough would simply start crying and run away. Although not an engineer, I became a role model simply because I was a female. I could speak up for female students, support them, guide their activities, and help them fight their battles. My office became a haven where women students could come, shut the door, cry, get a pat on the back, wipe their faces, and get back to the business of being engineers.

Much has changed at Howard since then. The number of women students increased dramatically, providing an in-house support group for each new woman who entered the school. The Society of Women Engineers grew and became very active. During some years, women students dominated both academic achievements and student activities. One year all of the officers of the Engineering Student Council were females. Honors for the highest grade point averages in graduating classes are as likely to belong to a female student as to a male student. Our women graduates are well-prepared, and most are very confident that they are well-prepared.

I asked a few current students and alumni to identify the factors that help them succeed at Howard, describe their experiences with sexism and racism, and tell whether their undergraduate education had prepared them to deal with

discrimination. Their responses suggested that the most important factors in helping them succeed were: (1) the fact that they were well prepared when they entered; (2) the support they received from my office (Office of Student Services), their peers, their instructors, and their families; and (3) the presence of role models.

The biggest obstacle they faced was proving their technical proficiency when working with a group of males. Once they proved they were capable, they were treated with more respect. They were given equal opportunity to assume leadership roles in school, but often chose not to pursue them. Most felt little pressure to behave differently because they were women once they proved themselves. As one alumnus explained:

I felt it was imperative that I not be classified as an "air head" riding on the coattails of my fellow male students. I worked hard to carry my own weight.

Most of the women had their first real experiences with racism and sexism in the workplace--during summer internships, postgraduate employment, or graduate study. Most of the experiences took the form of isolation and underutilization of the women's skills. For example:

The men that I worked around had a hard time dealing with a woman being in the office. The fact that I am black made it even harder, I think. They would not speak to me for a long time. I was given very menial assignments that anyone could do." The major obstacles were getting over the barrier of making conversation with men who were in a time warp [and] convincing my supervisor that I was capable . . .

I am a project manager and my job requires that I be the leader in the processing of projects. [Yet] when my supervisor is out of the office, only my white coworkers are allowed to act in his behalf.

While attending a predominantly white graduate school I faced racism on a daily basis. It was a good education, though. I now know that I am as technically competent as any white boy in my field.

Most of the women were satisfied with their choice of engineering as an undergraduate major, but half of them indicated that they were considering other careers, perhaps

because of their unpleasant experiences in the workplace. The consensus was that the major issues in attracting and retaining women in engineering center on cultivating interest, making opportunities available, and providing support.

The environment at the Howard University School of Engineering apparently provides what young women need to succeed in engineering. It is a nurturing environment in which women are expected to be prepared, are encouraged to succeed, and can easily find role models and support whenever they need them. We have succeeded in improving women's chances of entering and graduating from engineering by participating in outreach programs for high school students and maintaining a comfortable environment in which they can pursue their careers. Although they do not have learning experiences while they are on campus to prepare them specifically to face discrimination, our women students apparently are able to deal with both racism and sexism after they graduate because they develop both excellent skills and high self-esteem at Howard. As one female graduate explained:

I was able to be me and that seemed to be okay. I was given equal opportunity to assume leadership roles as desired. I always felt like part of the team and was always encouraged to participate. The engineering environment at Howard was quite nurturing.

References

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3. Adams, Linda. Effectiveness Training For Women. New York: Simon & Schuster, 1979.

