

# Human Resources Underutilized: The Plight Of Women On Campus!

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## ABSTRACT

*Legal, cultural, and ethical considerations impact decisions of organizations and those of the individuals who aspire to assume their rightful role in them as students enrolled at universities or as aspiring employees in business firms. An ongoing question emerges, however, concerning the barriers and cultural attitudes toward women (and minorities) versus men. The specific area of study undertaken examined the relationship between several categories of data and the persistence of men and women students in completing their self-selected college major as preparation for employed life after graduation. Implications and challenges of career choices for women wishing to pursue careers in science & math or business management are discussed.*

**Keywords:** ACT, barriers, de facto, discriminant analysis, educational choice, gender bias, glass ceiling, graduation, intellectual & non-intellectual, non-traditional, personality type, persistence.

## INTRODUCTION

It makes little difference whether pink is for girls and blue is for boys, emotionality for girls and rationality for boys, or the other way around. What does make a difference is that a difference is perceived and accepted. It is the bifurcation by gender that is the fundamental fact and thus "the problem." During childhood, girls play with dolls and prepare for motherhood, and the role of second wage earner in dual career families, while boys are active on the sporting field preparing for life's competition in the world of business. Throughout elementary school and later during their high school years, girls are encouraged to become cheerleaders and nurses while boys are encouraged to play doctor and dream of successful careers in medicine, law or business. The subtle cues received by women during their formative years appear to impact their career choices; especially, the choices of college and major upon enrolling. Our nation's economy and our international competitiveness have long depended on a highly skilled workforce. Thus, any under representation of women in key positions in the workforce with a high demand for skilled personnel, and that are important for economic growth, will adversely impact our economy and our international competitiveness. Shattering this glass ceiling begins in K-16 and continues well into graduate school and the workplace. Gender bias must remain a key issue in search of resolution if our nation is to maximize its allocation of scarce resources and regain world political and economic leadership.

Betty Freidan in The Feminine Mystique refers to this scenario as "the problem that has no name." She discusses this disparate sexual discrimination and associates it with parental guidance, peer pressure, socially related behavior modification, self doubts and the lack of positive role models for young girls and women. This socialization process where boys and girls learn their separate gender roles may have lasting impacts on the career aspirations of women versus men. And, this adverse impact may naturally carry over into the working lives of women if they are forced to accept positions only in traditional areas, those career slots long dominated by their sisters. The adverse economic reality of this stems from finding far too many women underemployed. Men are left to pick and choose as they desire. Women, if they select the rigors of corporate life are often forced to choose subordinate tracks while men are free to wage battle for the most prestigious positions.

Women electing to follow their male counterparts into the corporate jungle must often assume the burden of wage earner, mother and housekeeper. Thus, women are expected to be 'Wonder woman,' often without having had adequate role models to follow; and, without the home or spousal support that many males take for granted.

Initially, the problem seems to be a question of changing attitudes. Men must see women as capable managers and workers of all kinds. Conversely, women must feel equal to men and seek equality when it comes to career choice and job opportunity. In point of fact, women must demand equality for themselves and for their daughters. But will they? The work force contains more women than men but women are not well represented as managers, women do not pursue majors in business especially at the graduate level and they are under represented in within academic training grounds that prepare individuals for science, engineering, or managerial careers. Yet, even when they do choose alternative career field, they still face male role models who teach the classes and administer the schools, colleges and universities. Too often instructional bias is in favor of the male student and against women.

There appears to be too many epistemological presuppositions that are true barriers to women as both perceived by males and by many women themselves. Grandy writes, “Teachers need to be cognizant of representational, motivational and epistemic dimensions which can restrict or promote student learning. Hence teachers must develop cutting edge, modern and politically correct, “intellectual tool kit(s). (Students) must be provided opportunities and materials to develop (math & science) skills and the classroom community must have the appropriate features of a (supporting) community.” (Grandy, R, 1997)

Women outnumber men in the workforce yet earn 33% less on average than their male counterparts. The gap is even more noticeable at the top of the career ladder than it is elsewhere. This has been justified in the past based on differences in education or years of experience (Blau and Ferber). When education and experience are controlled during analysis of earnings, women still earn 16% less than men for the same work (all the mid to low end of the career ladder). Thus, the perceptions or adverse expectations of future pay may explain in part why women do not major in science, math, or business in proportion to men who pursue these academic choices...

The role of educators is to challenge all students without over challenging any of them in order to best motivate each to achieve to their native abilities. John Dewey ardently believed, “The role of the educator is to determine the environment of the child, and thus by indirection to direct (those children). (The child’s) growth depends upon the *presence of difficulty* to be overcome by the exercise of (her native) intelligence. It is part of the educator’s responsibility to equally (observe) two things: First, that the problem grows out of the conditions of the experience being had in the present, and that it is within the range of the capacity of students; and, secondly, that it is such that it arouses in the learner an active quest for information and for production of new ideas. The new facts and new ideas thus obtained become the ground for further experiences in which new problems are presented. The process is a continuous spiral (upward or downward).” Experiential hands on learning aimed at and above present ability those helps shape higher cognitive learning and growth of the students in question. Are women finding these kinds of supportive educational opportunities in school and beyond?

Women enrolled in the more than 3,500 colleges and universities across the nation outnumber men yet two important statistics are clear: (1) women make up only 27.3% of the faculty on college campuses and (2) women earn fewer degrees than men at all levels--B.A., M.B.A. and PhD.--by increasing margins as the years of formal training increase (Chronicle of Higher Education).

The future place of women in science or math related careers or in management in these areas can be anticipated, in part, by their enrollment in schools of engineering or business. These are the training grounds for corporate America. Why, for example, do some women students enroll as business majors while others do not? Do they encounter real or misconceived notions of faculty biases toward women, thus influencing their educational choice? Or, do they lack the requisite backgrounds required for successfully completing a business major? Worse, are they convinced by family and peer groups that they do not possess such abilities when in fact they do? Spears wrote, “Most educators see gender bias in schools as a thing of the past. Yet women’s participation in science, technology, engineering, and mathematics (STEM) . . . continues to lag behind men. Women have made more progress in law and medicine than in physics. To be sure, the blatant barriers that I and other women experienced as undergraduate physics majors in the 1960s are gone—they are unthinkable in today’s schools and universities. What remains is a layer of subtle barriers (a type of disparate impact emerges).” (Spears, J.D. 2008).

In the short run it is more than a question of colleges and universities saying they want to recruit more women (and minorities willing to enroll in what has been considered non-traditional majors for women. It is a matter, over some longer period of time, of diligently putting together career planning and recruiting programs that convince women that the choice of careers and majors is really theirs and not that of family, peers, or the greater

society. Thus, it is a matter of convincing corporate America that women are a source of underutilized brain power. When corporations start demanding more women as engineers, scientists, mathematicians, or business managers, a derived demand for more women students on the part of business schools will be experienced across the country. At issue is more than de jure equal opportunity afforded by law, it is mandatory that equal opportunity become de facto for women and minorities if our national economy is to maximize the utilization of all scarce resources. What is at stake is the need for an aggressive strategy to encourage women to make intelligent vocational choices by providing them ample role models and mentors who will coach them throughout their careers beginning with formal mentoring and vocational counseling while they are in college and continuing through the employment process of finding acceptable employment and engaging in advanced training & development opportunities along side of their male counterparts during their working lives.

“The United States economy relies on the productivity, entrepreneurship, and creativity of its people. To maintain its scientific and engineering leadership amid increasing economic and educational globalization, the United States must aggressively pursue the innovative capacity of all its people—women and men. However, women face barriers to success in every field, (business), science and engineering; obstacles that deprive the country of an important source of talent. Without a transformation of academic institutions to tackle such barriers, the future vitality of the U.S. research base and economy are in jeopardy. *Beyond Bias and Barriers* explains that eliminating gender bias in academia requires immediate overarching reform, including decisive action by university administrators, professional societies, federal funding agencies and foundations, government agencies, and Congress. If implemented and coordinated across public, private, and government sectors, the recommended actions will help to improve workplace environments for all employees while strengthening the foundations of America’s competitiveness.” (Beyond Bias)

Women have made tremendous progress over the last few decades. They are moving into the science, math, engineering, and management positions in greater numbers than ever before; however, they still have a long way to go. The ‘Glass Ceiling’ is still an unfortunate fact of life, one might suspect. Yet, if a woman wants to succeed in the work world as a manager she must first be successful in completing a prerequisite major while in college. How women make this educational choice is an underlying focus of this position paper.

Understanding the complexities of educational choice and the completion of a particular college major has been a problem faced by counselors and admission officers for some time. Although the decision of how such a choice is made is not completely understood, many researchers assume that student choices involve a process of matching certain intellectual and non-intellectual characteristics with the demands and rigors of a particular field of study. For example, John Holland (1973) writes, "The more closely a person resembles a particular (personality) type, the more likely she is to exhibit the personal traits and behaviors associated with that type." He argues that individuals can be classified by the types of people they most closely resemble and that various work environments exist that mirror each of the personality types or profiles. Thus, certain kinds of individuals are more or less compatible with a given type of learning or work environment resembling their own personal makeup.

This makeup is shaped and defined by the individual's unique intellectual and non-intellectual characteristics. These characteristics are influenced by early childhood experiences including role models, play activities and during the formative years throughout the person's school years including extra-curricular activities. Individuals search for their special environment, an environment that enables them to exercise their requisite skills and abilities, one that matches their attitudes and values and one that they believe more closely resembles who they are or perceive to be. They seek a comfort zone matching environment to abilities to succeed with that environment. Thus, students change majors while employees change jobs or careers as they seek a good match between their environment and their personality profiles.

If we accept Holland's 'matching theory' as correct, then when a student's intellectual and non-intellectual traits are similar to the traits of other students in a given field of study, s/he will be more satisfied with his or her choice and thus remain in that major. Conversely, if a student's traits are dissimilar from those of other students in the same field of study, s/he will become dissatisfied and will change to another field of study. And, it may be assumed that the student will continue to change fields of study until finding a field where s/he feels most comfortable. Thus, they change fields of study until they find a field of study where they are most like the other students majoring in that field. Consequently, they find a field of study where they will be more likely to successfully complete their college degree. Additionally, they prepare for a particular career where they have a

higher probability of achieving success than they might otherwise achieve. It is for this reason that role models are so very important to make sure that student "A" finds a representative sample of like types already enrolled or employed in her desired major or position.

The challenge faced by women entering college is one of selecting the best major, a major that matches their background experience and aptitudes while preparing them for acceptable careers. Acceptable in the sense that the career environment matches their personality profiles upon graduation. The probability of a given student graduating in one of two general fields of study, i.e., business vs. non-business (engineering, science, math, liberal arts and so forth), should increase as the match between her profile, the profiles of others in the same major and the environment of the major are roughly the same.

The question of whether a woman will complete a major in, for example, business is a question that was answered in part by investigating three sub problems linked to the challenges women face when selecting college majors. The first, do distinctive or different types of students complete different majors?, secondly, to what extent, if any, do the intellectual and non-intellectual measures enable one to predict persistence in completing business and non-business majors?, and finally, of the men and women who complete business majors, are the women as predictable as the men in terms of their persistence?

To answer these questions, a study was designed using a random, stratified sample of students (N=131) consisting of 52 men and women in the non-business group and 79 men and women in the business group. With this resulting sample of 131 student per sisters and employing the technique of discriminant analysis, the levels of predictability of the two groups were established. The predictions of major field of study were analyzed separately for the 46 men majoring in business and the 33 women with business majors. Thus, the two major groups and the two sub-groups whose entrance data were investigated as to their effectiveness as predictors of major field of study at graduation included (1) all students in business vs. all students in non-business and then (2) men in business vs. women in business.

#### **INDEPENDENT VARIABLES OR PREDICTORS**

The variables examined in this study used to predict successful completion of college majors included ACT aptitude scores in English, math, social studies and natural sciences; proposed educational major-a decision made while the student was still enrolled in high school; certainty of planned education major and first vocational choice-again, decisions made while the student was still completing high school; extent of participation in high school extracurricular activities such as sports, band, debate, student government or working on the yearbook; age of students since some were older having delayed entering college after their high school years; and six standard ACT interest inventory scores that measure a student's interest in science, creative arts, social service, business contact, business detail and technical environments. These standard scores measure the extent of a student's work and study related interests based on her or his familiarity with the six categories.

#### **DEPENDENT VARIABLES OR CRITERION**

Successful completion of college after having majored in either business or non-business was achieved by all students in the sample. That is, all students in the sample completed their college degrees, although some changed majors prior to graduation. Using discriminant analysis, students were categorized or placed into one of two groups during the initial analysis, and they were placed into one of two sub-groups during the secondary analysis. Thus, membership in one of two groups, and then, one of two sub-groups was predicted using discriminant analysis--a statistical technique used to match like types based on scores measuring common characteristics that all members of the sample possess.

#### **RESULTS**

The discriminant analyses resulted in a separation of individuals using the common set of measures, a classification of group membership on the basis of these differences, and a description of the differences based on the measures employed in the investigation. These measures, and not gender, were used as the common denominator for comparing and contrasting different groups, used to describe and study group differences and used to predict successful completion of one of two general courses of study.

The men and women in the business group were slightly less predictable than men and women in the non-business group with prediction success rates of 82.3% vs. 88.5%. It appears that when changing fields of study, it is more likely to change from business rather than to change into business. Of interest to this researcher who teaches strategic management in a college of business, the women in the business group were more predictable than were the men with a 78.8 % vs. a 73.9% rate of predictability. Thus, women were more like the typical student majoring in business than were the men.

## **DISCUSSION AND RECOMMENDATIONS**

Classification accuracies are very important outcomes of a discriminant analysis. The classification accuracies obtained in the present investigation do suggest that differences between groups are not entirely accounted for based on the discriminant function equations and the variables used in this study, although the accuracy rates were extremely high relative to other studies. The predictability of women in business exceeding that of men in business suggests that there is an extraneous variable operating that causes or encourages borderline men to major in business while preventing borderline women from majoring in business. Of the six non-business students who were predicted as most closely resembling the business group yet completed a non-business degree, all were women. Of the fourteen business students who were predicted as most closely resembling the non-business group, but who completed business majors, twelve were men. This seems to indicate that something is operating that forces borderline men into, while keeping some women out of, business majors.

The women who do go into business majors clearly resemble the business group, but this is not as readily apparent for the men who major in business. Women also appear to be better students and are more predictable, but they enroll in business as a field of study less frequently than do their male counterparts. Perhaps men feel they have to train for a lifetime of work, while women do not feel this way. Or, perhaps women feel hesitant about breaking into what has long been a traditionally male bastion of good ol' boys. There appears to be some sort of invisible hand, for examples, society pressures from family and peers, lack of role models either in college or in corporate America and/or family pressure, working to keep the borderline men in business while keeping the borderline women out of business majors. It appears, then, that men are less predictable than women. Still, more men than women seek careers in business.

Traditionally, it has been the men who have been taught from childhood to compete and to achieve. Thus, it has been men who have developed enterprising personality types and interests in either business contact or business detail environments--environments that are found in business careers. Some women have also developed these traits, however, a smaller percentage of women vs. men seem to possess personality profiles that match business environments. The world of business remains the domain of the 'good old boys' it seems. And, even when women have the 'proper' profile many elect fields of study other than business.

Gender appears to be a determining factor, but only to the extent that in our society women have different experiences throughout their formative years as compared to men. It is these experiences that shape a person's intellectual and non-intellectual characteristics. Since fewer women have the kinds of childhood experiences that many men experience, then it follows that a smaller percentage of women as compared to men will major in business. Women have not traditionally had the opportunity to develop aptitudes and interests that are necessary to influence their educational and career choices. The reasons for this deserve further study in fields such as engineering, science, and math.

It is interesting to note that a large number of women majoring in business also had competed in high school sporting competitions. The risks, uncertainties and challenges of sporting competition provides valuable experiences, experiences helping to shape personality profiles ideally suited for business careers. It might be beneficial to study the influence of a wide variety of team and individual competition on the kinds of educational choices made by men and women. And, it would be extremely beneficial to identify the career options afforded women compared to men based on equal opportunity both de facto and de jure where Title IX has had a large impact favoring women. Options and opportunity that transcend the law, that transcend business recruiting and hiring practices, and that transcend corporate philosophies would provide fertile ground for additional research. Equal opportunity for career selection, and thus selection of college majors, is another hurdle that women must clear if they are to become truly liberated. We all know who the presidential candidate is and who is not in this 2008 election race.



Admission practices and vocational counseling keyed to the specific career aspirations of women (and minorities) must be undertaken by universities seeking a state of true cultural diversity. A new form of administrative-student-faculty collaboration that breaks down adversarial barriers also needs to be developed. If standardized testing provides proof that women are equal to men in business, math & science ability; then, the question must be, “How do we cultivate ability and how do we create communities in which it is maximized?” There appear indications from time to time over my forty plus years of experience that there exist both ‘student-effects’ and ‘professorial-effects’ that impact what might be called the gender gap for better or worse, and it has generally been the latter. These adverse impacts on women in college must continue to be the subjects of ongoing research. Or, to put it even more bluntly, at present most culturally influenced policies concerning women and America’s so called free market are intransitive serial ordering statements, read that as ‘laden with ignorance.’ To illustrate, Anna Quindlen writes, "Women are half the population and, on average, only 20 percent of the nation's leaders, in business, in journalism, in politics. What if we had an oil shortage but were using only 20 percent of the oil at our disposal? Wouldn't that seem stupid and shortsighted?" (Quindlen, 2008)

Concerned university administrators must create a culture that fosters dignity for women and minority students, provides equal opportunities for their individual growth and development, and promotes cultural diversity. If these structural barriers are removed, women and minorities will rise to their levels of responsibility concurrent with their abilities and career ambitions. If universities require women and minorities to 'park' their brains at the door, they will do precisely that. But, if universities encourage women and minorities to use their requisite abilities, they in turn will respond by performing at peak levels and developing higher level skills that are presently in demand throughout the world of business and industry. There appears to be a Pygmalion Effect in industry and higher education today. For women and minorities to have equal educational opportunity the barriers of arrogance, ignorance and bias at all levels within a given university’s structure must be eliminated. Perhaps, such elimination will commence on or about 1-20-09 a date that marked George W. Bush's last day in office and President Obama's first! As Gordon writes, “Because the foundation for future success is a well-educated workforce, the necessary first step in any competitiveness agenda is to improve ...education.” (Gordon, B. 2007)

## EPILOGUE

*I am young and I possess many buried qualities: I am young and strong and am living a great adventure; I am still in the midst of it and can't grumble the whole day long. I have been given a lot, a happy nature, a great deal of cheerfulness and strength. Every day I feel that I am developing inwardly, that the liberation is drawing nearer and how beautiful nature is, how good the people are about me, how interesting this adventure is! Why, then, should I be in despair? (The Diary of a Young Girl, by Anne Frank, 1944).*

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