Progress and Promise

By the WEEA Equity Resource Center at EDC

The United States has witnessed significant progress for girls and women in education over the past 30 years. Success is evident in completion rates in postsecondary education, participation in sports, and representation in some professional fields. A recent U.S. Department of Education report and a number of press stories have spotlighted these successes. However, serious inequities persist, and in some cases, gender disparities have grown. This is true in career education, particularly in nontraditional areas of study for girls and women. As girls graduate and women become a larger share of the workforce, they must be prepared for the high-skilled, high-wage jobs of the future—for their own economic survival and for the well-being of the nation.

Thirty years ago, most girls and young women were routinely directed into a few occupations that were traditionally female—teacher, nurse, secretary, waitress. Courses were explicitly labeled "male" or "female," and career guidance counselors directed students to male jobs or to female jobs. In fact, career interest tests were color-coded pink and blue; results of these tests were interpreted based on the sex of the test taker. Before Title IX of the Education Amendments of 1972 was passed, few girls or women were even aware of the range of careers, much less the possibility that they might be an architect, lawyer, superintendent of schools, or member of Congress.[1] Today many more young women are exploring new fields, declaring new majors, and routinely choosing occupations that their mothers either did not dream of or were denied access to. Karen Nussbaum—director of the Working Women's Department of the AFL-CIO, former director of the Women's Bureau of the U.S. Department of Labor, and a founder of 9

to 5, a union for office workers—has seen these changes firsthand:

Probably the most important change in the workforce since I've been working is the huge influx of women into paid labor. And over that time, we've also seen laws passed, and in some places, implemented, to ensure equity for women in education and I think there have been huge changes as a result of these. Women are now in what were traditionally male jobs, particularly professional jobs, as doctors, lawyers, managers, and other high-level professions which all depend on higher formal education. And I think that would not have happened without the changes in the laws.[2]

Tremendous progress for girls and women has occurred at all levels of education and in the labor force. Eliminating overt gender bias in career development has played a critical role in expanding the life options of women and girls. As a result, young women are entering the work force in more fields than ever before, and with a broader array of expectations.

Yet challenges remain. While courses and careers are no longer overtly labeled "male" or "female," the majority of women are still concentrated in a few job categories not unlike those women occupied 30 years ago. Gender stereotypes about careers still limit girls' interest and participation in career options—as well as boys'. Career development programs, including counseling and career awareness programs, usually begin in adolescence, thereby missing opportunities to reach elementary and middle school girls and boys before gender socialization and stereotyping become a strong influence on career choice.

Further, although girls and women of color have high academic and career aspirations, significant structural factors—including lack of culturally sensitive career development initiatives, lack of role models, and lack of access and opportunities—limit their career options.

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Career Expectations

Because the influence is so great before students get to the point of selecting a vocational focus, in most cases it is hard for guidance and vocational educators to undo the role of conditioning that has already taken place.

—*Barbara Tavares, Office of the State Director for Vocational Education, Hawaii*

Gender, race, ethnicity, and disability all combine to frame the career choices girls and women make.

Gender stereotypes on the part of students, teachers, counselors, parents, employers, and work colleagues play a role in determining whether students see a career as open and inviting or as unattainable. Developing a limited sense of career capabilities and options at a young age leads girls to have lower and limited expectations about their abilities and steers them away from male-dominated careers.[3] Society's expectations that certain careers are "for boys" while other careers are "for girls" affect career development on both the personal level for students, and even on the programmatic level. Continuing patterns of sex-segregation in vocational education and school-to-work programs suggest that those expectations continue to shape the teaching and counseling methodologies of schools.[4] For example, if a woman's family, school, or society gives her the message that she is not meant for a career in engineering, that discouragement may cause her to lack the confidence to pursue such a career.

Although more investigation is needed on particular groups of women and girls, "some research shows that for African American females, early gender-role socialization is less sex-typed and African American girls often experience more crossover between traditionally male and female roles and duties in the household" and may be more open to considering nontraditional careers.[5] However, class and race bias, disillusionment about real job opportunities, internalized oppression, and continual discrimination can cause African American women and girls to lower expectations and efforts to make other choices.[6]

Research has found that while Latinas have one of the highest dropout rates in the country, they also have high occupational and educational aspirations.[7] However, education enrollments clearly show Latinas being steered into jobs with little career or income potential. In Texas, Latina high school students are frequently enrolled in cosmetology classes or tracked into noncollege preparatory general education programs.[8] Parent education and occupation, social class, and such factors as acculturation and discrimination all af-

fect how students develop their career expectations. Additional structural factors, including limited opportunities, immediate financial or family needs, and, for some, the mobility of living as migrant or seasonal working families, have an even greater impact.

Career Development

Career development is an important component in every student's life. Learning about different jobs, choosing a field of study, and planning for work—all these elements enrich the education experience and build career options. Career development is also often an overlooked aspect of girls' and women's education. Research has found that "career guidance and counseling, which are interventions in the career development process, are essential in helping students to choose their" educational and career pathways.[9] Historically, research on career development was conducted on white males and then generalized to other groups, without taking into account the complexities of factors such as gender discrimination, sex-stereotyping, socioeconomic status, or racism.[10] Exploring and addressing those issues will create more opportunities for students as they develop their education and career paths.

As career development theories are tested by research on various populations, a complex picture emerges, suggesting that career choice and development are influenced by multiple factors: personality (including vocational interests); how individuals perceive themselves and the world (self-concept, racial/cultural identity, world view); socialization; resources (financial, information, role models, social supports); experiences of sexism, racism, classism; and the salience of various life roles and identity.[11]

This has important implications for career development for women who are now moving into the workplace. For example, research indicates that while college women now have career expectations similar to those of males, they still perceive role conflicts and see family issues such as raising children and lacking affordable, quality child care as potential career barriers, concerns shared by few men.[12] Young women report that, in planning for a career, they feel they have to choose between two options: (1) jobs that pay less but enable them to have the flexibility to be at home with children (especially lower-income families, for whom little affordable daycare exists) and (2) jobs that require significant involvement and offer better pay.[13]

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Differences in Career Development

The current focus on the career decision-making of girls and women acknowledges the differences between male and female career behaviors, differences that do not fit with the traditional career development models. Helen S. Farmer found that "part of the difference is driven simply by individual differences; however, a more significant difference is driven by societal or external factors such as sex discrimination or sex-typing [limiting expectations based on gender] of occupations, much of which women are unable to control in large part."[14] The New York State Career Options Institute points out that a "major way in which women's career behavior differs from that of men is their failure to acknowledge and/or fully utilize their individual capabilities, talents, and interests in career pursuits" and that women are influenced by socialized expectations to limit their consideration of career options to the occupations deemed traditional for women.[15]

Gender, race, ethnicity, and disability all combine to frame the career choices girls and women make—as well as forming their beliefs about the kinds of choices available to them. Girls generally explore careers from a narrower set of career options than boys do,[16] in part due to gender-role socialization.[17] Conventional career development is not useful for many poor girls and women, because they must quickly find whatever work is available—they are struggling with immediate economic survival.[18] Teen mothers often face a particularly difficult situation. Although a significant percentage of these girls have high aspirations, many also fear poverty and academic failure. As a group they suffer from "high rates of depression and striking rates of domestic violence." They also often feel that they are treated differently than other students. This perception can have a demoralizing effect. Those who believed that teachers "discouraged them from taking certain classes due to their status as a teen mother" were likely to experience "diminished educational expectations over time."[19]

Career development programs and classes must work to reduce stereotypes through exposure to a wider variety of work environments, role models in nontraditional occupations, mentors, classroom discussions about occupational stereotypes, and gender-fair interest assessments. When combined with curriculum innovations and changes in classroom practice, these programs hold promise for continued improvement in women's career options.[20] Yet research on the role of guidance in girls' decisions about whether to take technology education as an elective in high school or to consider careers in technological fields found that girls were not well informed about technology careers and tended to see them as "male careers." Many girls have reported both a lack of knowledge about employment opportunities in technology-related fields and a strong desire to learn more about potential careers in these fields. This knowledge gap has been found to be particularly pronounced among African American and Latina girls.

A major obstacle faced by many girls in computer science courses is their lack of prior experience with technology. Girls and students of color who enroll in these courses have often had far less exposure to computers at home than white males have had, and therefore begin class with fewer computer skills. Further, a study by the American Association of University Women found that many girls reject what they perceive to be the current computer culture. "The stereotype of computer science is both masculine and negative. When asked, girls and women describe a prevailing concern that computer science will stunt their diverse range of intellectual pursuits and interests, and that it involves work that is tedious, sedentary, and— most critically—antisocial." The study concluded that changing the public image of computing and eliminating gender bias in computer games would be helpful to employing more women in the field of technology.[21]

Disability and Work

- Among individuals with a work disability, only 8.8% of males actively seeking employment were unemployed, compared with 11.2% of females.

- While researchers found that the employment rate for women with disabilities improved in the mid-nineties, most of these jobs were in the service sector.

- While women with disabilities are employed at higher rates in managerial and professional occupations than men with disabilities, this higher level of representation is found "primarily in the traditionally female-dominated professions." These women tend to be employed as "nurses and similar health professionals, elementary and secondary school teachers, and librarians."

- Women with disabilities are far less likely than men with disabilities to be employed as computer programmers and computer equipment operators.

- Approximately 26% of women with disabilities live in rural areas.

- Rural women with disabilities are approximately three times less likely to be employed than rural women without disabilities. In comparison, rural men with disabilities are approximately two times less likely to be employed than rural men without disabilities.

- Among employed rural women with disabilities, 80% earn less than $10,000 per year.

- The problems confronted by all women with disabilities are often "exacerbated in rural areas due to lower levels of education, limited opportunities, and isolation." A lack of adequate transportation options is a significant part of this problem.

Sources:

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Developmental research by Linda Gottfredson found that children begin to eliminate career choices because they are the wrong sex-type between the ages of six and eight.

Outcomes in the workplace are tied to the classroom—not just in terms of introducing students to work experiences but also in terms of who is counseled, in what ways, and when. For many girls and women, the current approach to career development is "driven by *who* the student is vis-à-vis gender, race, and class, rather than *what* the student is seeking."[22] For example, one Latina graduate student recounted how, despite her expressed interest in applying to a highly regarded college, the counselors and teachers in her urban high school offered no assistance, because "they said the college wouldn't be interested in 'people like you.'"[23] Effective career development for girls and women integrates the needs and interests of the individual female, her cultural background, and the historical, social, and economic experiences of her group and offers a range of possibilities.[24] This means, for example, addressing research findings that the "alienation of many Latinas from school stems from lack of role models and counseling, stereotypes in curricula, and low teacher expectations" and that mothers may have lower expectations for their daughters.[25] It means paying close attention to the individual girl. And it requires an understanding on the part of counseling staff of both their own personal and cultural background and experiences and those of their students.[26]

Girls and women with disabilities have additional career development needs. Currently, more than 69 percent of people with disabilities who could work are unemployed, and women with disabilities are the largest number of those unemployed.[27] Many women with disabilities are channeled into clerical, care, or service work; more white women with disabilities are in clerical work, while more African American women with disabilities are in service work.[28] Few career development models address these multiple aspects of a woman's identity and experience, locking many women into low-end jobs or no job at all. Further research and development are needed in this area.

Availability of Career Development

Career exploration usually begins in the school setting in adolescence, which some feel is a developmentally appropriate time to begin the process. Vocational educators continue to find, however, that by early adolescence, students already have strongly defined gender-role expectations about work—stereotypes that could be addressed more effectively through career exploration in earlier grades. In fact, developmental research by Linda Gottfredson found that children

begin to eliminate career choices because they are the wrong sex-type between the ages of six and eight.[29]

Most students receive little career development assistance, particularly at a time when it could help them make informed choices about selecting high school courses. The National Center for Education Statistics reports that both girls and boys have high aspirations and expect to go to college—although fewer girls say they definitely will attend a technical school. Nevertheless, many students have little assistance in getting there. A series of studies of middle school students indicated that while the majority of both girls and boys planned to go to college, only a minority planned to take college-prep classes and most had no career education.[30] Education researcher Patricia B. Campbell and others have shown that middle school is a key turning point for girls—it is here that they will make their first set of decisions about whether or not to continue in math and science. Despite dreams for their future, most girls do not make the connection between "what they learn in school and future careers, and they often lack guidance in selecting courses that lay the groundwork for their high school and post–high school plans."[31]

Gender Differences in Career Interest Assessments

Career interest assessments have traditionally been used for career exploration. In the 1970s, career interest assessments were criticized because they generally used sexist language and items that were biased toward males and resulted in scores that failed to encourage girls to explore occupations that were not traditional for their gender.[32] In 1975, the National Institute for Education (NIE) issued guidelines for reducing gender bias in career interest assessments, and the most frequently used measures—Strong Interest Inventory (SII), Kuder Occupational Interest Survey (KOIS), and the Self Directed Search (SDS)—were revised to be more gender-fair.[33]

Over the next two decades "most interest measures have met the criteria established by the NIE guidelines to eliminate sexist language, to use the same form of the test for both sexes, to provide scores on all occupational scales for both sexes with an explanation of which norms were used to develop the scale, and to use items that equally reflected the experiences/activities familiar to both sexes."[34] Even so, indicators like the SDS still reveal that women score higher on so-

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cial scales, and men on realistic scales.[35] These scores are then used to guide the future career choices of women and girls. In interpreting the results, interest measurements remind test takers that all jobs can be performed by either sex and that students should follow their dreams. But this important caution is not given until *after* the assessment itself, when the test taker is interpreting the results, leading one researcher to wonder "what kind of SDS scores a person might obtain if they received this message before taking the inventory."[36] Little research exists on whether girls from different backgrounds respond to the assessments differently, how closely the measurements reflect the link between interests and specific occupations, or whether the measurements reflect traditional assumptions about what is required in a specific job.[37]

Career Development Strategies

Evident from new theories of vocational choice and career development is that no set procedure or style exists for everyone. As Wanda Stitt-Gohdes says, "clearly, vocational choice and career development are influenced by who we are and how we perceive ourselves fitting into the larger social and economic arena. This perception is influenced by one's self-concept as well as how one sex-types occupations. In addition, career choice is clearly influenced by gender, race, and class."[38] While individual needs and circumstances must be kept in mind, certain general needs have been identified for women. A review of recent research surmised that women had specific career-counseling needs, including the following: "job search skills, occupational information, self-concept clarification, strategies and role models for managing dual roles—homemaker and work, assertiveness training, information on a variety of working environments, lifestyle clarification, and development toward a value of independence."[39] Improving "self-efficacy," or confidence in one's ability to perform, is a major issue for women in career development. The self-efficacy model of social learning theorist Albert Bandura is one tool for understanding career decision-making for women:

A critical aspect of this process is to introduce male-dominated careers to women who may have been interested in but had perceived barriers to those choices. At the outset these women need successful performance accomplishments in their particular area of interest. This might include specific coursework. The second need is to find appropriate role models who have been successful in the particular field of interest. Third, the women

need to learn "anxiety management." This involves being consciously aware of the angst and developing appropriate coping strategies. Finally, the counselor can provide the verbal persuasion and encouragement critically important in this process.[40]

Other research recommends that career counseling take place within the cultural context of the recipient. Counselors should be aware of their own and others' cultures and not make assumptions that all individuals in a culture have the same values, goals, and experiences. Additionally, counselors should consider the interaction of race and ethnicity with gender and class, as well as the level of acculturation and stage of ethnic identity development of the advisee.[41]

Research studies identify key components of career development programs that are most effective for African American and Latina girls:

- **Devising school-based initiatives.** Teachers can play an integral role in career development exposure (this has been proven for Mexican American girls and girls from lower socioeconomic backgrounds). This also includes access—in other words, making the career information readily available.

- **Developing systems, forming collaborations, and garnering support.** Bringing in the different institutions and collaborating on the common goal of equity in career development can involve whole communities in raising the career expectations for girls.

- **Providing current and accurate information about the nature of different careers and occupations, career preparation, and training.** Many African American and Latina girls do not have opportunities to learn enough about the wide range of careers available today, or about those envisioned for the future.

- **Educating against sex-role stereotyping.** Such education can ensure that girls examine how stereotypes affect their career goals and how they are exposed to different biases in employment, as well as help them to explore nontraditional careers.

- **Developing girls' skills in identifying racism, sexism, and discrimination and in developing strategies for dealing with discrimination and barriers.** Learning such skills will help them survive these obstacles in educational institutions and the workplace.

The need for mentors and networking for girls and women in science begins at the primary school level and continues through graduate education and careers in business and industry.

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- **Providing role models and mentors.** Providing role models of similar race and background can give girls exposure to success stories they can directly relate to.

- **Starting earlier.** Providing career development in middle school or earlier can make girls aware of the different male-dominated technical jobs and female-dominated service and clerical jobs. This awareness can help them acknowledge these stereotypes and, it is hoped, encourage them to stay in math, science, and engineering fields.[42]

Many factors enhance the career development process for students, and all of them provide students with opportunities to explore new occupational possibilities. Building connections for students between education and employment paths significantly affects outcomes. By implementing programs and approaches to career development such as those discussed educators, administrators, counselors, and parents will enable their students to explore a full range of possibilities, regardless of their gender. This in turn will create a future in which both girls and boys can realize their full potential. As men and women, their participation will play a significant part in moving this country forward and contributing successfully in the global economy. ❖

Providing career development in middle school or earlier can make girls aware of the different male-dominated technical jobs and female-dominated service and clerical jobs.

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Opening the Door to Economic Security

By the National Women's Law Center

Career education programs—such as school-to-work, vocational education, or job training programs—can be the ticket to true economic independence for many women and girls. But for far too many female students, sex discrimination is a powerful barrier to success.

School reform efforts nationwide have embraced career education as a way to make learning relevant for students and to better prepare them for the workplace of the twenty-first century. School systems have revamped the vocational school model of the past to encompass learning about the latest technologies, such as robotics and computer circuitry. School districts are increasingly incorporating career preparation into traditional academic schools by offering innovative programs such as career pathways, industry-sponsored certification programs, or even entire career-focused academies for students.

Despite these reforms, the promise of these programs remains limited for female students. Young women remain clustered in programs such as child care or cosmetology, while their male counterparts pursue areas such as automotive service or electrical engineering, gaining access to high-tech training and the higher salaries that careers in these areas command. Sex discrimination—taking the form of biased career counseling and recruiting, sexual harassment, and disparate treatment in the classroom—steers female students away from nontraditional areas and the economic security that they can provide.

Career Education Programs

Career education programs are important for women and girls. Participating in career education programs in school can lead to higher achievement. In addition to giving students skills they can use immediately in the job market, well-designed and well-implemented career education programs let students see the "real world" applications of their studies and can motivate them to seek more education. For instance, students who participate in cooperative education, job shadowing, and internship and mentoring programs offered through school-to-career programs tend to have better attendance records, reduced dropout rates, better college preparation, overall higher academic achievement, and improved productivity and attitude in the workplace, when compared with their peers.[1]

Training women for work in nontraditional and technical careers can lead to substantially higher wages for those who are trained. When women who would otherwise select predominantly female occupations are introduced to career options in previously unexplored nontraditional and technical fields they can effectively raise their earnings and reduce the overall numbers of low-income women. Women working in nontraditional fields typically earn 20 to 30 percent more than their counterparts in traditionally female fields.[2] Compare the 1998 median annual salaries for traditionally female jobs and traditionally male jobs that require similar educational levels:

Salaries for Traditionally Female Jobs	Salaries for Traditionally Male Jobs
Home Health Aide: $7.58/hour	Power Line Worker: $20.48/hour
Receptionist: $18,620/year	Engineering Technician: $37,310/year
Pre-School Teacher: $23,300/year	Chemical Engineer: $64,760/year[3]

Clearly, training in nontraditional areas is critical to increasing earning power for women, especially for the nearly one-third of women who do not obtain a college degree. On average, these women earn 36 percent less than their male counterparts.[4] Despite the promise of greater economic security that these programs provide, female students are seriously underrepresented in courses that can prepare them for high-skill, high-wage careers.

Female students are disproportionately concentrated in programs that prepare them for traditionally female, low-paying jobs. Although Title IX, which prohibits sex discrimination in any federally funded education program or activity, outlawed school practices that assigned courses to students based on their gender instead of their interest, girls remain concentrated in courses tra-

Career options in previously unexplored nontraditional and technical fields can effectively raise earnings and reduce the overall numbers of low-income women.

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Female students are under-represented in the technology and computer science classes critical for succeeding in the New Economy.

ditional for their gender, such as clerical courses, health occupations, and home economics. For example, in Connecticut's vocational high schools, as recently as the 1998–99 school year, high school carpentry, electronics, and automotive programs were about 85 percent male, while hairdressing and fashion technology programs were 96 percent female.[5]

The traditionally female courses prepare students for jobs in the service industry and are unlikely to lead to high-wage careers. As a result, sex-stereotyped enrollment patterns are especially problematic for those girls who are most in need of the economic security nontraditional programs can provide—those with disabilities, those who are economically or academically disadvantaged, and teen parents.[6] The old patterns of sex segregation threaten to leave girls in a lurch in the New Economy, as schools update traditionally male programs into high-tech opportunities—electronics into computer circuitry, for instance, or mechanical drafting into computer-assisted design. This pattern of sex segregation has carried over into one of the newest areas of career education— the work-based learning opportunities afforded by the School to Work Opportunities Act of 1994. A 1998 survey of 14 school-to-work sites found more than 90 percent of girls clustered in five sites that trained them for jobs in the traditionally female fields of health, teaching, graphic arts, and office technology.[7] A study of Wisconsin's school-to-work programs revealed that female students were concentrated in just a few programs, with 81 percent of them enrolled in health or finance programs; as a result, female graduates of the school-to-work program earned, on average, two dollars less per hour than their male peers did.[8] These studies indicate that some school-to-work programs may simply be replicating existing sex stereotypes regarding work and therefore may not be meeting the law's goal of ensuring that all students are exposed to a variety of career opportunities.

Post-secondary associate's degree programs also show the same marked sex segregation. Women in these programs are almost four times as likely as men to major in health fields and are also more likely to major in business and office fields. In contrast, male students in associate's degree programs are more than five times as likely as women to major in technical education and more than 14 times as likely to major in trade and industry programs.[9]

Female students are underrepresented in the technology and computer science classes critical for succeeding in the New Economy. Computers

and high technology are increasingly important to today's workplace. However, female students are less likely to get the necessary training in computers and technology beyond the traditionally female areas of word processing or data entry. This holds true at both the secondary and postsecondary levels, and in both vocational and general academic education. Although teen girls are now using computers and the Internet at rates similar to those of their male peers, they are five times less likely to consider a technology-related career or to plan on taking postsecondary technology classes.[10]

- Female students were less likely to have experience using computers to solve mathematics problems but were more likely to have used a computer for word processing, according to a study of students taking the 1996 SAT.[11]

- Male 1994 high school graduates were significantly more likely to have taken computer science and computer applications courses than were female graduates. The only computer-related area in which girls took more courses was data entry.[12]

- Girls made up only 37 percent of students enrolled in Advanced Placement (A.P.) computer science across the nation, with twelve states enrolling girls at less than 20 percent, according to the Department of Education's estimates for 1997.[13] Even when enrolled in the A.P. class, female students were less likely to take the national exam that leads to college credit in this area. Nationwide, in 2000 girls made up less than 17 percent of those who took the introductory-level A.P. computer science exam, and less than 11 percent of those who took the advanced computer science exam.[14] These numbers, compared with 1997 figures, represent a decrease in the percentage of female test takers.[15]

- High school technical vocational programs— including those for computer applications, computer programming, data processing, communication technology, electronics technology, and chemical technology—are dominated by male students.[16]

- In associate's degree programs, female students are seriously underrepresented in technical programs. Among students working toward associate's degrees, 12 percent of males, but less than 2 percent of females, majored in engineering or science technologies.[17]

Opening the Door . . . continued

- In higher education, women earn only about one-third of the bachelor's degrees in mathematical and computer sciences. Most disconcerting is the fact that women have been losing ground in the computer science field—the percentage of computer science degrees earned by women actually decreased from 1984 to 1995.[18] Women are also underrepresented in other technically oriented bachelor's programs, receiving only about a third of bachelor's degrees in physical and earth sciences, and only 17 percent of the bachelor's degrees in engineering.[19]

- The shortage of women in technology-related education programs has led to a national shortage of workers in the technology industry, costing the high-tech industry an estimated $4 billion a year.[20,21]

Women and girls continue to face many barriers to equal opportunity in career education programs. The underrepresentation of female students in many education programs, particularly technical and traditionally male fields, is directly linked to the continuing barriers that female students face in these programs. A 2000 report of the U.S. Commission on Civil Rights concluded that "[t]hrough lack of counseling; stereotypical socialization; discouragement; less aggressive inclusion of parents in designing programs; gender-biased teaching styles, resources, and testing; and other barriers, girls are steered from math, science, engineering, and other technical fields."[22] Similarly, a Congressional commission studying the lack of women in science, engineering, and technology concluded that "[a]ctive discouragement . . . contribute[s] to girls' lack of interest in [science, engineering, and technology] careers."[23]

Programs continue to use career counseling methods that reinforce existing gender stereotypes and discourage female students from pursuing nontraditional vocations. Career counseling should be designed to expose all students to a variety of career options and to help them achieve their goals. However, in many schools, counseling programs may simply reinforce outmoded stereotypes regarding work. For example, counseling programs may utilize materials or speakers that use gender-specific occupational terms or depict exclusively one sex in a particular career, or counselors may consciously or subconsciously steer students toward careers in which their sex has historically predominated. For example, when the Department of Education investigated a regional vocational school in Maine, it found that the school was using an outdated recruiting video, the introduction of which contained an image offensive to women—and that this resulted in very low enrollment of female students. The department also found that guidance counselors at the local middle school simply assumed that girls would not be interested in the traditionally male skilled trades offered by the vocational school because "young ladies don't like to do the dirty or heavy work." As a result, some counselors failed to encourage girls to consider enrolling in nontraditional programs and even actively discouraged girls who expressed interest in such programs.[24] Other counselors may simply conclude, without basis, that technical and scientific careers are not realistic for female students, particularly female students of color. A Latina teen from Los Angeles reports, "I told [my counselor] I wanted to do something in medicine . . . and she's like, 'Nope, you can't. I'm sorry.' "[25]

In addition, many career counselors use interest inventory assessments in order to determine which careers a student is particularly suited for. However, many of these assessment tools have an inherent gender bias that steers female students toward traditionally female careers.[26] For instance, the Armed Services Vocational Aptitude Battery, used for career counseling by about 60 percent of high schools, has been shown to steer women away from technical careers and toward clerical and health careers.[27]

Female students frequently do not receive equal treatment in career education programs. Research shows that, in at least some nontraditional classrooms, girls are not receiving an equal opportunity to learn; they are receiving different assignments and fewer opportunities to use the tools necessary for their intended trade.[28] For instance, girls in one Chicago vocational shop reported that their teacher encouraged male students to "learn by doing," while telling the female students to sit quietly and study their textbooks, clearly an ineffective method of learning a hands-on trade.[29] A teacher in Michigan would only allow female students to operate the required equipment if they had a male student supervising them.[30] Another teacher had the lone female student in his class earn her A by going out for doughnuts for the boys, making her miss class time and signaling to the boys that her attempts to learn a male trade were not to be taken seriously.[31] A recent study found that 71 percent of male teachers believed that male students were more interested in the mechanics of computer technology and were more likely to attribute boys' success in technology to talent, while dismissing girls' successes as due to luck or diligence.[32] As a

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result, boys may get more time and encouragement from their technology teachers, while girls are treated as marginal students.

Some schools also still lack adequate facilities for female students—a problem that dates back to the "male only" policies in effect at many vocational schools. For example, when the Department of Education investigated a vocational school in Connecticut in 1996, it found that the school had denied girls access to locker room facilities and the gymnasium, sending a clear message to the girls that they were second-class citizens.[33]

Hostility in the Classroom

Moreover, many teachers are not doing enough to create a classroom atmosphere that allows all students to reach their full potential. A review of school-to-work initiatives found that "boys tended to dominate—almost to the point of exclusion—in many industrial and engineering classes."[34] Female students in nontraditional fields frequently state that girls have to be "tough" to make it in their classes, and that they face resistance from their male classmates.[35] Recent studies of students working in groups on technology projects have found that boys tend to take over the more technically challenging tasks from their female peers.[36] One high school girl interested in computer science reported that when she and some female friends tried to join her school's after-school computer club, an all-male group, "the boys would refuse to let girls near the keyboard, and we could only look on as they typed in sexual remarks and jokes."[37] When girls in Connecticut were asked about their experiences in technology education, they reported that boys make fun of girls who try to use the equipment, giving girls who are better than boys at anything a particularly hard time. Teachers, the girls report, do little to correct this behavior.[38] Such an atmosphere interferes with female students' ability to learn and discourages them from enrolling in courses that can lead to high-wage careers. For instance, research shows that in post-secondary programs, female students transfer out of science-, engineering-, and technology-related majors more often than men do, in part due to experiences of gender bias and low faculty expectations.[39]

Many female students face sexual harassment in career education programs. The American Association of University Women's 1993 study "Hostile Hallways" revealed that sexual harassment is common in schools.[40] Because female students in nontraditional career education programs frequently are seen as trespassing on territory that doesn't belong to them, they are at particular risk for sexual harassment, as are adult females in nontraditional workplaces.[41] The interactive nature of many career education programs may also provide additional opportunities for harassment. For instance, female graphic arts students in a Pennsylvania vocational school were repeatedly sexually assaulted by male students in the class darkroom and in the unisex bathroom. The teacher failed to monitor the bathroom or darkroom or to stop the repeated obscene language and gestures that occurred in the classroom, and when school officials found out about the assaults, they did not even investigate.[42]

Federal Education Laws

Federal law requires schools to protect women's and girls' right to equal opportunity in career education. Students, parents, and others can use these laws to help combat the barriers to women's and girls' opportunities. Many states also have laws prohibiting sex discrimination in education and employment; these laws can be used to protect women's and girls' right to equal opportunity in career education.

Title IX of the Education Amendments of 1972 prohibits sex discrimination in education programs—including career education programs—that receive federal assistance.[43] This broad prohibition against sex discrimination includes sexual harassment and practices that have the effect of disadvantaging members of one sex. Most career education programs, or their sponsoring institutions, receive some form of federal assistance and are therefore covered by Title IX.

The Department of Education has issued regulations implementing Title IX,[44] as well as guidelines explaining Title IX's application to vocational programs specifically.[45] These regulations and guidelines make clear that women and girls have the right to equal opportunity in career education programs. In particular, education programs may not discriminate in recruiting, career counseling, admissions, or the treatment of students. Programs must also take steps to make sure that women and girls are getting equal opportunity. Some of these steps are as follows:

- Programs must ensure that counseling is not discriminatory and does not steer female students away from nontraditional areas.

- Recruiting teams should include members of both sexes, and promotional activities should portray females in nontraditional education programs and occupations.

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Opening the Door . . . continued

- All education programs must designate an official in charge of Title IX compliance.
- All education programs must have a written policy on sex discrimination, with a process for filing grievances.

Any student or interested group may file a Title IX complaint with the federal government to challenge discrimination in career education programs. Any federal agency that funds education programs or activities has the authority to enforce the statute, but the Department of Education's Office for Civil Rights is usually the lead agency for enforcing Title IX. Individuals whose rights under Title IX have been violated may also be able to bring a federal lawsuit against the education program or institution.

Career education students may also have rights under other federal laws. Students in cooperative work programs may be protected by Title VII of the 1964 Civil Rights Act, the law that prohibits discrimination in workplaces, or by other laws that prohibit discrimination based on race, national origin, religion, age, or disability. Some educational or job training programs that receive federal contract money may also come under the requirements of Executive Order 11246, which prohibits sex discrimination, and may require the program to make good-faith efforts to meet affirmative action goals.

Conclusion

Career education programs are an important step on the path to self-sufficiency. Laws such as Title IX have played an important role in opening the doors of career education for women and girls. However, women and girls still face unacceptable barriers in this arena, particularly in programs that prepare them for high-wage, predominantly male occupations. The shocking levels of gender segregation in career education programs reveal that female students still do not feel welcome in many career fields. In order to make the promise of career education work for women and girls, the barriers that prevent female students from enrolling and succeeding in these programs must be eliminated. ◆

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In order to make the promise of career education work for women and girls, the barriers that prevent female students from enrolling and succeeding in these programs must be eliminated.

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For more information, visit the National Women's Law Center website at www.nwlc.org

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WEEA Resources on Careers

Barrier Free
Serving Young Women with Disabilities
Designed to increase the educational, vocational, and social options of adolescent girls with physical or sensory disabilities. (52 pp.) • By Linda Marks and Harilyn Rousso, YWCA of the City of New York (1991) • #2732 • $12.00

Executive Mentoring: Myths, Issues, Strategies
Adapted by national corporations, *Executive Mentoring* provides tested guidelines for developing mentor programs for executives, academic administrators, and human resources staff. This book assesses mentors' needs, defines the problems they face, and examines the role mentoring plays in their organizations. Discussions of topics such as reasons to be a mentor, ways to select a protégé, and ways to structure the relationship are included. (34 pp.) • By N. Mertz, O. Welch, and J. Henderson, University of Tennessee (1990) • #2712 • $12.50

Exploring Work
Fun Activities for Girls
A fun, hands-on workbook for middle schoolers containing 30 engaging activities. Addresses gender-role stereotyping and gender bias and suggests ways to overcome obstacles. Teachers, parents, counselors, and program coordinators find this invaluable resource gives students a glimpse of career possibilities they never before imagined. Designed to address girls' special issues, and is equally engaging and important for boys. (158 pp.) • WEEA Equity Resource Center (1996) • #2772 • $18.75

Gender Matters
Training for Educators Working with Students with Disabilities
An essential resource for anyone responsible for training professionals and paraprofessionals who work with students with disabilities, particularly for those staff who work with middle, junior high, and high school girls. Consists of four two-hour training programs that can be used separately or in combination. The program is designed to
- assist educators in understanding issues related to gender and disability
- provide an overview of gender-biased practices in education
- give educators tools to provide gender equitable education to students receiving special education services

(178 pp.) • By Harilyn Rousso, Disabilities Unlimited, and Michael Wehmeyer (2002) #2814 • $25.00

Hand in Hand
Mentoring Young Women
One of our most popular products. Originally developed to train career women of color to be effective mentors for high school girls of color, *Hand in Hand* is now used by a wide range of mentoring programs.

Book 1: Guide for Planning, Implementing, and Evaluating a Mentoring Program. A manual for workshop leaders that provides guidelines for setting up a program and for establishing an active partnership between schools and businesses. (103 pp.)

Book 2: Ideabook for Mentors. Serves as the basis for workshop activities and offers guidance for both mentors and students. (36 pp.)

Book 3: Student Career Journal. Students record their thoughts and insights as they learn about themselves and begin planning a realistic adventure toward adulthood. (58 pp.)

By Bonnie Faddis, Patricia Ruzicka, Barbara Berard, and Nancy Huppertz, Center for Sex Equity 1988 • #2685 *Book 1: Guide* $27.50 • #2760 *Book 2: Ideabook* and *Book 3: Journal* $22.50 • #2742 *Book 3: Journal* $9.00

School-to-Work: Equitable Outcomes
School-to-work programs succeed at recruiting, retaining, and helping all students, if they meet the needs of girls, students of color, students whose first language is not English, students with disabilities, and pregnant and parenting teens. *School-to-Work: Equitable Outcomes* outlines the School-to-Work Opportunities Act, looks at specific equity and diversity issues in school-to-work programs, describes how gender-biased messages influence girls' and boys' career choices, and offers strategies to build an inclusive climate that supports all students. (26 pp.) • #2764 • $5.00

School-to-Work Jump-Start Equity Kit
This publication offers a wide variety of resources that will enhance and strengthen all career programs. Articles examine the role of equity in school-to-work and skill standards. It has more than 25 pages of interesting activities and guidelines for school- and work-based learning, a school-to-work fact sheet, information on key programs and publications, and a worksheet to disaggregate data to ensure success for all students. Kit includes *School-to-Work: Equitable Outcomes* (88 pp.) • #2766 • $18.75

Single Mother's Resource Handbook
This handbook is an important addition to programs serving adult women in welfare-to-work, community college, or transition programs as well as pregnant and parenting teens. It helps single mothers develop positive self-images, recognize available alternatives, better express their needs and feelings, positively influence their children, and use problem-solving skills to make better decisions. Updated in 1992 and translated into Spanish, this easy-to-use guide is a valuable resource for all women who are facing the challenges of motherhood (53 pp.) • By Annette Fernando and David Newbert, Head Start Child Development Corporation (revised 1992) • #2147 English • #2741 Spanish • $12.50

WEEA Digest: The School-to-Work Opportunities Act
An Opportunity to Serve All Students
This digest provides a thorough examination of how equity can make career development effective for all students. To receive your free copy, contact the WEEA Equity Resource Center, 55 Chapel Street, Newton, MA 02458-1060; 800-225-3088; **www.edc.org/WomensEquity** Also available in packs of 50. (12 pp.) • #D9508 (pack of 50) • $8.95

To order WEEA materials call our distribution center at 800-793-5076.

Additional Resources on Careers

Career Counseling of Girls and Women
Guidelines for Professional Practice
The need for quality standards for the delivery of career counseling services, and for the articulation of competencies required for practitioners delivering these services, is gaining increasing attention. Work has focused on generic standards and competencies and guidelines pertaining to specific populations. One important contribution to these efforts in Canada is the guidelines for career counseling of girls and women developed by the Collaborative Action Working Group on Counseling, which were a key component in a strategy to promote labor market equality. • By Valerie G. Ward (1995) • *ERIC Clearinghouse on Counseling and Student Services*, Greensboro, N.C., Canadian Guidance and Counseling Foundation Ottawa (Ontario) • **www.ed.gov/databases/ERIC_Digests/ed414524.html**

Career Development for African American and Latina Females
There is an urgent need to provide female adolescents of color with a career education that will enable both economic self-sufficiency and personal fulfillment. This digest discusses ways for schools and other institutions to provide such an education. • By Jeanne Weiler (1997) • *ERIC Clearinghouse on Urban Education Digest*, No. 125 • **http://ericweb.tc.columbia.edu/digests/dig125.html** • ISSN 0889-8049

Career Development and Gender, Race, and Class
This digest investigates broader perspectives on career development that are being built on emerging research focused on gender, race, ethnicity, and social class. The implications of this information for career and vocational educators and counselors are discussed. • By Sandra Kerka (1998) • *ERIC Clearinghouse on Adult Career and Vocational Education Digest*, No.199 • **www.ed.gov/databases/ERIC_Digests/ed421641.html**

Career Strategies
How to Get and Keep a Job
Designed to fulfill each of the SCANS competencies and foundations, the Career Strategies plot is augmented by definitions from the modern business lexicon, real-world case studies to stimulate and nurture higher-order thinking, and current labor-market statistics. Tested by an ethnically diverse group of teenagers and piloted by a statewide JTPA summer program, *Career Strategies* has proven to be engaging and realistic. The drama follows two high school students, Whitney and James, on a quest to discover the secrets of success in the workplace. With the guidance of a trusted teacher and three mentors from the business world, the main characters not only find proven job skills and traits, but also uncover unwritten workplace rules. • By Jim Comiskey and Jay McGrath (2000) • Academic Innovations, 281 S. Magnolia, Santa Barbara, CA 93117 • 805-967-8015 • Fax: 805-967-4357 • Email: academic@acad emic innovations.com • **www.academicinnovations. com**

Choices
Choices addresses the myths and realities facing teenagers entering the workforce. The curriculum includes discussions about career expectations and awareness of nontraditional careers, as well as guidance for planning for the future. Appropriate for young women. • By Mindy Bingham and Sandy Stryker (2000) • Academic Innovations, 281 S. Magnolia, Santa Barbara, CA 93117 • 805-967-8015 • Email: academic@academicinnovations.com • **www.academicinnovations.com**

Cool Careers for Girls Series
The 10 books in this series feature more than 100 women in ten career fields. In easy-to-read profiles illustrated with pictorial representations of a career path, women talk about what they do on their jobs, why they love what they do, what jobs they had before, and what they did to prepare for the career they have now. They even discuss what they were like as girls and how they like to spend their spare time. Appropriate for young girls, ages 11–14. • By Ceel Pasternak and Linda Thornburg • Impact Publications, 9104 Manassas Drive, Suite N, Manassas Park, VA 20111-5211 • 800-361-1055 • Fax: 703-335-9486 • Email: info@impactpublications.com • **www.impactpublications.com**

Family Role in Career Development
Family influence is an important force in preparing youth for their roles as workers. Young people form many of their attitudes about work and careers as a result of interactions with the family. Family background provides the basis from which their career planning and decision making evolve. However, within each family, the level of involvement can vary, offering both positive and negative influences. This digest examines the research about family influences on career development and describes implications for practice. • By Bettina A. Lankard (1995) • *ERIC Clearinghouse on Adult Career and Vocational Education Digest*, No. 164 • **http://ericacve.org/docs/parent.htm**

Gender Differences in Adolescent Career Exploration
Career exploration typically occurs during adolescence, when boys and girls try out various work roles in part-time work, volunteer work, or school/community activities. Exploration tasks include gaining an increasing awareness and understanding of the self and of one's abilities, interests, values, and needs. This is the first of three substages leading to realistic career choice. This digest focuses on gender differences in the role of assessment in the exploration process. Career assessment texts, such as those of Walsh and Betz (1994) and Walsh and Osipow (1994), contain excellent chapters on gender bias in career assessment. • By Helen S. Farmer (1995) • *ERIC Clearinghouse on Counseling and Student Services Digest*, Greensboro, NC • **www.ed.gov/databases/ERIC_Digests/ed391108.html**

Additional Resources . . . continued

GyrllTech Evaluation Tools

Conduct a GyrllTech check using field-tested evaluation tools adapted by the Institute for Women in Trades, Technology, and Science (IWITTS) for general use by the education and school-to-work communities. These user-friendly tools will help you determine how your high school or class is doing in preparing young women for high-skill, high-wage careers in nontraditional areas. • IWITTS, 1150 Ballena Blvd, Suite 102, Alameda, CA 94501-3682 • 510-749-0200 • **www.iwitts.com**

Her Own Words Series on Women in Nontraditional Careers

These videos celebrate women in nontraditional careers, that is, those in which women make up less than 25 percent of the workforce. The pay, benefits, and job satisfaction can be much higher than in traditional female occupations. The videos are used all over the country as part of programs at career-counseling centers, libraries, museums, schools, and colleges; they are frequently used as part of Women's History Month celebrations. The videotapes range from 15 to 22 minutes long, and the resource guides are 114 pages long. • By Jocelyn Riley • Her Own Words®, P.O. Box 5264, Madison, WI 53705-0264 • 608-271-7083 • Fax: 608-271-0209 • Email: herownword@aol.com •**http://members.aol.com/herownword/career.htm**

School-to-Work
Preparing Young Women for Nontraditional Careers

This guide is appropriate for high school educators, counselors, and school-to-work and equity coordinators. It includes a trainer's workshop guide, a participant's workbook, and an annotated bibliography of practical classroom resources. *School-to-Work* is easy to put to use immediately in order to recruit and retain young women in nontraditional classes and school-to-work activities. • Institute for Women in Trades, Technology, and Science, 1150 Ballena Blvd, Suite 102, Alameda, CA 94501-3682 • 510-749-0200 • **www.iwitts.com**

Vocational Education in the Middle School

During middle school, most adolescents significantly shape their attitudes about learning, work, and other values that they carry with them through adulthood. Do young adolescents have a realistic view of the world of work and their potential place in it? What role should vocational education play in shaping this view and preparing middle schoolers for high school and for work in the twenty-first century? These questions are explored in this *ERIC Digest*. • By Sandra Kerka (1994) • ERIC Clearinghouse on Adult Career and Vocational Education Digest, No. 155 • **www.ed.gov/databases/ERIC_Digests/ed377314.html**

"You Can Be a Woman . . . " Series

The "You Can Be a Woman . . . " series of books and CD-ROMs encourages elementary school girls to consider careers in science and math. The eleven-book series features female professionals such as a paleontologist, an Egyptologist, and a marine biologist. Cohen's first book, *You Can Be a Woman Engineer* (1991), traces her arc from a girl who had never heard of female engineers to a woman who led a team of engineers on the design for NASA's Hubble Space Telescope. Available in English and Spanish. • By Judith Love Cohen • Cascade Pass, Marina del Ray, CA • Email: jlc@cascadepass.com • **www.cascadepass.com**

Use the provided contact information to order these materials.

Online Course
Engaging Middle School Girls in Math and Science

Studies show that starting in middle school, girls are less likely than boys to take elective courses in math and science. This decline in participation is especially severe among low-income or disadvantaged girls, girls with learning disabilities, and girls who are learning English as a new language.

Engaging Middle School Girls in Math and Science, an exciting online course developed by the WEEA Equity Resource Center and the New England Comprehensive Assistance Center, brings teachers together to explore how they can make a difference at this critical stage in girls' academic careers. The course is designed so that teachers can build on what they already know about good instructional practice, and work toward developing classrooms that support more equitable learning for boys and girls. Useful for both formal and informal settings, this inexpensive course fits easily into every budget and schedule. Professional development points, undergraduate, and graduate course credit are available.

This online course runs for nine weeks (including a one-week tutorial) and is comparable to a 24-hour course. The course fee is $80 for an individual; $60 per person for teams; course credit is an additional $40. Enrollment is limited to 20 students. Register at the WEEA Equity Resource Center website: **www.edc.org/WomensEquity**

Join the Conversation
EdEquity—The Center's Online Discussion Forum

Join EdEquity to keep up on the latest educational equity issues and talk with others working in this area. Take part in EdEquity's quarterly Dialogues with the Experts, an issue-oriented online discussion series featuring distinguished panels of experts who engage forum participants in weeklong conversations around current topics in educational equity. To link to recent discussions and view future Dialogue topics, go to **www.edc.org/WomensEquity/service/listserv. htm**. To subscribe, send an e-mail to <Majordomo@mail.edc.org>. The subject should be left blank and the body of the message should read: **subscribe edequity**

WEEA's Services and Resources

For resources and assistance call the center at 800-225-3088.

Practical Tools and Support for Gender-Fair Learning

The WEEA Equity Resource Center at EDC can help you find the tools you need to create gender-fair multicultural learning environments.

Call the center's hotline at **800-225-3088** or **TTY 800-354-6798** for resources and referrals.

The center's website is full of exciting information and tools, from fun facts about the history of equality to a list of practical curricula designed to help make any subject gender-fair. The center's website was designed to be accessible to users with disabilities.

www.edc.org/WomensEquity

EDEQUITY (the Educational Equity Discussion List) is designed to support practitioners and engage them in discussion about educational theory and practice. To subscribe, send an e-mail to <Majordomo@mail. edc.org>. The subject should be left blank and the body of the message should read:

subscribe edequity

The WEEA Equity Resource Center, a project of Education Development Center, Inc. (EDC), is funded by the U.S. Department of Education's Women's Educational Equity Act Program to promote gender equitable education for all students. The WEEA Center offers products, services, and referrals to schools, school boards, colleges and universities, community organizations, businesses, parents, and students throughout the country. These practical tools include curricula, books, working papers, digests, and online courses that support equity and excellence regardless of gender, race, ethnicity, class, language, and disability.

WEEA Catalog

Our catalog lists over 100 products that offer concrete ways to implement gender equitable education in classrooms, from preschool to college, and in adult education. Whether you are beginning the process or are an experienced gender equity specialist, we specialize in resources that help you understand the current issues in gender equity and how these relate to your classroom or workplace. Call the center for a free copy (800-225-3088).

Need Help with Equity Issues?

Our staff includes a team of technical assistance specialists available to suggest materials, make referrals, locate speakers for conferences, and answer questions regarding issues on gender equity and its intersections with disability, race, ethnicity, and class. Call us to ask questions: 800-225-3088.

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