

FORGING NEW PATHWAYS:

Promising Practices for Recruiting and Retaining Students in Career
and Technical Education Programs That Are
Nontraditional for Their Gender

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A publication of

Programs and Practices That Work: Preparing Students for Nontraditional Careers Project

A joint project sponsored by
The Association of Career and Technical Education

The National Alliance for Partnerships in Equity

The National Association of State Directors
of Career Technical Education Consortium

The National Women's Law Center

EXECUTIVE SUMMARY

A NEW ENDEAVOR

The "Programs and Practices That Work: Preparing Students for Nontraditional Careers" Project

This report describes promising practices for improving students' access to career and technical education (CTE) programs that are nontraditional for their gender. It relies on practices utilized by the winners of and nominees for the 2005 "Programs and Practices That Work: Preparing Students for Nontraditional Careers" Project award. The Programs and Practices That Work (PPTW) Project is a new endeavor created by the Association of Career and Technical Education (ACTE), the National Alliance for Partnerships in Equity (NAPE), the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), and the National Women's Law Center (NWLC) to recognize programs that have successfully raised the enrollment of under-represented students in nontraditional CTE courses. This year's recognized programs are: Minot Public Schools in North Dakota (highest recognition); Michigan Department of Labor and Economic Growth (honorable mention); and Northeast Community College in Nebraska (honorable mention).

Educators and administrators are encouraged to implement programs and practices that incorporate these promising techniques already used by other institutions:

- Guidance and career counselors talk to all students about nontraditional courses;
- Students are connected with role models and mentors;
- Students participate in hands-on projects to learn about nontraditional training and to apply skills;
- The institution commits itself to gender equity and non-discrimination by providing frequent and regular training for students and staff;
- The program or practice is evaluated by students, participants, and facilitators and responds to these evaluations;
- Program facilitators measure the outcomes of the project by collecting data about impact; and
- Community members and businesses help plan gender equity events and are invited to participate in order to foster strong school-community relationships.

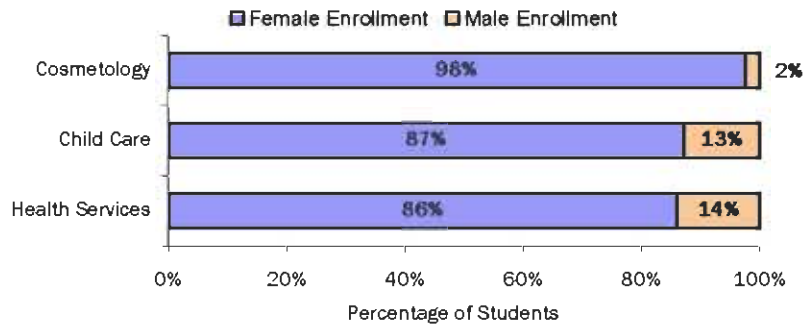
Nominations for the next PPTW recognition will be accepted starting in December 2005. See www.napequity.org/nape_programsthatwork.html or www.acteonline.org/policy/legislative_resources/PTWproject.cfm for more information.



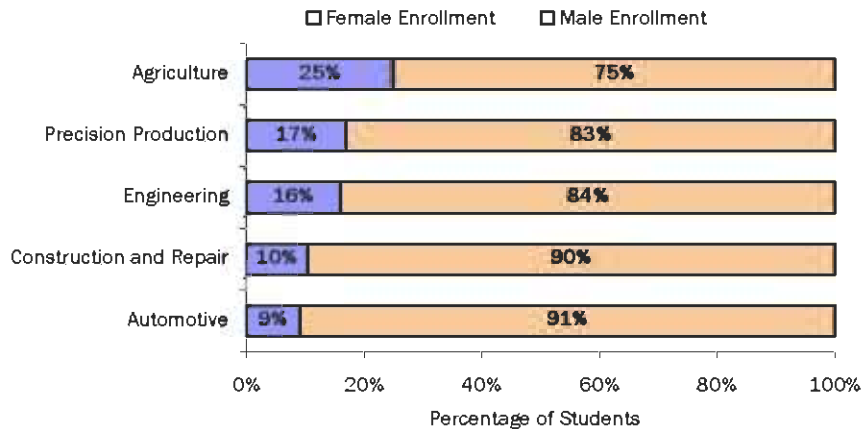
INTRODUCTION

In high schools, career and technical education augments traditional academics by providing students with an opportunity to learn practical skills that can lead to high-paying, stable employment, and/or benefit them as they continue their education. Career and technical education (or CTE, formerly known as “vocational education”) is popular – 97% of high school students take at least one CTE course and nearly half of all high school students take a sequence of three or more CTE courses.¹ However, even though Title IX of the Education Amendments of 1972 – the federal law prohibiting sex discrimination in education – has been in effect for over 30 years, some CTE courses and job training opportunities are still dominated by one gender. Although all federally funded schools must assure equal access to CTE programs, the data suggest there are still significant barriers to students’ participation in many CTE programs. For example, in high schools across the country, programs such as automotive, technology, construction, and engineering are dominated by male students, while programs such as nursing are dominated by female students. The following charts demonstrate the disproportionate enrollment patterns of male and female students in CTE courses that are nontraditional for their gender.²

Sex Segregation in High School Courses That Are Nontraditional for Boys



Sex Segregation in High School CTE Courses That Are Nontraditional for Girls



Overall, most CTE programs that historically have been traditionally female (programs leading to occupations that are less than 25 percent male) or traditionally male (programs leading to occupations that are less than 25 percent female) remain so today. In fact, the most recently available data show that the level of under-representation of women has remained virtually unchanged since 1979.³ Real-life stories from students in CTE,⁴ preliminary research on CTE,⁵ and research on math, science, engineering, and technology education suggest that, at least for female students, lack of enrollment in nontraditional courses can be linked to sex discrimination and sex-stereotyping.⁶ The same is likely true for male students wishing to enroll in traditionally female courses. Sex discrimination and stereotyping – such as permitting sexual harassment in courses by peers or teachers, inadvertently allowing boys to monopolize equipment or teacher attention, and steering girls away from nontraditional courses – can create real barriers that prevent students from being able to make informed choices about or pursue their education and careers. Other barriers that may contribute to the disproportionate numbers of female and male students in nontraditional CTE courses and that are often related to sex stereotyping and bias include:

- students' lack of awareness about nontraditional CTE opportunities;
- students' internalization of sex-stereotyped roles;
- peer pressure to avoid nontraditional CTE courses; and
- cultural pressure to avoid nontraditional CTE courses.

Lack of access to educational opportunities affects both genders, but is particularly troubling for women in today's economy. Discouraging young women from pursuing nontraditional training can cut off their access to nontraditional jobs which are more likely to be high-paying than traditional jobs. For example, based on 2005 data, the National Women's Law Center has found that of the occupations it studied, the male-dominated fields pay an average median hourly wage of \$17.35, while the traditionally female fields pay just \$13.85 on average. This translates into a median annual salary of \$36,085 for men and \$28,805 for women – a \$7,280 wage gap.⁷ Moreover, in many local labor markets, some of the most high-demand jobs are nontraditional for one of the genders. In New Jersey, for example, four of the fields with the highest demand identified by the New Jersey Department of Labor are nontraditional for either women or men: (1) science and technology-based fields (nontraditional for women); (2) building and construction trades (nontraditional for women); (3) elementary and early childhood education (nontraditional for men); and (4) nursing and allied health professions (nontraditional for men). In many cases, the higher-paying, high-demand jobs are nontraditional for women.

Educators must take precautions to ensure that sex discrimination nor bias affects students' attitudes toward, access to, enrollment in, or completion of nontraditional programs that may lead to higher paying jobs. Moreover, educators should help forge new pathways that overcome barriers that have historically limited opportunities based on gender and encourage students to explore nontraditional training and employment. To assist educators in addressing discrimination and removing barriers to nontraditional training, four leading CTE and gender equity organizations – the Association of Career and Technical Education (ACTE), the National Alliance for Partnerships in Equity (NAPE), the National Association of

State Directors of Career Technical Education Consortium (NASDCTEc), and the National Women's Law Center (NWLC) – founded the “Programs and Practices That Work: Preparing Students for Nontraditional Careers” Project. The purpose of the project is to help schools eliminate the subtle and unintended, as well as the overt barriers, that students face in enrolling in and completing nontraditional CTE courses and programs. In helping schools address these barriers, we aim to improve students' access to these courses and programs toward the goal of enhancing students' economic self-sufficiency and personal fulfillment.

ACTE, NAPE, NASDCTEc, and NWLC are committed to improving gender equity in CTE. The Programs and Practices that Work (PPTW) Project fosters gender equity in CTE by giving special recognition to local and/or state educational agencies, programs, and/or schools that have improved students' access to and completion of CTE programs that are nontraditional for their gender.

This report:

- Summarizes the findings of the first annual Programs and Practices that Work: Preparing Students for Nontraditional Careers Project.
- Features promising practices for gender equity in CTE programs, and
- Recommends steps for educators to take to ensure gender equity in CTE programs.



SHINING THE SPOTLIGHT ON PROMISING APPROACHES

The Programs and Practices that Work 2005 Honored Programs

For 2005, ACTE, NAPE, NASDCTEc, and NWLC selected three promising programs for PPTW Project recognition. The institution receiving highest recognition, Minot Public Schools in Minot, North Dakota, almost tripled its enrollment in nontraditional CTE in three years. The institutions receiving honorable mentions – the Michigan Department of Labor and Economic Growth and Northeast Community College in Norfolk, Nebraska – have made significant strides toward improving gender equity in their CTE programs.

Highest Recognition: Minot Public Schools CTE Programs, Minot, North Dakota

Minot Public Schools CTE programs include regular opportunities for students to explore nontraditional careers. Over a three year period, Minot Public Schools (MPS) sponsored two career and skills awareness days – DIVA Tech and Define Your Dreams – and one technology camp – Technology on the Go. MPS's gender equity programs are designed to expose students to nontraditional courses and have made significant progress in increasing enrollment of the under-represented gender in these courses. Over the three years that these programs were offered at MPS High School, enrollment in classes that were nontraditional for students' gender increased by 32 percent.

The MPS DIVA Tech program was a day-long event targeted at girls in grades 8 through 12. It provided students with hands-on opportunities to explore nontraditional areas offered in the MPS trades and technology curriculum, including auto tech, welding, and information technology. Each student selected several hour-long laboratory experiences and used the skills learned to create a take-home project. Classroom instructors and female student assistants served as helpers and role models in the labs. Professionals who hold jobs that are nontraditional for their gender gave a workshop and answered questions relating to occupational responsibilities, training requirements, salaries, benefits, and barriers in the workforce. In addition, a school career counselor described the nontraditional courses available for girls in the upcoming school year and answered questions.

In efforts to boost enrollment in/completion of high school nontraditional CTE courses, MPS also targeted 7th and 8th grade students in a program that raised awareness of nontraditional careers. Through a program called 'Define Your Dreams,' MPS brought together female professionals and students to help young women realize the importance of math, science, and problem-solving skills in daily life and careers. The professionals spoke with the students about their nontraditional careers and the necessary training. Students explored nontraditional careers in hands-on workshops and learned about nontraditional course options for their four-year high school plans.



MPS complemented its two career days with a three-day field trip called 'Technology on the Go' for girls in grades 8 through 11. Guided by female professionals, students explored local businesses, coal mines, electrical plants, and manufacturing plants. Throughout the tours, students were encouraged to take photographs. At the end of the program, students designed their own publications with the photographs they had taken. The three-day adventure was provided at no cost to the students, and students who completed the program received a \$75 stipend.

After the PPTW nominations were submitted, MPS held another Diva Tech career awareness day, along with a complementary program for boys, Dude Tech. Dude Tech was a career awareness day designed to encourage male students to explore CTE courses that are nontraditional for them. Boys learned about careers in nursing, child care, and food industries.

Honorable Mention: The Michigan Breaking Traditions Award, Office of Career and Technical Preparation, Michigan Department of Labor and Economic Growth

The PPTW Project gave honorable mention to a state awards program that recognizes pioneering students in a CTE field that is nontraditional for their gender. For three years, the Michigan Breaking Traditions Award has highlighted outstanding student achievement in nontraditional CTE and provided role models for other students considering training for a nontraditional career. The Michigan Department of Labor and Economic Growth administers



The 2003 Breaking Traditions Award Recipients

the program and selects award winners based on letters of support from educators, student essays, detailed information on the student's technical proficiency, academic achievement, career plans, school activities, and contributions to mentoring or assisting other students pursuing or considering a nontraditional career. The Department of Labor and Economic Growth reports that the caliber of nominations and student achievement has improved each year the award has been offered.

Annually, winning students receive awards at a ceremony attended by the media and state legislators in the Michigan Capitol Building. In addition, the Michigan Department of Labor and Economic Growth publishes and disseminates a brochure about the honored students each year.

Honorable Mention: Career Camp, Northeast Community College, Norfolk, Nebraska

Annually since 1994, Northeast Community College has hosted a three-day camp for young women who have completed high school grades 10 through 12. The camp introduces students to nontraditional occupations and to courses available at Northeast Community College that lead to these occupations. Students participate in hands-on workshops in electronics engineering technology, building construction, accounting, electro-mechanical technology, drafting, computer programming, welding, automotive technology, and natural resource management. Professional women in nontraditional careers discuss how to overcome obstacles in the workplace and answer students' questions. Northeast Community College has collected evaluations from young women who state that the Career Camp encouraged them to pursue careers in welding and the automotive industry.

In addition to exploring nontraditional careers, students are encouraged to develop their self-esteem and self-sufficiency in additional sessions that address communication skills, confidence, dating violence, and self-defense. Students stay in the community college residence halls and participate in the camp at no cost. Throughout the year, camp facilitators participate in gender equity trainings and conferences that in turn enhance the camp the next year.



LESSONS LEARNED

Techniques for Improving Students' Enrollment in and Completion of Nontraditional CTE Courses

The three honored PPTW programs represent three different approaches by institutions at the secondary, post-secondary, and state levels to improving enrollment of the under-

represented gender in nontraditional CTE courses. However, each of these programs, as well as several of the other programs nominated for the PPTW project, employed certain common strategies. The following factors tend to be present in a promising or successful program for improving enrollment and completion rates of the under-represented gender in nontraditional CTE courses. The program or practice:

- Stressing nontraditional opportunities for students by requiring guidance counselors to explain nontraditional CTE course offerings to them;
- Introduces students to role models, including professionals who have nontraditional careers and peers who participate in nontraditional CTE programs. The role models answer questions, share stories, and frequently interact with and mentor the students;
- Targets multiple ages of students at various stages in their educational and professional careers so that students can take advantage of nontraditional CTE opportunities in middle school, high school, and post-secondary education;
- Provides hands-on opportunities for students to learn about and apply skills;
- Builds upon or cultivates an institutional commitment to gender equity and compliance with civil rights laws and uses the program as an opportunity to train all staff about gender equity;
- Measures the outcomes and results of the project by collecting data about and testimonials from participants;
- Provides participants the opportunity to evaluate their experience and the project;
- Relies on and builds strong school-community partnerships or interagency coalitions;
- Encourages students to participate in a gender equity event by offering course credit or other incentives;



**IDEAS
for integrating equity
principles throughout the
institution**

- Provide opportunities for professional development regarding equity. One institution sets aside funding from its CTE gender equity program for staff to attend conferences on sex discrimination. The staff who attend give presentations to other educators and administrators about lessons learned.
- Include students of both genders in recruitment materials. One institution uses images of nontraditional students in all CTE publications and brochures.
- Require students and staff to regularly attend sexual harassment training. One institution provides annual sexual harassment training to all staff.

- Responds to the needs of the local labor market and features high-demand occupations; and
- Seeks publicity in the media and the attention of lawmakers to enhance the impact of the program.

Many programs were promising, and while still developing, showed encouraging signs of future success. ACTE, NAPE, NASDCTEc, and NWLC encourage these programs and all educational agencies to continue to work toward increasing enrollment and completion rates of the under-represented gender in nontraditional CTE programs. Among other strategies, educational agencies should strive to:

- Involve parents in these programs and educate them about nontraditional CTE opportunities for their children, including the income levels associated with traditional and nontraditional careers;
- Support program participants after program completion and provide assistance throughout students' enrollment in nontraditional CTE courses;
- Identify and implement concrete methods for measuring outcomes and impact of the practice on the under-represented gender's enrollment, completion, and/or job placement in nontraditional CTE fields;
- Create materials describing the implementation of the program so that the practices can be replicated by others; and
- Require training for all staff and students on sex discrimination, sexual harassment, and sex stereotyping.



**IDEAS
for building strong
partnerships with the
community or between state
agencies**

- Create an advisory board that includes businesses that hire graduates of nontraditional CTE programs.
- Invite business leaders to campus to participate in gender equity activities and ask them to provide support, including financial support, internships, etc.
- Take students on tours of local businesses. Have the students talk to employees who hold nontraditional jobs. One program took students to over 15 job sites.
- Work with your state department of labor to identify high-demand nontraditional jobs to feature in your gender equity activities.



MOVING FORWARD

Implementing Promising Techniques for Gender Equity in CTE

This report describes several methods used to increase enrollment of the under-represented gender in nontraditional CTE. We encourage teachers, administrators, and other education personnel to use these successful strategies to develop programs in their own communities

and to experiment with other new and innovative approaches.⁸ We also encourage educators to contact one of the four sponsoring organizations of PPTW to learn more about this year's recognized programs or the multiple approaches described in this report. In addition to providing technical assistance, we may be able to put educators in touch with individuals in their communities who have programs for gender equity.

Educators can seek funding from a variety of sources to underwrite the costs of gender programs to improve the under-represented gender's access to nontraditional courses. For example, funding may be available from local businesses whose workforce is comprised of occupations that may be nontraditional for one gender. We also recommend that educators and advocates seek funding through their state educational agencies. Educators can point to the requirements of federal law to support these requests.

The Carl D. Perkins Act of 1998 (Perkins III) is the federal law that funds and sets standards for CTE. The Perkins III accountability system requires states to make progress in improving student participation in and completion of CTE that leads to nontraditional training and employment. States have the option of using \$60,000 to \$150,000 of their Perkins III state leadership funds for services that prepare individuals for nontraditional employment. Also, states have the option of reserving and redistributing 10 percent of the Perkins III funds allocated to local education agencies and may require these local agencies to use these redistributed funds for students pursuing nontraditional training.

As this publication goes to press, Congress is in the process of reauthorizing Perkins III. Both the House of Representatives and the Senate have passed versions of new Perkins bills. If either bill becomes law, it would offer additional optional sources of funds for gender equity programs. For example, the Senate bill (S.250) would allow states to use funds to develop a state self-sufficiency standard and would allow states and local education agencies to use funds to overcome barriers to participation in baccalaureate degree programs by students who wish to pursue nontraditional occupations. The House bill would provide incentive grants to states with special consideration for those that have increased the number of students studying for nontraditional careers and/or the number of students who are displaced homemakers or single parents.

Finally, advocates and educators should urge schools to fund gender equity programs in CTE in order to bolster their compliance with Title IX. Disproportionate enrollments or completion rates of female and male students in CTE courses can indicate a failure to comply with Title IX, the federal law that prohibits gender discrimination in education. In fact, the Title IX regulations require that schools take steps to ensure that disproportionate enrollment of students of one gender in a course is not the result of discrimination. If a school is engaging in discriminatory practices, it can be vulnerable to a Title IX lawsuit. Investigating and remedying potential discrimination and implementing gender equity programs thus serves the interests of the school and its students, and will help overcome barriers that prevent students of the under-represented gender from enrolling in or completing nontraditional CTE courses and programs.



CONCLUSION

In today's competitive economy, the United States will benefit by ensuring full participation of both genders in the labor market. But evidence continues to show that female and male students are under-represented in CTE courses that lead to jobs that are nontraditional for their gender. This troubling problem requires immediate action and a commitment to trying new and multiple strategies to eliminate discriminatory barriers and improve students' access to and completion of nontraditional CTE courses. We encourage educational agencies to adopt practices that incorporate the successful strategies described in this report and to develop unique practices of their own. To support educators and provide them with resources, ACTE, NAPE, NASDCTEc, and NWLC will continue to collect and disseminate information on promising techniques for promoting gender equity in CTE courses. We invite educators to share their experiences with us, or to nominate a program for recognition by the 2006 Programs and Practices that Work: Preparing Students for Nontraditional Careers Project.

For more information on the Programs and Practices that Work: Preparing Students for Nontraditional Careers Project or to share information on a CTE gender equity program, please contact one of the following organizations:

Association for Career and Technical
Education
1410 King Street
Alexandria, VA 22314
(703) 683-3111 or 1-800-826-9972
(703) 683-7424 (fax)
www.acteonline.org

National Association of State Directors
of Career Technical Education
Consortium
The Hall of States
444 North Capitol Street, NW
Suite 830
Washington, DC 20001
(202) 737-0303
(202) 737-1106 (fax)
www.careertech.org

National Alliance for Partnerships in
Equity
172 Hood Road
P.O. Box 369
Cochranville, PA 19330
(610) 345-9246
(610) 869-4380 fax
www.napequity.org

National Women's Law Center
Career Education Project
11 Dupont Circle, NW, Suite 800
Washington, DC 20036
(202) 588-5180
(202) 588-5185 (fax)
www.nwlc.org



Appendix

Methodology for the Programs and Practices That Work: Preparing Students for Nontraditional Careers Project

The first notable programs were selected in the spring of 2005, and new programs will be selected annually. Each year, recognized programs will be featured at the ACTE, NAPE, and NASDCTEc national conferences. In addition, recognized programs will receive an award at a briefing for the U.S. Congress. The briefing will call Congress' attention to: 1) the continued existence of gender-based barriers in accessing education; 2) the programs dedicated to eradicating those barriers; and 3) the importance of improving gender equity provisions and funding in federal law. Finally, the recognized programs will be featured in a report describing promising practices for improving enrollment in and completion of CTE that is nontraditional for a student's gender. This is the first of these reports.

To identify innovative programs that are improving students' access to nontraditional CTE courses, ACTE, NAPE, NASDCTEc, and NWLC relied on experts in CTE and in gender equity in education. During the first year of PPTW, the sponsoring organizations asked their memberships to spread the call for nominations for PPTW recognition. To be eligible, programs were required to receive funding under the Carl D. Perkins Act of 1998 and to demonstrate an increase in participation in or completion of nontraditional CTE programs by students of the under-represented gender. Nominations were required to include an explanation of how the program or practice met criteria related to effectiveness, quality, impact, and documentation.

The four sponsoring organizations chose two representatives from the membership of each organization for a Review Panel that evaluated the nominations. The Review Panel consisted of national and state gender equity experts as well as one State Director for CTE. The nominated programs presented numerous practices with potential for improving students' access to nontraditional CTE. In 2005, the Review Panel selected one program to receive highest recognition and two programs to receive honorable mention. This report features the three recognized programs as well as promising practices by other programs. ACTE, NAPE, NASDCTEc, and NWLC salute the initiatives by all nominees and encourage this year's nominees who were not selected to re-apply.

Endnotes

¹ National Assessment of Vocational Education: Final Report to Congress (2004).

² These charts were prepared by the National Women's Law Center using data that it received from 12 states' departments of education. The states include Arizona, California, Florida, Illinois, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, North Carolina, and Washington. The Center will present further analysis of this data and detailed description of its methodology in a report scheduled to be released in August 2005.

³ Vocational Education Programs Guidelines for Eliminating Discrimination and Denial of Services on the Basis of Race, Color, National Origin, Sex and Handicap, 34 C.F.R. pt. 104, app. B (2005).

⁴ Michigan Department of Labor & Economic Growth, Breaking Traditions 2005 Awards Presentation (2005).

⁵ Maria Carmen C. Sanogo, Facilitators and Barriers to High School Female Participation in School-to-Work: Traditional vs. Nontraditional Programs for Females, 65 (1995) (unpublished manuscript, thesis for Pennsylvania State University Graduate Program in Vocational Industrial Education, on file with author); ROBERT SHEETS, MIMI LUFKIN, AND DAVID STEVENS, IMPROVING PERFORMANCE ON PERKINS III CORE INDICATORS: SUMMARY OF RESEARCH ON CAUSES AND IMPROVEMENT STRATEGIES 61-75 (2003), available at http://www.nccte.org/publications/infosynthesis/r&dreport/Improving_Performance_of_Perkins_III.pdf (last visited Jun. 17, 2005).

Sex discrimination continues as women enter the skilled trades. See Marisa Castellano, "It's Not Your Skills, It's the Test:" Gatekeepers for Women in the Skilled Trades in CHANGING WORK, CHANGING WORKERS: CRITICAL PERSPECTIVES ON LANGUAGE, LITERACY, AND SKILLS 189-213 (Glynda Hull ed. 1997).

⁶ See AMERICAN ASSOCIATION OF UNIVERSITY WOMEN EDUCATIONAL FOUNDATION: COMMISSION ON TECHNOLOGY, GENDER, AND TEACHER EDUCATION, TECH-SAVVY: EDUCATING GIRLS IN THE NEW COMPUTER AGE 44 (2000) citing JANET SCHOFIELD, COMPUTERS AND CLASSROOM CULTURE (1995) (boys refer to girls' femininity and appearance in elementary and secondary computer science classes, distracting girls from their work); Susan Giurleo, *Persisters and Career Changers in Technical Careers: Are there Gender Differences?* in DIVERSITY AND WOMEN'S CAREER DEVELOPMENT: FROM ADOLESCENCE TO ADULTHOOD 85, 81-94 (Helen S. Farmer ed. 1997) (female high school student interested in a science career stopped taking science classes and pursued a technical career after her chemistry teacher repeatedly touched her breasts in class); MARY GATTA AND MARY TRIGG, BRIDGING THE GAP: GENDER EQUITY IN SCIENCE, ENGINEERING AND TECHNOLOGY (2001) (report for the New Jersey Employment and Training Commission's Council on Gender Parity in Labor and Education).

⁷ Wage data is from Nov. 2003. Annual wages have been calculated by multiplying the hourly mean wage by a "year-round, full-time" figure of 2,080 hours; for those occupations where there is no published hourly mean wage, the annual wage has been directly calculated from the reported survey data. BUREAU OF LABOR STATISTICS, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL EMPLOYMENT AND WAGES (Nov. 2003) available at http://www.bls.gov/oes/2003/november/oes_nat.htm (last visited Jun. 17, 2005).

⁸ All efforts to reduce under-representation of students of one gender in particular courses or programs must comply with relevant federal and state legal standards.