

break out of traditional job roles

child care was a good option. She laughed and told him, "Absolutely not."

High schools try to specialize their students too early, MacKinnon says. She took art and science until she graduated because her parents and math teacher advised her to keep her options open.

When Claudia Zovatto, a third-year computer math student, told her high school guidance counsellor of her career choice, he suggested she go into arts because math was "too hard."

Girls may be turned off technical studies because the fields are so male-dominated, not because they are difficult. Third-year math student Kelly Adams said there was only one female math teacher in her high school, leaving female students who planned a career in math without role models.

Carolyn Maingot, a qualifying year psychology student, remembers her high school math club: "It was a bunch of guys who would just sit there and talk algebra all the time." There were no girls in the club.

There is little change in first-year university. Women form tiny minorities in first-year physics classes. Physics professor Pat Kalyniak says 18 or 19-year-old women who have been used to half-male, half-female classes are "a little rattled" when they go into a room with 150 men and three women. Some women are not comfortable and opt for other studies.

Sexism is often blatant in the university classroom. Computer math student Claudia Zovatto says a professor once announced, "These questions will separate the men from the women." Embarrassed by his sexist comment, he then apologized and tried to explain that he meant it will separate the students from the non-students.

Kalyniak says young women also find math dull in high school and even in first-year university. "You have to go through a lot of



Will this young lady have legitimate career choices?

"some parents still push children into educational based on sexual, traditional lines"

stuff that is boring before you have the mathematical tools to get to the interesting stuff."

Math student Kelly Adams says a lot of people have math phobia. She tutors a grade 13 student, who often declares she cannot do a problem before tackling it. "You have to work at it," Adams says.

In Ontario, high school students have the option in grade nine to drop math. Many girls do, closing down their career options. Klodawsky suggests the way math is taught is partially to blame.

"What has been emphasized in the past is the right end as opposed to relationality," she explains. "Girls tend to be more interested in relationships than results."

If math could be taught with less emphasis on the final answer, she says it could attract more girls.

Cathy McCutcheon, a third-year math student, disagrees. "I used to do math in high school and just give the end result and they would mark me down for that," she says. "They're more interested in the steps."

Engineering professor Moyra McDill says some girls drop math because they're not as strong as they'd like to be in the subject. While dropping it may be the easy way out, it often prevents them from exploring many avenues in university.

McDill, the chair of the high school liaison committee for engineering, often goes to high schools to give talks about women in engineering. She says the talks, which are usually on career days, lets girls know engineering is a possibility.

Sixty female students in non-traditional subjects at Carleton, University of Ottawa

and Algonquin also visit high school classes to show girls that any career is possible. The program, called Pathmakers, tries to show girls that they need to support themselves economically.

Math student Kelly Adams, a Pathmaker, says they use graphic demonstrations to try to get their point across. They line up ten girls, telling four they will be divorced, one that she will never marry and another that her husband will die.

Cyril Garner, head of the Carleton math department, suggests having the program may establish a difference between boys and girls.

"Are we reinforcing these stereotypes?" he asks.

Carleton also offers one-week mini-courses in all subjects for high school students. Every May, boys and girls have the opportunity to get a taste of university studies.

Naomi Griffiths, a history professor who wrote a book about women's choices in the seventies called *Penelope's Web*, says the government should make it easier for girls who dropped math. She says the government should fund a program that would allow a different stream of entry into math, science and engineering programs.

But should the government push girls to enter the scientific world? Some people suggest that there are inherent differences between men and women and that women will always prefer arts over science.

"It's not that our minds can't apply themselves to things of that nature," explains sociology/psychology student Colleen Pellatt. "It's just that we view world problems not just looking for technological solutions but also looking for human solutions."

Aimie Paikera, a business student, agrees: "There are a lot of women who tend toward social sciences and things like that, dealing more with people because we're more people-oriented."

Griffiths says universities and the society have to ensure that "women are seen as normal as men," but adds, "I don't think women are the same as men."

On the job market, Ian Miller of Canada Employment, says it is possible that women, as a group, may prefer certain occupational areas, even when they understand they have equal opportunity to study any field.

Until the numbers of women in technological fields rise, the token women who do study science, math or engineering have an advantage in finding jobs. Kalyniak says in universities, women professors have an advantage in getting tenure because universities often fear accusations of sexual discrimination.

When Zovatto first enters an interview for a computer math-related job, she says the employer gives her an, "Oh, you're a girl," look. Then the interviewer asks her if she has to work harder than men in her classes.

"You do work a little harder," she says. "You're there to prove to some of the guys that you really do belong there."

"Pathmakers tries to show girls that they need to support themselves economically"

Some employers specifically want to hire women to prove they do not discriminate, Miller says. Because the number of female engineers is low, women have a better chance of landing a good job in their field.

But the number of women entering technical studies is increasing slowly. Ten years ago at Carleton, women formed five per cent of the engineering faculty; today, they make up eight per cent. In 1977-78, 32 per cent of science students were female; in 1987-88, the number is 34 per cent.

"It's a very slow process," Miller says. "It takes time. It won't change overnight." But, in time, it will.

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