

Women Embrace Computing in Mauritius

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INTRODUCTION

Studies like Camp (1997), Gurer and Camp (2002), Sigurdardóttir (2000), and Vegso (2005) have documented the declining percentage of women in computer science (CS) in the United States and other countries. While women are underrepresented in the United States overall, there are cultural pockets within the country that are exceptions to the rule. For example, Lopez and Shultze (2002) note that African-American women earned the majority of CS bachelor's degrees each year from 1989 through 1997 at historically black U.S. colleges and universities. Fisher and Margolis (2002) and Frieze and Blum (2002) report some success in increasing the percentage of women studying computing at Carnegie-Mellon. Camp, Miller, and Davies (2001) point out that the problem is significantly worse for CS departments housed in a school of engineering compared to those housed in a school of arts and sciences, a phenomenon dubbed "the school of engineering effect." So while women are on average underrepresented in CS in the United States, such national averages can hide significant variance within a country's subcultures.

Outside the United States, Schinzel (1999) notes that the situation in Anglo-Saxon, Scandinavian, and German-speaking countries (ASGs) is similar to that in the United States, but female representation in CS is comparatively constant and high (45-50%) in Greece, Turkey, and the Romanic countries (e.g., France, Italy). Schinzel's data are fragmentary, but they offer intriguing hints that culture plays an

important role in encouraging or discouraging women from studying CS.

These and reports like Galpin (2002) indicate that there are non-ASG countries where women are equally represented in CS. This in turn suggests that the problem is one of culture: ASG cultures apparently in some way discourage women from choosing IT-related careers, while the cultures of these other countries apparently encourage women to do so. If the root of the problem is the culture in the ASG countries, then that is where we should focus our efforts.

What is it about the culture of the United States and other ASG countries that discourages women from studying CS? Trying to analyze the negative cultural factors from within an ASG country is rather like a fish trying to analyze the water in which it is swimming. A preferable approach is to become a "fish out of water" and visit a non-ASG country where women are studying CS. By identifying those cultural differences in non-ASG countries that are leading women to study CS, we can identify those aspects of ASG culture that are problematic.

In this article, we examine the country of Mauritius, a 25x40-mile island roughly 500 miles east of Madagascar that is home to 1.2 million people. Ethnically, its population is 68% Indo-Mauritian, 27% Creole-African, 3% Sino-Mauritian, and 2% Franco-Mauritian. Religiously, its people are 52% Hindu, 28% Christian, 17% Muslim, and 3% other religions. With this dynamic mix of people, Mauritius is one of the world's most culturally diverse countries.

BACKGROUND

Prior to 2001, the University of Mauritius (UoM) was the sole university in Mauritius, offering bachelor's and some graduate degrees to roughly 4,000 students. The university is free, and admittance is based solely on standardized entrance-exam scores. With roughly 1.2 million people in Mauritius, admission is extremely competitive and the admitted students are highly capable.

Applicants to UoM indicate the program they wish to study, plus alternatives should their first choices be full. Beginning with the top-scoring students on the entrance exam, students are matched to programs using their first choices unless that program is filled, in which case they are matched to their alternative choices. Admission is thus based on merit, plus supply and demand for particular programs; UoM has no special admissions policy to increase underrepresented groups.

UoM's Department of Computer Science and Engineering (CSE) provides the country's primary source of computing-related education. CSE offers bachelor's degrees similar to those of a U.S. technical university, and has periodically updated its programs and curriculum to reflect technological changes. Since 1990, it has offered the following programs.

- **1990-1997:** Bachelor of Technology in CSE (BT-CSE)
- **1997-2000:** Bachelor of Engineering in CSE (BE-CSE)
- **2000-Present:** Bachelor of Science in CSE (BS-CSE)

- **2000-Present:** Bachelor of Science in Information Systems (BS-IS)
- **2001-Present:** Bachelor of Science in CS and Multimedia (BS-CSM)

The BS-CSE and BS-IS programs are very similar to computer-science and information-systems programs in the United States. The BS-CSM blends traditional CS training with training in graphical design and multimedia applications. While the BT-CSE and BE-CSE are 4-year programs, the BS-CSE, BS-IS, and BS-CSM are all 3-year "UK style" bachelor's programs.

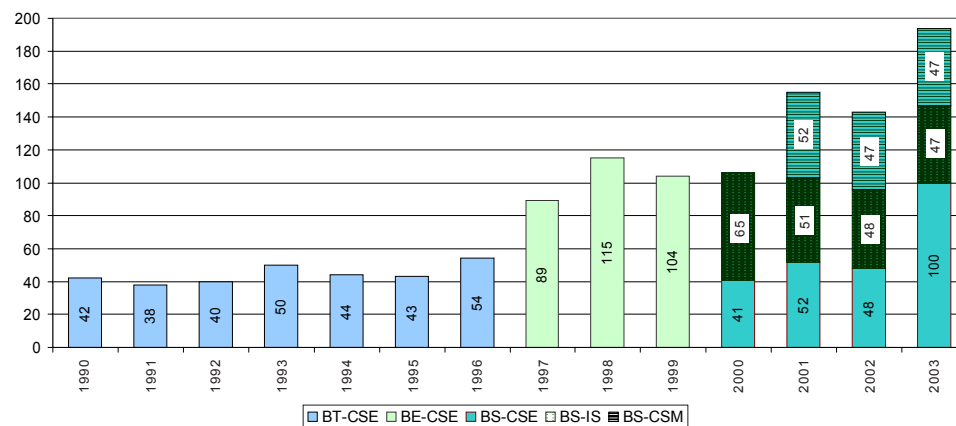
GENDER IN MAURITIUS

In this section, we explore the representation of women in the CSE department at UoM. More precisely, we present data showing the rates at which female students enroll in and graduate from CSE programs. These data show that the gender and IT situation in Mauritius is quite different from ASG countries. In an attempt to explain these differences, we conclude this section with some aspects of Mauritian culture that, in our opinion, are responsible for these differences.

Students Entering CSE Programs at UoM

Figure 1 presents the number of students enrolling in CSE programs each year.

Figure 1. First-year CSE students by program



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