



**Title:** Ethno-Linguistic and Gender Differences in High School Course Selection Patterns

**Authors:** Robert Sweet, Lakehead University; Maria Adamuti-Trache, University of Texas (Arlington); Bruce Garnett, School District 36 (Surrey)

**Contact:** [rasweet@lakeheadu.ca](mailto:rasweet@lakeheadu.ca)

**WP Number:** 13-04

**Research Question:**

Competence in high school math and science is a requirement for admission to valued post-secondary science, technology, engineering, and mathematics (STEM) programs. Choosing the appropriate combination of high school courses is an equally important prerequisite. The basic question addressed in the study is: Are there ethnic and gender differences in B.C. students' course selection patterns?

**Importance:**

Previous Canadian research indicates distinct gender and ethnic differences in post-secondary entry to STEM programs but has not adequately examined the link between high school preparation and successful entry to these programs. Using a large sample (n=44,365) provincial data set, this study analyzed ethnic and gender divisions in high school students' course selection patterns based on a detailed math and science curriculum typology.

**Research Findings:**

Course selection was predicted from ethnicity and gender factors taking into account students' home and school situations as well as their academic performance. Non-English speakers were more likely than English speakers to enroll in math, or physical and life science courses. More Chinese- and Korean speaking students enrolled in the math-sciences area, particularly in the physical sciences. Chinese students were also more likely than other groups to enroll in the life sciences. Males were more likely than females to enroll in non-sciences courses marking, perhaps, a shift in the stereotypical course choices of females. However, most female students who enrolled in the math-science area chose life science courses. Among females, Korean and Chinese speakers were more likely to enroll in the physical sciences.

**Implications:**

While STEM fields of study represent only some of the very many post-secondary pathways available to students, they offer an interesting intellectual experience and eventual employment possibilities in our evolving technological economy. Ethnic and gender differences in high school course planning and preparation for post-secondary education in STEM areas reflect individual or cultural preferences, but they also raise concerns of awareness and opportunity in course planning and preparation. Improved post-secondary accessibility for all students interested in STEM study requires support from both home and school in making appropriate course choices.