

SIMON FRASER UNIVERSITY

EDUCATION 367-4

**INTEGRATING ESL LEARNERS IN DIFFERENT SCHOOL SUBJECTS:
SCIENCE AND MATHEMATICS**

(D1.00)

(Cat. #33649)

Regular Summer Semester, 1993
(May 3–July 30)
Wednesday, 1:00–4:50 p.m.
Location: MPX 7500 Back

Instructor: Prof. Gloria Sampson
Office: MPX 8671
Phone: 291-4303

PREREQUISITES: 60 hours of credit.

AIMS

This course is for future teachers who have no training or interest in linguistics or language teaching methods, but who expect to have some learners of English as a second language (ESL) in their science and mathematics classes, K-12 and adult levels. It provides teachers with (a) an overview of the language patterns used in science and math textbooks, in problem-solving, and in cooperative group work in math and science; (b) a picture of how these language patterns are connected to mathematical and science thinking; and (c) a set of techniques for classroom use that help ESL students acquire both the appropriate language patterns for scientific thinking and the thinking processes themselves.

TOPICS

1. The sentence patterns of the math and science registers of English versus the sentence patterns in the humanities registers of English. How these different language registers were constructed and how they reflect different ways of thinking about the world.
2. The sentence patterns and thought processes used in cooperative small group math/science problem-solving.
3. Creating classroom tasks that have ESL learners practicing both language patterns and math/science thinking processes along with their English-speaking peers.

ASSIGNMENTS

1. Locating potential language problems in school textbooks for math and science.
2. Comparing how a native speaker of English and an ESL learner talk through and think through a problem-solving task.
3. Creating a progress file for ESL learners to promote cognitive self-instruction in the classroom and outside it.

Students in this course create assignments for whatever grade/age level they wish.

REQUIRED TEXTBOOKS

- Patricia Osborn. (1989). *How Grammar Works (A Self-Teaching Guide)*. Toronto: John Wiley & Sons, Inc. [A book for people who dislike grammar.]
- Rosalind Driver, Edith Guesne and Andrée Tiberghien. (1989). *Children's Ideas in Science*. Milton Keynes, England: Open University Press.
- Michael Cornelius and Alan Parr. (1991). *What's Your Game?* Cambridge University Press.
- Curriculum and Evaluation Standards for School Mathematics*. (1991). Reston, VA: NCTM.