

SIMON FRASER UNIVERSITY

Faculty of Education

Spring Semester, 1982

Ed. 487-4: Designs for Learning: Mathematics (Advanced)

Instructor: Prof. John Trivett

Office during course: MPX 8632

Office at home: 922-6683

Times: Thursdays, 4:30 - 8:30 PM
commencing January 14th, 1981

Office hours: Thursdays 1:00-3:00 PM
and by appointment

Place: MPX 8620a

Required Text: Trivett, J.V.And So On, Detselig Publishing Co., Calgary, Alberta

PREREQUISITES? → The prerequisite for this course is Ed. 475 - Designs for Learning: Maths or other courses, seminars and workshops about the 'subordination of teaching to learning' led by Profs. Dawson and Trivett. Or by permission after prior consultation with the instructor (922-6683).

FOR WHOM? → The course is intended for elementary and secondary teachers. It will be centered around real lessons with children of different grade levels.

ADVANCED? → 'Advanced' implies a far greater attention to and growth in theory and practice of classroom teaching than is normal in an introductory course of a radical nature. Participants will be expected to be involved seriously (but not solemnly) in the content and approach in their own schools, for they will most likely have already overcome many doubts and fears about the changes needed, both within their selves and in their teaching. Regular feedback of personal teaching and learning experiences will be a feature of the course.

THE APPROACH? → Briefly, and therefore probably misleading, the learning/teaching approach embraces assumptions about how children and adults learn generally and learn mathematics specifically. To mention a few:

1. Every learner has to accept responsibility for his own learning.
2. Only awareness is educable.
3. Everyone can learn mathematics, provided they mastered their first language by 5 years of age.
4. Actions, images, thought, processes, imagination and patterning are more important in learning mathematics than answers, algorithms and formulas.

(over)

5. All school mathematics can be mastered joyfully by a large majority of students in less time than commonly thought, with less energy and more integration with other subjects and aspects of life.
6. All this can, and indeed must, be practised within the present school system.

WRITING? →

In our meetings, relaxed, enjoyable discussions and practical work in learning will typify what we do. One on-going written account aimed at specific individual interest will be required from each student.

READING? →

A wholesale reading of books outlining other approaches and traditional research will not be requested. Rather we shall hope for a study of the few but increasing number of books that support this modern approach, as for example in Bateson's recent Mind and Nature, a Necessary Unity.

BEGINNINGS? →

If you wish to begin before January, I suggest the following:

- Bateson, G. Mind and Nature, E.P. Dutton, New York, 1979
- Gattegno, C. What We Owe Children-the Subordination of Teaching to Learning, Educational Solutions Inc., N.Y., 1974 (LB 1715 G3)
- " " The Common Sense of Teaching Mathematics, Ed. Sols., N.Y., 1973 (QA 135.5G34)
- Hofstadter, D.R. Gödel, Escher, Bach: an Eternal Golden Braid, Vintage Books, N.Y., 1980
- Trivett, J.V. Games Children Play-for learning Mathematics, Cuisenaire Company of America, New Rochelle, N.Y., 1976

Another valuable asset to bring to class on the first night is some written outline of how you personally teach mathematics and why you do what you do.

"WE MUST CONTINUOUSLY

LEARN TO UNLEARN

MUCH THAT WE HAVE LEARNED

AND

LEARN TO LEARN

THAT WHICH WE HAVE NOT BEEN TAUGHT!"

Andrew Feldmar
Vancouver, 1981