

S.I.T.E.

Summer Session, 1984 (July 3-27)

Instructor: Dr. Molly Watt

Mondays, Wednesdays, 1:00 - 6:50

Location: on campus

"Even the simplest turtle work can open new opportunities for sharpening one's thinking about thinking: Programming the turtle starts by making one reflect on how one does oneself what one would like the turtle to do."

Seymour Papert in Mindstorms

It is said that Logo is a language for learning. This course will have two parts:

- 1) Learning Logo through turtle explorations
- 2) Reflecting on the process of learning and the actual learnings

This is an in-depth immersion into Logo's mathland. It will function as a professional seminar. Class time will be divided between lecture/demonstration, hands-on computer time and class discussions. All are expected to contribute by participating fully, by sharing from their experiences, ideas, reading, bugs, experimentations and frustrations! Each will have an opportunity to present their work to the class for responses and extensions.

The purpose of this part of the course is to provide the participants an in-depth experience exploring the Logo microworld of turtle graphics. By simply "talking to the Logo turtle" at the computer, participants will be able to create Logo procedures and super-procedures. They will learn the ins and outs of using their workspace, the editor and disk filing. The lecture/demonstrations will present the powerful ideas embedded in the Logo language. People procedures, playing turtle, using variables, writing stop rules, making Logo procedure trees, planning top-down programs, understanding the total turtle trip, using recursion, developing debugging strategies and creating tool procedures are some of the topics scheduled. Others will emerge during the process of discovery.

Looking at classroom curriculum connections and the Logo teacher's role will be an ongoing theme of class discussions. Each participant will complete a programming project and create a classroom curriculum or in-service training unit for future use. Participants may be entirely new to Logo or experienced in using it.

What do people learn when they learn Logo? This question presents the central theme of the second aspect of the course, one we will approach from a variety of perspectives. MINDSTORMS, the primary sourcebook on the Logo philosophy by Seymour Papert, will be the starting point for discussion and investigation. There are many different kinds of learning involved in a Logo experience, for example, intuitive geometry, problem-solving strategies, modeling one's own learning, group collaboration on projects and computer literacy. How can we create learning environments in which those learnings can be realized as fully as possible? How can we determine what students are actually learning? How can we evaluate success? The instructor will share her own experience as one example of one person's learning.

The central work of the course will be a study by the participants of their own learning during the course. To document their learning, class members will keep a running journal of their experiences (at least two pages per day). A portion of the class discussion will be devoted to methods of assessing one's own learning and the learning of others. The final project will be a ten-page paper connecting the theory and practice of Logo to a specific plan for Logo teaching, teacher training, curriculum development, evaluation of learning outcomes, or educational research.

Those enrolled in the class should complete a preliminary reading of MINDSTORMS before it starts.

Required Text:

Mindstorms by Seymour Papert
Basic Books, N.Y., 1980

Suggested Texts:

Discovering Apple Logo by David Thornburg
Addison-Wesley, Ontario, 1983

Learning with Logo by Daniel Watt
Byte Books, Peterborough, NH, 1983

Logo for the Apple II by Harold Abelson
Byte Books, Peterborough, NH, 1982

Articles:

- 1) The Art of Teaching Logo or When and When Not to Bother the Learner by Mary Jo Moore, Hands on, Spring, 1983

- 2) The Comparison of Two Problem Solving Styles of Two Children Learning Logo by Daniel Watt, Creative Computing, Dec., 1979
- 3) Creating a Logo Environment by Tim Riordin, The Computing Teacher, Nov., 1982
- 4) De-Bug Collection by Molly Watt, inCider, Feb., 1984
- 5) In the Lap of the Machine by Robert Lawler, Boston Review, June, 1982
- 6) Logo Building Blocks by Molly Watt, inCider, Jan., 1984
- 7) Logo, What Makes it Exciting? by Daniel Watt, Popular Computing, August, 1983
- 8) What is Logo? by Molly Watt, Creative Computing, Oct, 1982

Also available will be the D.C. Heath k-8 Logo workbook series by Molly Watt and selected chapters in manuscript form Teaching with Logo by Molly Watt and Daniel Watt, Addison-Wesley, 1985

About the Instructor: Molly Watt, C.A.G.S.

Molly Watt teaches courses in Logo, and Introduction to Educational Computing at Keene State College. With Daniel Watt, she is co-author of TEACHING WITH LOGO, (Addison-Wesley, 1985) and has written a K-8 Logo Math Workbook Series to be published by D. C. Heath. A free-lance author, she writes a monthly "Question and Answer" column for TEACHING AND COMPUTING MAGAZINE, and is a regular contributor to a number of other national computer magazines. She is a member of the executive board of the New Hampshire Association for Computer Education Statewide and co-editor of the organization's newsletter. She is a senior consultant to the Quill Project, a curriculum linking computers with the teaching of writing. She was a teacher and school administrator in Massachusetts for more than twenty years. She is a co-founder of the Monadnock Area Logo Users Group.

C.A.G.S., B.S. in Education: Lesley College
M.A.: Antioch/Putney Graduate School of Education