

ENHANCING THE TEACHER AS AN EVALUATIVE RESOURCE

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GOALS

Mathematics is an enormously important skill. Our students can learn to use this skill in one-on-one learner-teacher situations. Technology is the one classroom resource that has increased over the last ten years. We must use that resource to efficiently simulate one-on-one learning situations.

- Evaluate the places where *computer mediated communications* can assist learner-teacher and learner-learner interaction/communication.
- Structure student-instructor electronic interactions to reduce the burden on the instructor, increase responsiveness to individual needs. Enhance the process for all.
- Don't replace the teacher, help the teacher work more effectively with the heterogeneous body of students. Teacher work is work with students.
- Provide incentive to create evaluative tools that can raise student initiative and faculty hope for teaching success. **INTERACTION PORTFOLIOS**, electronically formatted and archived essences of student-instructor interaction, provide the raw material for teachers to know their students. With these they can evaluate their students' progress over time.
- Use student-student interactions as a resource. Help teachers model their most effective methods so transparently our most successful students can use the same resources to help fellow students.

SUBJECT MATTER VISION

- Recognize that encouraging teacher success, without also encouraging vision, will persuade teachers to limit, rather than expand, their teaching concern territory.
- Encourage faculty to document subject matter vision that encompasses more expertise than one course.

For example, in *Mathematics*: Many dedicate their lives to improving first year calculus teaching. The material, however, by contrast to vector calculus has an advantage: engineers, physics people, chemistry people, math people, all agree what is its essence. That agreement disappears when you cross into the spatially oriented vector calculus. Especially difficult are how to entwine the necessary algebra and geometry thinking. The problem: 9th and 10th grade algebra texts have yet to show teachers how put the algebra and geometry modes of thinking together into one classroom. First year Calculus, in a practical sense, is mostly algebra. Failure to deal with this has meant an almost total wipe out of minority students who struggle to enter the *narrow gate* of scientific adventure.