Mathematics Department Assessment Plan fall 2011

Critical thinking in mathematics is involved in:

1) Translating a practical word problem and setting up the proper equation to solve the problem accurately. Does the solution reflects reasonable conclusions.
2) Problems with multiple answers one of which is the correct answer. Exams with multiple answers the student should evaluate all answers and pick the correct answer. A process that require critical thinking.
3) The math teachers are teaching the students how to solve word problems in all of math courses. The departmental final exams are multiple choice problems. From course to course we recognize improvement in critical thinking skills.
4) The department is in the process of evaluating the performance of the students in Math On Demand (MOD) method of teaching. MOD is a computer method of teaching that requires critical thinking skills.

There are three stages in mathematical problem solving

1) Concept: Understanding the context of the problem?
2) How to convert any story problem or numerical representation in to an equation?
3) Then if we have an equation how do we solve it, steps to solve the equation?

All of the above stages require critical thinking skills.

To improve critical thinking skills we are assigning more story problems in our classes as part of home work. They are also sprinkled across the math curriculum and they are also part of final comprehensive final exams.

In our classes we are dedicating time in reading and solving problem. Student's progress will be measured, how they have performed in final exams. We have data from previous semesters and if our present semester shows improvement in student's success, we will expand it. We are also tracking our students across math classes.

We are presently collecting data MOD (Math on Demand). Our success rate in math 099(regular) is 45%, we are trying improving it. If we see progress we will be implementing many new strategies.