

Problem-solving Outcome : stemplot of rubric scores

0														
1	0	0	5	5										
2	0	0	3	3	5	8								
3	0	5	5	5	5	5	8	8						
4	0	0	0	0	0	1	3	3	3	3	5	8		
5	0	0												

Mean 3.4 Standard deviation 1.1 n = 32
Quartiles: 1 2.4 3.6 4.2 5
22/32 = 69% proficient or better

Multiple Representations Outcome : stemplot of rubric scores

0	0													
1	5													
2	0	3	3	4	5	5	5	5	5	7	8			
3	0	0	5	5	5	5	5	5	5					
4	0	0	0	0	0	0	0	5	5	5				
5														

Mean 3.1 Standard deviation 1.0 n = 32
Quartiles: 0 2.5 3.5 4 4.5
19/32 = 59% proficient or better

Profile of the “average” Math 30 student based on rubric criteria and mean scores for each outcome:

Communication: Most of the work is neat and organized with answers supported by work shown. Explanations are usually given, but may at times be incomplete. If prompted, defines variables accurately and with appropriate specificity in most cases. Interprets slopes, intercepts, and solutions accurately, though some interpretations lack units.

Problem-Solving: Usually interprets problems correctly with occasional difficulty in understanding. At least 70% of the problems are worked correctly. Strategies are effective, but may not be efficient. Usually able to generate a model, but model may have minor errors. Usually able to use a model to answer a question, though some errors may affect accuracy. Limited and incomplete use of a general problem-solving process; for example, at times estimates are unreasonable, reasoning may be illogical, and does not consistently check answers.

Multiple Representations: Correctly interprets and uses information from tables and graphs in an attempt to answer a question, find an equation, etc. Constructs tables and graphs but organization, scale, or some other difficulty may impede finding a solution. Tables are labeled accurately. Graphs are accurately scaled and labeled. Interprets validity and limitations of tables and graphs though some interpretations lack precision or complete reasoning. Able to use technology to answer questions, though answers may be incomplete.

Closing the assessment loop: improving learning

1. The Teaching Community produced over 30 classroom activities during FA 04. Over the winter break Math 30 activities were edited to address areas of student difficulty highlighted in the assessment results. Specifically, we put a greater emphasis on
 - a. steps in the general problem-solving process (e.g. identifying given and extraneous info, paraphrasing the task, estimating, checking, etc.) and
 - b. fostering the critical thinking involved in generating useful graphs and tables (e.g. setting windows appropriate to a problem scenario).
2. The Math 30 Teaching Community will analyze the assessment results this semester and develop specific action plans. Since the learning experiences (activities) have already been edited to address the assessment results, instructors may choose to follow action plans developed by previous TCs, e.g. work on how to use the activities in class to promote student achievement --- the coaching principle --- or develop more CATs to assess student understanding after an activity and as an opportunity to incorporate review.
3. Small changes were made to the rubric and to the final exam questions.