

Assessment of Student Learning Using Oral Presentations.

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Overview

- Assessment concept and history
- Outcomes from first implementation
- Writing project mini-study
- Future plans for assessment

Assessment Concept History

- Initial Steps:
 - ✍ Discussion of program goals
 - ✍ Limited faculty buy-in RE assessment
 - ✍ Limited faculty enthusiasm for assessment models
- Breakthrough Concept: want students to be self-educating in mathematics
- Assessment model
 - ✍ Students study a math topic individually
 - ✍ Make an oral presentation
 - ✍ We judge their success in learning about the topic

Original Assessment Task

- Courses: Modern Algebra 2 & Analysis 2
- Students pick term projects
- In class presentations
- Teachers make on the spot assessments
- Videotape record later reviewed by committee
- Goal: formulate rubrics, then assess each student's presentation

Outcomes

- Majority of presentations did not support assessment of our target learning objective
- Technical problems with taping
- Simple rubric for classifying several types of presentation
- Judge both how appropriate the project was for our goals, as well as how well students performed on the target assessment task

Rubric

- ✍ ***Inappropriate Topic***: Project did not require independent learning of mathematics. Eg. Topic with historical focus
- ✍ ***Superficial Presentation***: Project did not allow us to tell how well student had learned new math. Eg. Power point style presentation.
- ✍ ***Satisfactory***: Project convinced us that student had successfully mastered new mathematics
- ✍ ***Unsatisfactory***: Project convinced us that student had not successfully mastered new mathematics

Results

Descriptor	Algebra	Analysis
<i>Inappropriate Topic</i>	3	2
<i>Superficial Presentation</i>	2	2
<i>Satisfactory</i>	3	4
<i>Unsatisfactory</i>	1	2
<i>Total</i>	9	100

Reactions

- Assessing this learning objective is tricky
- Ability to learn confounded with oral and/or written communication skills
- Communication skills also important
- Logistical concerns: carry out task within a course? Impact on grade? Impact on syllabus? Probe student understanding? Comfort level with video?
- Oral examination vs. oral presentation vs. written paper.

Written Paper Mini-Study

- Assigned to all students in Algebra 1, Fall 05
- Carefully formulated organizational and content standards (definitions, theorems, examples, ...)
- Model paper provided by instructor
- Topics carefully selected by instructor
- Editorial process: peer review of first and second draft, final draft submitted to instructor
- Copies of marked up drafts retained for future analysis of the editorial process

Preliminary Observations

- Overall, paper quality good to excellent
- Students did learn new mathematical ideas, applied these to prove new theorems, communicated effectively
- Editorial process shows little evidence of critical reading

Future Plans

- Repeat basic structure from first try
- Only assess in analysis
- Teacher will carefully select topics
- Three faculty will witness projects
- Four will review all tapes
- Results presented to faculty at large for discussion of interpretation and program implications

Open Issues

- How will we modify our program if we decide that students do *not* seem to be developing abilities as independent math learners?
- Do we want to revise the assessment activity?