Quality-Based Assessment: Experiences in Computer Science Education

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ABSTRACT:
One of the main concepts of quality-based assessment is to provide students with scoring rubrics to define expectations on assignments so that students are actively involved in self-assessment. Another feature of quality-based assessment is to guide the assessment of student work where there is a reduced number of outcomes, such as in the assessment of papers and projects. This poster shares experiences on incorporating some concepts from quality-based assessment in undergraduate and graduate courses offered in a computer science department. The quality-based assessment mechanisms discussed can be facilitated by course management tools in online-enhanced courses.

Quality-Based Assessment

- Faculty define expectations when assigning work
  - Expected/required features using checklists
  - Rated features using rubrics
- Students engage in self-assessment
- Process assesses rather than grades student work (reduced number of possible assessment outcomes)

Result	Assessment	Description
+	Exceeds Expectations	All YES's for the Expected Features plus at least a few +'s on Rated Features and no Δ
✓	Meets Expectations	All YES's for the Expected Features plus at most a few Δ's on Rated Features
Δ	Needs Improvement	If there are NO's on Expected Features or too many Δ's

Checklists

Use a checklist of expected features to clearly identify the expectations on an assignment.

Check	Description
✓	The assignment was submitted electronically by due date & time?
✓	The name appears as a comment in the beginning of the file?
✓	The program includes comments to document its purpose?
✓	Variable names are descriptive?

Rubrics guide the assessment of student work where there is a reduced number of outcomes, such as in the assessment of papers and projects.

Rubrics

On papers and projects, use the same scoring rubric to guide the assessment for self, peer, and instructor evaluation

Instructor

Self

Peer review provides the basis of a reflective, self-assessment

Peer

- Anonymous peer-review provides formative feedback to the student
- Facilitated by course-management tool
- Student must make a credible effort for peer-review deadline
- Student revises based on peer review before instructor evaluation

The use of the rubrics as an assessment form provides a direct correspondence between the expectations and the assessed score.

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