

Enhancing Scoring Reliability in Mid-Program Assessment of Design

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Abstract

For the past six years, faculty across Washington State have worked to define and measure design competencies for the first two years of engineering and engineering technology degree programs. A three part performance-based assessment to assess student design capabilities at the mid-program level was developed for this purpose. This paper presents a pilot reliability study designed to enhance the consistency of scoring the three-part assessment. Toward this end, three raters participated in a multi-step procedure which included initial scoring of student work, reconciliation of differences among raters, revision of scoring criteria, and the development of decision rules to deal with student work difficult to score within the existing scoring criteria. Intraclass correlation coefficients were computed before and after this process, showing marked improvement of inter-rater reliability. The revised scoring criteria and decision rules offer potential for faculty to produce reliable scores for student design performance on constructed response items and tasks, a prerequisite to sound program decision making.

Full Text Reference

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