Teaching Tip #1 for 2016: Creating a Rubric to Support and Evaluate Learning

Questions: What are some considerations to keep in mind when creating a rubric?

Key Words: Rubrics, Outcomes, Validity, Reliability, Utility

Scholarship of Teaching and Learning

Twenty years ago when rubrics first became a must-have item in education, just having a rubric was a goal. Recently, rubric quality has been much researched with validity, reliability, utility, and usability being topics of interest. In a research review of the use of rubrics in higher education, Jonsson and Svingby (2007) concluded that the scoring of student performance "can be enhanced by the use of rubrics. In relation to reliability issues, rubrics should be analytic, topic-specific, and complemented with exemplars and/or rater training." They also found that the research to date indicated that rubrics have the potential of promoting learning and improving instruction.

Validity is the extent to which a rubric measures what it is purported to measure (student learning/competency with the course, program, EES outcomes), while reliability is the extent to which the results from a rubric are consistent over time (intra-rater) and across different faculty (inter-rater). Utility is another measure of the quality of a rubric as faculty need to be able to use the rubric in a timely and efficient manner. Since rubrics are a learning tool, their pedagogical effectiveness must also be considered. The impact of positive and negative biases has led to blind marking being suggested. The development of a comprehensive validity test for rubrics such as Baartman, Bastiaens, Kirschner, and van der Vleuten's (2006) Wheel of Competency Assessment (See Appendix A) is underway.

Rubrics are tools to promote and evaluate the learning of associated outcomes. For this reason many rubrics are best created by a program team with pertinent sections used across multiple courses. In this way the terminology remains constant and students can become increasingly adept at striving towards the stated criteria. Dahm (2014) in a study of rubrics for engineering, found that "clarifying the expectations to the students in open-ended project-based courses likely leads to better performance." A comprehensive study by Furze, Gale, Black, Cochran and Jensen (2015) developed and tested a rubric to assess the clinical reasoning skills of healthcare students and evaluate their readiness to enter the clinical setting. One of the highlights that they found for both faculty and students was that the same rubric was used repeatedly in various courses which "allows students to explicitly view the developmental progression in their own reasoning process over time, as this tool was administered at the end of most semesters."

In order to positively impact learning, rubrics need to be written in clear language. Li and Lindsey (2015) suggest writing rubrics in simple, non-academic words as they found that what faculty "intended as referential language is frequently used as representational language, that is, language with multiple meanings and interpretations." For example, rather than writing a criteria as 'synthesis of cited articles' faculty could use clear language such as 'Ideas taken from sources were cited and combined logically and smoothly into the student's original

writing.' Their study also found that "a considerable number of students may not completely understand the focal points or keywords in the rubric even when they could recognize them as important elements. Concepts that may seem straightforward to the instructor may not necessarily be easy for students to understand." They suggest that faculty review the rubric in class using a sample assignment so that students can understand the criteria and standards in the rubric.

Bias can interfere with the mark even with a rubric. Faculty are known to be influenced by strong or weak writing skills. In a rubric study by Thaler, Kazemi, and Huscher (2009) there were some challenges with intra-rater (within the same rater) reliability. The authors suggested that "The possible halo effect of a strongly written paper might have interfered with the true quality of the manuscripts. It is difficult to ascertain whether a manuscript received a high score for demonstrating mastery of our learning outcomes, or merely for being well written. Conversely, it could be that instructors, raters, or both underestimated a poorly written paper and consequently assigned it lower scores in other content areas."

Suggestions and Innovations:

- Map the rubric criteria to your learning outcomes.
- When outcomes are common across a program's courses, work as a team to determine the best wording for rubric criteria.
- Test and iteratively revise the rubric.
- Provide an accessible, electronic copy of the rubric well in advance of the due date.
- Review the rubric in class in a norming session.
- Use blind marking whenever possible so you do not know whose work you are grading.
- Be careful not to let writing skills bias your marks in other criteria.

References (all available via our LRC)

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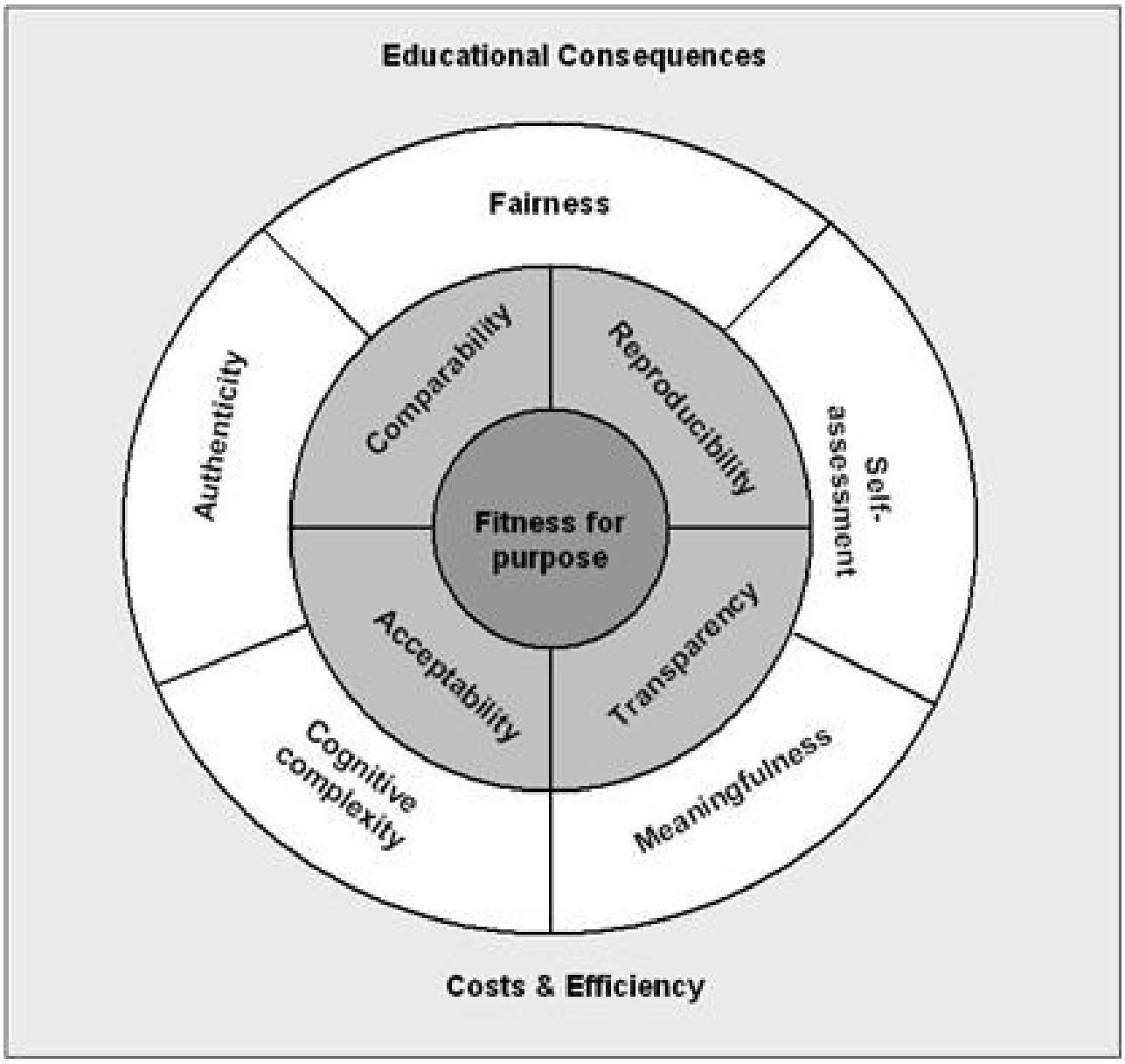
Appendix A: Wheel of Competency Assessment



Source: Baartman, L. K., Bastiaens, T. J., Kirschner, P. A., & van der Vleuten, C. P. (2006). The wheel of competency assessment: Presenting quality criteria for competency assessment programs. *Studies In Educational Evaluation*, *32*153-170. doi:10.1016/j.stueduc.2006.04.