The Learning Link

A forum for the discussion of teaching enhancement, provided by the UW-Madison Teaching Academy

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Helpful Tips for Creating Reliable and Valid Classroom Tests: Getting Started--The Test Blueprint

There is a great deal of effort that goes into developing and teaching a course: Doing all the background research and reading, preparing all course materials and lecture notes, training and helping TAs, and teaching to or working with students. So, it is quite likely that one

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will invest hundreds of hours helping students learn the subject matter in a course. Nevertheless, when it comes to preparing tests or other assessment materials, it is often the case that they are developed rather quickly. Accurately assessing how well students have mastered course material is both a science and an art. Not all methods of testing are equally capable of providing the same quality of information about students' mastery of the material. In this article, the first in a series on tips for improving classroom assessments, we focus on the test blueprint as a necessary first-step in the test development process.

The test blueprint identifies the objectives and skills that are to be measured as well as the relative weight on the test given to each. This device is perhaps the most overlooked aspect of test development. The development of a test should always begin with the specification of a test blueprint before any items are written. The objectives to be measured should collectively represent as much as possible what it is that you wish to measure. Each objective should be specific enough to allow you to write items that measure the particular skill of interest.

Getting Started--The Test Blueprint

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Test blueprints are essential because they help lay out specifically what is to be measured. In the absence of such a blueprint, development of a test can potentially proceed with little clear direction. The most likely result of this is a set of questions that were easy to develop rather than a set of questions that measure the content and skills that are important. Without a blueprint, certain objectives are likely to be over-represented on the test, while others might be under-represented. Some objectives, particularly those for which writing good items is difficult, may not appear on the test at all.

Test blueprints may be refined to include more detail than just a specification of the course objectives. As examples, it is often helpful to build into your blueprint some measure of the test difficulty, such as a percentage of easy, medium, or hard items for each objective. It is sometimes useful to identify the number of objective items (e.g., the number of multiple-choice or true-false items) versus the number of constructed response items (e.g., the number of short answer or show-your-work items). There are lots of ways to put a test blueprint together—the important thing is that the blueprint is the starting point for every test.

Finally, one must be mindful that the test specifications need not remain static. Pedagogy is not static and the specifications for each test need to be periodically reviewed and modified to reflect the current state of knowledge.

For tests to be effective, the development of those tests must be viewed as a process. The first step in that process is the development of a test blueprint. For the next article in this series, we will begin describing strategies for writing multiple-choice items that measure the objectives in the test blueprint.

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