Guiding Principles for the Assessment of Students' Learning

Based on a discussion paper developed by
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Effective assessment of learning is a complex, challenging and intellectually engaging experience – for teachers and learners. In part, the assessment process itself is inherently complex, and includes all of the ways we systematically provide learners with opportunities to demonstrate their learning with respect to clearly articulated outcomes, generate evidence of that learning, and receive feedback to enhance learning, before we make professional judgments about the extent to which learning outcomes are ultimately achieved (Boud, 2007; Fink, 2013; Wiggins, 1998). However, the impact of assessment goes well beyond determining the degree to which learning outcomes have been met (Biggs & Tang, 2011). Assessment shapes students' learning efforts, and the ways we engage learners in assessment "directs attention to what is important. It acts as an incentive for study. And it has a powerful effect on what students do and how they do it." (Boud & Falchikov, 2007, p. 3). Across contexts from contining education to undergraduate to graduate learning, assessment is an essential dimension of our learning experiences.

The integrity of professional judgments with respect to assessment is critical. The meaning and scope of "assessing student learning" have evolved as our understanding of how assessment practices can motivate and engage learners, and how reflection and feedback on these experiences can have a significant impact on learning (Brown & Race 2013; Fink, 2013; Weimer, 2013). In addition, the results are used by multiple stakeholders as evidence of achievement and potential, and influence future opportunities including access to advanced study, scholarships and awards, and employment (Walvoord & Anderson, 2011; Weimer, 2013). Fortunately, there are a number of well-established principles that can guide us in making plans for assessing student learning, regardless of the specific contexts of that learning.

Principles of Assessment

The scholarship surrounding assessment practices in postsecondary education reflects an established trend towards a learning-centered approach to assessing students' learning (Boud & Falchikov, 2006; Brown & Race, 2013; Kaslow, et al., 2007; Wiliam, 2011). Underlying effective approaches to assessment are evidence-based principles that provide a conceptual foundation for how effective assessment strategies enhance teaching practice and student learning (Ndoye & Parker, 2010). Many of these principles have evolved from practice and will resonate with effective teachers. A summary of the principles that underlie effective assessment practice provides an explicit framework that can guide the development of assessment procedures, clarify our thinking about meaningful assessment,

and generate discussion about assessment practices that best support student learning (Stowell, 2004).

The guiding principles outlined in Table 1 emerged from a comprehensive discussion paper (Lindstrom & Taylor, 2016) and provide a brief summary of ideas that inform effective assessment practices across disciplines. These principles are the "big ideas" that transcend specific assessment practices across disciplines and fields of study. They do not prescribe assessment practices in a particular context. What constitutes effective assessment practice in a specific context will depend on disciplinary cultures (Land, 2013; Trowler & Cooper, 2002): what kinds of assessment activities reflect the real work of that discipline? how is scholarship on a discipline demonstrated and expressed? what kinds of assessment practices are valued in the discipline? At a personal level, an instructor's beliefs about learning and the role of assessment in learning will also influence the assessment strategies implemented (Trowler & Cooper, 2002): is it important to strike a balance between formative and summative assessment? what assessment practices have been most effective in my own learning experiences? do students benefit from collaboration when learning a particular concept or process? can group work be effectively assessed? And, from a practical perspective, instructional context matters: what learning outcomes shape the learning and assessment experiences in a specific course? how many students make up the class? will some of the grading be done by graduate assistants (teaching)? are students working in a face-to-face, online or blended learning environment? how frequently is it reasonable to assess students' learning? how can assessment strategies be designed to protect academic integrity?

In such diverse contexts, guiding principles help us reflect on, critically assess, and have confidence in the effectiveness of a critical dimension of our students' learning experiences: how we assess their learning.

Table 1: Summary of major themes emerging from the scholarly literature related to assessment principles in postsecondary education.

Assessment Principle Themes	Translation into Practice
Conceptualizing Assessment	
Effective assessment requires a culture shift that moves away from focusing on evaluating student performance in isolation and to evaluating student learning as part of a comprehensive design to support student learning.[1]	Plan and distribute assessments to provide opportunities to practice application of knowledge and skills and integrate learning, and to allow students to receive feedback on their learning.
Assessment strategies are authentic in that they reflect the work of our disciplines and respect the integrity of epistemologies.[2]	Assessment tasks represent aspects of the actual work of our disciplines, adapted to the knowledge level of a particular group of learners. (e.g., provide text for analysis, case studies, data analysis, problem solving)
Assessment is a developmental and sustainable process that fosters self-regulated learning, academic integrity and the ability for students to be life-long learners.[3]	As part of selected assessment activities, integrate elements of reflection, self-assessment and goal setting, focusing on how students can use assessment results to influence future work.
Assessment is a continuous process that is embedded in the culture of the institution, and curriculum (at the program and course-level), as opposed to a course component meant solely to finalize a specific unit of student learning.[4]	Reflect on how assessment results can contribute to critical analyses that help identify bottlenecks or gaps to enhance a course or program learning experience.
Assessment should include discussion about the assessment process between students and teachers to foster a learning	Explain the rationale for the assessment strategies used and how the experiences of previous students have informed those choices.

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[1] Biggs & Tang, 2011; Boud & Associates (2010); Boud (2000); Brown (2004); Brown & Race (2013); Gibbs & Simpson (2004); Kaslow, et al. (2007); Wiliam, (2011).
[2] Brown, 2004; Brown & Race (2013); James, McInnes & Devlin (2002); Kaslow, et al. (2007).
[3] Boud (2000); Brown (2004); Brown & Race (2013); Kaslow, et al. (2007); Nicol (2007); Weimer (2013); Wilson & Scalise (2006).
[4] Brown (2004); James, McInnes & Devlin (2002); Ndoye & Parker (2010); Stassen (2012).

Assessment Principle Themes	Translation into Practice
partnership that can evolve based on student learning student feedback.[5]	Similarly, a strategy for reflection and debriefing on the results of an assessment activity can have a strong impact on both teaching and learning decisions.
There is a balance between summative and formative assessment processes and also some degree of separation between grades and feedback distribution.[6]	Not all assessment activities have to be graded. Short learning activities/questions (for individuals or groups) requiring a response can provide valuable practice opportunities and also feedback on students' levels of comprehension.
Assessment practice	
Fair assessment processes are transparent, providing students with clear expectations on what, how and why they are being assessed, and with quality information regarding their progress and status of their learning.[7]	Explain the rationale for assessment strategies used and how they are designed to support, as well as determine, learning. Explicitly describe the expectations for assessment tasks (e.g., provide a rubric or "marking guide" to help students understand the elements of, and expectations for, a task). Rubrics are particularly important in courses in which graduate assistants (teaching) assist with grading. They can also be used to guide specific feedback to students.
Assessment strategies are aligned with learning outcomes and instructional strategies.[8]	Engage students in learning activities and assessment strategies that connect transparently to learning outcomes. Learning activities provide opportunities to check understanding and receive feedback, and assessments provide further practice, as well determining the extent to which learning outcomes are achieved. E.g., if learning

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[5] Boud & Associates (2010); Laurillard (2002); Nicol (2010); Nicol & Macfarlane-Dick (2004).

[6] Boud (2000); Boud & Falchikov (2006); Brown & Race (2013); James, McInnes & Devlin (2002).

[7] Biggs & Tang, 2011; Brown & Race (2013); Evans (2013); Green & Andrade (2010); James, McInnes & Devlin (2002); Luth (2010); Nicol & Macfarlane-Dick (2004); Richardson & Coates (2014).

[8] Brown (2004); Brown & Race (2013); James, McInnes & Devlin (2002); Laurillard (2002); Luth (2010); Wilson & Scalise (2006).

Assessment Principle Themes	Translation into Practice
	outcomes include applying knowledge to solve problems or analyzing a particular genre of literature, then learning activities provide opportunities to practice these skills before summative assessment requiring these tasks takes place.
Assessment feedback is conceptualized as a 'feed-forward' approach: future-focused, action-oriented and used to improve student learning. Effective feedback is provided to students with an understanding that they can use it to improve future work.[9]	Focus feedback on what students should continue doing and how they can improve their future efforts. Some instructors ask students to choose an element of previous feedback and describe how they have addressed it in a future assignment.
Multiple opportunities for timely feedback on students' learning progress are provided throughout a course so students have sufficient time to practice, reflect on the results and incorporate previous feedback.[10]	Provide multiple and different opportunities (graded or ungraded) for students to demonstrate learning and to receive feedback. Feedback close to the assessment event has the greatest impact on learning. Assessments provide practice opportunities essential for learning.
Assessment is designed to motivate and foster student learning and confidence, rather than be solely a source of anxiety.[11]	Provide clear expectations about assessment activities and give students opportunities to practice, through learning activities, the kinds of tasks they will be asked to complete during assessment activities.
A variety of assessment methods are utilized with some level of student choice in order to maximize student engagement and involvement in the assessment process.[12]	Use different assessment strategies to build communication skills and to provide opportunities for students to demonstrate their learning in different ways. Offering students choice in topics or tasks, while still assessing the intended learning, motivates student effort.

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[9] Boud (2000); Boud & Falchikov (2006); Brown & Race (2013); Drew, Thorpe & Bannister (2002); Evans (2013); Gibbs & Simpson (2004); Luth (2010); Wiggins, (1998).
[10] Brown & Race (2013); Gibbs & Simpson (2004); Luth (2010).
[11] Brown & Race (2013); Drew, Thorpe & Bannister (2002); James, McInnes & Devlin (2002).
[12] Boud & Associates (2010); Evans (2013); Brown & Race (2013); Gibbs & Simpson (2004); James, McInnes & Devlin (2002); Richardson & Coates (2014).

Assessment Principle Themes	Translation into Practice
Ample opportunities are provided for students to self-assess, and reflect on their own work to enhance self-regulated learning.[13]	Integrate self-assessment in the assessment plan for a course (e.g., an analysis of how students prepared for an exam/wrote an essay and what they would do differently in the future) promotes engagement in learning and the development of independent learning.
Effective, reciprocal peer-assessment processes are premised on formative assessment principles to facilitate learning.[14]	Facilitate low-risk exchanges of respectful peer feedback, guided by a rubric or series of questions, to help feedback providers and receivers gain insights about the work under development.
Assessment processes and tasks reflect cultural and individual diversity.[15]	Where it is appropriate, create opportunities to either set assessment tasks in diverse relevant contexts or encourage students to integrate their personal perspectives. Tasks that integrate examples, or forms of expression that reflect their cultures or experiences, help build meaningful knowledge structures.
Support for Assessors	
Teachers recognize the importance of assessment and use assessment as a core element in planning instruction. Resources are invested to ensure that appropriate professional development opportunities are provided to academic staff and teaching assistants so they can gain the required expertise on assessment theory, strategies, and ways to effectively utilize assessment data.[16]	Seek out meaningful conversations with colleagues about assessment challenges and how to access resources to enhance discipline-appropriate assessment practices and course design support. Detailed guidance for graduate assistants (teaching) is essential to fair, consistent, learning-focused assessment experiences.

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[13] Boud (2000); Brown (2004); Evans (2013); Kaslow, et al. (2007); Luth (2010); Nicol, 2009; Nicol & Macfarlane-Dick (2004).

[14] Boud (2000); Boud & Falchikov (2006); Brown (2004); Brown & Race (2013); van den Berg, Admiraal, & Pilot (2006).

[15] Boud (2000); James, McInnes & Devlin (2002); Kaslow, et al. (2007).

[16] Boud & Associates (2010); Evans (2013); Havens (2012); Heinrichs, Berntosky & Danner (2015); Kaslow, et al. (2007).

Assessment Principle Themes	Translation into Practice
Teachers collect and use assessment data to inform the development of new assessment strategies and instructional interventions.[17]	Analyze and reflect on patterns of student success on assessments, and use the results to revise assessment tasks, or work with students to understand and correct misconceptions and focus on areas that need strengthening.
Institutional Support	
A consistent institution-wide grade scale system is clearly defined.[18]	Use the University's established grade scale, understand the meanings of those grade standards, and apply them consistently across individual programs and courses.
Post-secondary institutions strive to create a culture of assessment that entrenches assessment into policy frameworks, guides change processes, and increases overall organizational sustainability around supporting student learning.[19]	Universities are encouraged to create policies to support evidence-based decision making with respect to processes including curriculum development and review, and the recognition of teaching in faculty work.

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[17] Kaslow, et al. (2007); Stassen (2012).

[18] James, McInnes & Devlin (2002); Luth (2010).

[19] Heinrichs, Berntosky & Danner (2015); James, McInnes & Devlin (2002); Ndoye & Parker (2006); Stassen (2012).

Integrating assessment principles in practice

Given that assessment practices are "one of the most significant influences on students' experiences of higher education" (Boud, 2010, para. 3), it is critical that this statement of principles should not sit on a shelf and gather dust. To have an impact on students' learning, these principles need to be reflected in our everyday teaching, learning and administrative practices (Ndoye & Parker, 2010). Implementation does not have to be an "all or nothing" undertaking. While the principles identified do represent a comprehensive framework, individual principles will be transparently represented in the diverse assessment practices across disciplines. In other cases, these principles will help make the rationale for those practices more transparent – to teachers and to learners. In some contexts, a specific principle may suggest how an assessment strategy can be changed to make it more effective. Incremental changes designed to integrate individual principles can make a significant difference in students' learning experiences.

The challenge then becomes how we integrate these principles in conversations and decisions about course and program design, and in how we facilitate communication with and between students about their learning. Some of the strategies that have emerged in our discussions and that are in various stages of implementation include:

- Integrating the principles statement as a resource in curriculum review and course design program manuals and discussions.

- Explicitly incorporate specific principles in the annotated course outline template available through the Taylor Institute's Online Teaching Community.

- Employ a research assistant through the Taylor Institute to develop a dedicated, interactive webpage that will engage the university community in collaboratively building resources and examples from diverse disciplines to illustrate specific principles in action.

- Develop a plan/template for how each row of the principles statement can be elaborated to include disciplinary, class size/year-level applications, or signature pedagogies (e.g., case-based learning, laboratory learning, inquiry learning, community engaged learning).

- Make the principles statement available to the teaching and learning subcommittee of the Mental Health Strategy implementation team to inform their work.

- Develop strategies to increase students' knowledge of the principles statement and how they can use it to inform their conversations with and feedback to academic staff.

- Make the principles statement available to associate deans with responsibilities for teaching and learning for integration in their practice.

- Take advantage of regularly scheduled teaching and learning events or even short agenda items at meetings at the Faculty and departmental levels to integrate meaningful conversations with broader audiences about assessment of student learning.

As these principles become explicit points of reference in focused and intentional discussions about how we can engage in effective assessment practices at institutional, Faculty and local levels, further strategies for applying these principles to enhance assessment practices in specific contexts will emerge.

Why is implementing principles of assessment important?

As evidenced in Table 1, guiding principles for assessment of student learning emerge from a rich and diverse scholarship that is centred on improving student learning. Well-designed assessment principles, such as those identified above, align with a more learning-centered approach to teaching and learning (James, et al., 2002; Nicol, 2007; Wiliam, 2011) and "repositioning student assessment as a strategic tool for enhancing teaching and learning" (James, et al., 2002, p. 4) provides a vital platform for meaningful discussions with students about their learning. From a student perspective, assessment strategies define what it is they need to learn (Ramsden, 2003) and in terms of motivation, are "the engine that drives learning" (Brown & Race, 2013, p. 91). James et al. (2002) also assert that effective assessment practices foster academic integrity, as instances of plagiarism are minimized by carefully selected assessment tasks, transparency in assessment criteria, and avoiding ambiguous or unclear feedback. These principles are equally relevant at the continuing education, undergraduate and graduate levels.

While assessment practices do motivate and support learning, the integrity of the outcomes of assessment – often expressed as a grade – also demands carefully planned assessments. Students, and the many people who use grades as an indicator of student ability, trust our professional judgement about the extent to which learning outcomes are achieved. It is essential that the evidence on which we form those judgements is collected, interpreted, and communicated based on explicit and evidence-based guiding principles (Walvoord & Anderson, 2011).

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