

Guiding Principles for Assessment in Postsecondary Education:
An Evidence-based Approach

Gabrielle Lindstrom, PhD (c),
Research Assistant

and

Lynn Taylor, PhD
Vice-Provost (Teaching and Learning)

September , 2016

Guiding Principles for Meaningful Assessment of Students' Learning

Assessment is an essential dimension of our learning experiences. In addition to determining and certifying the degree to which learning outcomes have been met, 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). 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 (Fink, 2013; Weimer, 2013). Contemporary conceptions of assessment of student learning include 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). The integrity of these judgments is critical. 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 (Walwood & Anderson, 2011; Weimer, 2013). Effective assessment practice is an important, complex and intellectually engaging experience – for teachers and learners.

An examination of the guiding principles of assessment in a University of Calgary context is in keeping with the *Eyes High* vision and accompanying academic plan that is meant to act as a guide in aligning institutional activities and planning to realize the foundational commitment to “enrich the quality and breadth of learning” (University of Calgary, 2011a). The impetus for a focused and intentional dialogue on principles of assessment is guided by that deep commitment.

Some of the details in the academic plan were further influenced by the *Integrated Framework for Teaching and Learning* (University of Calgary, 2011b) which is premised on a central commitment to nurture student and faculty success in learning and teaching by fostering an intricate network of collaboration among diverse faculty experts from across disciplines. Notably, the document highlights the role of teaching as being the factor that has the biggest impact on

student success, and one that can be most successfully influenced by the institution (University of Calgary, 2011b). Moreover, the framework suggests the power of effective assessment in shaping pedagogy stating, “teacher expectation, as expressed through the tasks that are set and the feedback that is given, helps to determine whether the learning that occurs is deep or superficial” (University of Calgary, 2011b, p. 5). Even so, a notable silent area in current planning and policy documents is around an intentional and articulated commitment to a learning-focused approach to assessment. We are not alone, however, since universities commonly dedicate efforts to enable student success on teaching and learning activities, rather than on assessment reform (Boud, 2000; 2007; 2010, Nicol, 2004; 2007). This challenge is well-evidenced in the scholarship (Heinrichs, Berntosky & Danner; 2015; Kaslow, et al., 2007; Luth, 2010; Ndoye & Parker, 2010), and through this discussion paper, we endeavor to start a dialogue around research-informed assessment principles that can guide approaches to assessment in diverse contexts.

The scholarship surrounding assessment practices in postsecondary education is both diverse and broad in scope, and reflects a growing trend towards a learning-centered approach to assessing students’ learning (Boud & Falchikov, 2006; Kaslow, et al., 2007). Underlying effective assessment practices are the institutional principles that serve to provide a conceptual foundation for a mutual understanding, a shared definition of assessment, a strong expression of assessment expectations, and the use of results to enhance future teaching practice and student learning (Ndoye & Parker, 2010). Based on an in-depth literature review (Lindstrom, 2016), we draw upon recent scholarly literature to offer a focused and comprehensive overview of the guiding principles that underlie current assessment models and/or practices in post-secondary education, in order to inform the broader development of assessment principles at the University of Calgary. This discussion paper provides an overview of relevant topics that include:

- Why are university level principles of assessment important?
- What are the major themes that emerge from the principles that guide assessment in other postsecondary contexts?
- How are these guiding principles used?
- How can these themes be incorporated to enhance student learning at the University of Calgary?

Why are university-level principles of assessment important?

Praslova (2010) emphasizes that a culture shift is taking place in postsecondary education, one that places an institutional-focus on sustainable efforts to enhance student learning. Given the impact of assessment practices on learning, the implementation of evidence-based principles of student assessment is a high-potential lever in improving the overall quality of student learning (Heinrichs, Berntosky & Danner, 2015). However, Luth (2010) contends that principles of assessment are relevant only insofar as they are clearly articulated, implemented, monitored, evaluated and entrenched at the institutional level. Moreover, each principle should elicit wider discussion that ultimately forms the basis for how best to move forward with relevant assessment processes and practices in the contexts of individual programs and courses.

According to Boud and Associates (2010), universities are challenged to integrate research evidence on the centrality of assessment as “one of the most significant influences on students’ experiences of higher education” (para. 3). Moreover, guiding principles of assessment are important from a conceptual standpoint because, according to Ndoye and Parker (2010), “Creating an effective assessment system at the school, college or institutional level requires the articulation of a shared conceptual understanding, a common definition of assessment, and the clear expression of assessment expectations and the use of results” (p. 29). The articulation of principles of assessment in university education responds to a growing generalized sophistication of assessment evidenced in diverse strategies (e.g. peer assessment, self-assessment, portfolios) that arise out of the shift from outcomes-focused education to a student-learning centred focus, and a need to sustain a shared vision of assessment (Ndoye & Parker, 2010). Such principles of assessment serve as guides for establishing assessment procedures, clarifying thinking, and raising questions about institutional assessment practices that best support student learning (Stowell, 2004).

The call for a university-wide commitment to principles of assessment in no way diminishes the impact of the exemplary assessment practices of individual colleagues. However, envisioning, implementing and managing change in assessment practice “must be woven into the fabric of our institutions, rather than reliance on individuals operating in isolation” (Williams et al., 2013, p. 50). While both the practice of individual academic staff and the articulation of institutional

guidelines on assessment are necessary components of enhancing student learning, it is indeed the reciprocal “weaving” of principles and highly contextualized practices by individual teachers, programs of study and institutional policies that are necessary if change is to be successfully implemented (Simmons, 2016) and sustained (Kenny, Watson & Desmarais, 2016). Widespread shifts in assessment culture are buttressed by the combined efforts of networks of scholars working towards a common vision, and of leaders at all levels who work hard at “articulating a compelling vision; communicating the importance of making a shift; setting explicit guidelines for success; and providing appropriate financial, structural, strategic, and procedural resources” (Kenny et al., p. 88). To achieve this integration, principles of assessment must be considered and implemented by governing bodies, and reflected in administrative procedures and assessment practices throughout an institution. In other words, these principles should not sit on a shelf and gather dust. We must do something with them (Ndoye & Parker, 2010).

Principles of Assessment

The overview of principles of assessment summarized below emerged from a literature review conducted in 2016 using the following key phrases: assessment principles in higher education; post-secondary principles of assessment; assessment theory in higher education; and student-focused assessment in higher education. The search focused on articles that offered a conceptual and theoretical framework of assessment principles, that addressed both challenges and best practices in implementing assessment principles. Whenever possible, articles that focused on specific assessment strategies were excluded. The review revealed considerable overlap in assessment principles across institutional and disciplinary contexts. The major themes that emerged are summarized in Table 1.

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

Assessment Principle Themes	Sources
Conceptualizing Assessment	
Effective assessment requires a culture shift that moves away from evaluating student performance and to centering on supporting student learning.	Boud (2010); Boud (2000); Brown (2004); Gibbs & Simpson (2004); Kaslow, et al. (2007).
Assessment strategies are authentic in that they reflect the work of our disciplines and respect the integrity of epistemologies.	Brown, 2004; James, McInnes & Devlin (2002); Kaslow, et al. (2007).
Assessment is a developmental and sustainable process that fosters self-regulated learning, academic integrity and the ability for students to be life-long learners.	Boud (2000); Brown (2004) Kaslow, et al. (2007); Nicol, 2007; Weimer, 2013; Wilson & Scalise (2006).
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 component meant to finalize a specific area of student learning.	Brown (2004); James, McInnes & Devlin (2002); Ndoye & Parker (2006); Stassen (2012).
Assessment should include discussions between students and teachers about the assessment process that fosters a learning partnership and evolves based on student need.	Boud (2010); Laurillard (2002); Nicol (2010); Nicol & Macfarlane-Dick (2004).
There is both a balance between summative and formative assessment processes and some degree of separation between grades and feedback distribution.	Boud (2000); Boud & Falchikov (2006); James, McInnes & Devlin (2002).
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.	Evans (2013); Green & Andrade (2010); James, McInnes & Devlin (2002); Luth (2010); Nicol & Macfarlane-Dick (2004); Richardson & Coates (2014).
Assessment strategies are aligned with instructional strategies and learning outcomes.	Brown (2004); James, McInnes and Devlin (2002); Laurillard (2002); Luth (2010); Wilson & Scalise (2006).

Assessment Principle Themes	Sources
Assessment feedback is conceptualized as a ‘feed-forward’ approach which is 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.	Boud (2000); Boud & Falchikov (2006); Drew, Thorpe & Bannister (2002); Evans (2013); Gibbs & Simpson (2004); Luth (2010).
Multiple opportunities for 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.	Gibbs & Simpson (2004); Luth (2010).
Assessment is designed to motivate and foster student learning and confidence, rather than be solely a source of anxiety.	Drew, Thorpe & Bannister (2002); James, McInnes & Devlin (2002).
A variety of assessment methods are utilized with some of level of student choice in order to maximize student engagement and involvement in the assessment process.	Boud (2010); Evans (2013); Gibbs & Simpson (2004); James, McInnes & Devlin (2002); Richardson & Coates (2014).
Ample opportunities are provided for students to self-assess, and reflect on, their own work to enhance self-regulated learning.	Boud (2000); Brown (2004); Evans (2013); Kaslow, et al. (2007); Luth (2010); Nicol & Macfarlane-Dick (2004).
Effective, reciprocal peer-assessment processes are premised on formative assessment principles to facilitate learning.	Boud (2000); Boud & Falchikov (2006); Brown (2004); van den Berg, Admiraal, & Pilot (2006)
Assessment processes and tasks reflect cultural and individual diversity.	Boud (2000); James, McInnes & Devlin (2002); Kaslow, et al. (2007).
Support for Assessors	
Teachers recognize the importance of assessment and use assessment as a core element in planning instruction. Appropriate 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.	Boud (2010); Evans (2013); Havens (2012); Heinrichs, Berntosky & Danner (2015); Kaslow, et al. (2007).
Teachers collect and use assessment data to inform the development of new assessment strategies and instructional interventions.	Kaslow, et al. (2007); Stassen (2012).

Assessment Principle Themes	Sources
Institutional Support	
A consistent institution-wide grade scaling system is clearly defined.	James, McInnes & Devlin (2002); Luth (2010)
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.	Heinrichs, Berntosky & Danner (2015); James, McInnes & Devlin (2002); Ndoye & Parker (2006); Stassen (2012).

As evidenced in Table 1, guiding principles for assessment of student learning arise out of a rich and diverse scholarship that is centred on improving student learning. The findings from each source are elaborated in the literature review (Lindstrom, 2016), but several key findings are summarized below.

Enhancing teaching and learning. From a learning-centred perspective, Nicol and Macfarlane-Dick’s (2004) principles are important in assisting teachers to realign their assessment practices in order to be more responsive to the needs of their students. From an institutional perspective, Heinrichs, Berntosky and Danner’s (2015) principles respond to an increasing need for accountability and transparency in student grading and assessment. They suggest that “[I]nstitutions are looking for ways to implement successful approaches for assessment or the assurance of student learning to ensure it is taken seriously by faculty, and is integrated into the fabric or culture of the institution” (Heinrichs, Berntosky & Danner, 2015, p. 60). Importantly, this quotation demonstrates how assessment principles can work to recognize effective practices and mitigate the effects of ineffective assessment approaches across disciplines. In a similar vein, Boud’s (2010) seven assessment principles “can be used to focus debate and action on those features of assessment that have the greatest impact on learning and the quality of courses” (para. 25). Moreover, Boud’s (2000) suggestions for developing sustainable assessment are meant to contribute to formative assessment activities focused on student learning across the various levels in academic communities – from instructor, to program, to institutional policy. Additionally, James, McInnes and Devlin (2002) maintain that effective assessment is a way to

bridge teacher-student goals in that for teachers, assessment is often the last component to consider in curriculum planning, but students' first focus is on how they will be assessed. Thus, "repositioning student assessment as a strategic tool for enhancing teaching and learning" (James, et al., 2002, p. 4) becomes a vital and relevant endeavor because of the fact that it is so high-stakes. They further report that students "wish to see a clear relationship between lectures, tutorials, practical classes and subject resources" (Ibid, p. 3). Clearly, 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).

Fostering academic integrity. An interesting and important finding reported by James et al. (2002) is their assertion that instances of plagiarism are minimized through carefully selected assessment tasks, transparency in assessment criteria, and avoiding ambiguous or unclear feedback. In addition to the work of James et al. (2002), Nicol (2007) illuminates how formative assessment feedback reform, with a focus on learner self-regulation, can be a powerful and effective way of mitigating the factors that contribute to plagiarism and student failure. Nicol (2007) argues that plagiarism, in addition to a lack of clarity around assessment task expectations, is largely the result of lack of students' confidence in their ability to achieve a learning goal.

Developing skills for learning, work and life. Hunaiti et al. (2010) demonstrate how the implementation of research-based inquiry and assessing the learning associated with it can provide institutions with the means to improve student experience and better prepare learners for future careers. Additionally, students can learn to apply classroom knowledge to relevant problems that build on critical thinking skills. Similarly, Richardson and Coates (2014) suggest that the study of cross-cultural assessment that spans national borders is only in its emergent stages with current initiatives "focusing greater attention on the educational function of higher institutions but have not included the provision data on the outcomes of teaching and learning" (p. 826). Significantly, their work is relevant to university education because "In addition to meeting local demands, it is also vital that higher education institutions prepare student for careers and lives that are likely to involve them in a range of contexts, activities and

communities. And increasingly, many of these will be global” (Richardson & Coates, 2014, p. 833).

Levels of implementation and impact. As evidenced above, if guiding principles for assessment are to have an impact, they must be implemented and have synergistic effects at the level of individual teachers, programs and the institution, not unlike change in other dimensions of teaching and learning (Simmons, 2016; Williams et al., 2013). Because they serve as the framework for establishing institutional procedures around assessment, principles of assessment provide a blueprint for designing pedagogy and curriculum, and offer practical opportunities for students to acquire skills necessary to become life-long learners (Heinrichs, Berntosky & Danner, 2015; Kaslow, et al., 2007; Nicol & Macfarlane-Dick, 2004; Stowell, 2004). These principles include, but are not limited to:

- focus assessment on student learning;
- design assessment strategies that are authentic in that they reflect the work in the discipline
- capitalize on student self-assessment and peer-assessment;
- foster assessment practices that enhance self-regulated learning;
- engage in conversations between students and instructors about assessment processes that foster a learning partnership and evolves based on student need;
- conceptualize formative assessment practice as a ‘feed-forward’ approach which is action-oriented and used to improve student learning;
- align assessment with instructional strategies and learning outcomes;
- develop assessment processes and tasks that are sensitive to cultural and individual diversity
- utilize assessment data to inform future teaching and learning plans;
- implement an institution-wide grade scaling system;
- invest in professional development for faculty and teaching assistants around assessment;
- and,

- strive to create a culture of assessment that entrenches assessment in policy frameworks, guides change processes, and increases overall organizational sustainability around supporting student learning.

How are Principles of Assessment used in Postsecondary Education?

The literature review revealed that principles of assessment are used in a variety of ways in practice.

Developing teaching practice and course design

Tisani's (2008) examination of the underlying theoretical frameworks of educational assessment, although not considered principles of assessment, are useful in that they require us to take a more critical approach to examining our own assessment practices to identify areas for growth.

Brookhart (2004) illustrates how guiding principles of assessment will ultimately assist us to better organize assessment practice, identify effective practices, and allow us to effectively utilize information and empirical data to not only enhance students' educational experience but also to focus our individual and collective teaching goals and activities. Notably, Wiliam's (2011) discussion on assessment emphasizes the importance of acknowledging "that the use of assessment information to improve learning cannot be separated from the instructional system within which it is provided" (p. 4) and that a principles-guided examination of assessment practices is a compelling basis for strengthening the alignment of learning outcomes, learning activities and assessment strategies. Few experiences focus our attention on our plans for learning as sharply as when students are not successful on an assessment task.

Enhancing formative assessment

Nicol and Macfarlane-Dick (2004) argue that formative assessment can be a conduit for sharing educational objectives with students, measuring progress, and enabling "students to restructure their understanding" (para. 2) to increase skills and capabilities. Consequently, developing principles that guide effective feedback practices supports students in becoming self-regulated learners and raises awareness about the important "role of feedback on learners' motivational beliefs and self-esteem" (Nicol & Macfarlane-Dick, 2004. para. 3). From a more general

perspective, Nicol and Milligan's (2006) work on applying the seven principles of good feedback is important because it highlights the powerful association between self-regulated learning and assessment, and the fact that student's motivation to learn is constructed "on their appraisal of the teaching, learning and assessment context" (p. 8). Nicol (2009) provides an explicit demonstration of how principles of formative assessment are applied in authentic learning situations to increase retention rates and foster self-regulated learning in students. Moreover, the quality and frequency of feedback can often influence whether first-year students continue in their studies or drop out and can be an effective motivator in increasing students' abilities to self-regulate their learning:

"a key component of academic motivation and success is that students perceive themselves as agents of their own learning ... formative assessment practices must help them develop the skills needed to monitor, judge, and manage their learning. The ability to monitor, critically assess and correct one's own work is a key goal of HE [higher education] and lifelong learning" (Nicol, 2009, pp. 337-338).

Nicol (2010) demonstrates how underlying principles of assessment can transform formative assessment practices. Various research pathways are conceptualizing the role of students and teachers in feedback processes, thus, signaling a shift in assessment approaches and the principles and theories which underlie them. Significantly, students are being seen as active agents in the assessment of their learning – as co-assessors in their work rather than as passive receivers of assessment results (Nicol, 2010). Nicol (2010) further asserts, "For students to learn they must do something with transmitted information, analyse the messages, ask questions about it, discuss it with others, connect it with prior understanding and use this to change future actions" (p. 503). In other words, students' actions with regards to feedback may be more important to the quality of their learning than the actual quality and content of teachers' feedback comments.

Integrating principles and practice

The relationship between principles and practice is reciprocal. Green and Andrade (2010) point out that insights gleaned from critical examinations of specific assessment strategies can yield

guiding principles that serve to enhance student learning and create a model of assessment in university education that can be applied and modified across disciplines. Hunaiti and colleagues (2010) argue that although there have been many changes in teaching strategies and the theories that drive them, there has been little done to develop assessment approaches that would revolutionize students' learning experiences. Evidence-based principles of assessment can bridge this gap. Tam's (2014) review (developed out of an analysis of the scholarship on outcomes-based assessment and geared towards practitioners and assessment/curriculum designers in postsecondary education contexts) asserts that principles form the theoretical and empirical basis for assessment as a way to focus learning on a student-centred approach. The intellectual spaces between principles and practice are active places. Rowland (1999) would describe that space as hosting a three-way interaction among among the "personal" practice, the "public" principles, and a "shared" network of practice where ideas about principles and practice can be discussed and tested. This interaction is essential to improving both practice and the principles that guide it.

What Have We Learned?

In terms of what we have learned, it is clear that some of the principles of assessment are already widely reflected in individual teaching and learning practices. Specifically, James, McInnes and Devlin's (2002) principles are currently utilized to inform assessment in a course design program offered through the Taylor Institute for Teaching and Learning at the University of Calgary. Here, the principles are actively being used to inform pedagogical design and approaches (Nicol & Macfarlane-Dick, 2004). Green and Andrade's (2010) work encourages instructors to reflect on the alignment between authentic learning experiences in or across disciplines, assessment and course outcomes in order to gain a deeper appreciation for the challenges surrounding assessment. Notably, they illuminate that instruction and equity in learning opportunities are better enabled through the development of assessment principles that promote collaborative dialogue and healthy discussion around assessment beliefs, and highlighting the fact that assessment reform is a holistic endeavor involving multiple stakeholders. Dickson and Trembl's (2013) examination on teaching, learning, and assessment

processes serve as a starting point for comparing the impacts of pedagogical strategies. Notably, they highlight the fact that integrating assessment results with the impacts of teaching and learning can offer innovative developments in teaching strategies thereby enhancing students' learning. Moreover, dissemination of the results contributes to a literature base that instructors, SoTL practitioners and assessment practitioners rely on. For our purposes, their discussion on collaborative inquiry meant to integrate SoTL and assessment processes informs our understanding of how assessment is not an isolated endeavor exclusively shouldered by the instructor (Dickson & Treml, 2013). Instead, we need to focus our efforts to provide an open platform for collaboration so faculty can better determine the areas where course-based and program-based assessment can be integrated and inform the each other (Simmons, 2016; Kenny et al., 2016).

Significantly, instructors will be better able to plan assessment strategies that foster students' ability to self-assess with a clear understanding of the powerful influence assessment has on students' learning, and their overall university learning experience (Boud & Falchikov, 2006). When we integrate opportunities for students to assess their own work, they will better understand what constitutes good work. The use of exemplars is one way to achieve this in addition to implementing meaningful student self-assessment techniques.

We can use Nicol's (2007; 2010) examples to both strategize assessment practices, and consider creative ways to make our assessment processes more interactive. Additionally, we could begin a conversation around what it would mean to strategize our teaching activities in ways that have our students emulate the behavior of subject-matter experts. The suggestions provided by Boud (2000) offer opportunities for us to reflect deeply on our current understandings around assessment in order to make space for different ways of thinking about assessment practice in general. Additionally, we have learned that sustainable assessment is as much a way of thinking as it is a way of doing, recognizing that as educators we must teach the whole person with an understanding that our students do not learn in isolation from their past, present and future experiences. Boud (2000) challenges us to teach, and find sustainable ways of measuring the learning attached to these lessons, from a deeply human position that acknowledges the influence we have in contributing to a learning society.

From an institutional perspective, Ndoye and Parker (2010) provide important insights not only into the ways to create a culture of assessment, but also the role of students through building bridges of communication with student organizations to foster a culture of assessment. Likewise, Fuller et al.'s (2016) work is helpful when attempting to define and create a culture of assessment unique to our institution and reminds us that we must be aware of and consider factors that may impede the development of assessment culture. Underlying principles of equity and justice (Stowell, 2004) are important in better understanding our own institutional culture of assessment. Significantly, we must consider and accommodate a reality that there exists a great degree of judgment involved in setting standards of assessment and that assessment, in general, is inherently a value-laden activity. We can mitigate bias by examining and understanding the interplay between the social constructions of equity, justice, decision-making, student achievement and monitoring procedures (Fuller, et al., 2016). In the context of our own curriculum review practices at the University of Calgary, we are working towards aligning program and student outcomes through curriculum mapping – a practice recommended by Fuller et al. (2016). In doing so, we are presented with opportunities to reflect upon our own institutional values and the assumptions we make about student achievement. Our challenge is to determine what principles are useful for our purposes and move towards customizing established principles to support critical examination and fine-tuning of our own assessment practices.

Clearly, existing scholarship on the topic of guiding principles of student assessment at the university level identifies compelling topics for both individual consideration, and collaborative dialogue. We have provided an overview of what these assessment principles are, why and to whom they are important, and how we could use them to improve student learning experiences. Significantly, we identified a notable shift in the culture of university education in regards to evolving priorities in assessment practices - a culture shift that is now focused on supporting and improving student learning as opposed to simply measuring and evaluating performance. Additionally, we highlighted the prominence of assessment practices as a way to enhance students' learning and their university learning experiences. If, as an institution, we commit to making meaningful and effective assessment an intentional, well-articulated goal, we will derive a number of benefits. When common principles are entrenched in our planning documents and

embedded in our institutional culture, program goals, curriculum, and the minds of policy leaders and instructors alike, then we can better ensure that our students perceive the assessment process as an opportunity for further learning, rather than one that focuses primarily on anxiety and stress. This document is an invitation to further discussion about how individual teachers and programs can use clearly articulated assessment principles to inform the diverse practices that characterize the assessment of learning the University of Calgary.

References

- Black, P. & Wiliam, D. (1999). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7-74.
- Boud, D. (2007). Reframing assessment as if learning was important. In D. Boud & N. Falchikov, (Eds.). (2007). *Rethinking assessment in higher education: Learning for the longer term* (pp. 14-26). New York: Routledge.
- Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education*, 22(2), 151- 167.
- Boud, D. and Associates. (2010). Assessment 2020: Seven propositions for assessment reform in higher education. Sydney: Australian Learning Council. Retrieved from https://www.uts.edu.au/sites/default/files/Assessment-2020_propositions_final.pdf.
- Boud, D., & Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment & Evaluation in Higher Education*, 31(4), 399-413.
- Brookhart, S. M. (2004). Assessment theory for college classrooms. *New Directions for Teaching and Learning*, 100, 5-14.
- Brown, S. (2004). Assessment for learning. *Learning and Teaching in Higher Education*, 1, 81-89.
- de la Gonzalez, M., Jareno, F., & Lopez, R. (2015). Impact of students' behavior on continuous assessment in higher education. *Innovation: The European Journal of Social Science Research*, 28(4), 498-507.

- Dickson, K. L., & Treml, M. M. (2013). Using assessment and SoTL to enhance student learning. *New Directions for teaching and Learning*, 136, 7-16.
- Drew, S., Thorpe, L., & Bannister, P. (2002). Key skills computerised assessments guiding principles. *Assessment & Evaluation in Higher Education*, 27(2), 175-186.
- Evans, C. (2013). Making sense of assessment feedback in higher education. *Review of Educational Research*, 83(1), 70-120, DOI: 10.3102/0034654312474350.
- Fuller, M. B., Skidmore, S. T., Bustamante, R. M, & Holzweiss, P. C. (2016). Empirically exploring higher education cultures of assessment. *The Review of Higher Education*, 39(3), 395-429.
- Garrison, R. D., & Vaughan N. D. (2010). Blended learning in higher education: Framework, principles, and guidelines. *The Quarterly Review of Distance Education* 11(4), 285-287.
- Gibbs, G., & Simpson, C. (2004). Conditions under which assessment supports students' learning. *Learning and Teaching in Higher Education*, 1, 3-31.
- Green, B. A., & Andrade, M. S. (2010). Guiding principles for language assessment reform: A model for collaboration. *Journal of English for Academic Purposes*, 9, 322-334. DOI: 10.1016/j.jeap.2010.06.003.
- Havens (2013). Give assessment a fighting chance. *Chronicle of Higher Education*. Retrieved from <http://chronicle.com>.
- Heinrichs, S., Bernotsky, R. L., & Danner, L. R. (2015). Guiding principles to impact an institution-wide assessment initiative. *Research & Practice in Assessment*, 10, 60-64.
- Hunaiti, Z., Grimaldi, S., Goven, D., Mootanah, R., & Martin, L. (2010). Principles of assessment for project and research based learning. *International Journal of Educational Management*, 24(3), 189-203.
- James, R., McInnis, C., & Devlin, M. (2002). Core principles effective assessment. Retrieved from

<http://learnline.cdu.edu.au/commonunits/documents/Core%20principles%20of%20effective%20assessment.pdf>.

- Kaslow, N. J., Beneau, M. J., Lichtenberg, J. W., Portnoy, S. M., Rubin, N. J., Leigh, I. W., Nelson, P. D., & Smith, I. L. (2007). Guiding principles and recommendations for the assessment of competence. *Professional Psychology: Research and Practice*, 38(5), 441-451.
- Kenny, N., Watson, G. P. L. and Desmarais, S. (2016), Building sustained action: Supporting an institutional practice of SoTL at the University of Guelph. *New Directions for Teaching and Learning*, 146, 87–94. doi:10.1002/tl.20191.
- Kirkpatrick, D. L. (1976). Evaluation of training. In R. L. Craig (Ed.), *Training and development handbook: A guide to human resource development*, 2nd ed., 301-319. New York: McGraw-Hill.
- Lauillard, D. (2002). *Rethinking university teaching: A framework for the effective use of learning technologies*. London: Routledge Falmer.
- Luth, R. W. (2010). Assessment and grading at the University of Alberta: Policies, practices, and possibilities. A report to the Provost and the University. Edmonton, AB.: University of Alberta.
- McCready, T. (2007). Portfolios and the assessment of competence in nursing: A literature review. *International Journal of Nursing Studies*, 44(1), 143-151.
doi:10.1016/j.ijnurstu.2006.01.013
- Nicol, D. (2010). From monologue to dialogue: Improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education*, 35(5), 501-517. DOI: 10.1080/02602931003786559.
- . (2009). Assessment for learner self-regulation: Enhancing achievement in the first year using learning technologies. *Assessment & Evaluation in Higher Education*, 34(3), 335-352. DOI: 10.1080/02602930802255139.

- . (2007). Laying a foundation for lifelong learning: Case studies of e-assessment in large 1st - year classes. *British Journal of Educational Technology*, 38(4), 668-678. DOI: 10.1111/j.1467-8535.2006.00657.x.
- . (2007). E-assessment by design: Using multiple-choice tests to good effect. *Journal of Further and Higher Education*, 31(1), 53-64. DOI: 10.1080/03098770601167922.
- Nicol, D., Macfarlane-Dick, D. (2004). Re-thinking formative assessment in HE: A theoretical model and seven principles of good feedback practice. Retrieved from <http://www.enhancementthemes.ac.uk/docs/workshop/rethinking-formative-assessment-a-theoretical-model-and-seven-principles-of-good-feedback-practice-paper.pdf?sfvrsn=24>.
- Nicol, D., & Milligan, C. (2006). Rethinking technology-supported practises in relation to the seven principles of good feedback practice. In C. Bryan and K. Clegg (Eds.), *Innovative assessment in higher education*. London: Taylor and Francis Group, Ltd.
- Ndoye, A., & Parker, M. A. (2010). Creating and sustaining a culture of assessment.
- Praslova, L. (2010). Adaptation of Kirkpatrick's four level model of training criteria to assessment of learning outcomes and program evaluation in higher education. *Educational Assessment, Evaluation and Accountability*, 22, 215-225. DOI: 10.1007/s11092-010-9098-7.
- Poirier, T. & Behnin, E. (2014). Where and How to Search for Evidence in the Education Literature: The WHEEL. *American Journal of Pharmaceutical Education*, 78(4). Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4028579/>.
- Richardson, S., & Coates, Hamish. (2014). Essential foundations for establishing cross-national higher education assessment. *Higher Education*, 68, 825-836.
- Rowland, S. (1999). The role of theory in a pedagogical model for lecturers in higher education. *Studies in Higher Education*, 24, 303-314.

- Simmons, N. (2016), Synthesizing SoTL institutional initiatives: Toward national impact. *New Directions for Teaching and Learning*, 146, 95–102. doi:10.1002/tl.20192.
- Star, C., & McDonald, J. (2007). Embedding successful pedagogical practices: Assessment strategies for a large, diverse, first year student cohort. *International Journal of Pedagogies and Learning*, 3(2), 18-30.
- Stassen, M. L. A. (2012). Accountable for what? *Journal of Assessment and Institutional Effectiveness*, 2(2), 137-142.
- Stowell, M. (2004). Equity, justice and standards: Assessment decision making in higher education. *Assessment & Evaluation in Higher Education*, 29(4), 495-510.
- Tam, M. (2014). Outcomes-based approach to quality assessment and curriculum improvement in higher education. *Quality Assurance in Education*, 22(2), 158-168. DOI: 10.1108/QAE-09-20110059.
- Taras, M. (2007). Assessment for learning: Understanding theory to improve practice. *Journal of Further and Higher Education*, 31(4), 363-371. DOI: 10.1080/03098770701625746.
- Tisani, N. (2008). Challenges in producing a portfolio for assessment: In search of underpinning educational theories. *Teaching in Higher Education*, 13(4), 549-557.
- University of Calgary. (2016). 2016 Comprehensive institutional plan: Prepared for the Government of Alberta. Calgary, AB.: University of Calgary.
- . (2012). Academic Plan. Calgary, AB.: University of Calgary.
- . (2011a). Eyes High: University of Calgary 2011 vision and strategy. Calgary, AB.: University of Calgary.
- . (2011b). Systemic, specialized and sustained: University of Calgary integrated framework for teaching and learning. Report and Recommendations of the Institutional Learning and Teaching Plan Task Force. Calgary, AB.: University of Calgary.
- van den Berg, I., Admiiral, W., & Pilot, A. (2006). Design principles and outcomes of peer assessment in higher education. *Studies in Higher Education*, 31(3), 341-356.

- Walvoord, B. E., & Anderson, V. J. (2011). *Effective grading: A tool for learning and assessment in college*. John Wiley & Sons.
- Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2nd ed.). San Francisco: Jossey Bass.
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.
- Wiggins, G. P. (1998). *Educative assessment: Designing assessments to inform and improve student performance* (Vol. 1). San Francisco, CA: Jossey-Bass.
- William, D. (2011). What is assessment for learning? *Studies in Education Evaluation*, 37, 3-14. DOI: 10.1016/j.stueduc.2011.03.001.
- Williams, A. L., Verwoord, R., Beery, T. A., Dalton, H., McKinnon, J., Strickland, K., Pace, J. & Poole, G. (2013). The power of social networks: A model for weaving the scholarship of teaching and learning into institutional culture. *Teaching and Learning Inquiry: The ISSOTL Journal*, 1(2), 49-62.
- Wilson, M., & Scalise, K. (2006). Assessment to improve learning in higher education: The BEAR Assessment system. *Higher Education*, 52, 635-663.
- Yakimowski, M. E., & Alfano, M. P. (2013). Can principles of “good practice in assessment” work within higher education? A case study of an interdepartmental assessment exchange project. *Journal of Assessment and Institutional Effectiveness*, 3(2), 77-105.
- Yorke, M. (2003). Formative assessment in higher education: Moves towards theory and the enhancement of pedagogic practice. *Higher Education*, 45, 477-501.