

USING ASSESSMENT TO CREATE 'LEARNABLE' MOMENTS: PAIRING FORMATIVE FEEDBACK WITH CORRECTIVE ACTION & REFLECTION

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Abstract

Feedback failure is a concern shared by many higher education instructors who report that they are unhappy with their assessment ROI (return on investment). They are devoting more and more hours each week to evaluating students' work and giving them feedback without a corresponding improvement in their progress. Research suggests that feedback which is not perceived as "helpful" (10) by students may actually inhibit their progress by adding an additional layer of frustration to their learning experiences. Judging the quality of students' work in a summative way and giving feedback at the same time results in the feedback being "backward looking." Because it arrives too late to affect the learning outcome, students tend to discount its value or even ignore it altogether (Gibbs and Simpson, 2004-5, 25). During this workshop, participants explored two ways to ensure that their feedback adds value to students' learning by: (1) developing action-oriented rubrics using John Hattie's three-question model (Hattie, 2009) and then (2) following up with guided, small group practice in their presence.

The presentation slides (with text) and full bibliography are available for downloading at <http://goo.gl/W6ZZ1c> and <http://goo.gl/468Zvp> respectively.

I.

In higher education, assessment seems to be something of an instructional black hole, 'sucking in' huge amounts of instructors' time, energy, and concern with little light in the form of improved student success escaping back into the learning environment. In 2004-5, Graham Gibbs and Claire Simpson conducted an extensive literature review to determine the value of assessment as it is commonly carried out in higher education. They found that that it is "enormously expensive [in terms of time and dollars invested], disliked by both teachers and students, and largely ineffective in supporting learning" (11). Despite that, assessment "has long been recognized as the single most influential factor in shaping what and how students in higher education choose to learn," swamping the effects of even the most innovative and engaging aspects of curriculum (Fostaty Young, 2005, 1-2).

If the amount and frequency of feedback are the assessment elements which most contribute to improved learner success, then UNBF students should be making good gains as a result of our instructors' efforts. Just under 50% of our faculty who teach at least one undergraduate course spend from 5 to 20 hours grading papers and exams in a typical week. Close to 40% devote from 5 to 30 hours

or more to providing other forms of written and oral feedback (FSSE Pilot, 2011). The majority of our students acknowledge that they are receiving feedback that is prompt (96% of first years and 98% of fourth years), detailed (89%, 95%), or formative (80%, 90%) (NSSE, 2012). Despite all this, it is not uncommon for UNBF instructors to say that their assessment ROI is exasperatingly low.

Clearly, then, there must be other factors at work here -- shortcomings which additional hours, a faster turnaround time, and more detailed comments on more frequent assignments will not remedy. During this workshop two issues were explored: (a) the extent to which students perceive feedback as "helpful" (Gibbs and Simpson, 10) and (b) the lack of instructor follow-up which permits feedback to be ignored with impunity (25). The big question I wanted participants to consider was whether students are not acting on the feedback they receive because they don't care or because they don't know how.

II.

Students crave guidance, but lacking what they perceive as clear direction, they "will work out for themselves ... what they think counts" (Gibbs and Simpson, 10). Unfortunately, they don't always get it right. There is a growing body of research revealing that students and instructors, often and unbeknownst to each other, have significantly different conceptions of fundamental academic success tasks. For instance, they commonly do not define 'participation' or 'active learning' in the same way (Fritschner, 2000) and may vary widely in their perception of what becoming 'knowledgeable' means (Gibbs and Simpson, 23-4). In his paper entitled *Seeing Eye to Eye?*, Huang states that when assessing undergrad and graduate students' competence in academic writing, teachers and learners generally agree on what skills are important but are far apart on whether and how much improvement is required. While the students surveyed for this study mostly believed their writing skills to be satisfactory, their instructors identified at least nine areas of serious deficiency (Huang, 2010).

This pattern of mismatch carries over into assessment as well. In the MacLellan study cited by Gibbs and Simpson, although most students reported that feedback only seldom helped them to understand, most instructors reported that they thought it frequently did. Half of the students said that feedback did not prompt discussion; nearly two-thirds of instructors believed the contrary (10). Giving helpful feedback has a greater impact on learners than anything else that higher education teachers do, but what 'helpful' means differs significantly depending on which side of the podium one finds oneself (Gibbs and Simpson, 10).

Instructors know what makes for strong work, but if feedback does not communicate that to students in ways *they* find helpful, it adds little value to their learning. This problem may arise because the criteria instructors have in mind are not always explicit even to themselves (Wolf and Stevens, 2007, 4) or because the feedback may not sufficiently deconstruct an instructor's "sophisticated level of knowledge and understanding" (Gibbs and Simpson, 22). "Many academic tasks make little sense to students" (21), so feedback that does not clarify for them what is expected, where they went wrong, and how to fix it may have the unintended negative consequence of training learners to discount its value or ignore it altogether (22-3).

Rubrics, an assessment tool with the potential to deliver action-oriented feedback, tend not to be widely used in higher education. I'd assumed this was because writing student-friendly criteria can be a very challenging and time-intensive, but Reddy and Andrade (2010) suggest another reason in their review of rubric use in higher education. Compared to students, instructors view rubrics as having quite a narrow purpose, making this assessment tool yet another example of the teacher/student perception mismatch mentioned earlier. Students rely on rubrics as roadmaps for "learning and achievement" (439). Instructors, on the other hand, employ them primarily to ensure more quick, objective, consistent, and accurate evaluation (439) or to "reduce arguments with students" (University of Illinois, 2012). This observation from Reddy and Andrade sheds some light on why many higher ed. rubrics do not appear to be written with the learners' needs in mind. They aren't.

III.

Before moving to a more learner-centric form of rubric writing, it is first helpful to understand the difference between 'evaluation' and 'assessment'. Interestingly, when I asked the workshop participants what, if any, distinction they make between these terms, most said they use them interchangeably. A few suggested that 'evaluation' involves giving some sort of feedback whereas 'assessment' refers to the instrument such as a quiz or test used to collect information on student progress. According to Penn State's Schreyer Institute for Teaching Excellence (2004-5), the definition of assessment is: "using information to improve learning." If what instructors do when marking and giving feedback does not enhance learner success, then they are engaging in evaluation but not in assessment.

As participants in this workshop discovered when asked to look at rubric samples from the learners' point of view, 'unhelpful' feedback comes in the form of:

- repetitive language and empty comments which do not sufficiently differentiate one performance level from the next,
- reliance on words which make sense to academic experts but not to novice learners,
- negatively framed descriptors which say only what was not present or not done, and
- comments which may be meant constructively but nevertheless carry the sting of disparaging criticism.

Such rubrics are antithetical to the goal of assessment. By compounding students' frustrations and anxieties, they put very real roadblocks in the way of improved performance.

How can rubrics be redesigned to become drivers of improved student success? John Hattie, a New Zealand researcher on a life-long quest to determine which teaching practices have the greatest effect on student achievement, has conducted a meta-analysis of more than 50 thousand studies involving more than 240 million students. He says learners should be able to use rubrics to answer three questions (Hattie, 2009).

<insert image 1 here>

However, providing better rubrics may still not be enough to generate the desired outcomes. Learning requires *significantly* changing brain structures (Wieman, 2011). All knowledge is encoded in neural networks in the brain (Zull, 2012). For new learning to occur, existing brain cells, known as neurons, in which prior learning is embodied must grow new branches and literally reach out to connect with each other (Zull, 2012). Repeated use of new learning makes it more accessible and durable by causing networks that fire together to become wired together (“Hebbian Theory,” 2013) into enhanced and strengthened pathways (Pliny-the-in-Between, 2011). If pre-existing learning is incorrect or ineffective, connections in that neural circuitry must be intentionally and decisively ‘pruned’ in order for it to be permanently let go.

In the context of a course, closing the learning gap that lies between what students bring with them on the first day of class and what they need to know and be able to do by the last requires a lot more than just adding or deleting bits of knowledge (Wieman, 2011). Some course goals and objectives students will be able to accomplish without little or no assistance. The rest fall into what is known as the ‘zone of proximal development’ (bcb704, 2012) or ZPD which varies across individuals and topics. What the learning outcomes in the ZPD have in common is that they cannot be mastered independently. For successful acquisition of these skills and concepts, students require ‘scaffolding’ -- instructor or peer guidance which shapes and buttresses learning and moves it forward (Wood, D, et al, 1976). Scaffolding may seem like handholding at first, but as supports are gradually but relentlessly withdrawn, the range of tasks the learner can manage correctly and without help increases.

According to Gibbs and Simpson, instructor follow-up checks and corrective activities are as important to the assessment process as providing feedback. The more generic and forward-looking such tasks are, the more transferable the learning will be (25). The ‘practice in your presence’ strategy experienced by participants during this workshop can be used engage students in actively addressing their deficits and consolidating their learning (12) in class where the instructor and their peers can nudge them in the right direction if they become stuck or mistakes become apparent.

In the case of improving a piece of work, for example, students might collaborate in small groups for fifteen or twenty minutes to revise a test answer or other short assignment. Their goal would be to produce one new response by blending the best of their individual attempts, incorporating the feedback they had received, and referring to exemplars provided in the course resources. An opportunity to boost the original grade could be offered as an incentive to participate. To qualify, the group rewrite would have to address all individuals’ deficiencies, and each student would also submit an individual reflection about how this was accomplished. Students who did not maintain their improvements in the next similar task would be flagged for additional corrective follow-up.

Using this kind of strategy in class makes it easier for students learn from the feedback they receive and more difficult for them to ignore its importance (25). As well, working with peers has documented benefits for learners (Crouch and Mazur, 2001). Having students create one revision as a

group can encourage them to draw on their individual strengths, as confirmed by the assessment information received in their rubrics, in order to help each other across their respective ZPDs. Thus, the process does not stall if the instructor cannot get to everyone, and it is possible to overhear enough of the general wayfinding and sensemaking to find out if one's feedback was well received, helpful, and action-oriented (Hattie, 2009).

IV.

Evaluating students and giving them feedback at the same time is referred to as assessment *of* learning. A summative judgment about the quality of students' work or learning is delivered, and the feedback, arriving after the final grade has been determined, is too late to motivate them to make the hoped-for changes (Gibbs and Simpson, 25). Assessment *for* learning, on the other hand, extends an instructor's ability to shape learning by giving students experiences designed to help them cross their zones of proximal development. When students' brains receive the active, corrective practice needed to grow highly branched and connected neural networks, the quality and durability of their learning improves. Using strategies such as pairing action-oriented feedback with guided practice in class can also foster a rapprochement of sorts between instructor and students. Students are not left to their own devices to figure out what their next steps should be. Instructors are able to see the impact of their feedback first hand. Creating opportunities for each 'side' to see the learning experience through the other's eyes is one way to begin resolving the perception mismatches that frustrate both good teaching and good learning.

References

- Assessment Team, Schreyer Institute for Teaching Excellence. (2004-5). *Educational assessment definitions* [PDF]. Penn State. Retrieved from http://assess.psu.edu/files/Ed_Definitions.pdf
- 'bcb704' (2012, April 04). Vygotsky's zone of proximal development. *YouTube*. Retrieved from <http://www.youtube.com/watch?v=0BX2ynEqLL4>
- Crouch, C., & Mazur, E. (2001, September). Peer Instruction: Ten years of experience and results. *American Journal of Physics*, 69(9), 970-977. doi: 10.1119/1.1374249
- Fostaty Young, S. (2005). Teaching, learning, and assessment in higher education: Using ICE to improve student learning. In *Proceedings of the Improving Student Learning Symposium* (Vol. 13, pp. 105-115). London, UK: Oxford Centre for Staff and Learning Development, Imperial College.
- Retrieved from http://www.queensu.ca/ctl/resources/topicspecific/assessment/ISL_paper.pdf

Fritschner, L. M. (2000). Inside the undergraduate college classroom: Faculty and students differ on the meaning of student participation. *The Journal of Higher Education*, 71(3), May-Jun., 342-362.

Retrieved from <http://www.jstor.org/stable/2649294>

Gibbs, G., & Simpson, C. (2004-5). Conditions under which assessment supports students' learning.

Learning and Teaching in Higher Education, (1), 3-31. Retrieved from

<http://www.itl.usyd.edu.au/assessmentresources/pdf/Gibbs%20and%20Simpson.pdf>

Hattie, J. (2009). *The black box of tertiary assessment* [PPT]. Auckland, NZ: Visible Learning Laboratories.

Retrieved from <http://goo.gl/HxYSCY>

Presentation for the Symposium on Tertiary Assessment and Higher Education Student

Outcomes: Policy, Practice, and Research

Hebbian theory. (2013, December 15). *Wikipedia*. Retrieved from

http://en.wikipedia.org/wiki/Hebbian_theory

Provides the source for the saying: "Cells that fire together, wire together."

Huang, L. (2010, October). Seeing eye to eye? The academic writing needs of graduate and

undergraduate students from students' and instructors' perspectives. *Sage Journals: Language*

Teaching Research, 14(4), 517-539. doi: 10.1177/1362168810375372

Kilfoil, D. (2011). *UNBF FSSE pilot: A typical week for a UNB prof* [PDF]. UNB.

Kilfoil, D. (2012). *UNBF NSSE engagement item frequency Distributions* [PDF]. UNB.

'Pliny-the-in-Between' (2011, November 7). You are what you glutamate; Basic Neuroscience part 2:

Plasticity and Pruning. *Pliny's Tangent Du Jour*. Retrieved from

<http://waywardskeptics.blogspot.ca/2011/07/you-are-what-you-glutamate-basic.html>

Reddy, Y. M., & Andrade, H. (2010, July). A review of rubric use in higher education. *Assessment &*

Evaluation in Higher Education, 35(4), 435-448. doi: 10.1080/02602930902862859

- University of Illinois at Urbana-Champaign. (2012). Rubrics. *National Institute for Learning Outcomes Assessment Toolkit*. Retrieved from <http://www.learningoutcomeassessment.org/Rubrics.htm>
- Wieman, C. (2011). *Measuring Impact in STEM Ed: Are they thinking like experts?* [PPT]. Course, Curriculum, and Laboratory Improvement Conference. Retrieved from http://ccliconference.org/files/2011/01/Wieman-CCLI_TUES-meeting.ppt
- Downloads automatically.
- Wolf, K., & Stevens, E. (2007). The role of rubrics in advancing and assessing student learning. *The Journal of Effective Teaching*, 7(1), 3-14. Retrieved from http://uncw.edu/cte/et/articles/vol7_1/Wolf.pdf
- Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Child Psychiatry*, 17, 89-100.
- Originated use of term 'scaffolding'.
- Zull, J. (2012.). *Plenary session: A brain-based model for human learning; application for educator*. Address presented at The 46th Annual International IATEFL Conference & Exhibition in UK, Glasgow. Retrieved from <http://iatefl.britishcouncil.org/2012/sessions/2012-03-23/plenary-session-james-e-zull>
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