METRICS

A Roadmap for Assessing Student Learning Using the New Framework for Information Literacy for Higher Education

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THE NEW FRAMEWORK

In the next several months, ACRL will likely approve a new and important document: the Framework for Information Literacy in Higher Education. This document is intended to replace the Standards for Information Literacy Competency Standards for Higher Education, a seminal publication that has guided information literacy instruction for well over a decade. Since 2012, the ACRL Information Literacy for Competency Standards for Higher Education Task Force has drafted and revised the new Framework document. This process has been very open, and as a result, has inspired academic librarians to engage in renewed reflection and conversation about the nature of information literacy and its instruction. At this writing, the Framework is still a work in progress. Multiple drafts have been circulated among librarians, feedback has been elicited, and the final revisions and submission to ACRL are expected to be completed in a few months.

Although the Framework is still a draft document, most librarians are beginning to consider how the new Framework and the anticipated "sunset" of the Standards will impact both their information literacy instruction and assessment efforts. The Task Force has acknowledged that the Framework is a significant change from the previous Standards. The Standards outline competencies, skills, and outcomes that students need to achieve in order to become information literate. In contrast, the Task Force has organized the new Framework around six frames, each centered on a "threshold concept" they determined to be an integral component of information literacy. For many librarians, threshold concepts are unfamiliar constructs, represent a different way of thinking about instruction and assessment, and require a concerted effort to integrate into practice.

IT'S ALL ABOUT THRESHOLD CONCEPTS

Threshold concepts are core tenets in a particular discipline that are transformative, irreversible, integrative, bounded, and potentially troublesome (Meyer & Land, 2006, 7–8). Threshold concepts are often given context by a profession; they are frequently explained as the concepts required to "think like" an economist, doctor, or mathematician (Meyer & Land, 2006, 23). They were originally posited by Meyer and Land during a coffee break conversation (Rhem, 2013). In this conversation, the two exchanged ideas about concepts that, when fully understood, change the way students see their discipline and perhaps themselves. Often these concepts are grasped over time and students have to pass through a "liminal" space, or "threshold," before arriving at an "aha" moment (Rhem, 2013). This notion caught on, and other educators have attempted to discern the threshold concepts central to their own areas of study. While some educators have suggested threshold concepts for a particular subject area, no disciplines have yet codified an agreed-upon list. Rather, most educators use the idea of threshold concepts as stimulus for conversing with colleagues or a way of reflecting on their own pedagogy. In information literacy circles, Townsend, Hofer, and Brunetti (2011) introduced the idea of threshold concepts, which the Framework Task Force has subsequently embraced. The Task Force's selection of threshold concepts as the central driver of the Standards revision process has been both lauded and questioned, at least in part because the term "threshold concept" is so new to many librarians.

WHERE DID THE OUTCOMES GO?

In the Framework, each of the six frames includes a threshold concept as well as "knowledge practices/abilities" and "dispositions" associated with that threshold concept. The Task Force clearly states that neither the knowledge practices/abilities nor the dispositions are intended to be used as learning outcomes. The omission of learning outcomes in the Framework may be due to three factors. First, the Task Force made a conscious decision to shift away from the format of the previous Standards document which included over a hundred statements formatted as learning outcomes. Second, the Task Force hoped to make outcomes the purview of librarians working in a local, campus context rather than provide them at a national, profession-wide level.

Third, Meyer and Land, originators of the threshold concept, have provided little guidance on ways to transform threshold concepts into outcomes. At first glance, Meyer and Land do not appear to support pedagogy or assessment based on learning outcomes. Land and Meyer (2010, 66) state, "A one-size-fits-all statement of intended learning outcomes will simply not work" because, they say, it's impossible to

adequately describe a learning goal to students who haven't yet achieved that goal. In an earlier work, Land, Cousin, Meyer, and Davis (2006) state that there are too many different end-points in learning to describe them using outcomes. They assert:

> The need for the learned to grasp threshold concepts in recursive movements means they cannot be tackled in an over-simplistically linear 'learning outcomes' model where sentences like 'by the end of the course the learner will be able to' undermine, and perhaps do not even explicitly recognise, the complexities of the transformation a learner undergoes. It is likely that any course requiring student engagement with threshold concepts and troublesome knowledge will entail considerable…post-liminal variation. Consideration of threshold concepts to some extent 'rattles the cage' of a linear approach to curriculum design that assumes standard and homogenised outcomes…We would argue…for the notion of learning as excursive, as a journey or excursion which will have intended direction and outcome but will also acknowledge (and indeed desire) that there will be deviation and unexpected outcome within the excursion; there will be digression and revising (recursion) and possible further points of departure and revised direction. (202)

Whether Meyer and Land believe that outcomes can't be communicated to students who haven't already achieved them or that it's too difficult to write outcomes that capture wide variation at the end point of student learning, they appear to discount a learning outcomes approach to threshold concept assessment. At the same time, Meyer and Land recognize a need for assessment. They write:

> If we were to promote a manifesto…to gain evidence of student understanding of threshold concepts as well as helping to promote that understanding, our desiderata would include…new modes of mapping, representing and forming estimations of students' conceptual formation…a rich feedback environment offered at the point of conceptual difficulty ('stuckness', the liminal state) as well as in the pre-, post- and subliminal states…a more nuanced discourse to clarify variation and experience and achievement through the various stages of the liminal journey…the possibility of an ontological (as well as conceptual) dimension of assessment…a more meaningful correspondence of students coming to terms with troublesome knowledge and transformation to patterns of grading…[a] simplif [ication] and optimis[ation of] assessment by focusing on threshold concepts as the jewels in the curriculum at programme level, where what are assessed are the key transformative dimensions of a learning programme…[and] a corresponding emphasis on helping students become aware of their learning in relations to threshold concepts. (2010, 76–77)

Based on their writings, one may conclude that the problems Meyer and Land have with learning outcomes are not insurmountable. In fact, threshold concepts are very well suited to learning outcomes assessment, as long as the assessments permit the use of authentic assessment approaches, provide useful feedback to students to help them over the "stuck places", emphasize individual variation in the journey that students travel to achieve them, recognize that learners may redefine their sense of self, link learning and grading in meaningful ways, organize programmatic assessment around transformational ideas, and support metacognition. Indeed, Meyer and Land provide a few examples of assessment approaches they believe align well with threshold concept assessment.

WHAT WOULD MEYER AND LAND DO?

Meyer and Land offer both broad and specific recommendations for the assessment of threshold concepts. In general, Meyer and Land emphasize the importance of developing a "third ear" (a term borrowed

from Ellsworth, 1997) or "learning to understand what the students do not understand" (200). They also provide several examples that are more complete, such as pre- and post-test items (Taylor, 2006, 96) and responses to open-ended pre- and post-question prompts (Shanahan & Meyer, 2006, 106). Although these examples take a "snapshot" approach, a strategy they caution against (2010, 62), both techniques are suggested as ways to gain "insight into the possible source of any associated learning difficulties that students may have in acquiring the concept" (Shanahan & Meyer, 2006, 112) and locate "students' articulation of a threshold concept within a troublesome framework…[and] track progression of their understanding of the concept over time" (Shanahan & Meyer, 2006, 113). Meyer and Land also raise concerns about assessments in which students engage in mimicry (2010, 73) or "produce the 'right' answer while retaining fundamental misconceptions" (2010, 62). In order to address these concerns, they recommend assessments that take a declarative approach, where students represent their knowledge. An example of this approach is concept mapping, which enables educators to "(a) discover what each student knows (rather than trying to anticipate it); (b) show what knowledge a student possesses, and illustrate how that knowledge is arranged in the student's mind; (c) move from traditional 'snapshot' testing which often focuses on isolated ideas rather than developmental thought or affective processes, and (d) recognise that some ideas may be resistant to change, but interrelationships with other ideas may be more fluid" (2010, 64). Land et al. also support "think aloud" assessments that help externalize learning processes (2010, 65) and encourage metacognition (2016, 201). Examples include "diarised forms of assessment, portfolios, logs, patchwork texts, sequential conceptual mappings…and blogs" (2010, 70). They hope that these assessment approaches will not only help identify the "stuck places" students encounter on the liminal journey to grasp a threshold concept but also help students begin to shift their sense of self from being students of a discipline to becoming practitioners of that discipline. While Meyer and Land's limited literature on the assessment of threshold concepts does not provide substantial, detailed guidance, it does demonstrate their belief that threshold concepts are assessable using approaches familiar to librarians.

OK, SO NOW WHAT?

Because the new Framework differs substantially from the Standards—in conceptual underpinnings, areas of emphasis, document structure, and level of detail—librarians intending to use the Framework to teach and assess information literacy frames may benefit from a roadmap to launch their efforts.

STEP 1—GET INSPIRED

While the proposed Framework is organized around six frames, each focusing on one threshold concept, the Task Force has stated that the list should not be considered exhaustive and that additional threshold concepts may be added in the future. ACRL reviews this type of document every five years, but librarians need not wait for a formal Framework review to adapt the threshold concepts for their campus environment. Indeed, librarians should feel comfortable adjusting and amending the Framework to suit their needs. For example, librarians could—through collaboration and conversation with colleagues, students, and other stakeholders—identify additional threshold concepts or merge existing ones. They may choose to expand beyond a strict threshold concept definition and add additional "big ideas" or "enduring understandings" (Wiggins & McTighe, 2005, 342) that are worth teaching and may better fit student needs. Librarians could also work with disciplinary faculty to identify threshold concepts in the disciplines, then seek opportunities to work together to teach those disciplinary threshold concepts, especially when they merge with information literacy, research, and critical thinking concepts. Essentially, librarians can use the Framework as