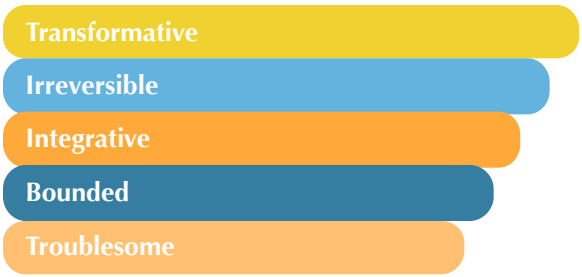
Threshold concepts & Information literacy



Teaching with Threshold Concepts

The Basics

> *"A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something."*[1]

Transformative
Causes the learner to experience a shift in perspective.

Irreversible
Once grasped, cannot be un-grasped.

Integrative
Unifies separate concepts/lessons/facts into a unified whole.

Bounded
May help define the boundaries of a particular discipline, are perhaps unique to the discipline

Troublesome
Often counter-intuitive, the place where students stumble or get stuck

Key Points

Provisional
Information literacy threshold concepts are not settled. The new ACRL Framework for Information Literacy, a recently completed Delphi study, and individual efforts from librarians continue an ongoing conversation about the big ideas of information literacy.

Disciplinary Lens
Though information science is an interdisciplinary area of inquiry, librarians share common ways of thinking and practicing. We can employ our subject expertise in analyzing our content for potential threshold concepts. Students are understood as potential disciplinary practitioners.

Shifting Information Landscape
Information no longer lives mostly in the library. It's out there roaming the wilds of the Internet. Self-published novels sit next to authoritative blog entries from the NYT, and Nature sits next to questionable academic journals produced by pharmaceutical companies. In this environment, how does the novice learner distinguish between the bad and the good or even just the relevant and the irrelevant? Librarians have to venture beyond the details of using particular databases and citation tools into the concepts that also make sense of information systems outside the library — out in the world where finding, using and creating information actually happens.

Assessing Threshold Concepts

> *"How might we get away from traditional assessment regimes in which a student can produce the 'right' answer while retaining fundamental misconceptions?"* [2]

Liminal Space
The liminal space is where the threshold initially comes into view. Learners often get stuck in this space, which is usually an uncomfortable place of confusion, both intellectual and affective. Learners approach the liminal space from different directions and with different levels of understanding. Some may move quickly through the liminal space and the threshold, others may take a while and require more guidance.

Seeing Movement through the Liminal Space
Assignments make external the internalized ontological and cognitive shifts that indicate an approach to and crossing of a learning threshold. But sometimes the rules of the game — the citation styles, the unfamiliar vocabulary in academic writing — can hide whether or not students understand the big, conceptual ideas. Meyer and Land suggest that one way to assess conceptual understanding is to produce informally structured assignments that can help us see whether students are engaging with the concept, and treat the rules of the game as a separate learning objective.

> *"A big idea is not necessarily vast in the sense of a vague phrase covering lots of content. (B)ig ideas are at the 'core' of the subject; they need to be uncovered; we have to dig deep. Ideas at the core of the subject (...) are the hard-won results of inquiry, ways of thinking and perceiving that are the province of the expert."*[3]

Proceed Slowly
You cannot rush a threshold concept. By nature, these are the concepts that students will need to revisit again and again before they can get across the threshold with the "aha" moment. Once they are across, they will likely need to revisit earlier material as they integrate formerly disparate facts with their new understanding.

Korey Brunetti, Amy R. Hofer, Silvia Lu & Lori Townsend

Proposed Threshold Concepts for Information Literacy

Authority
Authoritative evidence comes from sources that possess the expertise, experience, and relevant credentials to be considered trustworthy. However, those criteria are not constant across settings or situations; the disciplines have differing views of what constitutes evidence, and different situations give rise to different criteria for evaluation of authority, whether acknowledged or implicit. People create authoritative evidence as well: an information need may not be met by existing evidence that is available. Examining the characteristics of authoritative evidence in specific contexts illuminates the systems that grant authority, including their faults, along with considerations of when, where, and why these systems are used. Understood in this way, authority is a reflection of societal structures of power produced through established systems and institutions.

Format
Information is packaged in different formats because of how it was created and shared. Focusing on process de-emphasizes the increasingly irrelevant dichotomy between print and online sources by examining content creation in addition to how that content is delivered or experienced. While the relevance of the physical characteristics of various formats has waned with the increasing availability of digital information, understanding format in the context of the information cycle is still an essential part of evaluating information. Critical questions can be asked about content and how and why it was produced. Understanding who has access to publishing via different formats, and which voices are heard or silenced in different communication channels, reveals a great deal about power in societies.

Information commodities
The cost of information, academic or otherwise, is often obscured. Information may appear to be free because libraries negotiate subscriptions or interlibrary loans, institutional repositories and open access journals do not charge for their services, and a deluge of information is brought up by a web search. Yet costs are associated with information production, and revenue may be generated as a result of its use. Understanding these realities can encourage critical thinking and resistance around the implications of the commodification of information, such as issues of privacy, filter bubbles, net neutrality for web content, and personal data. Considering the financial relationships involved in information production, consumption, and dissemination allows for thoughtful choices about information sources and personal data while prompting questions about the economic and proprietary influences that impact information flow.

Information structures
Opening the hood on databases and search engines transforms them from mysterious boxes that magically produce good-enough information on command into systems that can be used precisely and efficiently. Information users leverage database features such as field searching, controlled vocabulary, and filtering to retrieve appropriate materials. Information creators organize information for inclusion in information systems, as well as design such systems, whether managing personal information or disseminating research data for re-use. Though information structures are highly dependent upon technology, the underlying principles of organization and classification are still largely about organizing knowledge, mediated by format. Because people structure information and the systems that contain it — and human knowledge is contested, negotiated and continually evolving — information structures often reflect economic, disciplinary, and social conventions rather than adhering to strictly logical principles of organization.

Research process
Identifying and articulating useful research questions requires an existing foundation of knowledge and is difficult intellectual work. Applying information to a problem, or using it as evidence in an argument, or for inspiration in a creative endeavor, requires that the researcher understand what will qualify as disciplinary evidence. This process of inquiry, research, and use is one of iterative inquiry, allowing for mistakes and correction of earlier misapprehensions. This process — from inquiry, to seeking out existing knowledge, to the selection of relevant information, to the development and testing of a thesis/hypothesis and subsequent analysis and synthesis of the results — results in the creation of new knowledge. Engaging in the information creation process is an extension of the thinking process, and therefore "research" may be understood as a broadly encompassing term though some forms of research may be more or less valued in academia.

Scholarly discourse
Information users and creators are part of an ongoing conversation in which new knowledge builds upon or refutes what has gone before, and in turn inspires others. Knowledge is negotiated through ongoing discourse and disseminated through the scholarly literature. In some cases, close study of existing conversations will lead to a new inquiry as a literature review reveals gaps in the conversation. In fact, scholarly discourse is most compelling when it is approached with a research question in mind. As an extension of scholarship as a conversation, scholarly conversation and knowledge creation take place in the context of a community that includes novices, apprentices, and experts. Communities uphold standards and exert influence on the content produced within those guidelines; communities may also resist new or dissenting understandings. Some communities may be difficult for certain populations to access, depending upon the expectations of the community, the cost of entry, or social barriers.

[1]Meyer, J. & Land, R. (2003). *Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practising within the Disciplines*. Enhancing Teaching-Learning Environments in Undergraduate Courses. Available at http://www.colorado.edu/ftep/documents/ETLreport4-1.pdf

[2] Land, R., & Meyer, J.H.F. (2006). Threshold concepts and troublesome knowledge (5): Dynamics of assessment. In J.H.F. Meyer & R. Land, (Eds.) *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 61-79). London: Routledge.

[3] Wiggins, G., & McTighe, J. (2005). Understanding by design. Alexandria, VA: ACD.

Korey Brunetti, Amy R. Hofer, Silvia Lu & Lori Townsend