Crafting the Perfect Blend: Student Cognitive Development Theory and Threshold Concepts for Student Success

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Now that the Association of College and Research Libraries (ACRL) Framework for Information Literacy in Higher Education is finalized and filed, many libraries are working to integrate the goals of the frames into their instruction programs. This paper intends to give readers the tools to do so by approaching the frames as a continuum of student learning across the undergraduate experience. Specifically, we will look at William Perry's theory on intellectual and ethical development and how it can help us teach framework concepts in a way that will help our students pass through information literacy thresholds.

The Framework

The ACRL framework (http://www.ala.org/acrl/standards/ilframework) in summary, consists of six interconnected concepts (frames) that are identified as central to information literacy. These frames were chosen as a result of an ongoing Delphi study (see: http://www.ilthresholdconcepts.com) as well as significant input from ACRL members and the academic library community Additionally, they are informed by the theory of threshold concepts which are defined as concepts within a discipline that when understood open up a new way of understanding or learning within that discipline (Association of College and Research Libraries, 2015). Thus, we can think of these frames as significant understandings to become information literate. The rationale behind the framework is to move the profession from a set of standards toward a vision of information literacy education that extends "throughout students' academic careers and as converging with other academic and social learning goals" (Association of College and Research Libraries, 2015, para. 5). Below are the six frames:

1. Authority is Constructed and Contextual
2. Information Creation as a Process
3. Information Has Value
4. Research as Inquiry
5. Scholarship as Conversation
6. Searching as Strategic Exploration

Instead of giving us a list of set standards that indicate what our students should be able to do, the framework gives us a list of important concepts that our students should be able to understand and apply. This shift gives libraries the flexibility to teach these concepts within the context of their student population, their institution and within a variety of different disciplines. It also, however, requires individual libraries and librarians to make these decisions and determine how to accomplish these tasks. This flexibility gives us significant freedom and significant challenges. A common starting place is the question, "how am I supposed to teach such a large concept (or multiple large concepts) in a one shot?" This paper argues that not only is this impossible, it is also not the point of thresholds. Instead, we need to think of the frames as concepts to be taught across the continuum of student learning. In order to teach across this continuum, we need to understand it. This paper proposes that William Perry's scheme of intellectual and ethical development can be our guide.

William Perry's Scheme of Ethical and Intellectual Development

William Perry's (1999) scheme of ethical and intellectual development gives us a framework to understand students' mental models of the world at different stages in their college careers. Perry's work explored how college students conceptualize and interact with truth, and knowledge and authorities. His findings are largely based on a study conducted in the 50's and 60's with undergraduate men from Harvard University, and a few women from Radcliffe. While his study used a relatively small sample, much of what Perry found has been replicated and expanded upon in later studies (See: Belenky, Clinchy, Goldberger, & Tarule, 1986; Magolda, 1992; King & Kitchener, 1994).

Perry identified nine positions through which most college students pass during their intellectual development. These nine positions are often grouped into four categories: dualism, multiplism, relativism, and commitment. These positions help us better understand how students see and interact with the world. Often we see students start college as dualists, and leave as relativists. Students often move into the commitment stage during their professional career or after college. It is also important to note that students can be at more than one stage at one time. For example, a student may be a dualist in a subject like math, and at the same time a multiplist in a subject like English.

Let's take a closer look at each of the four categories created from Perry's positions

Dualism

Students with a dualist mindset believe that everything can be known and authorities have the answers. In this position students see the world in absolutes. As a result, they believe that everything can be known and that information is either 100% right or wrong. Their position leads them to believe that authorities (e.g., teachers, professors, tutors) have the right answers and their role as learners is to passively absorb the teacher's knowledge.

Multiplism

Students with a multiplist mindset have shifted away from the dualist view of the world and now realize that there aren't absolute right and wrong answers to every question. Instead, they see a diversity of opinion and go to the other extreme by recognizing everyone's opinion as equally valid. This position is often manifested in rebellion or cynicism as students embrace the freedom to challenge ideas. However, it is important

to note that students at this stage may still want to earn good grades and though their attitude may be cynical, they will go through the motions of an assignment to ensure that the instructor is getting what he/she asked for in the assignment instructions.

Relativism

Students with a relativist mindset have learned to think critically, something that is challenging before this position. From this position, students have learned to analyze arguments using reason and evidence and recognize that authorities should be challenged when their arguments are faulty. Students in this position use logic to identify the strongest arguments and ideas. At first, this shift to relativism may happen only in the student's' major area of study because that is the area where students have had the opportunity to wrestle with and think through the challenging problems and questions of that field. However, those skills can later be applied to other disciplines. When students see the world from this position, the instructor's role is to model good thinking habits for students.

Commitment

Many times students reach the final of Perry's positions, commitment, after college. Students at this stage seek out a diversity of opinions and use that information to make a decision. From this position students exhibit a commitment to their own opinions, values, and interests. When making a decision students have learned to incorporate their own views, along with a careful, conscious consideration of alternatives while recognizing that they must remain open and that their views may change. It is from this position that students transition from learner to participant and often from student to professional.

Ideally, students progress through these stages throughout their college career. However, if students are challenged in a way that pushes too far or too quickly, their development may pause, they may retreat to an earlier position, or they may reject the idea all together. Take, for example, a student with a dualist mindset in terms of information literacy. That student may wait for the librarian to tell them what sources are right, or acceptable, and which are wrong, or unacceptable. With the right help and encouragement, this student may be able to progress toward a multiplist mindset. At this stage, because they likely view each source as equally valid, they seek sources that will fill the requirements of the assignment. Only then, with more help and encouragement, will they reach relativism, where students critically evaluate an information source based on need and context to determine whether or not the source is appropriate. If an instructor, or librarian, assigns a task to a dualist that is designed for a student with a relativist mindset, that task won't make sense because it does not align with how they see the world.

Better understanding of where students are positioned can help us construct meaningful learning experiences that encourage growth. However, in order to encourage growth it is important that we have a sense of from which position our students see the world. It would be easy to assume that all students enter college as dualists and leave in commitment, but unfortu-

nately it is not that easy. It is important to remember that a student's position is determined by the amount of time or energy that student has put into understanding that field of study. This means librarians may well encounter students who are relativists in their major area of study but are still dualists with regard to information literacy. Information literacy educators can make reasonable assumptions about students' progress through these positions by examining their prior experience with information literacy. If, for example, a student has had extensive information literacy instruction in either their major or through library instruction, it may be safe to assume that he or she has progressed beyond dualism.

Teaching the Framework

With an understanding of Perry's model, information literacy instructors can begin to think about how to teach our threshold concepts throughout the undergraduate experience. For example, let us look at how we can teach the concept of "scholarship as conversation" to students as they move along the continuum of learning. This concept is defined as: "communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations" (Association of College and Research Libraries, 2015).

This threshold concept can be overwhelming to think about teaching to our newest students. We know they do not have much experience with scholarship or information literacy in general, how do we teach them not only that this community exists, but also that there is a "sustained discourse" and "varied perspectives and interpretations?" This is a lot for a new student to take in and understand. However, Perry's model helps us break this concept down into the pieces that will help our students along the pathway to understanding and crossing this "threshold." For example, if we know our students are at the dualist level, we know they believe that there is "one right answer." Therefore, it is impossible for them to imagine that such a community could even exist. Thus, we know that we need to focus our lesson on that aspect of the concept, before going on to the characteristics of such a community. Below we have attempted to interpret this concept through the eyes of students at each cognitive stage.

Dualist:
Unaware that scholars are responding to one another's ideas through writing. In search of the one "ultimate expert" who holds all of the answers.

Multiplist:
Recognizes that sources respond to one another about a topic. Recognizes every voice in that conversation with equal weight and merit. In search of sources that fulfill assignment requirements.

Relativist:
Recognizes that sources respond to one another about a topic and that voices have different weight and merit. In search of sources that provide a better understanding of the conversation.

Commitment:
Absorbs the conversation and makes decisions based on all of the voices. In search of sources that provide a better understanding of the conversation.

Armed with an understanding of where our students are cognitively and how they might understand these core information literacy concepts, we can design learning activities that help move our students to the next cognitive level and therefore a step closer to passing an information literacy thresholds. Below is a rough example of a learning activity.

Learning Activity

*Threshold***:**
Scholarship as conversation

*Starting Level***:**
Dualist

*Activity Goal***:**
Help students understand that a scholarly community exists and that it has a conversation through writing.

*Learning Activity***:**
- Locate, before the class, four or so articles on the same topic in the same discipline from different time periods. Make sure some of the articles reference each other.

- Break students into small groups and give them each an article.

- Each group writes their article's author on the board.

- Then a group goes up and writes down five authors listed in their article's reference list. They draw lines between their article's author and the authors referenced.

- Then each subsequent group does this, but if the author is already listed on the board, they simply draw lines from their article's author to that author.

- This goes on until there is a web of authors on the board.

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The aim of this paper was not to give the reader all of the answers when it comes to implement the framework; that needs to be done at a local level and with local context. However, by using the cognitive development theories discussed, readers now have a structure to base their work. Implementing the framework may be more difficult than prescriptive standards of the past, but the flexibility allows us to think more authentically about our students and how to help them move along the continuum of student learning.

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