



Evidence-Based Instructional Design Strategies

DELIBERATIVE PRACTICE

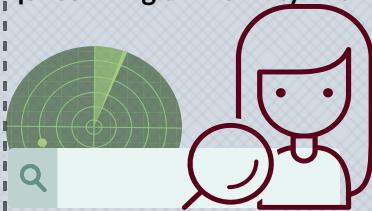
"I fear not the person who has practiced 10,000 kicks once, but I fear the person who has practiced one kick 10,000 times." - Bruce Lee

Overview Information literacy skills involve complex cognitive processes that require significant time and effort to master. Drawing on the 'deliberative practice' model of expertise development, librarians can implement evidence-based instructional practices for facilitating information literacy learning.

THE COGNITIVE COMPLEXITY OF INFORMATION LITERACY SKILL DEVELOPMENT

"Although students are often thought of as being competent or even expert in information problem solving [...] research reveals that solving information problems is for most students a major if not insurmountable cognitive challenge.

Many researchers have demonstrated that young children, teenagers, and adults are not capable of effectively choosing proper search terms, selecting the most relevant websites, and questioning the validity of sources.



Furthermore, research [...] revealed that students have difficulty defining the information problem and **do not know what they do not know.**

Students must learn to solve information-based problems and must learn transferable search and evaluation strategies."

Kirschner, P. A., & van Merriënboer, J. J. (2013). Do learners really know best? Urban legends in education. *Educational psychologist*, 48(3), 169-183.

Skill Development and Expertise

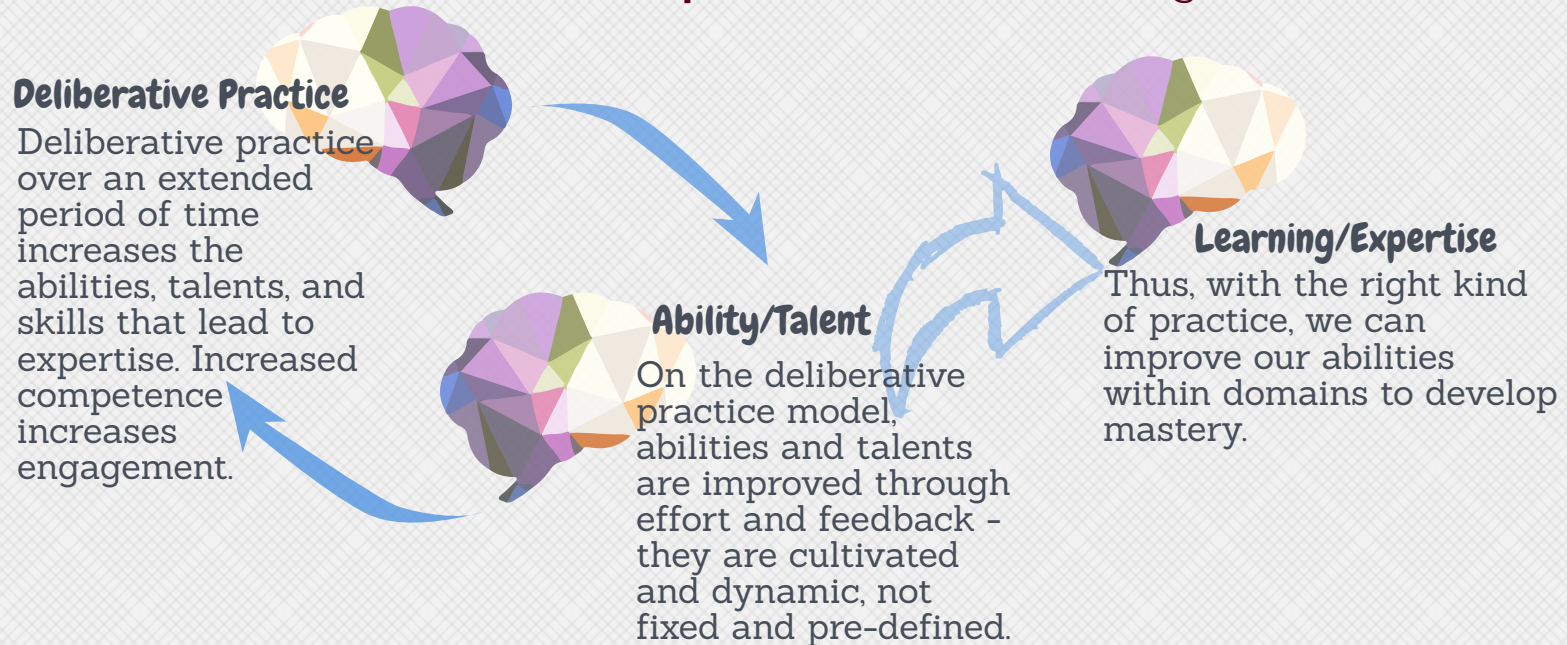
"Experts are made, not born. This is not to say that intellectual ability and talent do not exist, but that effort, deliberative practice, and feedback from experts are essential to the development of high-level expertise ...

Overall, 30 years of research suggests that intelligence and talent provide initial advantages, but that high levels of expertise are due primarily to sustained, systematic effort."

Schraw, G. (2006). Knowledge: Structures and Processes. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of Educational Psychology* (pp. 245–263). London: Routledge.

Deliberative Practice Model

"It is virtually impossible to become proficient at a mental task without extended practice." - Daniel Willingham



Schraw, G. (2006). Knowledge: Structures and Processes. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of Educational Psychology* (pp. 245–263). London: Routledge.

What makes practice deliberate?

LEARNER ATTENTION & INTENTION

Learners improve with intentional and dedicated effort toward skill mastery.

KEEP INSTRUCTION BRIEF AND TARGETED

Consider background knowledge so that tasks can be understood after a brief period of instruction.

FEEDBACK

Should be immediate so learners have knowledge of the results of their efforts, their strengths, and areas for growth.

REPEATED EXPOSURE

Learners should repeatedly perform the same or similar tasks to refine and reinforce understanding.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological review*, 100(3), 363.

PUTTING IT INTO PRACTICE

1 Growth Mindset

Wanting to improve one's skills requires a belief that talent is not fixed but changeable through deliberative practice. How can I create an environment where learners prioritize the process of learning and skill development over innate talent and ability?

2 Meaningful Learning

Deliberative practice requires the motivation to improve one's skills. So how can we make information literacy really matter to learners so that they see the value of improving these skills?

3 Background Knowledge

Comprehension depends on background knowledge. So how can we discover students' background knowledge of information literacy skills in order to appropriately scaffold our instructional activities to maximize learning?

4 Opportunities for Meaningful Practice

How can I structure my learning environments so that students have the time and opportunity for meaningful, intentional practice of high-order information literacy skills?

5 Expert Feedback

Skill acquisition requires feedback from experts. How can we provide students with meaningful point of need expert feedback on information literacy skills?

6 Extended Practice

One swallow does not a summer make, and expertise isn't developed in a day. How can we create opportunities to offer learners expert feedback on their research throughout the course of their studies?

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