

Applications of deliberate practice:

Where have you seen examples of these principles?

What applications of these principles do you see for your teaching?

Pearls on Educational Principles Deliberate Practice

Pearls on Educational Principles:

- Present an influential idea in education
- Suggest examples of its use
- Give an opportunity to apply the idea to your teaching

Principles
to Guide
Teaching
Practice in
Medical
Education

Office of Research and Development in Medical Education

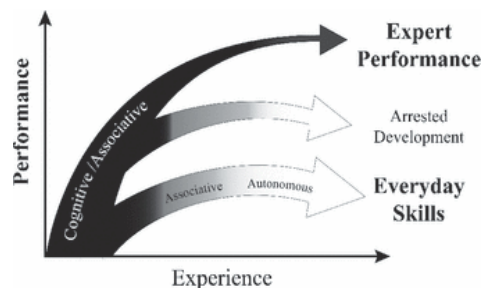
Deliberate Practice

as explained by
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The idea:

Psychologist Anders Ericsson coined the term **deliberate practice** while researching how people become experts. Studying experts from several different fields, he dismantled the myth that expert performers have unusual innate talents. Instead, he discovered that experts attain their high performance through how they practice: it is a deliberate effort to become an expert. This effort is characterized by breaking down required skills into smaller parts and practicing these parts repeatedly. In between practice, expert performers elicit feedback and reflect on their own performance, which guides the focus of subsequent practice. The work by Ericsson has led to the understanding that mere practice makes permanent, but only deliberate practice makes "perfect." Without the deliberate aspect, practice may lead to automaticity and arrested development, whereas experts always try to improve beyond their current level of performance.

Ericsson acknowledges that experience plays a major role in the development of expert performance. His findings across various fields show that it takes at least 10 years of full-time practice to reach a high level of performance, even with deliberate practice. Over time, expert performers develop high-level skills in self-monitoring and self-regulation, which facilitates ongoing deliberate practice.



The construct of deliberate practice is relevant to medical education both for practical skill development (such as surgical skills) and in the development of medical expertise. The theoretical framework of deliberate practice tells us that neither learning everything about a domain nor gaining extensive experience in a domain ever leads to expert performance unless deliberate practice is involved. Clearly this has implications for medical education, suggesting that the old adage "see one, do one, teach one," should be replaced by "see a lot, practice a lot, reflect a lot, and practice more."

The examples:

In medical education, the construct of deliberate practice is being successfully applied in the area of **simulation**, where learners have unique opportunities for repeated practice of clinical skills and integration of both reflection and feedback:

- practicing history-taking skills with a standardized patient
- taking repeated stabs at peripheral-line placement on a plastic arm
- resuscitating a simulation mannequin more than once
- reviewing one's own performance on video to augment reflection and facilitate feedback.

References:

Ericsson, KA. Deliberate practice and the acquisition and maintenance of expert performance: a general overview. *Acad Emerg. Med.* 2008, 988-994

Figure adapted from The scientific study of expert levels of performance: General implications for optimal learning and creativity by K. A. Ericsson in *High Ability Studies*, 9, p. 90. Copyright 1998 by European Council for High Ability.

