Conceptual Frameworks to Guide Research and Development (R&D) in Health Professions Education

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Conceptual frameworks (CFs) are ways of...
- Thinking about a problem or question e.g., Thomas et al’s six steps to curriculum development
- Representing how complex things work e.g., Dual-Process Cognition Theory

Each CF is inherently limited, focusing on specific operational elements while leaving others out.

References:

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When reporting educational research and development projects, state the CFs clearly so that others know your assumptions.

Why CFs?
- CFs are pervasive; they underlie, explicitly or not, all our educational choices and actions.
- CFs offer a variety of perspectives from which to look at educational problems or research questions.
- CFs provide a solid foundation, with standardized vocabulary and well-grounded principles, on which to build educational R&D projects and interpret outcomes and results.
- CFs allow researchers to build on one another’s work, leading to an ever greater understanding that moves the field forward.

To find CFs...
- Critically review the literature for similar initiatives.
- Note the CFs used.
- Be open-minded to the many frameworks from which to choose.
- Select the one(s) that best fits your needs.

Dimensions of a project or study

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<td>“What are the important elements to consider for this topic or issue?”</td>
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<td>Variables and their interrelatedness</td>
<td>“How are the variables related?” “What’s our model or theory?”</td>
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Key questions addressed
- “What are the important elements to consider for this topic or issue?”
- “How are the variables related?” “What’s our model or theory?”

Example study Stefanidis et al.
Problem: Learners are making limited gains from simulation-based surgical skills training and they struggle to transfer that learning into practice under stress and distractions in the operating room.

Authors’ CFs
Fundamentals of Laparoscopic Surgery: Five Basic Skills
Dual-Process Cognition Theory

How each CF influenced the authors’ study from the beginning
- Suggested a skill to focus on, laparoscopic suturing, which is standardized and familiar internationally.
- Clarified what the authors did not choose to study (e.g., precision cutting or ligating loop).

Highlighted that whether learners have learned something to the point of automaticity (unconscious, effortless actions) is not evident solely by their strong performance of a task, but also by their having spare cognitive resources to multitask.

Suggested that learners should practice the skill until they reach a deliberately chosen performance standard, rather than that all learners simply practice for a fixed amount of time.

Suggested a research design for criterion measurement: Observe learners’ performance on the main task under two conditions: (1) without distraction vs. (2) while also performing a secondary task that requires similar cognitive processes.

Major insight gained from the use of CFs
Interpretation: To help learners reach automaticity for a task (e.g., suturing) to a particular standard, clinical educators should require that they continue practicing the task until they can perform it well while substantially distracted.

References:

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