Learning Curves in Health Professions Education

Reference:

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Tags

Clinical domain
Medical Expert
Communicator
Collaborator
Manager
Health Advocate
Scholar

Professional
General

Educational domain
Assessment
Professional development
Undergraduate
(Post)graduate
(Residents)

Background

Learning curves hold substantial promise to guide educational and assessment activities. Learning curves, in the age of competencies, milestones and entrustable professional activities (EPAs), could help guide both programs and learners.

Purpose

In this paper, the authors discuss key issues around the effective use of learning curves and provide some useful examples.

Type of paper

Descriptive

Key Points on the Methods

Non-Applicable
Key Conclusions

1. The authors discuss the validity issues around learning curves, focusing on three key components: 1) the measure of learning (usually on the Y-axis); 2) the measure of effort (usually on the X-axis); 3) and a measure of how they are related (the authors call this the “linking function”)

2. Using learning curves, the authors make the important observation that “using time alone, especially in the clinical setting where not all time ‘units’ are equal, can result in problems or invalid results.” Learning curves conceptually highlight the major challenges and limitations in rotational-based training programs

3. Learning curves are very useful in a deliberate practice model

4. The authors make an important distinction between a programmatic level learning curve pattern and individual learning curve patterns – the individual curves, as highlighted by their radiology example, are highly variable. The end result is that anyone using learning curves to design programs should be cautious in applying a program level curve to individual learners and not assume an intervention at the program level will necessarily help all learners equally

5. The authors note that the “tight coupling” of assessment and learning/curriculum is particularly useful for formative assessment and may assess in detecting learners in difficulty earlier

6. Although not extensively commented on by the authors, the example curves demonstrated evidence of regression and decay among learners in training programs, raising questions about how to determine when a “stable” pattern has been achieved. The authors do a really nice job of discussing this phenomenon in the context of the practicing physician

Spare Keys – other take home points for clinician educators

Learning curves are particularly well-suited for CBME, deliberate practice and mastery-based educational models. They have potential at both the individual and program level. Furthermore; learning curves are not typically linear, and lessons from learning curves can inform effective uses of Milestones and EPAs.

Shout Out

Timely and well-written article on a useful concept in professional development.