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Time-variable training: the goal of competency-based education or a consequence?

La formation variable dans le temps : objectif de l'éducation par compétences ou simple conséquence ?

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"The main thing is to keep the main thing the main thing" - Steven Covey

Recently, I attended a national symposium on competency-based medical education (CBME). I was struck by how quickly several attendees turned the conversation to competency-based time-variable training (CBTVT), a model in which learners progress through training based on readiness or competence rather than time spent in a curriculum.¹ Clearly time-variability was on attendees' minds, with the conversation repeatedly shifting from CBME more broadly toward the practical challenges of time-variability (e.g. funding, workforce needs, assessment challenges). In this Commentary, I argue that focusing on time-variability before attending to other aspects of CBME could stifle broader CBME implementation efforts.

Time variability: the rationale

A common argument for CBTVT comes from a social accountability perspective. Time-based educational approaches presume that the vast majority of trainees will reach a desired criterion (e.g. competence, readiness for practice) by training for a prespecified duration of time. However, medical trainees progress and grow towards competence at different rates.² The outcomes-based focus of CBME research has exposed the fact that our current time-based training paradigm may not be optimal when considering human variability in learning. As Dr. Hilliard Jason noted over 50 years ago, "By making time a constant, we make achievement a variable."³

Time-variability and CBME seem to go hand-in-hand. In their landmark paper, Van Melle et al. described five core components of CBME, one of which is "tailored learning experiences."⁴ The authors define this as learning that is "...flexible enough to accommodate variation in individual learner needs..." noting that learners should be given 'time flexibility' to achieve desired learning outcomes. I myself have been a proponent of CBTVT, so why was I worried that time-variability was a prominent part of conversation at a CBME symposium?

Time-variability: a consequence rather than a focus

Time-variability should be a downstream consequence of CBME implementation, not the focus of it. By consequence, I mean *something that naturally follows*. If CBME implementation aims to ensure that all learners achieve predetermined learning outcomes, and if learners arrive at outcomes at different rates, then it follows that variable durations of training are necessary for everyone to achieve a given learning outcome. However, a problem arises when time-variability becomes the *goal* of CBME rather than a *natural consequence*. Early CBME implementation efforts should focus on core components such as competency-focused instruction and programmatic assessment before delving into the sticky wicket of time variability. Even when considering the core component of *tailored learning experiences*, time-variability is likely not the best way to initially promote flexibility unless other components of

CBME are well implemented. For example, trying to make time-variable promotion and graduation decisions would be difficult (and potentially harmful) without a robust program of assessment to inform such decisions. Once CBME principles have gained traction, then time-variable training may develop. But taking an initial focus on time variability distracts from the ‘main thing’ of implementing other important aspects of CBME, and may stifle implementation efforts before they gain traction.

Time-variability does not need to be a starting point of CBME implementation. For example, my institution’s internal medicine program recently piloted CBTVT in a program called TIMELESS.⁵ However, we only integrated time-variability *after* taking several years developing a competency-based program. We spent years defining our desired training outcomes, developing a multifaceted program of assessment, and changing to a competency-focused curriculum. We arrived at a point where time-variability was a next logical step as we recognized the heterogeneity in our residents’ learning trajectories, and we felt that the validity argument for our competency-based summative decisions was stronger than the argument for time-based decisions. Had we started our CBME journey focusing on time-variability without the other core components in place, we likely would never have progressed as we did.

Keeping the main thing the main thing

Innovation pilots that are designed to focus on CBTVT’s impacts are necessary if we are to learn more about time variability’s impacts on learners and programs. How would CBTVT impact residency selection and medical education funding? How would healthcare workforce be impacted by learners with variable and dynamic clinical schedules? What impact would time variability have on learner

mindset and well-being? How can CBTVT be operationalized in a way that is fair and equitable when assessment is often biased and flawed? Innovation with focused attention to these challenges should be welcomed. But CBME initiatives should not start with a narrow focus on time variability and its many (surmountable) challenges. Rather, programs should focus on implementing other CBME core components, and when they are ready, begin exploring time variability.

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