The Practicality of Theory

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Abstract:

The study of medical education has broadened significantly over the past decade to include a wide variety of theoretical frameworks from multiple research domains. There remains a significant misconception, however, that learning theories (largely drawn from cognitive psychology and education) are practical and useful to educators, whereas other types of theory are not. The authors of this commentary reflect on a learning theory-based model for developing master learners presented by Schumacher et al in this issue of *Academic Medicine* and suggest bioscientific and sociocultural theories that enhance different aspects of that model. Bioscientific and sociocultural theories present medical educators with an exciting array of new methodological and interpretive possibilities. The authors illustrate ways in which these theories can also have important practical applications for, and impact on, the practice of medical education.

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The last decade has seen major changes in the field of medical education research. The paradigm wars between qualitative and quantitative methods have abated while the breadth of disciplinary perspectives represented in our community has increased. At the medical education conferences we attend around the world, audiences have seemed less methodologically narrow and more open to new theoretical framings with each passing year. Both at those conferences and in our reading of medical education journals, we see researchers using an ever-growing variety of theoretical approaches to answer old questions and to come up with new ones.

The authors of the article 'Developing the Master Learner: Applying Learning Theory to the Learner, the Teacher, and the Learning Environment',[1] published in this issue of the journal, intentionally limit their review of theoretical frameworks guiding the development of master learners to learning theories. They write that, within the gamut of learning theories, they then focus, based on their experience as clinician educators, "on theories derived from cognitive psychology, experiential learning, and social constructivism that have the most practical application and impact in the clinical learning environment."[1] These are reasonable choices – journal articles can only be so long, authors can only be experts in so much, and learning theories from these domains certainly have much to offer to the development of master learners.

There is, however, a prevailing misconception in our field – to which Schumacher et al, with their focus on application and impact, may have fallen prey – that, while learning

theories can be practical, other kinds of theoretical frameworks are not. Bioscientific theories have often been rejected within medical education research as being too far removed from the clinical and educational realms; sociocultural theories, on the other hand, have often been dismissed as 'wishy-washy' or impractical. Yet, as one of us argued recently in this journal,[2] theories from these domains can be incredibly practical, providing significant insight into and impact on decisions ranging from medical student pedagogy to the design of health systems and institutions. How might these apply to the development of the master learner?

Insights from Neuropsychophysiology:

One obvious example comes from recent work in the bioscientific, experimental field of neuropsychophysiology. As LeBlanc has highlighted,[3] theory-based research into the effects of physiological (e.g. cortisol measurements) and subjective stress on learning has shown it to affect attention and memory as well as decision-making and team performance. She points out that studies of theoretical concepts such as selective attention and memory consolidation indicate that moderate stress can enhance learning, but only if stressors are integral to (and not distractions from) the task at hand. Neuropsychophysiology has also shed new light on the relevance of the traditional psychological notion of coping styles, including research showing that avoidant coping is associated with greater increases in cortisol levels.[3] This research would indicate that optimizing the master learner's ability to learn should include teaching her to cope effectively with stress, while optimizing her context for learning should include encouraging moderate stresses that derive from the object of learning rather than from extraneous features in the environment.

Using Foucault to 'Make Strange':

While the preceding example offers an enhancement to Schumacher et al's model of the development of the master learner, other theoretical frameworks operate at different levels of analysis. Foucauldian discourse analysis,[4] for example, is a sociocultural framework that allows us to question such models' fundamental assumptions by exploring the relationship between language and the construction of social phenomena.[5] Within this theoretical framing, the task shifts from answering a concrete question about the factors the contribute to the development of master learners to problematizing the socially-constructed underpinnings of that very question. How, we might ask, have the social roles of learner and teacher been constructed in the first place? What are the effects of the commonplace positioning of learning as an individual skill in which to gain mastery? What are the implications of the current shift away from educational processes to a focus on outcomes? How do we understand the particular focus on self-regulation at this historical moment? Asking and answering these questions does not belittle the original question being problematized but rather 'makes strange'[5] its taken-for-granted assumptions.

Such 'making strange' may at first seem rather impractical, but it can have intensely practical effects. The basic tenets of our medical education system, like those of any institution, are not inevitable or "true" but rather the results of historically-mediated, socially-constructed happenstance. By 'making strange' with these supposed truths, theoretical frameworks like Foucault's allow us to appreciate their constructed nature, identifying them as being the product of contingent social and historical forces. These previously unquestioned assumptions can then be examined, their positive and negative

effects weighed, and deliberate decisions made about their appropriateness. For example, Hodges's Foucauldian exploration of the discourses underpinning the shift between process-oriented, time-based medical education and outcomes-oriented, competency-based medical education allows educators to move past divisions between the old "truth" – the previous naturalness and seeming inevitability of time-based education – and the new "truth" – the currently-assumed superiority of competency-based education – to make informed choices about the future of their training programs.[6]

Power, Hierarchy and the Learning Environment:

While Foucault's theories have been used by many to argue for social change, many sociocultural theories are much more explicit in their focus on exposing inequities in order to improve both society and the plight of disadvantaged individuals within it. Examples of such theories, often referred to as "critical" theories, include neo-Marxist theories (which focus on income disparities and other forms of uneven distribution of wealth) and equity theories (e.g. feminist theories, anti-racist theories, queer theories), both of which have been used in medical education research to study relationships within various learning environments. Baker et al,[7] for example, describe the implementation of an interprofessional education (IPE) program among health professionals and trainees at a group of hospitals affiliated with a large urban North American university. Using Witz's feminist neo-Marxist "Model of Professional Closure",[8] they explore the power struggles that became evident from interviews with both teachers and learners and that resulted in the IPE program reproducing, rather than breaking down, the traditional hierarchies that are detrimental to the functioning of interprofessional teams and to collaborative learning. This research would indicate that optimizing the master learner's

context for learning must go well beyond providing safe spaces, up-to-date technology and longitudinal interactions between teachers and students to ensuring that the hierarchies and power struggles present in all learning environments are recognized and managed.

An Exciting Array of Possibilities:

There are many other sociocultural theories currently being used in medical education, and each allows us to ask and answer different types of questions at different levels of analysis. Some focus on macro issues such as exposing and disrupting the production and reproduction of inequities by the medical education system; others focus on micro issues such as exploring and improving aspects of individual physician-patient interactions. These theories are drawn from multiple different disciplines and fields in the social sciences and humanities: sociology, anthropology, political science, literature, cultural studies, rhetoric, history, linguistics, and many others. Each opens up new ways of seeing the world and so new questions to ask, new assumptions to unearth, and new possibilities for change.

Despite their exciting potential for underpinning change in medical education, we recognize that not everybody in the medical education community is going to individually engage with either bioscientific or sociocultural theories. Nonetheless, we are confident that our field as a whole will continue to engage with these theories, recognizing the many useful insights and innovations with which they have already provided us. Over the past ten years we have shaken off the vestiges of the previous era, wherein the only legitimate discipline within medical education research was cognitive

psychology, and made room for a rich array of new theoretical possibilities. Now it's time to realize just how practical all those theories can be.

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