THEORETICAL UNDERPINNINGS AND SHORTCOMINGS OF COMPETENCE BY DESIGN NEUROSURGICAL EDUCATION

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INTRODUCTION

In a 1978 report by the World Health Organization, McGaghie and colleagues called for competency-based curriculum development in medical education.¹

Subsequently, variations of competency-based medical education (CBME) frameworks were introduced into postgraduate medical training programs around the world.²

This outcomes-based approach to postgraduate medical education aims to ensure that necessary competencies that reflect societal and patient needs are attained throughout residency training by designing learning experiences that emphasize observable abilities.⁸

The Royal College of Physicians and Surgeons of Canada has mandated the implementation of Competence By Design (CBD) curriculum for all specialties, including neurosurgery.

The CBME learning framework will be critiqued from both social and reflective learning perspectives to encourage the training and development of holistic medical practitioners.

This paper serves to:

1) explore the fundamental behavioural learning principles from which CBME originated

2) critique CBME using Lave and Wenger’s situated learning theory and Schön’s reflection-in-action thinking theory in order to identify potential learning gaps within CBME and to provide necessary insight for neurosurgical programs considering its adoption
The origins of CBME were developed from the works, orientations and principles of various behavioural learning theorists.\(^3\)

Behaviouralists believe one can learn about an individual by observing their behaviour and response to different stimuli.\(^4\)

Complex medical professional roles can be atomized into distinct series of observable and measurable tasks whose summation is meant to represent the whole of clinical competency.

CBME claims that necessary competencies are attained throughout the continuum of residency education by designing learning experiences around “observable abilities”.\(^5\)

CBME no longer assumes competence achievement based on fixed amounts of time spent in training programs.\(^5\)

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CBME’s fragmentation of medical practice disregards the complex intricacies of the functioning whole and assumes that by amassing the deemed necessary skills, the learner has developed into a holistic practitioner.

CBME ignores how learning involves the construction of professional identities which are shaped and comprehended through relationships developed between people and their place of practice.⁶

CBME undervalues how over time, legitimate peripheral participation enables the understanding of activities, tasks and functions that exist within broader systems of relations whose meanings are developed within social communities.

RESULTS - LEARNING REQUIRES REFLECTIVE PROCESSES

Practitioners develop a specialized repertoire of data, strategies and techniques which they amass through repeated interactions within their field of study.  

CBME’s focus on measurable and observable skills disregards artistic and intuitive processes of thought required of practitioners when facing new and challenging professional problems.

CBME reduces complexities of practice to oversimplified distinct components associated to specific contexts which disregards the integral interconnections, and contextual complexities that are the essence of a “messy” professional practice and that underpin the creation of effective therapeutic relationships.

However, it is important to develop neurosurgical curriculum that:

1) appreciates the participation of residents in all types of experiences and tasks required of daily medical practice (ie. scut work, rounding, team discussions, patient counselling) rather than limiting appreciation to defined tasks for specific levels of training.

2) encourages a reflective approach to navigating complexities of clinical decision making and practice rather than reducing reflection to non-technical competencies that are not necessarily measurable or observable.

CBME’s approach to postgraduate education creates a learning framework that promises greater accountability and transparency of the necessary competencies attained through the continuum of residency training.
CBME's goal of increasing transparency and accountability of postgraduate medical trainees by valuing observable and measurable discipline-specific tasks encourages the development of procedural and technical knowers.

Curriculum developers should not ignore other learning approaches that develop reflective practitioners who appreciate the social relations and contexts which shape actual medical practice.