Practice model for interprofessional teaching-learning of anatomy at a higher education institution in South Africa

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INTRODUCTION

The pressure is increasing on health education institutions to deliver graduates with the key graduate competencies as described by CANMEDs: professional, communicator, collaborator, leader and manager, health advocate and scholar (Frank, 2005). Interprofessional Education (IPE) provides an environment where students can work as health practitioners in different contexts, where they can work as scholars and team workers. Other attributes such as ethical and patient focused conduct, being a change agent, being socially accountable and act as communicators (Frank, 2005) can develop within an IPE environment.

AIM

The main aim of this research was to develop a practice model for interprofessional teaching-learning of anatomy at a higher education institution in South Africa to facilitate deep-holistic lifelong learning.

RESEARCH DESIGN AND METHODOLOGY

The research design utilised a theory-generative, quantitative and qualitative design (Brink, 2006; Mouton & Marais, 1996) to explore (Mouton & Marais, 1996) and describe (Mouton & Marais, 1996) teaching-learning of anatomy in a specific context (Klopper, 2008).

The study was conducted in two phases with two steps under each phase, including three objectives. Phase one consisted of the identification of concepts, description and definition of the three objectives. Step 1 under phase one consisted of identifying main and related concepts and this process was completed for objectives one and two, namely to assess interprofessional students' (IPS) and peer group's (PG) opinions on the teaching-learning approach to anatomy; and to explore interprofessionals' perceptions of the importance of anatomy in clinical practice. All data gathered, synthesized and concepts identified from objectives one and two lead to step 2 of phase one, that is to say concept descriptions and definitions that were completed through objective three, which was to describe a conceptual framework for interprofessional teaching-learning of anatomy.

Phase two (model construction), step 1 (to construct relational meaning of main and related concepts) and step 2 (model construction through theory synthesis) was completed from the concept descriptions and definitions identified in phase one.

RESULTS

One strategy for expressing a theory or study framework is a map or model that graphically shows the interrelationships of the concepts and relational statements. The map is sometimes referred to as a conceptual or framework map that is developed to explain the concepts contributing to or partially causing an outcome. The map should be supported by references from the literature. A conceptual map summarizes and integrates what is known about a phenomenon more succinctly and clearly that does a literary explanation, thus allowing a grasp of the "wholeness"of a phenomenon (Burns & Grove, 2011). A conceptual map includes all of the major concepts in a theory or study framework. These concepts are linked by arrows expressing the proposed linkages between concepts. Each linkage shown by an arrow is a graphic illustration of a relational statement (proposition) of the theory. Mapping is useful in identifying gaps in the logic of the theory and reveals inconsistencies, incompleteness, and errors (Burns & Grove, 2011).

The survey list of Dickoff *et al.* (1968) used the following six modified questions for concept classification in relation to activities and their features:

1. AGENT: who or what performs the activity?
2. RECIPIENT: who or what benefits from the activity?
3. CONTEXT: in what context is the activity performed?
4. TARGET: what is the targeted outcome of the activity?
5. PROCEDURE: what is the guiding procedure, protocol or technique of the activity?
6. DYNAMIC: what is the energy source for the activity?

Figure 1 illustrates the coherent generation by use of deductive logic from concept identification to concept classification using the modified survey list of Dickoff *et al.* (1968). A related outline follows to articulate how this was applied to concept classification in the applicable research study.

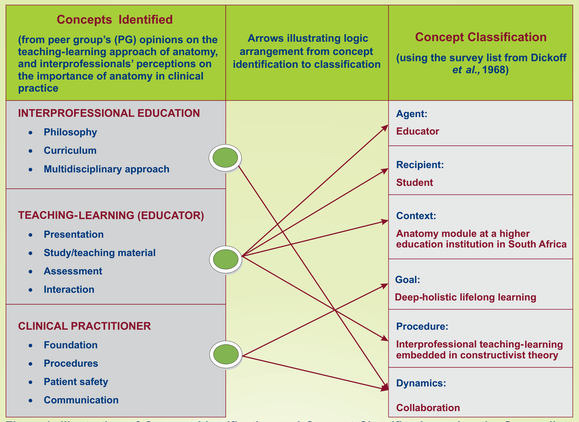

Figure 1: Illustration of Concept Identification and Concept Classification using the Survey list (modified) from Dickoff *et al.* (1968). Figure adapted from Bodrick (2011).

Table 1: Legends used for the practice model as described in figure 2 (Scrooby, 2012)

	Interaction between the educator and student.
	The educator and student work towards the same goal, namely deep holistic lifelong learning.
	Interprofessional teachinglearning leads to deep-holistic lifelong learning and this is achieved and implemented by a competent clinical practitioner/ in clinical practice.
	Continuous dynamic of collaboration.
	Agent and recipient: Educator and student with their own set of characteristics.
	Procedure of interprofessional teaching-learning embedded in constructivist theory used by both the educator and student in their interaction with each other.
	Goal of deep-holistic lifelong learning as implemented by a competent clinical practitioner.

The depiction of the practice model for interprofessional teaching-learning at a higher education institution in South Africa follows in Figure 2.

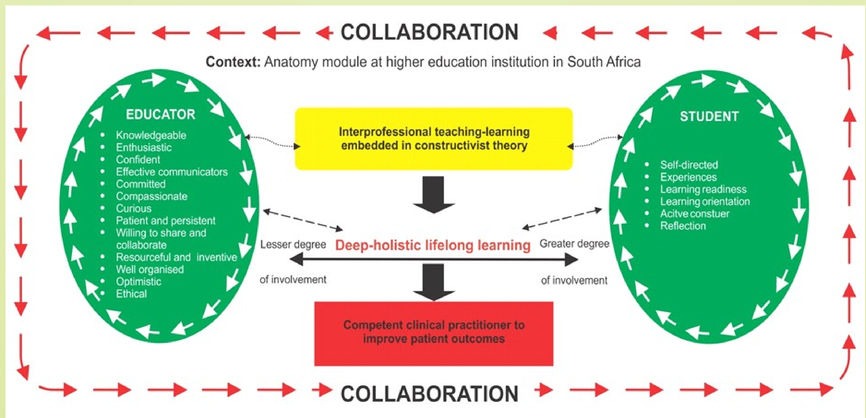

Figure 2: Practice model for interprofessional teaching-learning of anatomy at a higher education institution in South Africa (Scrooby, 2012)

DISCUSSION OF RESULTS

- The educator, the person who facilitates an anatomy module to students registered at a higher education institution in South Africa, should display the following characteristics and attributes: knowledgeable, enthusiastic, confident, effective communicators, committed, compassionate, curious, patient and persistent, willing to share and collaborate, resourceful and inventive, well organised, optimistic and ethical. The educator is in constant interaction not only with the student, but also with himself/herself and other health professional educators (Scrooby, 2012).
- The student, registered for an anatomy module at a higher education institution, that normally forms part of a health profession curriculum, is characterised by self-directness, accumulated experiences, learning readiness, learning orientation, active construction and reflection. The student is in constant interaction not only with the educator, but also with himself/herself and other health professional students (Scrooby, 2012).
- The educator and the student enter the teaching-learning context with the same aim, and that is striving towards deep-holistic lifelong learning. Interprofessional teaching-learning embedded in constructivist theory forms the interaction method used between educators from different health professions, between the educator and the student, as well as between the health professional students themselves. In order to use interprofessional teaching-learning embedded in constructivist theory, the educator always refers to the student's existing cognitive framework to find a starting point and to begin the relationship on an equal level. The educator utilises the study guide as the core of the teaching-learning structure. The study guide is a written guide that serves as a clue, map, guide and framework by means of which the educator undertakes his/her teaching, reflects it to the student and structures teaching-learning activities. It is a means of communication that, as the educator's instrument, probably stimulates and motivates the student to become independent on an individual basis (Scrooby, 2012).
- When creating a context conducive to teaching-learning, there are certain aspects that should enjoy the educator's attention. Evaluation should be linked to the objectives and be approached holistically. Students should always know what the evaluation criteria are. Feedback to students takes place on a continual basis, and there is opportunity for self-evaluation to encourage reflection and motivation. The educator should utilise teaching-learning methods that focus on discussion, participation and interaction. Teaching-learning methods that satisfy these requirements are group discussions, seminars, symposiums, case studies, simulation and role play. The creation of a context of teaching-learning is a circular and reflective action and a dynamic process (Scrooby, 2012).
- The educator's and student's approach towards teaching-learning is aimed at pursuing deep-holistic lifelong learning. Deep-holistic lifelong learning can be represented on a continuum from a lower to a higher degree of involvement. The educator should constantly be involved in this continuum in order to be a reflective practitioner. The student should also to a lesser or greater extent be involved in the continuum in order to practice as a competent clinical practitioner and to be a critical thinker. The aim is that the educator and the student should, to a lesser or greater extent, be involved with deep-holistic lifelong learning. What we learn is ultimately shown in what we do, and thus deep-holistic lifelong learning will be implemented by the competent clinical practitioner with the ultimate goal of improving/facilitating patient outcomes (Scrooby, 2012).
- For interaction to take place between the educators, students and competent clinical practitioners, collaboration must be introduced as early as possible into the curriculum of health professionals. This collaboration will lead to better collaboration between health professionals in the clinical setting and ultimately improve/facilitate patient outcomes (Scrooby, 2012).

CONCLUSION

This practice model is unique as it was the first research study conducted on the interprofessional teaching-learning of anatomy at a higher education institution in South Africa without a medical school/faculty. An in-depth literature review was conducted on the concepts identified from the empirical data and triangulation, deductive and inductive reasoning strategies were used to describe the conceptual framework and ultimately the practice model. The practice model will also provide lecturers, facilitators and students with a learning experience that will add value to their own teaching and learning knowledge and skills by allowing students, educators and facilitators to be able to identify and know each profession's scope of practice; what treatment can be given to the patients and what must be referred. The patients will then ultimately receive holistic treatment because of this synergy/collaboration between the different health professionals.

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