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Self-Directed Learning: A Paradigm Shift for Physiotherapy Education

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Abstract

Training physiotherapists to a level where they can influence the standard of health care practice could be a complex process. Entry-level physiotherapy education in Ghana is a continuum between academic and clinical training during which they have to integrate the application and development of skills in communication, collaboration, advocatory and leadership. Self-directed learning is considered by many as one of the appropriate methodologies to allow practitioners to stay up-to-date and knowledgeable of the current literature. A teacher-centered approach is characterized by lecturing and hands-on skills training as the main or only way of facilitating student learning. Students who qualify as physiotherapists from teacher-centered tertiary institutions need to be self-directed life-long learners to be able to meet the demands of a complex work environment in the field of physiotherapy and professional health care delivery. The teacher-centered traditional approach to teaching and learning appears to be the predominant form of teaching among most universities in Ghana. Since a student-centered teaching approach has been widely recommended as the approach of choice, especially in the education of health care professionals, there is a need to determine if it is possible to design and implement physiotherapy based modules that include student-centered approaches such as Self-directed learning which may address minimal guidance that is usually associated with teacher centered tertiary training in Ghana.

Keywords: *Self-directed learning; teacher-centred; Physiotherapy, student-centred*

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Introduction

Physiotherapy services are usually not rendered in isolation however, it has become a more significant aspect of holistic health care delivery. Holistic health care delivery entails the interprofessional interaction and collaboration between health professions such as medicine, physiotherapy, occupational therapy, human nutrition, and nursing [1]. The interaction also needs to occur between physiotherapists and community leaders as well as between the patient as an individual and the family or caregivers. Holistic health care delivery also entails interaction between the health professional and the management of a health care institution or facility where or through which the service is rendered [1]. This complex integrated process of continuous interaction does not only entail the application of knowledge and scientific principles as well as clinical and environmental settings based on research evidence, but also being culturally sensitive and skilled in interpersonal and leadership skills [2]. Newly qualified physiotherapists will invariably find themselves in super-complex work-environments in which they may have to solve problems within institutions, together with other health care professionals. Therefore, health professions' (including physiotherapy) students need to learn to become aware of their present level of knowledge and skill and to manage their learning in relation to the level of knowledge and skill required to solve clinical problems or manage professional situations to the benefit of various people [3].

Entry-level physiotherapy education in sub-Saharan Africa is a continuum between academic and clinical training during which they have to integrate the application and development of skills in communication, collaboration, advocatory and leadership. At the same time physiotherapists have to become professional scholars who solve clinical and health-related problems [2 & 4]. The environment in which the training of physiotherapists takes place should, therefore, provide a continuum between academic and clinical training in the context of clinical problem-solving at any level of care.
Competency based education emphasizes the outcomes of the training in the form of abilities that students have to acquire during their training [4]. The personal competencies

described by Frenk, et al [4] and the competency framework (CanMeds) [5] described by Frank, Snell & Sherbino [6] appear to complement each other, as the framework is a further development of the principles presented by Frenk, et al [4]. The CanMeds [5] framework (Figure 1) appears applicable and acceptable to allied health professions training and is likely to be a description of the competencies that health professionals need.

Considering the advent of COVID 19 and what Universities worldwide, especially in developing countries have had to go through thus far, to teach and examine students, a paradigm shift for learning for the health professions students is more imminent than ever. The purpose of this paper is to advance submissions in favour of self-directed learning for physiotherapy training at the entry-level to prepare students as lifelong learners. It is however acknowledged that this relates wholly or in part to other allied health professions training.
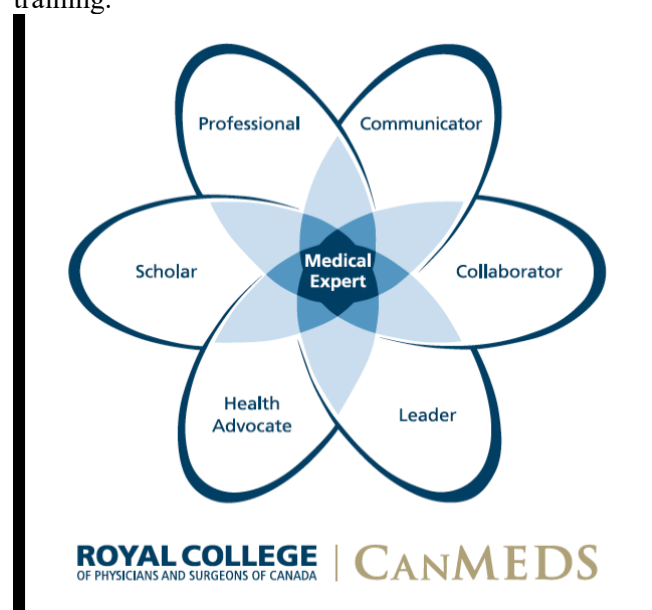

Figure 1: Can MEDS (2015)
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Self-Directed and Life-Long Learning

The demands of modern society, the exponential increase in knowledge, a complex and changing health care environment in which the professional competence of health care professionals is tested, emphasizes the

importance of health professionals being self-directed- life-long learners. According to Murad, Coto-Yglesias, Varkey, Prokop, & Murad [7] self-directed learning (SDL) is considered by many as the most appropriate methodology to allow practitioners to stay up-to-date and knowledgeable of the current literature. Murad, et al., [7] further indicated that SDL has been advocated for the efficient and effective training of medical students, residents, practicing doctors, nurses and other health care professionals.

SDL is a process of acquiring the ability to control one's learning process by identifying one's learning needs; formulating learning goals; identifying human and material resources for learning; choosing and implementing appropriate learning strategies and evaluating learning outcomes. The definition also refers to the fact that learning takes place with or without the help of others – with or without interaction with others and with or without guidance from others, which may include peers, the lecturer or tutor [7 & 8].

Although the concepts of SDL and life-long learning (LLL) start with the student's intrinsic motivation to learn, the two concepts are not the same. SDL could be considered a prerequisite for LLL or one could describe the concepts as having reciprocal interaction between them. The principal activity with SDL is the independent pursuit of learning to empower the individual to become an independent mature authentic self.

The goal of LLL is to equip students with skills and competencies to direct their learning actively beyond the end of formal education. Lifelong learning requires students to be motivated, responsible for their own learning, and able to manage the exponential growth of knowledge, of information, and of communication technology in the societies they live in [8, 9, 10 & 11]. From this perspective SDL can be considered both a means and an end for LLL.

Approaches that Foster Self-Directed Learning

Conceptually, SDL as an instructional approach is regarded as part of the constructivist approaches to health care education. Arguments exist that are for or against constructivist teaching approaches that foster SDL in students while confusion also reigns about the optimum level of guidance students should receive [12].

A constructivist approach to teaching also entails varying degrees of guidance during implementation and discovery [12 & 13]. The main aim of the constructivist approach to teaching is to facilitate, motivate and focus students' learning. Such an approach challenges and enables them to take control of their learning process and acquire the appropriate information-seeking skills [14 & 15].

Any teaching approach meant to foster SDL for students should, therefore, incorporate the interaction between working memory and long-term memory (prior knowledge) for the approach to be effective. Teaching approaches that advocate limited guidance during instruction do not necessarily take into account the limitation of the lack of long-term memory (prior knowledge) if students have to acquire 'basic' information through problem-solving. Such approaches may result in ineffective learning because the information was stored in the long-term memory either incompletely or not efficiently [16]. Song and Hill [8] express the need for the development of a personal perspective on the four principal domains of SDL, namely personal autonomy; willingness and ability to manage one's overall learning endeavours; independent pursuit of learning without formal institutional support or affiliation; and learner-control of instruction in which SDL is taking place.

In line with different domains of SDL, Song & Hill [8] indicate in their conceptual framework (Figure 2) that students enter a course with their specific level of skill that is prior knowledge, which together with their attributes enable them take control of their learning process. The students with all their unique attributes are subject to the learning context which influences students' SDL. The outcome of the interaction between the students' (self-directed learning) and the learning environment is the effectiveness of the learning that took place as well as students' satisfaction with their instruction. The model also provides a structured and practical approach to use as a basis for the planning and design of a teaching strategy.
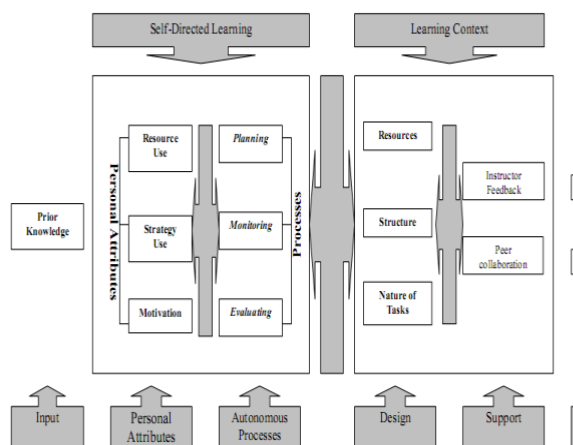
Figure 2: Conceptual framework for Self-directed Learning (Song and Hill, 2007)

Challenges of Teacher-Centred Physiotherapy Training

The main viewpoint of lecturers that use a teacher-centred approach of instruction is that they are the experts and students need to learn from them. This teaching approach leads to rote learning, repetition, recitation, and memorisation instead of independent learning, critical thinking and problem solving [17 & 18]. From preceding discussions, it may be fair to indicate that the teacher centred-approaches for health professions training including physiotherapy should not be the only teaching approach used to equip students to meet the demands that they have to deal with in practice after they qualify. Dalley, Candela & Benzel-Lindley [19] maintain that when content is the focus, curricula tend to become overcrowded and decrease the time available for activities that develop abilities such as critical thinking, problem-solving, and clinical decision making. In view of the global and local demands for physiotherapy service and the advent of the COVID 19 pandemic the training of health professionals in some sub-Saharan Africa Institutions [20] need to consider developing learning modules with content that is effective and sustainable provided it is well planned and rigorous including peer-reviews to enable students to become self-directed life-long learners who are able to meet the demands of the challenging health care environments. It is essential that students become LLL to keep abreast with new developments in health care services and the latest evidence on the management of patients.

Miflin, Campbell, and Price [21] however warn that the main problem with changing a teacher-centred learning approach to a constructivist teaching approach of which SDL is part can cause great confusion for teaching staff and in students. Faculty members and students have to be carefully instructed on the principles of applying a constructivist teaching approach. Miflin, et al [21] also state that students should receive adequate support during a constructivist teaching approach in order not to become lost and revert to rote learning, repetition, recitation and memorization and overly dependent on faculty members for their learning. Kirschner, et al [13], also argued that (novice) students who have to learn basic sciences should receive guided instruction so that they can form 'long-term memory', which is a very important prerequisite for solving 'current problems' based on a 'working memory'. Miflin, et al [21] and Kirschner, et al [13] emphasize the importance of guided instruction in students especially those who are new (novice learners) to the specific content they have to learn.

The Way Forward

Since student-centred teaching approaches have been widely recommended as the approaches of choice in the education of health care professionals, there is a need to determine if it is possible to design and implement modules that may address the lack of or minimal guidance that is typically found in teacher-centred tertiary undergraduate physiotherapy training institutions in sub-Saharan Africa.

It may be appropriate to use the Song & Hill [8] model (Figure 2) for SDL to conceptualize a research project on implementing an educational intervention that could foster SDL among physiotherapy students. The research-based Song & Hill [8] conceptual model for SDL is applicable for a face-to-face and a fully online course and is a demonstration of how the 'learning context' influences self-directed learning. Murad and Colleagues [7] also recommend that educators embarking on developing SDL curricula for learners in health professions should:

1. Involve learners in choosing learning resources and strategies to enable them to find the most appropriate resources to fit their individual learning styles as well as the overall learning objective.

2. Consider SDL as one of the effective

strategies for more advanced learners such as those in the later years of health training institutions or residency and doctors in practice.

3. Consider SDL particularly when the learning outcome is situated within the knowledge domain.

Conclusion

Health care reform in some sub-Saharan Universities and the manner in which teaching and learning take place for undergraduate programmes may have to shift from teacher-centred to student-centred. SDL and LLL is one of the solutions that could reduce the negative effects of recitation, repetition, memorization and students becoming overly dependent on lecturers for their learning. It seems lecturers may need to adopt the constructivist teaching approach to foster SDL in students, since it has been suggested earlier that SDL in health professions education appears to be associated with moderate improvement of knowledge, skills and attitudes as compared to the traditional didactic teaching.

Author Contributions

JQ, CE and GP contributed to the concept paper. JQ, CE, GP AB and JA sourced and reviewed relevant literature. JQ, CE, GP AB and JA wrote and reviewed the manuscript for important intellectual content, revised the draft and approved the final version of the manuscript for submission.

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