



Perspectives on Clinical Education: How physiotherapy students learn in the clinic

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SUMMARY

Clinical internship provides the real-life or contextual, social, and interactive experience that helps students translate abstract theories learned in the classroom to clinical practice. In many quarters, it is generally presumed that clinical teaching can effectively be done by any competent and experienced practitioner. This paper elucidates how learning takes place in the clinic. It highlights periods of weigh in or acclimatization, legitimate peripheral participation, alignment with the practice setting or community, and active engagement, as stages in clinical learning. It identifies engagement, reflection, observation and dialogue as daily activities needed to make sense and derive meaning from learning in the clinic. It also utilizes the distinctive features of two clinical education organization models to provide insight into how clinical teaching skills and the mentor-protégé relationship between teachers and students can be enhanced in contemporary clinical education in Nigeria.

KEYWORDS: clinical education, learning, clinics, clinical rotations

INTRODUCTION

A current paradigm is that learning in any professional training is not simply the assimilation of facts or the processing of information, but more importantly, it is how what was learned can be applied in a given context at the point of care (Leve and Wenger, 1991; Wenger, 1998; Barab & Duffy, 1991). In many quarters, it is generally presumed that clinical teaching can effectively be done by any competent and experienced practitioner. One possible consequence of this notion is that effective teaching skills may not be given due attention.

Becoming a competent physical therapist involves receiving learning instructions through classroom teaching or didactic instructions, lab experiences, and exposure in the clinic. The physiotherapy professional training curriculum is sequenced so that students acquire theory knowledge or cognitive skills through didactics at the initial pre-professional part of their training. Competency in the technical and non-technical aspects of practice is important.

The former involves psychomotor skills development (Oyeyemi, 2011), and can be imparted during lab practicals and honed on during clinical postings.

Non-technical competency, however, involves the development of professional behaviours including communication and interpersonal skills (Oyeyemi, 2011; Fidler, 1996; Plack 2006), and is deemed most effectively imparted during clinical affiliations. This aspect of professional training is deemed of pivotal importance in making a competent professional and acquiring the necessary professional identity. Instruction to achieve learning and impart generic professional behaviours is achieved through mentorship and is given in the later part of professional training.

In the professional phase of training in health disciplines, clinical rotation and internship are widely accepted as the experiences that provide real-life or contextual, social, and interactive experiences that help students translate abstract theories learned in the classroom

to clinical practice. Unlike in the classroom, learning in the clinical setting is improvisational or extemporaneous and is driven by the unpredictable real-life problems that may be encountered on a day-to-day basis (Plack and Driscoll, 2011). Presumably therefore, effective teaching in the clinic may be deemed to require distinct and unique instructional strategies different from the approach to didactic teaching or laboratory practicals.

Understanding how students learn in the clinic enriches our knowledge on competency acquisition and professional identity development. Such knowledge enables physiotherapy professionals to self-assess, and also enables the teacher to systematize and organize clinical teaching for effective student experience. It could also prepare the student for an important training experience that shapes the student as a future professional. This paper elucidates how learning takes place in the clinic. It also highlights the contrasting features of clinical education organization models as obtains in Nigeria and the United States.

CLINICAL EXPERIENCE IN ALLIED HEALTH

Bench (1999) has described the internal, external and bridge versions of clinical education organization. The internal version is one in which both the theory and students' clinical experience are provided in the same institution. This was the mode of training at the inception of physiotherapy as a discipline (Backlay, 1995; APTA, 2003). This insular training mode typically based in hospitals is no longer in existence today.

In the external version, clinical education experiences take place in free-standing hospitals, clinics and centres bonded with the university by a contractual agreement, and under clinicians who are employees of the former institutions. Clinical experience in the bridge version takes place mainly in a university teaching hospital under the preceptorship of academic and clinical faculties who are employees of the universities and teaching hospitals respectively.

Three philosophical categories on how learning takes place have been identified as cognitivist, behaviorist, and constructivist (Leonard, 2002; Omrod, 2012). The cognitivist theory defines learning as a semi-permanent change in mental processes or associations, and focuses more on the internal processes and connections that take place during learning. Cognitivist educators structure the

content of learning activities to focus on building intelligence, and promote cognitive, and meta-cognitive development.

Behaviorists view the learning process as a semi-permanent change in behaviour, and focus on observable aspects of learning. Behaviorists strive to elicit learning through such devices as behaviour objectives, competency-based education, and skills development and training. To the constructivist, learning is achieved when a recipient is able to construct knowledge out of their experience. Constructivists would therefore structure teaching using a pedagogic approach that promotes active learning or learning by doing.

Although classical theories of learning elucidate how learning takes place, they are however premised on a two-way learning traffic that flows between the teacher and the student. These theories presume a learning dyad predicated on transmitting curriculum-based knowledge and teacher expertise, and ignores the interaction between the learner and the environment. Therefore, unlike learning as conceived by the classical theorists, effective clinical learning is necessarily woven around a complex learning triad consisting of the student, the clinical instructor, and the entire health care community, including patients, families, other therapists, doctors, nurses, other health care workers, and other students (Plack and Driscoll, 2011).

Learning in the clinic is necessarily geared towards the assimilation of the values, attitudes and skills that constitute professional attributes, and students are required to develop skills to be self-directed, active, independent, and goal-oriented. Achieving professional competence during training consequently entails the development of skills in social interactions, context mastery, and active participation in a community of practice. Personal epistemologies or beliefs about knowledge and sources of knowledge influence the way the teacher and the students approach and adapt their respective roles of teaching and learning in clinical settings (Plack and Driscoll, 2011).

In the dyad concept of learning, an ideal clinical teacher is one that has attained a superb level of professional competence and expertise especially in one area of specialty. Clinical teaching as now construed must be designed to achieve the complex goals of clinical education, and building skills of life-long and self-regulated learning. It also has to be one that is focused on developing and changing students' own conceptions of knowledge and learning through participation in the professional

community (Wenger, 1998).

A clinical teacher is expected to possess the skills to assess a student's entry level competency on skills in the cognitive, psychomotor and affective domains of learning. However, while learning in the cognitive and psychomotor domains can be evaluated more easily and more objectively, learning in the affective domain requires substantially more subjectivity (Shephard & Jensen, 2002). Therefore, not only is clinical teaching more difficult to conduct, learning in the clinic is also not as easily evaluated as in theory learning because it involves behaviour assessment (Schon, 1987).

Community of practice is an important 'leg' in the clinical education tripod as it is the medium of learning in the clinic (Plack, 2006; Plack, 2008; Plack 2003). The first step in clinical learning as students are posted into the clinic involves negotiation of ways into and interacting within the community. As the students begin in a clinical setting there is an initial period in which the students try to gain access to various activities, people, history and challenges essential to their own learning and professional development. Shared history in the clinic can help students to make sense of what they are observing (Plack & Driscoll, 2011).

In the process of negotiating their way in, students experience a period of adjustment in each new clinical setting, and they begin their learning on the periphery. The second step in the clinical learning process involves legitimate peripheral participation in which students start by simply observing, asking questions, and performing a component of patient management under close supervision. The ultimate goal of legitimate peripheral participation is the development of an identity and sense of belonging within the community of physical therapy practice.

Identification within the community and alignment with the nuances and culture of the setting and environment through adoption of terminologies, and cultural norms and idiosyncrasy of the setting is the third step in professional identity development. Identification involves emersion in the culture. Alignment is a negotiation process through which students ultimately learn what it truly takes to belong and to become a fully socialized and distinct participating member of the profession (Sheppard & Jensen, 2002). It is an acculturation process which occurs through observation within the social context (Bandura, 1986).

In the fourth step in the process, students are actively engaged in practice and are sufficiently adjusted to make sense of the sociocultural expectations of the clinical

environment (Lave & Wenger, 1991; Wenger, 1998). During the period when students become increasingly more engaged in the total process, it is anticipated that the students and the teachers enjoy a reciprocal relationship. The students learn how experienced practitioners act and interact, and how they communicate with patients and other health care providers throughout the day.

Students' full immersion in a community of practice helps shape what they think, what they do, and how they make sense of their experiences. Clinical learning at this stage takes place through a process in which the learner learns from the practitioner and vice versa (Wenger, 1998). The daily cycle of learning starts with concrete experiences, through reflection and observation, abstract conceptualization, active experimentation, and finally back to concrete experiences (Schon, 1987).

Dialogue is a mechanism through which reflection can occur not only within an individual but between and among individuals and it is what makes it explicit (Plack & Driscoll, 2011). Without this dialogue, students may make personal meaning of an experience but may not be able to develop a shared meaning or understanding of experiences or expectations. When clinical instructors share what they were like as novices, how they too made errors, and what it really took for them to develop competence, confidence, and ultimately expertise, they help students and novices modulate and clarify their own experiences and assumptions.

In summary, learning from experienced practitioners is very much like an apprentice learning from a master craftsman. On resuming in a clinical rotation, students experience a weigh in period or period of acclimatization, a period of legitimate peripheral learning, a period of alignment with the setting community before they become meaningfully and actively engaged in clinical experience. Everyday, in order to effectively learn and truly make sense of their surroundings, students must engage (i.e. doing), reflect (i.e. thinking), observe (i.e. watching), and dialogue (i.e. talking) with their clinical instructor about what they were observing and learning in the course of their practice experience.

BARRIERS AND CHALLENGES TO CLINICAL LEARNING

Challenges may be described as those activities, experiences, or ordeals that students are faced with while in

the clinical setting, and which must be overcome or mastered as they learn. In contrast, barriers are factors that hinder learning, or make it more difficult for students to overcome or master these challenges. These factors may constrain or restrict the learner from fully participating in the community of practice.

Students' past experiences and attributes sometimes negatively influence their learning (Boud and Walker, 1993). They may lack confidence, experience fear and feel shy; they may also experience language limitations. Cultural differences may also hinder their learning. It is presumable that fear of being wrong or making a mistake can prevent students from asking questions or sharing their thoughts. Students may not want to risk disagreement or share differences of opinion due to the fear that they could offend their teachers.

Students' anxiety may be accentuated by a community or setting that lacks empathy, or is too busy or unwelcoming. To optimize learning in the clinical setting, it is critical that students feel valued, respected, and listened to for what they bring to the community. Likewise, experienced clinicians and teachers need to feel valued for the experience and wisdom they bring to the practice. Lack of receptivity on the part of the instructor and student is one barrier that could impact the clinical experience.

Providing learners with access to engage with other clinicians and role models is an important step in effective supervision of students (Plack, 2008). Creating a supportive learning environment requires more than the skills of a single individual. Responsiveness, care, respect, and empathy from both the clinical instructor and from the community can result in a comfortable and supportive learning environment (Emery, 1984; Kram, 1988; Kelly, 2007). Only an environment that reduces stress and opens the lines of communication necessary for students to ask questions and admit error can facilitate learning.

In the clinical setting, students face at least three major challenges that provide excellent learning opportunities. One challenge often faced is when engaging in learning activities explicitly designed by the clinical instructor to challenge the student and facilitate learning. The second one is dealing with novel or unfamiliar situations. Another challenge is confronting situations in which students must manage their own attributes as well as those of their clinical instructor, patients, and the environment (Plack and Driscoll, 2011).

In meeting the expectations of the teachers in the learning activities designed by the clinical instructor, the student must be adequately prepared through appropriate course curriculum content. A mentor may not only support the protégé but may also structure learning to challenge the protégé. This may be done by providing experiences that could result in tension or a gap between what is presently known and what is not known by the student (Daloz, 1999). It is only in resolving this tension or bridging this gap, that learning occurs (Spouse 1998; Daloz, 1999).

During clinical experiences, students may feel that they are being tested constantly for grading purposes. In his theory on social learning, Bandura (1986) described mentors as role models that embody the role of a professional with a vision to achieve. As an evaluator, it can be argued that the clinical instructor as assessor may not be deemed to be performing the role of a mentor. Students are expected to be directed and tutored, following a learning plan often essentially fashioned by the instructor, in an environment in which the latter is more familiar and has firmer control.

As new learners gain credibility and are given greater responsibility and independence, they are challenged to become more authoritative, to delegate responsibility, and to problem-solve independently. In novel or unfamiliar situations, the teacher may provide the necessary guidance and support needed to overcome the situation at the beginning. However, later, during the affiliation experience, students could be expected to be able to manage complex conditions or unfamiliar situations.

To function fully within the community, students have to be able to manage their own personal characteristics, such as shyness. They are also expected to adapt to the unique characteristics of each member of the community and manage these to maximize learning. Students may also be expected to identify areas of strength and weakness in themselves as they progress through the experience. They have to overcome possible rejection by patients who may feel shortchanged with student 'handling' of their treatment plan. They are expected to also be able to elicit the cooperation of auxiliary staff who may also be considered informal evaluators.

Clinical instructors have two distinct support functions: career and psychosocial (Kram, 1988). As mentors they are expected to provide support to minimize the barriers or hindrances to learning in the clinical setting and serve as teacher, guide, friend, adviser, protector, and even

surrogate parent at times (Zacchary, 2000; Murray, 2001). Clinical teachers are expected to affirm and validate their protégés' experiences (Daloz, 1999). This support function can be seen as a counterweight to the evaluative function of the clinical instructors as critical eyes that determine the outcome of the affiliation experience with little cues and direction.

DISCUSSION

The five domains of effective clinical teaching have been identified as teaching, evaluative, personality, interpersonal relationship and competence. A recent study shows Nigerian teachers and students ranked teaching skills least among domains including clinical competence, personality, interpersonal relationship and evaluative skills (Oyeyemi et al, 2012). Therefore, the comparison of two clinical education organization models discussed in this section is to provide insights into areas in which teaching skills and the mentor-protégé relationship can be enhanced in contemporary clinical education in Nigeria

In an external version of clinical education organization as practiced in the United States of America, three to four clinical experience episodes are arranged, each lasting 6-12 weeks. Students are rotated through inpatient acute care, outpatient experiences, subacute care and nursing home, or specialty rotations in different institutions. In the bridge version of clinical education organization as practiced in Nigeria, students are placed on daily clinical experience for 2-3 years. During this time, special experience is gained by postings outside the teaching hospitals: in sports clinics and centres, leprosaria, private hospitals and physiotherapy centres, and psychiatric centres.

In Nigeria, clinical experience takes place almost solely in the affiliated teaching hospitals with an established culture and bureaucracy throughout units and clinics. This affords a healthcare environment with people of unified culture and idiosyncrasies. Unlike in the external version of the clinical education model as practiced in the United States, in which affiliation sites are different for each episode of experience, it can be argued that the process of the weighing-in period and alignment may not be entirely relived by students with each rotation. The relative stability of the community of practice is one feature of this version that minimizes the need to deal with new instructors or environments.

A one -on-one clinical instructor to student relationship

is the prevailing match in the external version of clinical education, although two students to one clinical instructor is encouraged. This arrangement is believed to better allow for a mentor-protégé relationship between the teacher and the student(s). This could also facilitate collaborative and reciprocal learning among the students. However, it can be argued that a mentor-protégé relationship is blunted in the bridge version of clinical education model as obtainable in Nigeria.

Clinical teaching in Nigeria is conducted by academicians who are university employees and clinicians who are employees of the teaching hospitals. In an external version of clinical education as in the United States, clinical affiliation is under the direction of the center coordinators of clinical education (CCCE), and clinical instructors (CI) who directly mentor students (APTA, 2012). However, these clinical teachers are not normally remunerated by the university, although tuition credits and library privileges are often offered. In Nigeria, clinicians who take students in rotation may also be appointed as associate lecturers and paid honoraria by the University.

In the bridge version of clinical education as practiced in Nigeria, clinical learning experience is evaluated through a traditional summative examination. External examiners are often invited to test students in the final year of their professional training and the students are graded with number scores and grades assigned. Competency is determined based on clerkship and documentation, and an oral examination by examiners, utilizing cases preselected for the examination.

In the United States, there are no formal examinations during clinical experience in the traditional sense. Competency is documented at mid-term and at the end of the affiliation, using a standardized clinical performance instrument (APTA, 2002). Performance is rated on a visual analogue scale from novice level to entry-level competency in each of the 24 criteria of practice ranging from professional behaviour, communication, safety and infection control practices, to practice elements including examination, evaluation, diagnosis and prognostication, procedural intervention, and resource and quality management.

In Nigeria, certification in clinical teaching is yet to evolve and although the clinicians and academician assessors are deemed to be highly knowledgeable, with many years of practice experience, certification in teaching or clinical instruction is rare. In the United States,

certification in clinical teaching has been instituted (APTA, 2012) and clinical instructors undergo 2-3 days training to be certified or credentialed. A preferred centre is one with the CI and/or the CCCE credentialed in clinical instruction. The CCCEs are listed as faculty in programmes and are generally responsible for students' experience in their institutions and facilities.

It can be argued that the distinctive characteristics of clinical education versions as practiced in the US and Nigeria are products of the historical realities in the two countries. They are also a function of professional programme development as influenced by external necessities in the countries (Duncan, 2006). A recent study that showed teaching skills having the lowest rating among physiotherapy teachers and students (Oyeyemi et al, 2012), could be an indication of an erroneous view of teaching skills in clinical learning that needs to be addressed in physiotherapy training in Nigeria.

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