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Exploring Sociocultural Interactions and Influences Shaping Clinical Education

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Abstract

Introduction: Clinical education involves teaching and training students in real-life clinical settings. Students may be supported by university staff and or clinicians at various hospitals or clinical settings.

Methods: This qualitative, cross-sectional research was conceptualized and conducted through an interpretive lens by drawing on the theoretical underpinnings of Lave and Wenger's Situated Learning Theory (SLT) and Communities of Practice (CoP). We set out to determine how sociocultural and contextual elements influence the learning experiences of final year Physiotherapy students during clinical placements.

Results: The findings signified that individual student attributes such as agency, educator attributes and the predominant culture of the clinical site greatly influenced student participation and clinical learning.

Conclusion: These findings illustrate the intricate relationship between a "novice student" and "master educator" and how their interactions with others influence participation in a CoP.

I INTRODUCTION

Clinical education, also called workplace-based learning, allows students to immerse themselves in the authentic activities of their profession, playing a pivotal role in shaping healthcare professionals. Clinical education is a teaching and learning method for health professional students who deliver profession-specific services within a healthcare facility (Ramakrishnan & Bairapareddy, 2020). The interactions with clinicians, clinical educators, their peers and patients affect students' ability to participate effectively in clinical learning opportunities (Mafumo et al., 2022). The immediate environment, artefacts and the student's ability to work in established professional teams may also come into play (Rappazzo et al., 2022). These influences may be associated with the individual clinical rotation or rooted in the more prominent cultural and historical traditions of the profession and its community or the training institution (Cleland & Durning, 2019).

This study, underpinned by a sociocultural lens, attempts to better understand the nuances in the clinical environment that enable learning (Milne et al., 2022; Mukhalalati et al., 2022). Therefore, this study seeks to illuminate the elements and relationships during clinical education that emerge from social and cultural contexts, their interaction, and how they impact students' learning (Cleland & Durning, 2019; Patton et al., 2013).

II THEORETICAL AND CONCEPTUAL FRAMEWORK

Situated Learning Theory (SLT) and Communities of Practice (CoP) by Lave and Wenger (1991) have been adopted in this study. Imperative to SLT is the influence of other role players in the learning environment (Lave & Wenger, 1991). The theorists posit that learning occurs through a social process of gradual participation in a group of professionals who are skilled in the same activity. The group is called the CoP, and the participation process is termed legitimate peripheral participation (LPP) (Lave & Wenger, 1991). When exploring clinical education through the lens of SLT and CoP, the theories' elements may vary from one clinical site to another.

III STUDY DESIGN AND SETTING

We sought to explore the learning experiences of final-year physiotherapy students (4th year) in different clinical settings within a five-week rotation using a sample of convenience (Mack et al., 2005; Stalmeijer et al., 2014). An exploratory, cross-sectional qualitative research design was utilized.

At the institution, an introduction to clinical practice begins in the second academic year of the undergraduate programme, continuing into the third year alongside theoretical education (Health Sciences Faculty, 2020). At the time this study was conducted, final year students completed five clinical rotations. These clinical rotations include paediatrics, rehabilitation, musculoskeletal, intensive care units and a community rotation, representing the major disciplines in Physiotherapy practice (Terry et al., 2020). The duration of each clinical rotation was five weeks. In the final year, clinical rotations run consecutively as all theory is completed before the start of the academic year. However, this cohort of students, who were in their third year of study at the height of the Covid-19 pandemic in 2020, had only one clinical placement rotation. Consequently, they had significantly much less first-hand clinical experience entering their final year than the cohorts of previous years.

IV PARTICIPANTS

Data was collected during one clinical rotation from six fourth-year physiotherapy students who rotated through different healthcare spaces: tertiary, secondary hospitals, and community facilities in the Western Cape, South Africa. Ethical approval to conduct the study was obtained in July 2020 (HREC REF: 016/2020), and the participants' consent was obtained. Due to the COVID-19 pandemic and the impact of this on all educational activities in the country, a decision

was made to postpone all recruitment for the study until 2021. Therefore, recruitment started in February 2021 by using the research invitation flyer which was posted on the fourth-year physiotherapy internal website. The COVID-19 pandemic had significantly affected the enrolment of participants. We encountered a slow uptake of research participants, resulting in the six participants who consented to take part in the study. It is possible that the ongoing pandemic and the secondary ramifications thereof including students falling ill (due to COVID-19) was associated with this low enrolment of participants.

For some participants, data was collected during their first clinical placement; for others, it was the third placement (see Table 1).

V PARADIGM AND POSITIONALITY

The research study has been conceptualised and framed with the interpretivist mindset that our reality is subjective and formed by our interactions with the world we live in and by other people (Tombs & Pugsley, 2020). Interpretivism posits the existence of multiple truths and realities, thus contesting the existence of a single absolute truth (Bunniss & Kelly, 2010; Odole et al., 2014). Interpretivist research seeks to gain understanding from experiences and appreciates the importance of all experiences in a particular phenomenon of interest. When conducting interpretivist research, the researcher explores the world through the experiences and understanding of the encounters of the participants (Thanh & Thanh, 2015). This is especially relevant in this study, as contextual, social, and relational elements may play a role when physiotherapy students engage in clinical education activities (Liljedahl et al., 2016; Ramklass & Vithal, 2022)

Emanating from this interpretivist paradigm, we, as researchers, have noted with interest that students experience various teaching and learning activities within clinical placements differently. Holmes (2020) states that the experiences which shape researcher positionality may influence all spheres of the research study. Thus, the researchers conceptualized the study and its methodology to capture the participants' own lived experiences and how this related to the learning opportunities that they were presented (Cleland & Durning, 2019).

VI METHODS

Self-recorded video diaries followed by semi-structured interviews were used (McGrath et al., 2019; Zundel et al., 2018). Video diaries were narrative-based and provided the ideal medium for students to recount their subjective experiences from their current or prior clinical exposures. Narratives were chosen as they are commonly used in everyday communication and are naturally used to recount events or experiences (Gee & Handford, 2013). Following the narrative self-recorded videos, all participants were invited to partake in semi-structured interviews informed by individualized guides related to concepts of interest in this study and those emerging from the video diaries. The identity of participants was anonymised, and where direct quotations were used, pseudonyms were given (Ferguson et al., 2004).

VII DATA ANALYSIS

Discourse analysis was used to illuminate participants' views and experiences about clinical education concerning the social context in which they found themselves (Gee & Handford, 2013). Using a deductive approach, learning opportunities identified by participants, physical learning environment, location, student participation, and the interactions and development of relationships formed the main categories and sub-categories. In analysing the data, the transcripts of both the video diaries and semi-structured interviews were reviewed, and emerging codes were developed and refined. Open coding was used to assign raw data components to appropriate categories and sub-categories (Maguire & Delahunt, 2017). Once all data was coded, categories and codes were transferred from the participants' data sources and captured electronically on a spreadsheet to determine the frequency of codes across all the data sets. This

process made it possible to form connections between codes, to look for emergent patterns, and unearth the most dominant concepts (Aronson, 1995). In unearthing possible themes, recurring persons were noted, for example, individuals to whom participants referred, sayings, activities expressed in the data and their intended meaning (Aronson, 1995).

During the iterative data collection and analysis cycle, the codes were checked and refined until the codes adequately represented the participant's views and experiences (Maguire & Delahunt, 2017). Uncertainties from the transcript of the video diary were dealt with in the follow-up interview with participants. The most dominant and significant concepts were extracted from each category of codes and blended to form themes (Aronson, 1995; Maguire & Delahunt, 2017).

VIII RESULTS

The results presented are from six participants, five female and one male, who rotated through various clinical spaces as outlined in Table 1. Educator attributes, skills, the exercise of power and teaching strategies to promote agentic student engagement emerged as central themes under sociocultural influences. To a lesser extent, contextual influences arose in the findings.

Table 1
Study Participants and Their Clinical Rotations

Participants Pseudonym	Clinical rotation sequence	Clinical placement
Ziyanda	3rd clinical rotation	ICU* Trauma in tertiary hospital
Sandy	3rd clinical rotation	ICU Acute Spinal Cord Injuries in tertiary hospital
Clara	3rd clinical rotation	Paediatric in tertiary hospital
Anna	1st clinical rotation	ICU General Surgery in tertiary hospital
Nadia	1st clinical rotation	General in community setting
Neil	1st clinical rotation	Paediatric in tertiary hospital

*ICU=Intensive Care Unit

A *Social and Cultural Influences*

1 *Clinical Educator Attributes and Skills*

Some students in the study associated their difficult experiences at the clinical placements with the traits that the clinical educator at the site exhibited. The two participants (Sandy and Clara) stated that their clinicians' behaviour limited their ability to ask questions and made them fearful of making mistakes. The personality attributes of the clinical educator directly influence how students engage in the clinical setting.

> Clara: … our clinicians are really harsh. And there's no such thing as constructive criticism. And there's no encouragement whatsoever … [Paediatric Tertiary]

> Sandy: She was very critical of our like little mistakes but hadn't given us guidance on what to do. So, she would complain and then we would have to try and figure out how to improve instead of being given a bit of guidance. [ICU Acute Spinal Cord Injuries Tertiary]

2 *Student-Educator Relationship*

The influence of the student-clinical educator relationship in determining clinical supervision success cannot be underestimated. In this study, students often used the clinical educator as a

compass to guide them in the unfamiliar territory of the clinical site. There was also considerable uncertainty when students commenced their fourth-year clinical rotation due to the lack of clinical exposure in their third year due to the COVID-19 pandemic periods of national lockdowns. Students felt unprepared for the realities of the clinical setting and the duties of working as a student physiotherapist. This further amplified the significance of this relational aspect with the clinician or clinical educator.

> Ziyanda: I had unexpected difficulties especially in the hospital like not really realizing you know that this is actually like a whole load more than you know you would ever expect. [ICU Trauma Tertiary]

A more personalized, relational approach to clinical education is encouraged to support learning. A meaningful student-clinical educator relationship allowed the clinical educator to be more connected to the needs of the student. When students in this study felt allied with their clinical educator, they were more at ease when needing to identify aspects of patient care with which they were struggling. This kind of close professional association may also allow students to pick up on the *ways of being* of physiotherapists.

> Anna: I get along really well with my clinician which has been very helpful. It's been really nice it's definitely made me feel a lot more relaxed, and just more comfortable … [ICU General Surgery Tertiary]

Apart from two students (Clara and Sandy), generally the participants reported that their student-teacher relationships encompassed these desired qualities. These two students shared that they experienced strained relationships with their clinicians at the clinical site placement. These tensions negatively affected their entire clinical placement experience and minimized their learning potential. Clinicians have various approaches to interaction with students. The ideal teacher's attributes may encompass elements such as being thoughtful, concerned, and supportive, which contributes towards a supportive learning environment (Gamble Blakey et al., 2019). Some clinicians possess these qualities and have a natural proclivity to student mentoring and teaching. Others, however, do not prioritize teaching. This could be due to an array of reasons, such as inadequate preparation, lack of knowledge about clinical education, uncertainty related to teaching roles, and increased clinical workload leading to inability to reconcile clinician and educator roles.

> Sandy: it really hasn't been nice. and it's quite unfortunate because I feel like on a block, you're supposed to get learning opportunities, and the clinicians are supposed to expose you to things. To be quite honest I just got the impression that she um didn't really like want to be a clinician like want to be one of the clinicians' supervising students. [ICU Acute Spinal Cord Injuries Tertiary]

Moreover, the context of clinicians who fulfil the role of teacher is complex and challenging, making it impossible for them always to exhibit these traits or prioritize student relations. Historically, clinical education by clinicians is closely aligned with whether physiotherapists are placed in institutions that provide education for undergraduate health sciences students. Likely, knowledge of education is not a requirement for clinicians whose primary role is patient management.

3 *Power Dynamics between Student and Clinician*

Power occurs in relationships where one person concerned can modify the behaviours and actions of the other due to a potential risk (Alsubaie, 2015). In the study context, clinicians could exert power over students due to the perceived threat of being reprimanded or low marks on the clinical placement assessment which is part of their responsibility.

> Sandy: … I realized the impact of having a good clinician, on a block in terms of growth as students, and the impact that they can make on that. They literally make or break your block. [ICU Acute Spinal Cord Injuries Tertiary]

> Clara: … there's no encouragement whatsoever and to be completely honest, if I wasn't so thick skinned, I think this block would absolutely break me. [Paediatric Tertiary]

Multiple role players are involved in clinical education, especially in large tertiary settings. This may contribute to the development of power dynamics. In this study, however, not all clinicians or clinical educators have used their position of power to the detriment of students. In some

examples, power dynamics were used to create learning opportunities for participants and to empower them in their learning. A constructive power dynamic is constituted by providing enough support and supervision to the students, which is observed at a relational level through the clinical teacher or at an institutional level.

> Ziyanda: … our supervisors [clinical educators] make a huge difference to your block because your supervisor [clinical educator] is the person that can actually like guide you along what you are doing … [ICU Trauma Tertiary]

Informal learning in clinical teams suggests that hierarchical groups, such as those operating in large tertiary settings, may result in reduced agency in those with less power, such as students. It seems that when students and educators can find a healthy balance between autonomy, agentic engagement and teacher skill and support, this may minimize unhealthy power dynamics at the relational level. Acknowledging that power relations are inherent in educational relationships it is possible that other participants were situated in clinical placements where clinicians and clinical educators were able to attain this kind of balance.

4 *Teaching Strategies to Promote Student Agentic Engagement*

Students enjoyed implementing the skills learnt in the classroom and fulfilling the role of a student physiotherapist, which may have been a stimulus for them to exercise their agency. The concept of agency can be described as the ability to take action and make resolutions that enable one to fulfil your potential (Cook-Sather, 2020). Agentic engagement shows how students harness their agency to shape and cultivate their learning interactions actively; for example, when students ask questions, make recommendations, ask for clarity, and seek opportunities to learn. These actions signify a degree of agency in their clinical learning.

> Anna: I think that I've been trying my best to put myself out there. If one of the clinicians said: How do you feel about treating this patient by yourself? I've tried to, you know, be confident and say that I can. [ICU General Surgery Tertiary]

It is possible that students could employ their agentic engagement, thus modifying their learning context to suit their needs and make the environment more *motivationally supportive.* However, motivation and agentic student engagement may fluctuate with contextual and relational elements as observed in the study.

> Anna: I would say that I am quite hard working, I think that is something I would describe myself as. You know like I do like to put my all into something, so you know definitely, put all my effort into something. [ICU General Surgery Tertiary]

> Nadia: I would probably say I'm quite a gentle person. I'm very like compassionate and kind in that sense. I can be quite shy. But also like, I really enjoy participating and I am able to take initiative. I like things to be done properly so I never do, well like hardly ever do a half-hearted job or something. [General community rotation]

Constructive interactions with others and positive reinforcement in the workplace are beneficial to newly graduated physiotherapists early career development. This was evident in the study when students wanted to explore additional learning opportunities, such as observing specialized cases or other patient treatments, but felt restricted by the clinicians. Therefore, in this study, some students may have started their clinical placement rotations with positive learning attributes and agency but, due to the context, were not allowed to be autonomous and more self-directed in their learning.

> Clara: …there's a lot of opportunities in terms of like the different clinics like the burn clinic and cystic fibrosis and fracture clinic and CP [cerebral palsy] clinic and all the clinics, which are absolutely amazing. I have taken part in them [clinics]. The clinicians don't really want us to [attend these clinics] because they want us to spend more time with patients. But I think the clinics will help us with our patients. [Paediatric Tertiary]

> Neil: I think that it's also understanding that actually you know your role, you need to be a part of the team and then almost to a certain extent sucking it up and asking the question … [Paediatric Tertiary]

Students who expressed positive student-teacher relationships described valuable exchanges, including teaching during patient encounters, close guidance, oversight during patient management, and availability to brainstorm ideas. Noteworthy is the role of modelling reasoning, when teachers demonstrate their thinking and reasoning processes to students.

> Anna: It was the clinician. Literally she sat me down and she explained ventilator settings to me and it is just the first thing that pops into my head every time I think of my ICU block… [ICU General Surgery Tertiary]

> Neil: … throughout this whole block each time that the supervisor [clinical educator] has come, it's been a productive session. … It's been a session where I've taken things out … and nice to get some feedback … [Paediatric Tertiary]

The importance of bedside teaching related to patient care and thorough feedback experienced by students in the study established these activities as meaningful to clinical learning.

Students appreciate it when clinicians and clinical educators used a student-centred approach. This may include using multiple strategies and flexibility adapting to students' learning needs.

> Ziyanda: … there is someone that you can ask questions and there is someone that actually like reassures you that actually you are doing the right thing, or this is where you can improve in. [ICU Trauma Tertiary]

The findings highlight that the students appreciated when there was a balance of autonomy and support. An *autonomy supportive* teaching style is a method of engaging students actively in their learning by designing opportunities for students to engage in a way they choose (Reeve, 2013). This teaching method may foster student motivation, allow students to feel capable, and promote a sense of support in the clinical learning environment.

B *Contextual*

1 *Limited Clinical Experience Requires Additional Support and Supervision*

Students felt their lack of experience, primarily due to the academic disruptions from the COVID-19 pandemic in their third year, made them unprepared for clinical practice. Preparedness for clinical practice suggests that students feel confident in their ability to start their clinical work safely. It could, therefore, be argued that support and guidance was found to be important for these participants because this facilitated *legitimate* entry as a newcomer into the group.

> Sandy: I would have really appreciated especially in like maybe the first two days or the first week, I think after that it is completely fine to be a bit more on your own more independent, but from day one pretty much at [institution name] we were let loose and just had to go and do our own thing with our patients. [ICU Acute Spinal Cord Injuries Tertiary]

2 *Supportive Clinical Site Culture*

A clinical site which embraced students and clinical education was considered optimal amongst participants. The clinical environment was more than just having friendly staff. Clinical placements, which valued clinical education as an essential component of their daily work and had the resources to do so, were valued among participants. Some clinical placements may have an institutional or organizational culture in which the teaching and learning of physiotherapy students is instilled as an essential part of their practice. When students felt welcomed as a member of the community of physiotherapists, they mainly had positive perceptions of their learning at the clinical site. However, this was not the case for all students.

> Nadia: I found it quite difficult working without the clinical educators as it, it takes a lot of initiative from yourself, to actually go out and do things and I've been trying to take that initiative, but it has been hard … [General community rotation]

Viewing students as contributing members suggests that the perception of students as an unwelcome burden harms the clinical learning environment. The need for support from staff members at the clinical site to deal with difficult situations which may occur during clinical learning is important.

> Sandy: … it was quite overwhelming in the beginning because it's massive you get lost easily, you're trying to find wards um you can't always find admin that you need to find um and we're not really … you don't really cover that in class. [ICU Acute Spinal Cord Injuries Tertiary]

In addition to clinical placements accepting students, the culture of the clinical site may also influence student learning through the hidden curriculum. When students complete their clinical placement rotations, they are exposed to the dominant culture in that institution and the group's habits, norms, and values. In this study, students felt that their clinical learning was positively influenced when they perceived clinicians as optimistic about their presence and motivated and driven in their roles as physiotherapists. The institutional culture may also model an unhealthy belief about the physiotherapy profession, which could cause demotivation or even lead to emotional and mental health concerns. It is possible, therefore, that for students who mainly had negative experiences in this study, this could be due to differing ideologies about clinical learning and expectations.

IX DISCUSSION

Informed by sociocultural theory, this study sought to illuminate the elements and relationships that influence students' learning in the clinical environment. The results highlight clinical educator attributes, novice students, the learning environment, and the community of practice as influences on student learning and participation.

A *The Impact of Clinical Educators on Clinical Education*

Students in the study emphasized the impact of what educators would do to facilitate their learning and the quality of these interactions. This indicates relevance and reliance on teaching in the clinical workplace by experts informed by negative and positive experiences. Kurunsaari et al. (2022) highlight clinical educators' roles as students transition into becoming physiotherapists, addressing the theory and practice gap and supporting students' learning processes. However, Lave and Wenger (1991) see learning as a natural consequence of the relationships between inexperienced novices and more experienced individuals in the environment where the activity is practiced. That is to say that learning is intentional. Students may experience the learning opportunities in the clinical environment differently, as shown in this study (Liljedahl et al., 2015). For students to maximise their learning during clinical exposure, teaching and learning in earlier years of study may need to demonstrate the value of formal and informal learning opportunities equally (Mardian et al., 2023).

It is important to note that physiotherapy clinicians who fulfil the role of clinical educators may have experience in terms of years of qualification and practice in the profession but not the necessary knowledge and skills for clinical education (Wilkinson et al., 2023). This brings into question who fulfils the role of an expert for physiotherapy students on clinical placements. Consequently, clinical educators may be expected to perform as experts but are not adequately prepared, thus assuming an unjustifiable educator role (Hargreaves et al., 2023). This is important in contexts such as South Africa, where clinical educators from the university spend less time than clinicians with students. Students may depend on clinicians to acquire the practice of the profession. If that is the case, preparing students in an ongoing manner as they transition from one year to the next, and preparing clinicians for learning in the clinical education, is necessary (Dornan et al., 2019; Liljedahl et al., 2015).

Lastly, issues of how power is exercised proved influential due to its pervasive influence on the students' entire clinical placement experience. Power was exercised in opportunities afforded to the student or how students were treated in the clinical placement. This was done by the clinician(s), demonstrating that power can be employed to limit participation in the group activities, therefore putting students in a *disempowering* position (Lave & Wenger, 1991; MacMillan et al., 2022; Mahasneh et al., 2020). Alternatively, encouraging participation in professional activities can empower students to take control of their learning (Angoff et al., 2016).

B *The Novice Physiotherapy Student*

The fourth-year physiotherapy student commences with clinical placement rotations needing to attain specific knowledge and clinical skills determined by the university and their professional body. As the novice student engages with others and, specifically, individuals with more clinical experience, they are not only equipped with technical skill but take on the walk and talk of the profession (Solvang & Fougner, 2022). A sense of belonging to the community of physiotherapists enhances students' learning, which is optimised through *participation* in the *practice* of physiotherapy. As the physiotherapy student moves centrally within a group of experts, in addition to learning the activity and practice in the group, their identity as a physiotherapist is constructed (Lave & Wenger, 1991; Mafumo et al., 2022). Learning through *participation* can thus be considered as belonging to the community of physiotherapy (Fuller et al., 2005). Estrangement from clinicians influenced perceptions of limited learning opportunities, thus inferring that for some students to learn in the community of practice, they needed to belong.

The concept of student agency in the data results illuminates the importance of intrinsic qualities in informing how students have approached their clinical learning (Stenalt & Lassesen, 2022). It is likely that students bring their attributes and attitudes formed outside into the community (Fuller et al., 2005). In this study, this was signified by the students' agency, which allowed them to embrace their role as student physiotherapists by asking questions and taking on patient care. In some cases, however, other, more central community members may not always condone the expressions of agentic action. While initiative may be showed by some about a desired learning opportunity, the request may not be received in the same manner by the supervising clinician. SLT and CoP acknowledges that newcomers can change the community and even challenge the boundaries of the community (Lave & Wenger, 1991). These contests can often lead to tensions within the CoP. Students may, under these conditions, feel marginalized and mistreated, as was the case in the study finding. It is possible that these students found the community of physiotherapists and the social context of their clinical site divergent from their values, principles, and perceptions of the *practice.* These tensions could have led them to reject opportunities to participate more completely in the community and thus remain on the periphery (Fuller et al., 2005).

C *Fostering a Supportive Learning Environment*

The study findings demonstrate that these students understood learning opportunities as mostly related to their contributions, actions, and interactions within the environment and with essential figures, primarily the clinical educator.

During clinical education, novices are usually assigned simple tasks or perform portions of more complex tasks and do not assume full responsibility for these tasks (Lave & Wenger, 1991). For physiotherapy students, this could entail performing an aspect of the physiotherapy treatment but not being responsible for the entire patient treatment. Although this may be true at the start of their clinical placement, this condition of their role does not last for long as students are expected to manage their patient load. Additionally, patients vary in complexity and clinical presentation, indicating that the degree of proficiency of the student and the support provided by experts may vary. This is guided by the expected clinical learning outcomes which would stipulate what students would need to accomplish during the clinical rotation. Thus, students who may not be able to manage patients independently by the end of the placement may not meet the requirements to pass the clinical rotation. The rotational education model operative in the study preferences learning over a predetermined, short period due to the perceived benefits of depth and breadth of clinical exposure. This model is based on the premise that the rotational education system supports the development of the student's ability to cope in different contexts and independence (Holmboe et al., 2011). The rotational model further signals enquiries about the degree of complexity in which novices should demonstrate proficiency in clinical education (Zainuldin & Tan, 2021).

Apprenticeship, as described in SLT, is considered to be a more prolonged process allowing connections with people over time and gradual immersion into a CoP (Lave & Wenger, 1991). This is contrasted to the time allocated for clinical placement rotations (Holmboe et al., 2011). As students move from one clinical rotation to another, they are expected to transfer knowledge and skills learnt to their next clinical rotation. However, this does not always happen. A reason for this may lie in the multifaceted concept of content transfer that needs to be taught and mediated. The doing action in clinical education draws upon cognitive, psychomotor, and affective skills, a much more complex task (Khan & Ramachandran, 2012). Therefore, in the physiotherapy curriculum, physiotherapy students may only be able to demonstrate proficiency in some respects, and in varying degrees, of physiotherapy *practice* by the end of the clinical rotation, indicating that movement from the periphery to the centre of the CoP is uncertain. This concern has also been raised by Kaufman (2018) and Solvangg et al. (2021), who have shown that short placements of a few weeks duration may limit a student's movement within the group through *participation*; therefore, they may remain on the periphery of the community. Appreciating the different timeframes needed for students to learn in the clinical environment may enhance their clinical experience (Frank et al., 2010; Gervais, 2016).

Further to this point, the study results also illuminate an uncertainty about what is considered *participation* in the context of Physiotherapy clinical education. The skilled activity of the group is related to the physical tasks that physiotherapists do; for example, the strategies they would use to treat patients (Jonsson et al., 2023; Lave & Wenger, 1991). However, *participation* encompasses the group's shared history, traditions, and resources (Wenger, 2000). For students to fully partake and be engaged in what physiotherapists do, then students must be able to explore the skilled activity such as patient care and socialize with professionals. Observing professionals working and listening to recounts of their shared history is equally important, a finding which was notably absent from the student narratives. Although students have shared that learning during the clinical rotation occurred through mechanisms defined as *participation,* it is possible that participants are reflecting on learning the *activity* and not necessarily the *practice* of physiotherapy. Although it is outside of this study's scope, methodologically and conceptually, to explore full participation, the results signal a concern that the development of the physiotherapy student as a professional may not be possible without full participation. This has implications for how the clinical education curriculum is designed.

D *Dynamics of CoP in Clinical Education*

Physiotherapy departments in tertiary settings may easily be understood as communities of practice as this is where, according to theory, students develop professional *practice*. When novice students start a clinical placement, they interact not only with one clinician or clinical educator but also with all the physiotherapists in that clinical space.

The support for student learning through the community's culture, customs, and values in the clinical site proved to be meaningful to students. The relational nature of communities also implies that entry into the community and the resources which enable learning is not necessarily habitual (Wenger, 2000). Thus, if learning occurs through the relationships between people, there may be organizational and hierarchical structures or institutional and cultural influences in the clinical placement that hinder these relationships' development (Handley et al., 2006).

In this study, limitations to accessing the community of physiotherapists, in the case of two students, were mainly related to the placement culture and the general outlook concerning students. These students were both in clinical placements at tertiary hospital settings. Although the physiotherapy departments in both settings can be recognized as CoP's, it would seem that their ways of doing and being were exclusive of students and their learning needs, making *participation* challenging. Interestingly, two other students also had their clinical placement at the same institution but in different areas of the institution and with different teams; these two students had favourable impressions of the physiotherapy community and the placement. This, firstly, elucidates the subjective nature of learning in social structures and, secondly, demonstrates that

multiple communities may exist, each with their own *practices*, simultaneously in a large department of physiotherapists (Handley et al., 2006).

Additionally, what membership may look like in one clinical placement may differ vastly from another. For example, the physiotherapy activity that one student engaged in during their community placement would vary significantly from the practice that other participants were engaging within the tertiary hospitals. The different experiences signify that students may have to negotiate their LPP at every clinical site placement. Although this may be problematic for those students who struggle during their clinical rotations, navigating through different CoP's may be advantageous in acquiring other attributes and qualities necessary for community service required in South Africa.

The findings indicate that for Physiotherapy students, learning through LPP is conditional. The participation process is driven and designed by actions and attributes of novice students and master educators. It is either facilitated or hindered by the clinical site culture that constitutes the context.

X LIMITATIONS

The study's cross-sectional nature was a limitation, and it is plausible that a longitudinal study may have provided it with more participants and transferable findings, seeing that participants would have been exposed to a range of contexts and people. The possibility of bias is also acknowledged as the results are based on the subjective experiences of students and their interpretations of events (Gamble Blakey et al., 2019). The data collection method of the video diary could have also limited the sample, and students who are not confident in filming themselves or sharing their views on camera may have joined the study if another method had been used.

XI CONCLUSION

The study findings highlight that positive learning attributes, such as motivation, allow students to engage and create opportunities during clinical placement. Although not in itself a theoretical sociocultural construct, these attributes and agency form part of the student physiotherapist identity. The clinical educator must also possess attributes which foster positive pedagogical relationships with students. The student-teacher relationship is the medium through which teaching and learning interactions occur. The educator's action directly influences student engagement, and tensions between student and educator may be observed by power dynamics which may curtail student participation. The most significant contextual element influencing learning for physiotherapy students is the culture of the clinical site. Institutional cultures that embraced and fostered student participation in educational and professional activities are valued and enable learning. Furthermore, a reciprocal nature exists between student attributes and agency, and educator attributes such as skill and power. Ultimately, there is also an interconnectedness between the clinical site culture, student, and clinical educator.

AUTHOR CONTRIBUTIONS

The manuscript is based on work of a Masters thesis and was conceived, designed and analysed the data by NT, LP drafted the first manuscript, SM edited the manuscript. NT, LP reviewed and edited the final manuscript, all authors approved the final manuscript.

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