

## Research

# Effective Teaching and Learning Opportunities During Clinical Education from the Students' Perspective - Prospective Cross-sectional Study

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## Abstract:

The study aimed to explore physiotherapy students' perceptions of effective teaching and learning opportunities (TLOs) and the key attributes of clinical teachers during clinical education. Understanding these perceptions can help improve clinical teaching practices and enhance learning experiences. A prospective cross-sectional study was conducted among final-year physiotherapy students at the Faculty of Health Sciences, University of Ljubljana, Slovenia, during the 2021/2022 academic year. An adapted self-administered, structured questionnaire was used to collect data. Descriptive statistics were applied to analyze students' preferences regarding TLOs and clinical teacher attributes. A total of 46 students (61% response rate) participated. The most valued TLOs included patient management demonstrations (93%), feedback sessions (85%), and discussions with clinical teachers (76%). The most important clinical teacher roles were identified as feedback provider (93%), knowledge provider (91%), and mentor (89%). Key attributes of effective clinical teachers included good communication (89%), respect for students (78%), and approachability (72%). Students perceive patient management demonstrations, feedback, and discussions as the most beneficial TLOs. Effective clinical teaching is associated with clear communication, respect, and accessibility. The findings highlight the need for structured guidelines to support clinical educators and ensure consistency in physiotherapy education.

**Keywords:** teaching and learning opportunities; clinical teacher; attributes; physiotherapy; clinical education

## 1. Introduction

Clinical education offers a unique learning experience as opposed to classroom teaching. The student works with a clinician to translate the theoretical knowledge acquired in previous years into professional skills and behaviours (Rindflesch et al., 2009). On the other hand, clinical education provides a less controlled learning environment than classroom instruction, which sometimes makes it difficult for clinical educators to plan a stable and equitable clinical education experience for all students (Ernstzen et al., 2009). In the 'real world', the objectives of the healthcare institution in which teaching takes place are centred on the provision of quality healthcare to patients. In this context, the physiotherapy student's education may take a secondary role to patient care. Clinical education therefore becomes less of a structured approach to learning and more of a series of learning opportunities for the student to take up when they can.

In higher education, the rise of student-centred learning has led to a shift in emphasis from traditional 'teaching' to 'learning' (O'Neill & McMahon, 2005). In this model, the teacher serves as a facilitator rather than just a transmitter of knowledge, while students take a more active role in their education. This approach transfers the power from the teacher to the student (Milanese et al., 2013). A student-centred approach is particularly well suited to clinical education, where the unpredictability of the learning experience can disadvantage passive students. Actively engaged students, on the other hand, are more likely to take advantage of and benefit from the learning opportunities presented to them (Ernstzen & Bitzer, 2012).

Considering the problems mentioned above (e.g. lack of control over the setting, transition to student-centred learning), understanding the experience from the student's perspective can help identify strategies to improve the learning process and promote engagement (DeClute & Ladyschewsky, 1993; Hobbs et al., 2000; Crosbie et al., 2002).

In clinical education, the learning environment is influenced by the teaching and learning opportunities offered, the roles and attributes/characteristics/personality of the clinical teacher, the student and the patient, the models of clinical education used, the assessment of students and the atmosphere and facilities of the healthcare institution (Ernstzen & Bitzer 2006; Ernstzen & Bitzer, 2012). Two aspects of the learning environment, namely the teaching and learning opportunities (TLOs) and the roles and attributes of clinical teachers, have been shown to be the most significant factors influencing learning (Chan, 2001).

Clinical education TLOs are learning activities that the student encounters in the clinical environment that allow the student to actively build and integrate their theoretical and practical knowledge, through the experience of clinical practice (Ernstzen et al., 2009). Little is known about teaching-learning strategies that clinical teachers use in clinical education and the perceived efficacy of these (Kilminster et al. 2007). Knowledge of these aspects may lead to appropriate changes made in clinical education thereby enhancing learning in the clinical environment. As teaching supports learning, it is useful to determine which teaching-learning activities students view as effective and useful.

Although the importance of clinical education is eagerly emphasised, recommendations for optimal TLOs are inconsistent (Van der Hem-Stokroos, 2005). There is currently no standardised guide to help clinical teachers in physiotherapy organise their teaching method (Robertson et al., 2003). In other words, each clinical teacher teaches differently as it depends on their own judgement. This leads to different support and teaching by clinical teachers and different learning for individual students and in the same clinical rotation (Hobbs et al., 2000; Milanese et al., 2013). These voices are of concern in clinical education as they can lead to inconsistency and inequity in student learning experiences, lack of validity and reliability in assessment, varying standards in clinical teaching, varying levels of motivation among clinical teachers, and a lack of time and staff for clinical education (Delany & Bragge, 2009; Hartley et al., 2019).

Previous researchers found that the attributes of the clinical teacher and the relationship between the student and the teacher have a powerful effect on learning (Kilminster & Jolly, 2000). Attributes such as approachability, enthusiasm, communication skills and the desire to share knowledge have been identified as important attributes for clinical teachers (Bennett, 2003; Ramakrishnan & Bairapareddy, 2020). Behaviours such as being a competent physiotherapist, being available, answering questions without belittling the

student, and providing useful and constructive feedback were perceived by students as the most effective clinical teaching behaviours (Onuoha, 1994; Ernstzen & Bitzer, 2012). The aim of the study was to find out what final year physiotherapy students enrolled at the Faculty of Health Sciences at the University of Ljubljana in Slovenia (FHSUL) consider to be effective teaching and learning opportunities during clinical education and what they consider to be the role and attributes of an effective clinical teacher.

## 2. Material and Methods

The study follows a prospective cross-sectional design among the cohort of final year physiotherapy students enrolled for the 2021/2022 academic year at the FHSUL in Slovenia. FHSUL offers a 3-year undergraduate program in physiotherapy which consists of theoretical studies (46%) and practical training at the university and in clinical placement (54%). Students must complete a 20-week of minimal 700 hours clinical education throughout the curriculum.

A self-administered, structured questionnaire was used for data collection based on questionnaire used by Milanese et al. (2013) and Ernstzen et al. (2009) in studies of physiotherapy students' perceptions on effective practices for teaching and learning in the clinical setting. Before we translated the questionnaire into Slovenian, we received permission from the author Ernstzen et al. (2009) of the original questionnaire to use the questionnaire and adapt it to our context. The translation process of the original questionnaire from English into Slovenian followed the recommendations of Squires et al. (2013), which consider cross-cultural aspects of translation, where questions, expressions and concepts from the source culture (English) are carefully adapted to the target culture (Slovenian), considering the specific characteristics of the Slovenian language, cultural norms, values and context. Ten participants assessed the suitability of the questionnaire's content in pilot study and evaluated its key features, including clarity, simplicity, conciseness and time required to complete the questionnaire, on a scale of 1 (strongly disagree) to 5 (strongly agree). The average rating for clarity was 4.6 ( $\pm 0.5$ ), for simplicity 4.4 ( $\pm 0.7$ ), for conciseness 4.6 ( $\pm 0.52$ ) and for time suitability 3.8 ( $\pm 0.63$ ).

The questionnaire asked for basic demographic information (age, gender) and specific questions regarding their clinical placements. From the fifteen TLOs listed in the questionnaire, students selected the five most important ones where they learnt the most. Of the ten roles that are most important for the clinical teacher and the twelve attributes of the clinical teacher that the students consider necessary for optimal learning and that were listed in the questionnaire, the students selected the five most important.

An electronic version of the questionnaire was sent to final year students via the website MojaAnketa.si.web. Before completing the questionnaire, all participants were informed of the following: the purpose of the survey, that participation was voluntary and that the answers would remain anonymous. Completion and submission of the questionnaire implied informed consent.

Collected data were entered into Microsoft Excel spreadsheets, and analysis was performed in both Excel and IBM® SPSS Statistics (v22) (Armonk NY, US). Descriptive statistics, including frequencies and percentages for categorical variables, and mean and standard deviation (SD) for continuous variables were calculated to describe the demographic data.

## 3. Results

Of the total number ( $n = 76$ ) of students enrolled in the final year of the 2021/2022 academic year, 46 students completed the questionnaire in full during the study period (response rate of 61%). The participants included 36 female and 10 male students with an average age of 22.7 years (range 22–29 years).

The perceived learning values of the different TLOs are shown in **Table 1**. The five most important useful domains for providing TLOs to students was demonstration of patient management, followed by feedback and discussion with the clinical teacher, clinical tasks and one-to-one learning sessions.

**Table 1.** Students' views on teaching and learning opportunities/activities during which students learn the most.

Teaching and learning opportunities	Percentages and (number) of students who selected the activity
Demonstrations of patient management	93% (43)
Feedback	85% (39)
Discussions with the clinical teacher	76% (35)
Clinical tasks	41% (19)
One-to-one learning sessions	37% (17)
Reflection	28% (13)
Discussion with peers	26% (12)
Group-learning sessions	22% (10)
Learning on own	22% (10)
Mock assessment	17% (8)
Coaching	17% (8)
Questioning	13% (6)
Peer assessment	9% (4)
Lectures	7% (3)
When learning is facilitated	4% (2)
Other	2% (1)

The participants were asked to choose what they considered to be the most important roles of the clinical teacher. The results are shown in **Table 2**. From the results of the questionnaire, the five most important roles of the clinical teacher were selected: reflector/feedback provider, knowledge provider, mentor and demonstrator of techniques.

**Table 2.** Clinical teacher role

Clinical teacher role	Percentages and (number) of students who selected the role
Reflector/feed-back provider	93% (43)
Knowledge provider	91% (43)
Mentor	89% (41)
Technique demonstrator	80% (37)
Counsellor	70% (32)
Role model	35% (16)
Assessor/Evaluator	15% (7)
Facilitator of learning	13% (6)
Questioner	9% (4)
Friend	4% (2)
Other	0% (0)

Students identified the importance of the communication skills of the clinical teacher as the most important attribute. Other important attributes of clinical teacher attributes were respecting the students and approachability. The attributes that received the lowest rating in this study were that the clinical instructor is enthusiastic, a listener, and self-confident (**Table 3**).

**Table 3.** Clinical teacher attributes

Clinical teacher attributes	Percentages and (number) of students who selected the attribute
Good Communication	89% (41)
Respects the student	78% (36)
Approachability	72% (33)
Shows concern for student	61% (28)
Supports the student	59% (27)
Organised	37% (17)
Not prejudiced	35% (16)
Gives recognition for student abilities	33% (15)
Interpersonal skills	17% (8)
Enthusiasm	11% (5)
Listener	4% (2)
Self-confident	4% (2)
Other	0% (0)

#### 4. Discussion

The objective of this study was to explore physiotherapy students' perceptions of the teaching and learning activities associated with clinical education and how they perceive the key roles and attributes of the clinical teacher. Our students valued demonstrations of patient management by a clinical teacher as one of the most valuable clinical TLO. Demonstrations of patient management by the clinical teacher are usually situations where he/she performs the patient management step by step, demonstrating the subdivisions of the patient management. These subdivisions are going through the patient folder, performing the interview, planning and performing the physical assessment, as well as management strategies for the patient. A demonstration on patient management may help the student to determine where to start the process of patient management, what to assess, and promote decision-making skills (Stoikov et al., 2022). Observing the teacher performing the demonstration may be seen as learning by observation, and performing the demonstration may be seen as learning by doing (Torre et al., 2006). On the other hand, teacher-led demonstrations may be seen more than as passive learning by the student (Kilminster et al., 2007).

Another important TLO in this study was feedback. Van der Hem-Stokroos et al. (2005), Allen & Molloy, (2017) and Wijbenga et al. (2019) point out that feedback should be a key element in clinical education programmes. Feedback to students should be clear and unambiguous so that they are aware of their mistakes and weaknesses (Kilminster et al., 2007). Our results support the findings of Kilminster & Jolly (2000), who emphasise the importance of feedback for students' self-confidence and for a good relationship between students and teachers.

Discussions with the teacher were selected by most students as another valuable TLO in our study. Discussions about a specific patient appear to be useful in facilitating learning because they actively engage the student, as through discussions students practise thinking through problems, organising concepts, formulating arguments and counterarguments, evaluating the evidence for their own and others' positions, and responding thoughtfully and critically to different points of view (Milanese et al., 2013;

Stoikov et al., 2022). A discussion is therefore a collaborative learning event that offers the opportunity to gain knowledge and insights through the exchange of ideas and opinions. For our cohort of students, the use of TLOs that were least frequently selected in the questionnaire and were not directly related to a patient (mock assessment, coaching, questioning, peer assessment, lectures) needs to be reconsidered.

The data obtained from our study showed that students perceive the most important role of the clinical teacher as a reflector/feedback and knowledge provider, mentor and demonstrator of techniques. The role of the clinical teacher as a facilitator of learning was rated low by the students in our study. These findings are not in line with current professional evidence which postulates that the role of the clinical teacher is to facilitate learning opportunities and maximise the clinical experience within the duration of the placement (CSP Chartered Society Physiotherapy, 2020). However, the role of the teacher as both a provider of feedback and knowledge and a facilitator of self-responsibility for learning appears to be contradictory. Harden & Crosby (2000) may offer a viewpoint that could explain the students' perspective. They state that the teacher as a knowledge provider takes on a whole new meaning in the clinical context. Rather than providing knowledge by delivering it on to students (e.g. in the form of a lecture), in the clinical context the teacher passes on knowledge that relates to the specific condition of the patient. This situation creates a strong context that facilitates learning due to the immediate relevance of this knowledge.

The attributes of clinical teachers that played an important role for our students were identified as good communication, respect for students, approachability, interest in students, and support for students. Communication skills of the clinical teacher was the most important attribute from the students' perspective. It has been documented that physiotherapy students have had negative experiences on placement where they have experienced problems with communication with the clinical teacher (Ramakrishnan and Bairapareddy, 2020), an unapproachable clinical teacher (Meyer et al., 2017) and a lack of mutual appreciation of the roles of teacher and student (Delany & Bragge, 2009). The relationship between students and the clinical teacher has been shown to be a better predictor of client outcome than the ability or helpfulness of the clinical teacher (Kilminster & Jolly, 2000).

#### 4.1. Recommendations

As the main aim of our study was to determine which of the TLOs were considered by the physiotherapy students to be effective in enhancing learning in the clinical setting, these activities - demonstration of patient management, feedback and discussion with the clinical teacher - should therefore form the basis of the clinical teaching programme. At the FHSUL in Slovenia, there is currently no standardised guide to help physiotherapy clinical teachers organise their teaching method, as it is not compulsory for physiotherapists working with students to undergo training. It could be argued that students could be disadvantaged by a lack of understanding of educational teaching principles by clinical teachers who have not received training in practice education, particularly because students are assigned to multiple clinical teachers. There is clear justification for providing untrained clinical teachers at FHSUL with the necessary theoretical knowledge and skills to provide students with a consistent educational approach during clinical training. The importance of personal factors such as good communication skills, approachability, respect and support for students should be emphasised in clinical teacher education.

#### 4.2. Strengths and Limitations

The study had many strengths. This was the first study aimed at investigating students' perceptions of teaching and learning activities related to clinical education in Slovenia. The results of this study provide valuable insights into students' perspectives of clinical teaching and learning opportunities and the role and attributes of clinical teachers in the effectiveness of clinical education. One limitation is that we did not include the views of clinical teachers to gain insight into the similarities and differences between the perspectives of students and clinical teachers. Limitations of the study also include the fact that the study was only conducted at a single higher education institution. Had the study

been conducted at multiple higher education institutions in Slovenia, different phenomena and findings may have emerged.

## 5. Conclusions

In our study, demonstrations of patient management were found to be the most valuable activity for facilitating learning in the clinical setting from the students' perspective. However, demonstrations cannot exist in isolation but should be complemented by feedback and discussion. Feedback and discussion were seen by students as the second and third most important TLOs. Students perceived the most important role of the clinical teacher as a reflector/feedback and knowledge provider, mentor and demonstrator of techniques. Good communication skills, respect for students, approachability, interest in students and support for students were cited by students as the most important attributes of the clinical teacher. The fact that clinical teachers at FHSUL are not required to undertake formal training and often rely on the goodwill of physiotherapists in the clinical setting to work with students needs to change. FHSUL, which sends its students to specific practice settings, should consider providing these clinical teachers with the necessary training to provide students with an effective clinical placement experience.

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