

**A study to investigate the use of objectively structured practical examination in the assessment of undergraduate Physiotherapy students' practical skills at one tertiary institution in South Africa**

by  
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Submitted in partial fulfilment of the requirements for the degree of  
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June 2003

*To*

*My mother, Pete & my angels*

## PREFACE

The research described in this dissertation was carried out in the Department of Physiotherapy at one tertiary institution in KwaZulu Natal, under the supervision of Ruth Searle of the University of Natal.

The study represents original work by the author and has not been submitted in any other form to another tertiary institution. Where reference has been made to others, it has been duly acknowledged.

Nirmala Naidoo

Durban

June 2003

## ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to the following people for their contribution to this thesis:

**Ruth Searle** - My supervisor, who kept me thinking and learning with her expert advice and guidance. Thank you especially for your patience in teaching me, a novice at educational research.

**Charlotte Mbali, Ruth Searle & the participants in the MEd discussion group** - for the enthusiastic discussion on assessment. The discussions encouraged me to reflect on my own practice and stimulated my interest in the assessment of practical skills of my students.

**Staff of the Physiotherapy Department** - for openly sharing their teaching experiences with me.

**Physiotherapy students** - who participated so eagerly in the study and for the enthusiasm with which they shared their experiences of OSPE and practical examination.

**My father** - for his guidance

**My mother** - for her support and especially for the care of our girls.

**Richard** - my husband, for his love, encouragement and support of my work, despite the scientist in him!

**Kimera & Narina** - my angels, for bringing me back to the real world!

## ABSTRACT

Objectively structured practical examination (OSPE) is widely used in Physiotherapy to assess the practical skills of undergraduate students. The rationale for OSPE is to provide a means for evaluation of students' clinical skills, so that students may ultimately apply their skills to patients in the clinical situation. Students should show their ability to think critically and reason, for efficient and effective clinical application. It is therefore important that OSPE is structured such that these objectives may be achieved.

This study presents the results of an investigation of OSPE at a Physiotherapy Department at one tertiary institution in South Africa. The present implementation has some merit. However, some adjustments need to be made in order that the OSPE process is more integrative of theory and practice, while simultaneously ensuring the holistic approach. This would facilitate an integrated approach to education and training aimed at integrating theory with the practice, and the academic with the vocational. Thus there would be a holistic and global approach to patient care.

**LIST OF ABBREVIATIONS**

<b>EL1</b>	<b>English first language</b>
<b>EL2</b>	<b>English second language</b>
<b>HPCSA</b>	<b>Health Professions Council of South Africa</b>
<b>MCQ</b>	<b>Multiple Choice Questions</b>
<b>no.</b>	<b>number</b>
<b>NQF</b>	<b>National Qualifications Framework</b>
<b>OSCE</b>	<b>Objectively Structured Clinical Examination</b>
<b>OSPE</b>	<b>Objectively Structured Practical Examination</b>
<b>PBL</b>	<b>Problem Based Learning</b>
<b>%</b>	<b>percentage</b>
<b>SASP</b>	<b>South African Society of Physiotherapy</b>
<b>SKL</b>	<b>Skills Laboratory</b>
<b>SAQA</b>	<b>South African Qualifications Authority</b>

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# CHAPTER 1

## INTRODUCTION

The education system in South Africa is undergoing radical transformation and key challenges facing the South African higher education system are outlined in the White Paper: “to redress past inequalities and to transform the higher education system to serve a new social order, to meet pressing national needs, and to respond to new realities and opportunities” (South Africa, Department of Education, 1997: 27). One key strategy is to bring vocational training, and academic education closer together, minimizing the divide between them. This indicates that there is a need for curriculum transformation to promote co-ordination (to work together in an efficient and organized way), integration (process of combining practice and theory to work together) and coherence (a situation where all aspects fit together well) of academic development and learning programmes. These affect not only the wider system, but also individual and especially vocational and practical disciplines such as Physiotherapy.

### **1.1 National Qualifications Framework (NQF)**

To facilitate this integration of education and training the National Education Ministerial Committee introduced the South African National Qualifications Framework (NQF). The implementation of the NQF as a mechanism for change is a further factor that has influenced the intended outcomes of the Physiotherapy curriculum. The flexibility allowed by the NQF with respect to entrance criteria, permits admission of learners with varying backgrounds of prior knowledge, educational abilities and achievements. The NQF outlines a curriculum that is flexible and accessible to all students. The increased accessibility of Physiotherapy to a variety of students with different educational and cultural backgrounds has meant that the curriculum and assessment procedures have to be adjusted in order to efficiently deal with greater diversity within courses and to evaluate students’ practical skills whilst developing their ability to integrate theoretical understandings.



The framework of principles set up by the Ministry of Education accelerates redress for past inequalities whilst ensuring consistent high quality and the South African Qualification Authority (SAQA) has been established to oversee the process and to ensure the enhancement of quality in education and training.

## **1.2 South African Qualifications Authority (SAQA)**

As the health care environment continues to change, increased pressure is being placed on Physiotherapy education programmes to qualify more clinicians who are able to adapt to the evolving nature of Physiotherapy practice.

Physiotherapy education has to subscribe to the SAQA standards and Physiotherapy graduates are expected to meet the criteria of acceptable practice. Physiotherapy students therefore need to develop skills in all areas of the profession, as well as those which are relevant for social development and the needs of our country. Any curriculum needs to include the critical crossfield outcomes, as well as outcomes specific to their domain. Physiotherapy educators should consider how well students are being prepared to function in rapidly changing and complex clinical situations (Graham, 1996). This is borne out by the White Paper on Higher Education (South Africa. Dept of Education, July 1997) which outlines the aims of the institutions of higher education. One of these aims reads:

*“To produce graduates with skills and competencies that build the foundations of lifelong learning.”*

## **1.3 The Physiotherapy curriculum**

Along with these recent developments, several other trends have also influenced the Physiotherapy curriculum. Physiotherapy students in higher education are required to learn a vast amount of theoretical background whilst developing practical skills. They are expected to integrate theory with the practical and to develop independent judgment through the use of critical thinking and clinical reasoning, and with greater diversity amongst students, the pressure is ever towards practice. Perhaps what needs to be examined is how the various

aspects of the curriculum contribute to the development of such abilities. In this particular study assessment forms used in Physiotherapy will be examined, with a special focus on the OSPE and practical examination as examinations of practical application.

One of the objectives of testing Physiotherapy students' practical skills should be to verify and establish an holistic approach to patient care. Students are required to integrate theoretical knowledge with the practical in order to achieve this objective. The ability to integrate both the practical and theory needs to be taught or assisted through the teaching. Deep learning with an emphasis on understanding needs to be encouraged. Since assessment influences learning (Shortland and Davies, 1995) it is important to explore its effects and how it contributes to integration and student performance.

#### **1.4 Trends in Physiotherapy education**

The changes that are taking place within the Physiotherapy curriculum and profession as a whole are in keeping with the changes that are occurring in higher education, that is, moving towards promoting independent and lifelong learners. As with medicine the growing awareness of the patient, and of the role and influence that the patient exerts on the effectiveness of treatment has influenced developments within Physiotherapy education. Physiotherapists are no longer just technical experts. There is a need to be more flexible and more responsive to the patient in the variety of situations in which they find themselves. The role of the Physiotherapist in the multidisciplinary health team has become more recognized and acknowledged. This indicates a need for change in the curriculum, as well as in the methods of assessment, given the key role assessment has within the curriculum and upon learning.

Early in the Physiotherapy profession's history curricula were largely content-based and reflected the technical role of the Physiotherapist at the time. As the role of the Physiotherapist began to expand, the curricula became increasingly rooted in the medical and behavioural sciences. Hence, much of the curriculum content and many of the assessment procedures are similar to those for medical students. The changes that are occurring in this field are also in

keeping with the changes occurring in higher education more generally, and these have prompted revisions in the Physiotherapy curricula with a new consideration of learning and evaluation in the academic as well as the clinical setting. However, there is tension between the need to cover skills and the need to introduce critical thinking and problem solving skills in order to encourage integration.

The tensions inherent in health care delivery and the education system, and the limitations under which health sciences education takes place in South Africa has an enormous impact on assessment of students in Physiotherapy. Assessment procedures need to acknowledge circumstances in which assessment is applied if we are to achieve successful transformation. This transformation may also support the need to expose the students to a clinical environment earlier in the programme and on a more regular basis. There is tension in many areas, for example, increasing student numbers, more diverse student population with increasing pressure on training institutions to increase the number of graduates by providing accessibility to the Physiotherapy programme and providing flexibility within the programme, There are added tensions and limitations with the move to community-based care and with the emphasis on patient-centred care. This puts pressure on teaching and assessment forms which test both theory and practical skills. There are strains on the resources, facilities, time, and energy. The assessment forms are aspects which influence the curriculum and assessment as it develops, and exerts pressure for quality.

### **1.5 Assessment**

If there is a need to modify the curriculum this implies a need to modify assessment practices. Assessment should feature strongly in the curriculum with specific objectives and questions in order that judgements may be made with regards to variability. In order to administer good formal educational assessment, we must have a clearly defined purpose. Stiggins (1994) suggests asking the following questions:

- *What concepts, skills and knowledge am I trying to assess?*
- *What should my students know?*

- *At what level should my students be performing?*

*What type of knowledge is being assessed?*

Professional judgment is the foundation for assessment. The measurement of student performance may seem “objective” with such practices as MCQ’s, but even these are based on professional assumptions and values. Objective implies unbiased, reproducible and robust (eliminating cheating). The essence of assessment is making professional interpretations and decisions. These interpretations and decisions impact on the quality of assessment and the results (McMillan and Nash, 2000). The tension in assessment is to have an assessment that ensures students have the skills, yet allow students the opportunity to participate and develop broader skills. There is a strong push for objective performance and broad ranging tests, especially as this is a profession which deals with life and death. It is felt that it is important to be able to replicate the assessments and show that students can perform consistently. There is a sense that different markers should mark exactly the same. All this encourages rote learning and when students rote learn and cram, then the retention of such information and procedures is doubtful. There is a need for a balance.

A modern definition of assessment states that assessment should provide guidance and feedback to the learner, with the key function being to enable judgment of the effectiveness of student learning (Freeman and Lewis, 1998). It refers to the process of judgement of students’ competence and learning. Assessment is undertaken for a variety of purposes and these include learning, certification and quality control. Assessment of learning is done to motivate students, to provide feedback, to consolidate work done, to diagnose strengths and weaknesses and to establish the level of achievement (York, 1995). The role of assessment is seen by SAQA, which oversees assessment for the achievement of set outcomes, as integrating a variety of outcomes.

Assessment is an important part of education and whenever possible it must be of a type suitable to, and used for, the enhancement of good quality learning (Gipps, 1994). Assessment should support the teaching and learning of important skills and concepts. Michelson (1998) proposed that assessment should be more integrated into the learning process. Because the goal of learning is self-actualisation, as supported by the theories of Carl Rogers and Abraham

Maslow (quoted in Maddi, 1996), it requires a passage from passivity to activity and autonomy. Assessment procedures need to infiltrate into the teaching-learning process in order to develop life-long and independent learners who are confident in the application of integrated skills. Assessment is a powerful source of motivation, growth and renewal and is designed to improve the productivity of lecturers and students (Astin, 1992). Yet increasing numbers and a wider range of abilities and background present real challenges for how assessment is conducted.

### **1.5.1 Modes of assessment**

Assessment can be recorded and reported through logs, diaries, portfolios, video recordings and projects as well as other forms. These general assessment forms are known as alternative assessment, that is, they are different from the more traditional forms of assessment. Use of these alternate forms is encouraged by outcome based education. They tend to be more formative and feed into the learning process on a continuous basis. Different methods might be suited to different disciplines. These different modes of assessment occur as a result of contrasting educational theories and because the purpose of assessment is variable. Clarity of objectives and outcomes, and availability of guidance for students and lecturers are some of the factors to be considered when designing or selecting the most appropriate mode of assessment for a given situation. The number of students, time available for testing within the timetable, available space and resources (both physical and human) affect the choice of assessment procedure, as well as suitability for learning. Methods of assessment used in Physiotherapy are more traditional assessment forms and tend to be more summative. Assessment methods broadly include objective tests, short-answer questions, written examination and tests, extended written work, performance tests, assessment of oral work, class participation, projects, continuous evaluation and assessing problem-solving. This study seeks to explore the suitability of some of these evaluative processes in the context of the changes discussed.

Two forms of assessment are used to test the practical skills of Physiotherapy undergraduate students, namely, objectively structured practical examinations (OSPE) and practical examinations. Originally, the practical examination was widely used, and more easily so with

smaller numbers of students. With the increase in student numbers the OSPE has been introduced as a new form of assessment. Important questions arise as to how these assessment procedures are structured and conducted, whether they allow reflection on the skills learnt, and whether they test integrative theory.

Higher education should give students the confidence and ability to take responsibility for their own continuing personal and professional development and promote the pursuit of excellence in the acquisition, development and application of knowledge and skills (Stephenson and Weil, 1992). Students should be encouraged to be more integrative. In Physiotherapy this implies a wide range of skills, including the capacity to select appropriately from these skills and to combine skills for effective application in the holistic management of patients. The ability to be a reflective practitioner (Schon, 1983) should be emphasised and reinforced. The ethics of assessment demand that the constructs and assessment criteria are made available to students, and that a range of tasks and assessments are included in an assessment programme. Assessment forms need to be examined to see how far all or some of these aspects are met through their use.

### **1.6 Objectively structured practical examination (OSPE)**

The OSPE is one form of assessment that is focused on the practical aspects of Physiotherapy and used in medical education to examine large numbers of students. The objectively structured clinical examination (OSCE) is cited in some references and institutions and refers to the examination being conducted in a clinical setting or in a simulated environment using standardized patients. In this study the terms OSPE and OSCE are used interchangeably.

Manogue (1998) defined the OSPE as a system of assessment. It is a measure of clinical competence that focuses on outcomes via observable behaviours (Carraccio and Englander, 2000). The OSPE was first introduced in 1972 to assess the practical skills of undergraduate medical students (Harden and Gleeson, 1979) and contributed significantly to the change of clinical skills teaching and assessment strategies. With the increasing numbers of students and tensions on the assessment of students with regards to their competency, this form of

assessment was introduced into the medical curriculum to fulfill assessment requirements in this changing environment. This form is being adapted for Physiotherapy with a focus on correct procedure and performance.

The OSPE consists of a set of standardised 'stations'. At each station a student is tested on a specific clinical task. The clinical task may be the performance of a technique or procedure, or tasks related to a patient. An observer (examiner) may be present at the stations. If a technique has specific requirements, it is listed on a checklist, an example of which is shown in Appendix E. Each student moves from one station to the next so that by the end of the OSPE every student has completed every station (Harden and Gleeson, 1979). The standardized checklist suggests that there is a set answer expected of the student by the examiner.

### **1.7 Practical examination**

Another form of assessment used to examine the practical skills of Physiotherapy students is the traditional practical examination. This involves practical contact with real patients. Students take a history, they perform the physical examination and make a diagnosis. The intention is to develop application and integration of knowledge, skills and attitudes through the performance of tasks. Benefits of this type of testing are well documented, for example, it is a more integrated type of testing (Brualdi, 1998). The response here is criteria driven (not standardized) and the expected response is unique to individual situations. This type of assessment would prepare students to cope with the unpredictable and unexpected in the clinical environment which is the workplace setting. This is the environment the graduates would work in on completion of the Physiotherapy programme.

### **1.8 Rationale for the study**

In order to address the problems of deficiencies of the past in the health care delivery to all South Africans, there is increasing pressure to accept and produce more graduates in Physiotherapy to meet the needs of the community of KwaZulu Natal, South Africa. Due to the increasing pressure by the Department of Health to produce more Physiotherapy graduates,

there has been a twofold increase in the student intake. Due to budgeting constraints there has been no increase in resources. The decision to investigate the present implementation of the OSPE assessment was made as the OSPE was introduced into Physiotherapy as a means to assess large numbers of students. The reasoning was that a large number of students could be evaluated on a number of areas in a short time. Many pragmatic decisions needed to be taken.

There is support in the literature for assessment practice by the OSPE (Harden and Cairncross, 1980; Carraccio and Englander, 2000; Wilkinson *et al*, 2000). However, to achieve efficiency, resources in terms of manpower and equipment are required. To increase accessibility for students previously disadvantaged in their access to tertiary level education, the system of modularisation was introduced. While the modular system facilitates access to the Physiotherapy programme, it is proving to be problematic especially in the areas of clinical practice. Modularisation encourages the compartmentalisation and division of wide areas of study and students in the present system are developing problems in integrating the different components and more importantly, once credit is obtained for a module, there is no compulsion to practice the skills learnt. Students tend to shelve their learning and growth on the subject. There is also the danger here of a highly structured, almost prescriptive listing of skills and outcomes to which staff and students work. Modularisation seems to encourage a segmented curriculum (Watson, 1989). The curriculum may also become too practical with the danger of ignoring other aspects. There should be emphasis on integration, yet structures seem to encourage discrete testing. Assessment may mirror the same, that is, assessing those individual outcomes/objectives impacting on the way learning occurs.

The purpose of the study is to highlight the strengths and weaknesses in process of the OSPE in the assessment of undergraduate Physiotherapy students' practical skills done within one department in a tertiary institution in KwaZuluNatal.

The proposed questions are:

- How do forms of practical assessment and the OSPE encourage integration of the practical with the theoretical?
- What issues does the introduction of OSPE raise in relation to the assessment process?
- What kinds of learning does the OSPE promote in students?



- How appropriate do learners and teachers find the OSPE and practical examination as a form of assessment for Physiotherapy?
- What are the strengths and weaknesses of the OSPE as it is implemented in Physiotherapy?

The findings of this research could be useful to:

- 1) Determine the value of the OSPE in the assessment of Physiotherapy students' practical skills
- 2) Make students and staff aware of specific requirements and expectations of OSPE in order to make the OSPE as effective as possible.

The intent of the study is to evaluate the present implementation of the OSPE and to determine issues arising from such implementation in evaluating undergraduate Physiotherapy students' practical skills. The researcher is interested in gaining the perspectives of all involved with the OSPE, that is, the students who are examined by the OSPE and the staff who co-ordinate and examine students. There would be focus on the value and criteria used for the OSPE. This would provide useful information to curriculum developers. There is also the possibility of coming across unexpected issues.

Assessment by the OSPE is supported by the literature as being an efficient means of assessing practical skills (Harden and Cairncross, 1980). The authors found the OSPE to be a practical, reliable and valid alternative to other forms of testing practical skills. The OSPE, if well structured to assess the practical skills of students, will give the students some of the preparation required for independent learning. This would be achieved if students are motivated to integrate their learning for deep learning and understanding, and application of their skills with confidence. Professional skills and knowledge go together with good Physiotherapy practice as well as to provide linkages to other disciplines. Accommodating these is one of the greatest challenges of education and training in the 21<sup>st</sup> century (Candy and O'Leary, 1994).

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Assessment of practical skills

There is much in the literature to support the notion that a wide gap exists between theoretical knowledge and practical skills of students in the medical profession (Martenson, 2001) as well as those of students in the professions allied to it, with Physiotherapy being no exception. As Physiotherapy is largely practically orientated, the assessment of practical skills is an important part of the curriculum. In Physiotherapy, there is amongst other forms of assessment, the assessment by the OSPE and practical examination.

One of the first reports on the implementation of OSPE is published by Harden *et al* (1975). Over 20 years later, Harden *et al* (1999) raise some doubts about the effectiveness and efficiency of the OSPE and reflect on both strengths and weaknesses of the OSPE process. We need to interrogate our OSPE stations by comparing them to those proposed by Harden *et al* (1975) and Harden *et al* (1999). Although Harden *et al* (1975) proposed the initial implementation of the OSPE, what is not addressed is the standardization of patients and exactly how this is achieved to assess students' practical skills. Barrows (1993) gives an overview of the uses of standardized patients for teaching and evaluating clinical skills. Barrow's study reports success with the use of standardized patients, however, this requires strict selection and is dependent on the patient pool at the time of the examination. The debate between Harden *et al* (1999) and Barrows (1993) is related to objective marking versus standardized patients. What is discounted is the humanness and questions are raised, for example, about the pain and fatigue of the patient, and questions whether objectivity is helpful in this situation.

In comparing the practical examination with the OSPE in general, the practical examination introduces the human aspect where students should display good interpersonal relations with the patient and manage the patient holistically. The OSPE removes this aspect in its implementation in that there are models to replace patients and there are simulated clinical situations in a non-clinical environment.

The examination is very structured and the students' performance in the OSPE focuses on completion of a task within a short period of time, usually performed in a simulated setting with points on a checklist being allocated to a set approach to a task (Harden and Cairncross, 1980). The checklists make reference to only one specific response to the task. Answers are set by the co-ordinator with no space for other individual responses. There is no leeway for students' responses, only right or wrong answers. The practical examination is conducted with more time allocation to each task, and no specific checklist which allows for flexibility. The OSPE therefore has a prescribed and set response, whereas the practical examination is the real situation where the unpredictable may be addressed. A good mark obtained by a student at the OSPE does not necessarily imply student competency in the application of the skill in the authentic situation (Hager *et al*, 1994). For example, students in level 1 may teach a 'model' 3-point gait with crutches and may perform this technique perfectly. However, the student may not have an understanding as to when to use this type of gait pattern or what the precautions may be.

To accurately evaluate students' learning, an assessment method must examine his or her collective abilities, rather than encouraging compartmentalization. The "whole is more than the sum of all its parts" (Kingsland and Cowdroy, 1991) and this is important when we consider the implementation of the OSPE. This is especially important when we consider that in the application of Physiotherapy skills in the real situation, the "parts" have to come together as a "whole."

As one of the main objectives for the assessment of students' practical skills is integration of practical with the theory, it is important that the assessment is set such that students can be motivated to deep learning to achieve the objective of integration and holistic management of the patient. Kolb (1984) proposes possible ways in which students learn in a practical situation (Figure 1, page 24) and this could assist in the integration of theory and practice and ultimately impact on students' performance. Gibbs (1992) stresses the need for reflection to integrate theory and practice. Such integration is necessary for efficient and safe Physiotherapy practice.

Some authors like Martin *et al* (2000) support the implementation of tests of practical skills which are augmented by the use of assessment procedures in the authentic environment. Authentic assessment presents students with real-world challenges that require them to apply their relevant skills and knowledge (Martin *et al*, 2000). This would provide students with the challenges of the real situation and would allow for unpredictable situations that students would be required to respond to. This would also require quick judgements and decisions by students thereby giving the opportunity for assessment in the real situation.

According to cognitive theorists such as Bruner (1973), learning is an active process in which a person makes sense of facts and stimuli through the process of conceptualisation and categorisation. This emphasis provides the basis for Physiotherapy curricula that are orientated around the problem-solving process to help students deal with clinical situations (Graham, 1996). The way to evaluate this is by careful design of assessment procedures that will provide a comprehensive means of evaluation of students (Saunders, 1993). OSPE could be designed to provide evaluation of skills in the theory and practical aspects of skills, however, the practical examination brings together both these complex aspects in one examination with a real patient.

The focus of some Physiotherapy curricula has shifted toward competencies that new graduates are expected to demonstrate. Competency-based curricula focus on terminal competencies needed for entry-level performance in the profession and on criterion-referenced evaluation (May, 1978). Competency is focused on critical thinking and problem solving in the authentic environment and emphasis is placed on the process of problem solving, modes of inquiry and application of skills, rather than the mastery of content (Barr, 1977). Thus there is growing tension between an holistic approach and a more atomistic one. If we move towards a more unit standards approach we may slip towards a more fragmented, mastery based approach.

Ben-David (2000) notes that rote learnt responses to questions or repetition of a technique would result in a technicist approach and will not encourage integration of skills. We should continuously ask the following questions when designing an examination: What type of

learning experiences can be incorporated into this examination, either immediately prior to the examination, during or after the examination? As assessment becomes a learning experience, students will value their assessment experiences and value the additional learning opportunities.

Maudsley and Strivens (2000) emphasise that the basic elements of an ideal assessment of Physiotherapy students' practical skills should accomplish the following goals:

- Help students develop responses rather than to respond from pre-determined options
- Higher order thinking should be elicited in addition to basic skills
- Direct holistic evaluation
- Support synthesis with classroom instruction
- Teach students to evaluate their own work
- Allow for multiple human judgements

If we examine the OSPE process we can see that the researcher can record the observable behaviour and make assumptions of students' learning by observing students during the OSPE process (Phillips and Soltis, 1995). This is supportive of behaviourist theories, which are theories of learning that focus only on objectively observable behaviours (Watson, 1960).

Among many other aspects, behaviourism:

- Addresses specific objectives and learning outcomes
- Assesses by means of measurement of knowledge and skills
- Views learning as an event rather than a process
- Strives towards mastery of small bits of knowledge (this is illustrative of the OSPE).

(Perhaps what it does not include is the reasoning process?)

Since the OSPE has been used in a variety of medical situations, it is not surprising that there is extensive literature on its use in American and British medical models. It is the aim of any institution to produce competent graduates and to have good quality control. It is therefore important in this study to determine how the OSPE is constructed in the Physiotherapy context, and to determine what information the OSPE yields. This study aims to fill the gaps, if any, in our understanding of the OSPE process. The literature is however limited in that it

fails to:

- See how OSPE might achieve some skills outlined by Maudsley and Strivens (2000).
- Address Physiotherapy specifically
- Pin-point processes that make the OSPE effective in the Physiotherapy context
- Explain how the OSPE can be applied to other related fields

Support for the OSPE is shown by Shortland and Davies (1995) in a study conducted at the University of Wales Medical School on assessing undergraduate medical students' practical skills. A list of practical skills needing to be observed or learnt was included in an undergraduate medical curriculum. The ability of students to perform these skills was assessed by the OSPE. The results of the study support the use of the OSPE as a short objective test of practical skills. McFaul *et al* (1993) in their study to compare and assess clinical competence among final year students in two British medical schools, concluded that the additional uses of the OSPE include its suitability for testing clinical competence of students within and across medical schools. They note that the OSPE is able to highlight differences in standards between institutions, and that the OSPE can identify areas where teaching methods and/or course content are deficient. Tervo *et al* (1997) claim that the OSPE is a valid means to assess clinical skills that are fundamental to the practice of medicine. The authors concluded from their study that a well-constructed OSPE provides important information about candidate performance and the quality of training. This may not ensure that they operate in a 'real' situation.

## **2.1 History of progression of OSPE**

The progression of assessment can be traced from simple to more sophisticated assessment strategies. There is a move to multiple methods of assessment of students as the role of assessment becomes more important in the expanding horizons of medical professionals (Ben-David, 2000). Traditionally, the practical examination was used to examine students' practical skills. However, studies conducted by Wilson (1987) showed inconsistencies (of as much as 15 %) among the same examiners who examined the same students three months later. One could question the validity of this study as students could have changed in the period of three months. The inconsistencies among the examiners may not be unexpected as examiners are

different in different situations and they may have developed following the initial examination. This could also be due to the differences in the 'real' situation itself as it is non-standardised and difficult to replicate. Harden and Cairncross (1980) devised an alternative test by the OSPE for large numbers of students. They purport that the OSPE brings together a number of techniques (those techniques chosen to measure student competencies) used in assessment and incorporates them in an examination which is designed to test practical skills and which the lecturer can adapt to meet his/her own needs. The average time allocated to each station is five minutes. In an examination with twenty OSPE stations of 5 minutes duration each, and where all students move through all twenty stations with a 30 second break between stations, twenty students can be examined in one hour and 50 minutes (110 minutes). This shows that the OSPE is stylized, structured, controlled and standardized. None of these are possible in the authentic situation.

An assessment method is 'objective' when it is disinterested (not biased as to rating) and highly quantified (van der Vleuten *et al*, 1991). Each OSPE station can be reconstructed in the same way, the entire test is reproducible, and all students go through the same questions and are expected to give the same answers. The number of stations in an examination would depend on the number of students to be tested, the range of skills and content areas to be assessed, the time allocated to each station, the total time available for the examination and the facilities available to conduct the examination. This method of assessment is highly formalized and mechanistic and largely excludes the human aspect which is not always predictable. Sometimes the choice of assessment form may be a matter of convenience and safety for examiners. It does raise questions of how practice in the 'real' world happens.

## **2.2 Clinical skills**

Clinical skills are an important and integral part of clinical competence. Clinical teaching traditionally aims at developing student competence in various clinical skills. The learning of skills using a variety of approaches including models, simulations, laboratory practicals, etc. is an important feature of the Physiotherapy curriculum. Simulations provide a means for 'practice of life' situations that should essentially be a part of the educational experiences in a safe environment for all health professionals (Hoban, 1978). In addition, they can provide

valuable benefits without any harm, inconvenience, or real cost to the patient or student (Schneiderman and Muller, 1972). Using simulated patients has become popular in medical education at many institutions (Hamo, 1995). They are useful for clinical exposure, when students' skills are still developing. Students generally are more comfortable with these simulated situations, and as they develop their confidence, they become more clinically competent when they work with real patients (Barrows, 1993). Simulated patients can provide a means for the integration of various aspects of knowledge and skills, to encourage students to develop a holistic approach to patient care rather than regard the systems previously learnt as separate. This may be regarded as the first stage of integration. They also provide standards against which performance can be judged (Spannaus, 1978). The OSPE fits well with this.

Clinical teaching, together with the introduction of clinical skills in the authentic environment, is introduced early in the Physiotherapy curriculum (Level 2) and the aim of this is to emphasise the unpredictable, multifaceted nature of the real world. There is general consensus among Physiotherapy practitioners that the more authentic and well developed the assessment method, the more useful and efficient the method, that is, practical examination and the OSPE (personal correspondence). In implementing the OSPE, the question arises:

*Have we moved from a more challenging, holistic assessment method to one where only the technical skills of our students are tested?*

### **2.3 Goals/aims of the OSPE**

The goal of an examination of competence should be to simulate performance under conditions as close to the 'real' situation as possible. The number of stations in the OSPE

should provide a good sample of clinical situations. It should allow for the determination of student learning and understanding of concepts taught in the classroom with students being successful in transferring and applying their knowledge to the practical situation (Pangaro, 2000). Learning in the authentic environment, or as close to the 'real' situation as possible, fosters deep understanding as compared to superficial learning in a technical mode. This may be part of the tension of the claim that this presents the real situation and the actuality.



Hamo (1995) conducted an OSCE and discussed the role of the skills laboratory (SKL) in the integrated curriculum following identification of weaknesses of clinical skills amongst medical students. The skills in which the students were found to be weak were simulated in the skills laboratory and students were able to practice for the authentic setting. The main mode of skills learning has been where the clinical teaching assumes that by merely demonstrating a skill, the student will have the needed knowledge to repeat it. The author reported that clinical skills are first learned in the SKL using simulations. This resulted in a significant improvement of students' performance and helped to standardise procedures. It was concluded that the SKL is a useful clinical teaching setting, especially when clinical teaching is introduced early in the curriculum. The OSCE was a successful exercise for further integration of skills and knowledge. Students had to integrate their theory in order to accomplish the tasks set in the SKL. The study found that the main goal of the OSCE was achieved as the students' skills performance significantly improved. As clinical reasoning and critical thinking is required in the real situation, one assumes that this improved together with the students' skill performance in the real situation as students were required to respond to simulated situations and thereby had to make rational clinical decisions. This assumption is not always borne out in the real world.

If the aim of the OSPE is to assess students in the way they apply academic knowledge to real-life situations (either in a simulated or authentic situation) within a framework designed to encourage students to take responsibility for their own learning (Harden *et al*, 1999), then we need to:

- Review the current method of assessment by the OSPE in the present situation
- To draw conclusions about the effectiveness and efficiency of the OSPE
- To identify possible areas for change and/or modification
- To develop guidelines to inform assessment by the OSPE

#### **2.4 Strengths and weaknesses of OSPE**

Harden and Cairncross (1980) proposed that a contributing factor to the lack of integration in the assessment of practical skills is the unsatisfactory nature of the assessment tools

commonly used. This could imply that we need to relook and amend assessment tools and methods. They state that from the many studies published on the OSPE, it seems to have both strengths and weaknesses.

The main features of the OSPE are described as being (Harden *et al*, 1975):

- 1) Separate assessment of process and product through observation of performance and assessment of the end result.  
In the OSPE the student is watched performing the task under specialized and controlled conditions. In addition, the end result is assessed where appropriate. One would question whether this is an efficient method.
- 2) Adequate sampling of skills and content to be tested.  
All skills and content areas are sampled, but not all skills are tested in all content areas.
- 3) An analytical approach to the assessment  
In the OSPE, the elements of behaviour to be assessed are defined and agreed on by the examiners before the examination. The examiners can evaluate the performance of each student on the objective evidence accumulated during the examination.
- 4) Objective  
In the OSPE, all students sit a similar examination and each will see a number of examiners. The examiners use checklists when marking a student's performance and the marking strategy can be decided in advance.
- 5) The examination results in improved feedback to lecturers and students  
Following the examination, lecturers and students can be given feedback in each of the areas assessed.

In a study including 99 students divided into three groups, 66 were examined by traditional practical examination and 33 examined by the structural clinical examination (Harden *et al*, 1975). The performance of the students in the clinical examination was compared with their performance in a written examination. The marks in the clinical examination did not correlate with the marks in the written examination in the two groups of students who took the traditional clinical examination. In the 33 students who took the structural clinical examination there was a high correlation between the marks in the clinical examination and marks in the written examination. This study confirms the element of consistency in the correlation of marks obtained at the OSPE.

The advantages of the OSPE to support its use as proposed by Harden and Cairncross (1980) are:

- A large number of students can be examined
- Shorter time is utilized to examine students
- There is decreased examiner fatigue
- There is standardization of the examination (as all students have the same examination, all students go through a number of examiners).
- Increased objectivity through checklists

This list looks good for examiners and is convenient. It deals with pragmatic issues, with the constraints, but perhaps very little with the educational aspects. However, these 'advantages' may influence and reflect on the kind of learning that is achieved and the graduates that we produce. It is possible with the OSPE to analyse separately the student's success in different parts of the examination, and to obtain an overall score for techniques used in the examination, attitudes and recognition and interpretation of findings. However, Harden *et al* (1975) found that the OSPE could produce poor results. The causes of poor performance in a clinical examination are attributable to the following:

- All-round inadequacy (implying inadequacy of preparation by students and/or poor organisation by staff)
- Deficiency in some aspects, for example, poor technique (either imparted in the teaching and/or performed by students)
- Deficiency in specific subject areas.

Although there are advantages to the OSPE, authors who support use of the OSPE agree that there are some deficits in students' responses and performance (Harden and Cairncross, 1980; Wilkinson *et al*, 2000) such as in the list above. It is difficult to determine what is an accurate and efficient measure for a balance between the theoretical and practical. A possible link could be drawn from the results of students' theory tests with that obtained at the OSPE. These results could provide a reason for poor performance by linking practical test results with good or poor theoretical knowledge and to determine the reasons for this with feedback from students.

McFaul *et al* (1993) highlighted that extensive planning is necessary for efficient implementation of the OSPE. They challenge the efficiency of time and concluded that although this is time-consuming, it is worth the effort for efficiency of the OSPE. Planning would include the allocation of examiners followed by several regular meetings during which consensus and consistency among the examiners is established. Station construction can be discussed and debated with input by the examiners. Meticulous organization is necessary, and inefficiency on the part of those delegated to assist can cause problems for the OSPE. This would also ensure the consistency of examiners using the checklists.

Wilkinson *et al* (2000) described the development, organization, implementation and assessment of the OSCE. Their students rated the OSCE highly on relevance, and the study revealed that the OSCE could be implemented to objectively test students' practical skills, provided there is adequate planning and organization beforehand. On the surface presentation of OSPE the activities may look good. The question arises as to the deeper issues of the type of learning encouraged and the links with the workplace input and learning, etc.

## **2.5 Learning styles**

Assessment influences learning therefore we need to explore in what way assessment could be constructed to achieve deep learning and how assessment could be used to influence students' learning. Several researchers have explored theories related to learning styles. Based on the work of Marton and Saljo, Entwistle (1988) identified two main learning approaches, namely, deep and surface. The criterion that separates deep and surface approaches to learning is intention, which influences the manner in which students learn. Surface learning is where unconnected facts are memorised for later reproduction, and deep learning occurs where the student tries to make sense of ideas and concepts, and integrates these to give a whole understanding of the subject. The students' underlying understanding of what learning is, the nature of the task and their perceptions of its demands, also influence their approach to learning. The characteristics of a learning situation that will foster a deeper approach to learning are to allow freedom in what is learnt, encourage intrinsic motivation and to provide good open teaching. Deep approaches to learning promote integration of theory and practice and will encapsulate deeper understanding and reasoning for more effective application to

patient care.

The structure of questions at the OSPE, questioning by examiners and the students' approach to the tasks may influence the students' approach to learning and the efforts towards integration of theory and practical. This could influence the type of learning students utilize. Teaching strategies and departmental characteristics produce a variety of learning environments which influence students in their learning styles (Hounsell, 1977). It was suggested by Franson (1977) that if a learning task is perceived to be irrelevant or to induce anxiety, it is likely to reinforce the use of the surface approach to learning, even inducing the deep learners to adopt a surface learning approach, particularly if there are time constraints as there are in the OSPE. The OSPE therefore needs work to inspire a deeper approach to learning in order that students may understand and reason appropriately and effectively for efficient clinical application.

Martin *et al* (2000) investigated the influence of learning style and clinical experience on performance in the undergraduate OSPE. The results obtained showed that the performance in the OSPE was related to well-organised study methods, but not to clinical experience. This could indicate more rote learning or learning by recall. A significant relationship between clinical experience and organised deep-learning styles suggests that knowledge gained from clinical experience is related to learning style. It can be deduced from this study that deep learning is engendered by clinical experience, that is, the real and authentic environment.

However, well-organised study methods can assist students in their reasoning and performance at the OSPE. This may imply that clinical application of practical skills in the authentic environment supports deep learning and that well organized study methods with no clinical experience tend toward recall. There is tension in devising assessment. The conclusion therefore is that the OSPE may support rote learning while clinical experience supports deep learning, depending on how the learning experience is constructed. Further work is required to elucidate the most beneficial aspects of clinical teaching.

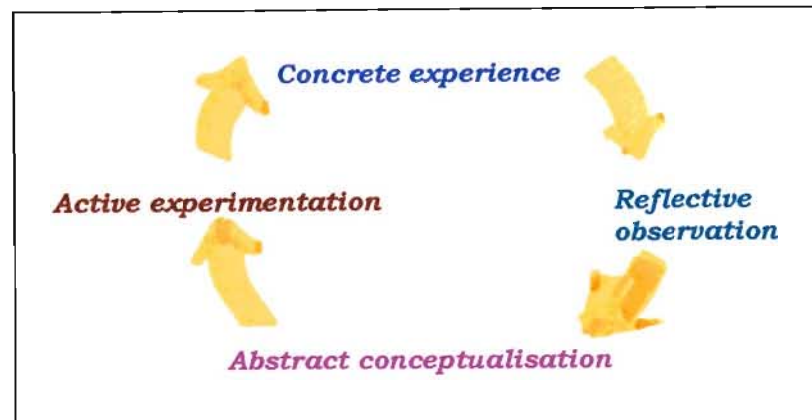
Assessment of practical skills needs to be part of the learning process. This implies that such assessment should be reflective of what we want to achieve in the teaching-learning process.

There should be integration between learning and hands-on doing, and theory and practice, as Kolb (1984) proposed in his investigation of the integration between theory and practice, and learning and 'doing.' The OSPE is one method of testing learning and the extent to which learning has occurred or not. The OSPE conducted in the authentic environment based on clinical experience could support deep learning (based on the experiential learning model of Kolb, 1984) [Figure 1]. Any assessment needs to be consistent with the philosophy informing new understandings of the learning process. Highly practical aspects link to experiential learning.

## 2.6 Experiential learning model

Jacques *et al* (1993) defined experiential learning as learning that arises out of reflection on experience leading to purposive action in order to test the 'hypotheses' that arise out of this reflection. This action in turn leads to further experience and reflection. This learning can be promoted either through reflection on past experience or through reflection on either planned for experience, (such as clinical placements) or on simulated experience enacted within the educational context. Individuals feel the need for mastery (Harter, 1981) and will gain more confidence and satisfaction when they are involved directly in the activity (Erikson, 1950). This learning leads to increased motivation through reinforcement. Concrete experience, when structured properly into a learning event, may expose students to the real situation and may promote deep learning and may determine at what point they are pushed to reflect or abstract. Students need to feel that the learning matter is of personal significance and relevance in order for it to be appreciated, which in turn leads to higher intrinsic motivation. When responsibility is taken for one's learning, the student is more inclined to invest higher levels of energy to the task, as it is more realistic and concrete. This has implications for Physiotherapy as students need to attach significance to their learning and this will motivate them to perform well. In the OSPE the practice of the concrete experience, however controlled, is realistic and relevant to their vocation, although it does not involve all aspects.

Several theorists have explored experiential learning, investigating the relationship between learning and doing, theory and practice, research and application. Kolb (1984) developed a model to explain the process of learning (Figure 1).



**Figure 1: Kolb's experiential learning cycle**

This experiential learning model of Kolb (1984) postulates that learning involves a cycle of four processes (Figure 1), each of which must be present in order for learning to occur. The cycle includes the student's personal involvement in a specific experience, that is, the student performs the activity. The student then reflects on the experience to find its meaning, from many viewpoints. The student draws logical conclusions (abstract conceptualisations) from this reflection. These conclusions and constructs guide decisions and actions (active experimentation) that lead to new concrete experiences (Svinicki and Dixon, 1987). A student reflects on experience (deep thinking) about new ideas and experiences he/she encounters, and as a result of doing this, the student tries to improve and do things differently in the future. Experiential learning may be a continuous cycle, however, it is not necessarily an automatic process.

This model of the experiential learning cycle is pertinent to Physiotherapy, particularly the OSPE, as it explains not only the possible ways that students learn in a practical situation, but also provides some strategies that could be used in teaching students, and could ultimately impact on students' performance, and more importantly assist students with the integration of theory and practice. There is emphasis on reflection and this has immense implications in Physiotherapy with reference to clinical decision-making. Gibbs (1992) stresses the need for reflection in order to integrate theory with practice. He concluded that learning must be tested

in new and different situations, in order to test a variety of responses by students to these situations. Although students may not all have had concrete experiences, all four levels of the cycle should occur within the OSPE in order for learning to be achieved. If deep learning is to be achieved by the OSPE, then the OSPE should encourage each aspect of the Kolb cycle. This would imply that deep learning and understanding would not otherwise be achieved.

A key researcher, Schön (1983), investigated the effect of reflection on learning. He was particularly interested in how professionals learnt and developed their competencies in their workplace. His contention was that practitioners often know more than they can say, they reveal their knowledge in their actions, and that it is through reflection that they cope with uncertain situations that they are often confronted with in their working environment. He notes that much of the education provided for professionals concentrates on problem solving, but he feels that this ignores problem setting and that this is an important weakness in approach. The implications for Physiotherapy are that problem setting can be introduced at undergraduate level to prepare students for these situations. When testing students on their practical skills, problem setting should be incorporated into the questions set at the OSPE and practical examination. This does not always happen at the OSPE in current practice, but does at the practical examination. Such activities will also encourage students to think critically and develop problem-solving skills. Schön's role for the teacher suggests that dialogue is important. By students observing and practicing with the lecturer, the student learns what is good quality practice and this motivates students to work at producing competent results when in practice.

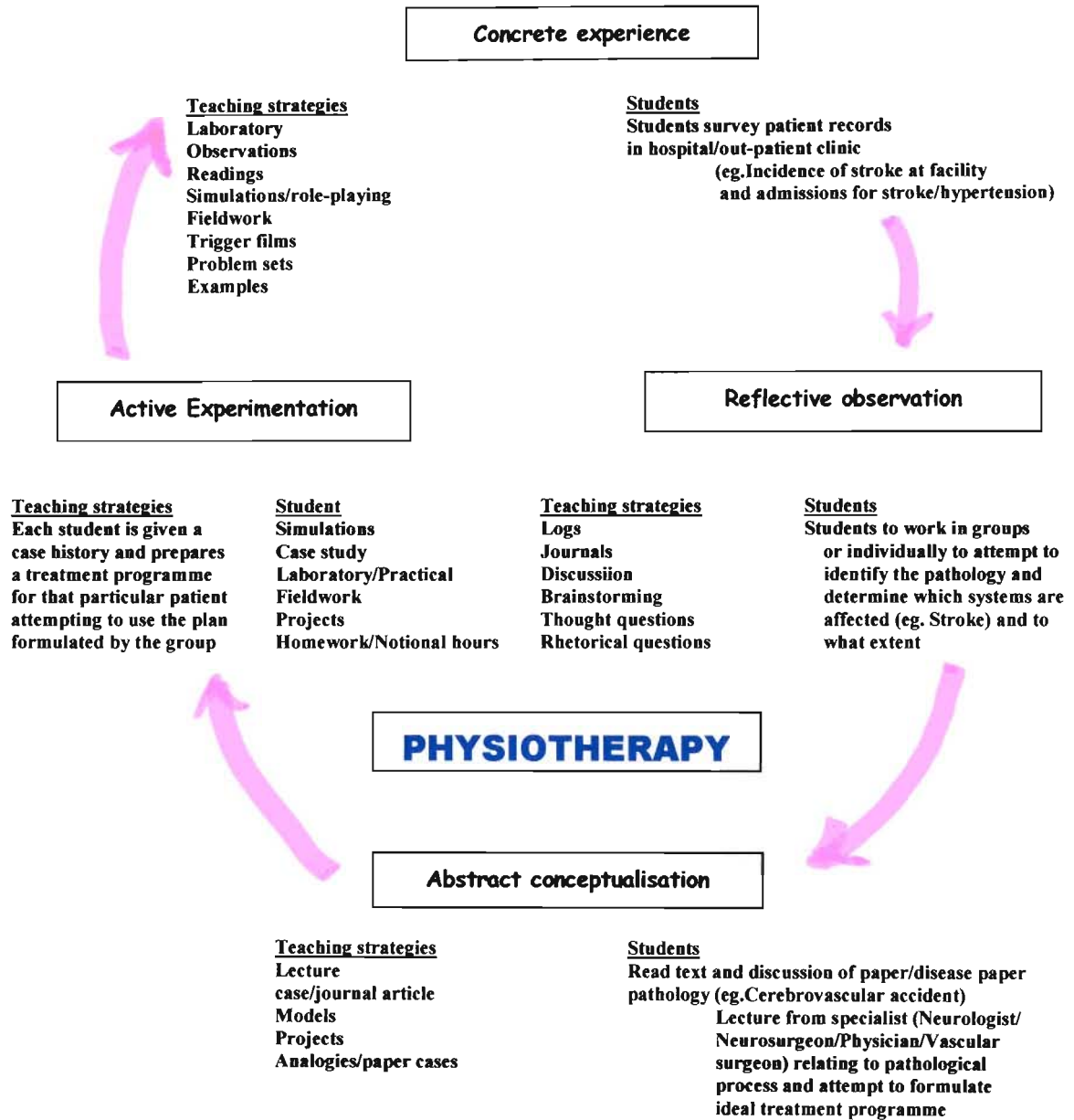
As Physiotherapy students are permitted to practice/work immediately after oath taking and registration with the Health Professionals Council of South Africa (HPCSA), the professional status of the Physiotherapy practitioner has direct bearing on the training of students at undergraduate level. Teaching processes, which enable students to respond only to certain situations can be disempowering, as it does not take into account the unstructured nature of many professional situations. Like Gibbs and Kolb, Schön supports experiential learning in the form of active engagement in the relevant professional practice. Reflection is important and should occur at all levels of the learning process. Feedback to students should comprise part of the reflective process of learning (Gibbs, 1992).



Physiotherapy is a vocational, hands-on (practical) discipline, being connected to skills and knowledge. It is important to differentiate the reflective professional practitioner from the technician. The holistic approach has the requirement of integration of theory with practice, critical thinking and high order clinical reasoning in patient care. The holistic approach is fundamental to Physiotherapy practice in order that safe and effective treatment modalities may be implemented. These can be controlled at undergraduate level by the support of a strong ethos of lifelong learning strategies and by support and motivation.

### **2.7 Proposed teaching strategies to support learning**

By choosing wisely from a range of activities, the lecturer can provide a variety of opportunities for learners to progress through the cycle. The implications for this framework to the discipline of Physiotherapy are drawn in Figure 2. This model explores choices regarding teaching activities and provides a broad range of classroom activities to support student learning. The lecturers can provide opportunities for students by choosing wisely from a range of activities in order for students to progress through the learning cycle. This model also accounts for the wide perspective of Physiotherapy. Both the students and the lecturers have important roles to play. The lecturer is free to choose appropriately from a wide pool of strategies. It is important that assessment must also reflect this, otherwise learning could be lost.



**Figure 2: Instructional activities that support different aspects of the learning cycle in Physiotherapy (adaptation of Svinicki and Dixon’s (1987) interpretation of the Kolb model)**

The OSPE would fit in at any level of the Kolb cycle. By giving the students a variety of activities, the different types of learners would be catered for. This would also support the link between theory and practice, and sharpen the students' critical thinking and clinical reasoning skills. These are necessary requirements in order for students to achieve deep learning for clinical problem solving. To bridge the gap between theory and practice, students need to be able to give reason to and understand their actions. These are the expectations in the authentic situation and would give the students better and specific preparation for what is expected of them. This would facilitate their performance at the OSPE by the exposure and learning experience provided by the authentic environment. This would also facilitate the integration of skills and theory for efficient and effective clinical application.

Another theory which sheds light on learning practical skills is the 'situated learning' theory which claims that 'learning to do' (closely linked to 'knowing how') takes place through solving problems in context. This theory has novices (students) learning a holistic set of actions and explanations from experienced practitioners (Maudsley & Strivens, 2000). Students learn what to observe, what interpretations to link to observations, and what words and actions to use when conveying this to patients and colleagues. Although this process is holistic in nature, it has both strength and weakness. On the one hand it underestimates the role of reflection on experience, and on the other, it supports the application of technical knowledge within skilled actions, for example, clinical decision-making.

Instructional design for situational learning emphasises perception and action over memory and retrieval. It establishes four elements which include appropriate situations, work situations within which students and experts can work alongside each other (for example hospital, clinic), adequate support to develop the tutor's coaching role (for example, staff development) and student assessment processes that incorporate the interaction of the student within the situation. The situated learning perspective challenges professional education by questioning the value of knowledge transmitted by instruction, typically within the educational institution. In physiotherapy this highlights as the gap between theory and practice and presents as a challenge in Physiotherapy education.

## 2.8 Learning through assessment

In designing assessment procedures to evaluate students, evaluators should keep in mind that students do learn through assessment practices (Ben-David, 2000). The more sophisticated the assessment strategies the more appropriate they become for feedback and learning. This should be borne in mind when structuring the OSPE and practical examination.

One of the important principles of assessment is the match between assessment methods and the learning mode, and the programme outcomes. As students progress from novices to experts, they integrate their learning experiences in a meaningful way, which produces the desired results. As students develop, multiple aspects of the profession are sequentially introduced into their training and this increases the complexity of the required tasks. Consequently, students should be given the opportunity to be assessed in the totality of their performance by incorporating all possible dimensions in a holistic form.

The more authentic and efficient an assessment method, the more useful it is in the assessment of students' performance. This takes students into a more contextualised situation, where assessment confirms the extent of students' learning. There are different forms of implementing assessment of students' performance in practical skills in Physiotherapy, and these are the assessment procedures of practical examination and the OSPE. This would facilitate and promote students' learning on how to respond to the unexpectedness in the 'real' situation, especially as these situations are frequent in clinical practice.

Assessment by the OSPE which is a simulated and structured process tends to compartmentalise sections of the curriculum, and therefore has implications for student learning. However, if the OSPE is of a technical nature, then there is no opportunity for the use of critical thinking mechanisms by the student although it may be economical in testing large numbers of students. However, we need to examine how the OSPE is structured; Is the OSPE technical? Does the OSPE feed into the learning process? Ideally, the intention is to support deep learning. If the OSPE is part of a decontextualised process, it is purely technical. If, for example, the OSPE is structured to be contextualised and in the authentic environment, with station construction based on critical thinking and clinical reasoning skills of students, then critical thinking and analytical reasoning may be incorporated into this type of

assessment practice. Authenticity of the environment will give students the necessary clinical experience and practice and would motivate students to deep learning.

Assessment of practical skills is undergoing review in my department with the increasing numbers of students in Physiotherapy, especially as this involves largely the use of integrated practical skills. Assessment procedures are being examined with the idea that assessment methods that are objective, comprehensive and quick are the methods of choice. The implications of this are that they may not necessarily be appropriate or adequate. What is being questioned is: *Have we moved from a more challenging, holistic assessment to a more technical, compartmentalised assessment method by using the OSPE to test practical abilities of students?* The varied understandings of those involved with the OSPE tend to infiltrate into the teaching-learning framework and this study will assist in delving into this. This is what becomes part of the hidden curriculum, and may include the unintended messages that the students receive. What presents a problem is the fact that the literature provides more on learning and less about how assessment and learning are inter-related.

## CHAPTER 3

### METHODS AND METHODOLOGY

#### 3.1 General approach

Physiotherapy is offered in eight South African higher education training institutions. In one particular four-year undergraduate Physiotherapy programme in one of these institutions the OSPE is one of the currently used methods of assessment of practical skills at levels 1, 2 and 3 whilst a practical examination is used to evaluate level 4 students. Level 1 is the first year of study, level 2 the second, level 3 the third and level 4 the fourth year of study. The OSPE is used to evaluate skills in a simulated, structured, segmented and discrete manner, whereas practical examination is a move towards a more holistic and authentic framework. In investigating the implementation and practice of the OSPE in Physiotherapy, the study will seek to understand how people involved in the process make sense of practice. It is also to check the effects of the process on the participants, and to see the strengths and problems. This study is being carried out in order to understand how the OSPE is implemented and understood by those involved.

Cohen *et al* (2000) explain that we 'come to grips' with our environment through experience, reasoning and research. We use personal experience in problem-solving situations. This implies that in a learning situation, students may draw on their own individually accumulated knowledge and skills, and familiarity of knowledge and skills which they derive from encounters in their environment. Where solutions to problem solving lie outside the students' knowledge and experience, the student may seek help of a senior person or lecturer. The limitations of this lie in the fact that in explaining solutions to problems some educators tend to use only that which they think is positive evidence for their explanation and neglect the counter arguments. We as Physiotherapy educators accept the practices involved in the medical model for these to apply to Physiotherapy assessment procedures. We have perhaps not sought to research the application of the OSPE specifically to the Physiotherapy discipline, where there may be possible limitations in our situation. Our reasoning is based on pre-conceived ideas and this can bias the conclusions at we arrive. We could also make

generalisations following reasoning about many individual cases. 'Research is a combination of experience and reasoning, and must be regarded as the most successful approach to the discovery of truth' (Cohen *et al*, 2000).

The qualitative research procedure used in this study explores phenomena in the natural setting, and seeks to interpret, understand, explain and bring meaning to them. Data collection requires the involvement of researchers who can follow procedures consistently and who will not themselves influence the data collected. Theories emerge from particular situations in which we find ourselves. There is a necessity to examine the event of the OSPE within its context. It is necessary to establish whether there are any issues arising from the implementation of the OSPE, and to make suggestions and recommendations as to how we can address these issues if they are present.

This study focused on understanding 'what goes on' in the OSPE, that is, in the **observable** setting. This was achieved by observation of the OSPE and the practical conducted for undergraduate Physiotherapy students in one institution. The difficulty with observable data is the relevance of what can be observed. Often the underlying rationale for activities may not be revealed through observation alone, hence the use of interviews and questionnaires to complement and enrich understanding of the OSPE. The perceptions of staff and students were established by interviews and questionnaires. **Interviews** were conducted with the academic staff who co-ordinate OSPE (one from each level of study) and the practical and those involved with the examination of the OSPE (one from each level of study) and the practical. **Questionnaires** were administered to students at all levels of undergraduate study.

### 3.2 Normative and interpretative paradigms

Whereas the normative paradigm proposes that human behaviour is essentially rule-governed, the interpretative paradigm makes efforts to get inside the person. Behaviour relating to the normative paradigm refers to the external environmental stimuli, for example, hunger or the need to achieve. In this paradigm the cause of behaviour lies in the past. It is not the intention of this research to determine the past, but rather to interpret the OSPE as it is, in the present, natural setting.

The interpretative paradigm, on the other hand, focuses on action. It is related to intentional behaviour and as such is future orientated. Interpretive researchers are involved with individuals and set out to understand their interpretations of the world around them. The theory that emerges is grounded on the data generated from the research (Cohen *et al*, 2000). This research is located in the interpretive paradigm as it involves interpretation of the findings of the OSPE. One feature of the interpretive paradigm is that the choice of the questions and the interpretations are the choice of the researcher.

### **3.3 Criticisms of the naturalistic and interpretative methods**

There is a risk in naturalistic approaches of putting artificial boundaries around the subjects' behaviour. This approach neglects the power of external structural forces that may shape human behaviour and events (Layder, 1994). The researcher's stance is to be as unobtrusive as possible to the OSPE and the practical process, and to investigate and assess the OSPE and the practical in the natural setting. The observer wishes to see what is happening, to record events, as well as to study various factors, influences and features.

A more critical stance would be not just to understand situations and phenomena, but also to change them. It is concerned with action that is based on reflection with the aim to emancipate those involved in the process. It implies that the findings should be taken further rather than seek to understand OSPE at undergraduate level, and that in addition, the OSPE may be rendered more efficient in the assessment of students' practical skills. It also suggests that the researcher should question the situation with the intention of transforming it. The main goal is to make the OSPE more efficient in objectively assessing the practical skills of undergraduate Physiotherapy students, however, it is not intended to.

### **3.4 Qualitative versus Quantitative Research**

Both quantitative and qualitative researchers are concerned with the individual's point of view (Denzin and Lincoln, 2000). A contemporary view of qualitative and quantitative research is viewed by researchers as being complementary and provides opportunity to answer more



questions when both types of research are used together. In this study, qualitative research, through detailed interviewing, observation and questionnaires, has tried to get closer to the perspectives of both the academic staff as well and students. Quantitative measures would seldom be able to capture the subjects' perspectives because they rely on more remote, empirical methods and materials.

This study utilises the ethnomethodological approach as it includes the perceptions of the participants in the study (staff and students). In his book on Sociological theory, Ritzer (1996) defined ethnomethodology as the study of:

*The body of common-sense knowledge and the range of procedures and considerations by means of which the ordinary members of society make sense, in which they find their way about in, and act on the circumstances in which they find themselves (page 137).*

### **3.5 Methodological Framework**

The theoretical framework of this study lies within the interpretive paradigm and the aim is to describe and illuminate the OSPE and the practical process as it is practiced and experienced by students and staff. Within this framework, the researcher shall endeavour to draw meanings or explanations from the data collected. The burden of the interpretive approach is that different participants in the study may have different meanings in the different situations of the OSPE, and the differences will have to be accounted for and related. This study uses the data collection technique of triangulation to provide a broad view of the behaviour and interaction of all involved in the OSPE. Three methods of data collection were chosen as the exclusive reliance on one method of data collection may bias or distort the researcher's picture and understanding of the OSPE. Data from different sources provides different perspectives and potentially enriching data for a fuller understanding.

Our varied understandings of the OSPE, its goals and implementation extend into the teaching-learning continuum. It is these understandings and interpretations that the researcher wishes to explore in interviewing the staff. The staff-student interaction will be recorded

through observation. Students' views on the OSPE and the practical process will be gathered from the questionnaire. In bringing the three methods together, it is hoped that there would be links derived from the implementation of the OSPE form, how it works, and its effects on the participants.

### **3.6 Features of the study of Physiotherapy**

The scope of patient care in Physiotherapy extends from the time the patient is admitted to an intensive care unit, to treatment of the patient in the hospital ward, to rehabilitation as an out-patient and integration of the patient back to their homes, families, work, sport/hobbies and communities. Physiotherapists are therefore in situations which are life-threatening and which call on their critical thinking and quick reasoning skills. The results of reactions may impact on the life of the patient and indeed the quality of the patient's future. The OSPE tests some aspects of the individuals ability to respond. However, the question is whether this situation is tested in totality or holistically. Can the OSPE be structured such that the stations are constructed to include the situations Physiotherapists are involved with in all aspects of patient care?

An important aspect of the Physiotherapy curriculum is the practical or skills training. Several methods of assessment are used in testing students on the Physiotherapy curriculum where students are exposed to role-play, simulations and real patients. Both the OSPE and practical examination of students are done to test Physiotherapy undergraduate students' practical skills. Checklists were used for OSPE evaluation for levels 1,2 and 3. (An example of a checklist is shown in Appendix E). Evaluation forms were used for the practical examination for level 4 students. (An example of an evaluation form is shown in Appendix F). The levels 1, 2 and 3 OSPE are used to test students on their practical skills; level 4 utilises practical examination. Although level 4 students were tested by practical tests, they had been exposed to the OSPE in the previous levels of study.

### **3.7 Subjects**

The subjects were both staff and students from one higher education training institution undergraduate programme. Eight members of staff were interviewed in all. Four OSPE co-ordinators and four examiners were interviewed, one co-ordinator and one examiner from each level of study.

From a total of ten full-time members of academic staff, often all staff were involved as both co-ordinators at one level of study, and examiners at other levels of study. To eliminate the chances of interviewing staff as both examiner and co-ordinator, the researcher decided to choose just one co-ordinator and one examiner from each level of study, with each interviewee being interviewed either as a co-ordinator or an examiner. There were therefore eight different interviewees in total.

All students undergoing examination by the OSPE were included in the study for completion of the questionnaire. Level 1,2,3 and 4 students refer to year cohorts. The number of students for each level of study is: Level 1 = 36 students; level 2 = 30 students; level 3 = 26 students; level 4 = 25 students. A total of 117 questionnaires were handed out to the students. Four different observations of the OSPE were done, with one for each level of study.

### **3.8 Research Instruments**

The following were used to collect data for this research project:

- Observation record (Appendix B)  
(This is a reconstruction of the events of the OSPE as a narrative with some reflection by the researcher, done for all levels of study). Section 3.10.3.1 discusses the observations of OSPE and section 3.10.3.2 discusses the observation of the practical examination.
- Interview schedule for level 1, 2 and 3 co-ordinators of the OSPE [Appendix C (a)]  
(This is a list of questions put to the academic staff who co-ordinate the OSPE for levels 1, 2 and 3).

- Interview schedule for the level 4 co-ordinator [Appendix C (b) ]  
(A list of questions put to the academic staff member who co-ordinates the OSPE for levels 4). Section 3.10.4 discusses the strengths and weaknesses of interviewing in research, with particular reference to this research.
  
- Interview schedule for examiners of the OSPE for levels 1,2 and 3 (Appendix C (c))  
(A list of questions put the examiners of the OSPE for levels 1, 2 and 3).  
As the examiners of the OSPE did not always teach the tested section(s), nor did they structure the respective the OSPE, a few questions to examiners were different to those asked of the co-ordinators.
  
- Interview schedule for the level 4 examiner of the OSPE [Appendix C (d)]  
(A list of questions put the examiner of the practical examination for level 4, hence the additional questions of the OSPE and practical examination which are different to those asked of examiners of the OSPE).
  
- Questionnaire to level 1, 2 and 3 students [Appendix D (a)]  
(The sample questionnaire to students in levels 1, 2 and 3).  
Section 3.10.5 discusses the advantages and disadvantages of questionnaires.
  
- Questionnaire to level 4 students [Appendix D (b)]  
(The sample of the questionnaire given to students in level 4).  
Level 4 students had been tested by the OSPE in their previous years, and by practical examination in their final year.

The following are secondary materials used as research instruments to gather information for this study:

- The OSPE checklist (Appendix E)  
(This is an example of the level 1 checklist used at one of the OSPE stations).  
Evaluation sheet for practical (therapeutics) examination for level 4 students (Appendix F)

### **3.9 Procedure**

The data collection methods used to accomplish the study were: observation of the OSPE in the institutional setting, interviews with staff involved with OSPE and questionnaires to students examined by the OSPE. Observation is one method of developing a detailed picture of the OSPE. The interviews and questionnaires will interrogate people who experience the OSPE in more detail.

The students were informed verbally of the study and confidentiality was promised and their personal details were not requested on the questionnaire. Signed consent was obtained from staff to conduct the interviews, and students for the questionnaire information (Appendix A). The question we want to ask is: Are we diminishing the effect of the OSPE by implementing the OSPE the way we do [which is contrary to Harden *et al* (1975)].

#### **3.9.1 OSPE Description**

Students are informed of the OSPE during their usual lecture and /or practical sessions. They are requested to arrive before the commencement of the OSPE in order to view the roster showing the times, examiners, models/candidates and stations at which the students will be examined. The examination venue is set up the day before the OSPE and students do not have access to the venue from this time. Four OSPE stations are set up for each OSPE. The examiners are the academic staff members from the Physiotherapy department (with whom the students are familiar).

This OSPE station set-up is different to Harden and Gleeson (1979) where all students pass through all stations. The present implementation would not allow for good sampling of the syllabus and does not provide the opportunity for students to integrate theory with practice in a variety of clinical situations. This observation is pertinent to Physiotherapy as the stations could be constructed such that they include a variety of tasks (to sample the syllabus) and all students should be examined at all stations.

### **3.9.2 Description of Practical Examination**

Level 4 students attend clinical rotations at identified hospitals and clinics. At the end of the clinical rotation, students are assessed by a practical examination. Appendix F is an example of the evaluation sheet used to assess students. The students are allocated a real patient and are examined one at a time by the examiners.

Unlike the segmented, compartmentalised features of the OSPE, which are usually performed on models in the classroom-simulated environment, practical assessment is carried out in the authentic environment.

### **3.9.3 Observations**

#### **3.9.3.1 Observation of OSPE**

The aim of the observation of the OSPE was to see what the routine was and to observe what was routine and unusual relating to both staff and students, and to seek explanation. The importance for the researcher is to relate the findings of observation, the perspectives of staff from the interviews and the responses of the students from the questionnaire to determine possible reasons and explanations for their actions related to the OSPE.

Observation of each OSPE was documented (as in the format in Appendix B). Participant observation was used, where the observer was engaged in the process of the OSPE, while remaining unobtrusive. The observer was a participant in that she was the timekeeper for the stations. Students were familiar with the researcher; she was part of the exam set up and therefore no attention was drawn and this did not disrupt the OSPE. The difficulty posed was there were four stations under observation simultaneously. The researcher's attention could have been caught at one station and this would have provided for distraction from the other stations. This was partially overcome by the researcher being in full view of all the stations all of the time. The researcher could move the focus of attention to any of the stations at any time. Most important was the researcher's general observations and report on the process of the OSPE.

Unstructured participant observation was used for each OSPE as it was observed in the natural setting. The setting of the OSPE was the educational institution where all the OSPE's were held. This type of observation is of advantage as data may be collected and recorded for verbal as well as non-verbal behaviour (Anderson and Arsenault, 1999). This method was chosen over the submission of reports by the co-ordinators of the OSPE as it was felt that each would be biased towards their own OSPE. Additionally, the observation could report on the OSPE as it actually occurs and not reported by one of the participants, as this may reflect acceptable responses and omit the unacceptable. The disadvantage with participant observation is that the observer should not lose perspective and become blind to peculiarities of the OSPE and those involved. The researchers own familiarity and that of those involved, both students and staff, can break this possible barrier.

Priebe (1993) quoted the German philosopher Edmund Husserl (1859-1935) in his doctoral thesis:

*To understand human phenomena, we need to put aside our established views and assumptions and learn to 'see' things as they present themselves in our experiences and to 'describe' them in their own terms. (Page 128)*

The importance of transcripts and observations is that the event is preserved on record. The transcript however does not capture the 'richness' and vividness of the observation. It is therefore fundamental to the research to have accurate description. The use of the narrative kept the flow of events of the OSPE.

### **3.9.3.2 Observation of Practical Examination**

The researcher participated as a moderator for the level 4 practical examination. Students were familiar with the researcher, and were told that the researcher would moderate the mark obtained by the student (as would be the case of an external examiner, which does occur at the final end-of-year examination). Observation records (Appendix B) were used to collect observation data of the OSPE being conducted at the hospital. Students were examined one at a time, and this gave the researcher opportunity to focus on one examination at a time.

The role of the researcher was one of involvement in the examination, but also to obtain as much as possible from the observation of the process of the practical examination, without the students and staff being overly aware of the presence of the researcher for research purposes, but one of involvement in the examination. This proved to work out well, as the researcher was familiar to the students, academic staff conducting the examination, as well as the clinical staff at the hospital. The researcher's presence was welcomed and not seen to be obtrusive.

### **3.9.4 Interviews**

Eight members of the academic staff were interviewed, with two from each level of undergraduate study, one as co-ordinator and one as examiner. As the level four students were examined by practical examination, additional questions were asked of the level 4 co-ordinator and examiner. The interview schedules are shown in Appendices C (a), (b), (c) and (d). The researcher conducted the interviews in the offices of staff members, with two being conducted in the researcher's office. Questions were put to the interviewees and their responses were recorded. Semi-structured interviews were used in conducting the interviews and transcripts were obtained from the recordings for analysis. The aim of the interviews was to establish the views of key people, namely, the co-ordinators and examiners. Open questions were asked to establish the perspectives and feelings of the staff interviewed, and closed questions were included in the interview schedule to establish consistency in the responses of the interviewees (Vithal and Jansen, 2000).

Interviews involve the gathering of data through verbal interaction between individuals. They differ from questionnaires where the respondents are required to record their responses to set questions. The advantage of interviews is that it allows for greater depth than is the case with some other methods of data collection. A disadvantage is that it is prone to subjectivity and bias on the part of the interviewer.

Structured interviews make respondents answer in a manner fitting the response category, thereby making the responses more easily coded. However, the disadvantages are that this



type is superficial; it forces inappropriate responses and the alternative responses are unsuitable. The unstructured interview is more flexible; it allows the interviewer to probe, tests limits of the respondent's knowledge, encourages co-operation, establishes rapport and is a truer assessment of the respondent's beliefs than structured interviews. This can give unexpected and unanticipated results. The disadvantages are that the interviewer has little control over the responses and they are difficult to quantify. Hence the choice of semi-structured interview, which provides some control of responses with some consistency, while simultaneously allowing for probing.

#### **3.9.4.1 Tape-recording**

Tape-recording and transcripts were derived from the interviews as the tape-recorder frees the interviewer to concentrate on exploring the interviewee's account. The tape recording however under-represents the communication by providing only the sound component, which is further reduced at the transcript stage. It favours the more articulate, but is however, objective (Cohen *et al*, 2000).

Issues of the way the researcher interpreted the recordings may arise, and in deriving the transcripts for the recorded interviews, some aspects may be omitted or misinterpreted. Recording interviews does not take into account non-verbal gestures, which may add meaning or make more explicit the point that the interviewee is trying to put across. Interviews make it possible to measure what they know (knowledge and information), and what their preferences are and what they think (attitudes and beliefs) for effecting change, gathering data and for sampling the respondents' opinions (Cohen *et al*, 2000). This is accomplished by informal, semi-structured interviews as used in the study. The interviews would assist in identifying the difficulties that staff may have regarding the OSPE, and would also highlight any issues they have relating to the OSPE.

### 3.9.5 Questionnaires

Two additional questions were included in the questionnaire [Appendix D(b)] to level 4 students as their examination was conducted by practical examination in the clinical area. Level 4 students were also exposed to the OSPE in their previous years of study and the researcher saw this as a good opportunity to tap into the opinions of students on both the OSPE and practical examination. This may enable the researcher to make comparisons between the OSPE and the practical examination.

All students were handed the questionnaire before the commencement of the examination and an explanation was given to all students as to the reason for the questionnaire. The researcher saw this time as an ideal opportunity to get a captive audience (the students), with the entire class together. A personal and informal approach to the students was adopted so as to encourage the students to give their honest and uninhibited response. Collecting the questionnaires “on the spot” ensured an increased rate of return of the questionnaires. However, a strong influence would be the fact that the students completed these questionnaires under some degree of examination anxiety.

The questionnaires used in this study covered a wide range of questions and included both open and closed questions. Closed questions allow for only narrow responses, while open questions allow the students to express their opinions and will possibly yield some unexpected responses. They allow participants the opportunity to introduce their own issues, some of which the researcher may have overlooked or not anticipated. Such questionnaires would give comprehensive information, while still allowing for specific information on specific aspects. Most closed questions are answered consistently and are reliable (Vithal and Jansen, 2000). In terms of validity, there is no guarantee that respondents fully understand the question or are truthful.

The questionnaires are effective when they are designed to engage the students’ interest, encourage their co-operation and elicit answers as close as possible to the truth (Cohen *et al*, 2000). Questionnaires provide a means of obtaining comprehensive responses. It was important to be informal to attract the students’ attention in order to give their full response.

Some of the strengths of the questionnaire method of data collection are that it is highly efficient for routine data collection with a large number of respondents. Questionnaires enable the use of a large number of questions and they can provide for individual comments and perspectives in the respondent's own words. Some of the weaknesses of questionnaires include the danger that respondents do not always understand the question leading to a response bias. Coding and entering responses to the questionnaire can result in data entry errors.

### **3.10 Focus of the study**

Instead of focusing on individual students and their personality characteristics, the study focuses on the dynamic activities taking place between the students, the environment and the interaction between students and staff relating to the examination of students' practical skills. Interaction, according to Cohen *et al.* (2000) implies that students act in relation to each other, acting, perceiving and interpreting. However, for robustness of the OSPE requires that students act in isolation. There may be influence of other factors in their isolated interactions, for example, influence of the environment, examiners, models, nervous reactions and the whole process of the OSPE.

Theory has the purpose of explaining and predicting, and the researcher will gather all the isolated parts of data on OSPE into a coherent framework of wider applicability to the OSPE in the assessment of Physiotherapy undergraduate students' practical skills.

### **3.11 Limitations of the study**

The following are some of the limitations of the study that are recognised by the researcher:

- The participants (students) in this study are asked for their opinions and suggestions on the OSPE. Level 1 students have their first exposure to the OSPE and have no exposure to patient care. They may be unaware of the "real" situation. Students may not know what the ideal situation is and therefore have nothing to which they can compare their situation.

However, junior students who have discussions with students at other levels of study may have some frame of understanding of the OSPE.

- In using the interpretive paradigm, the research accepts the perspectives of the participants and corroborates the status quo. This paradigm suggests that the research focuses on the present and the future. This research has the potential to impact on the way the OSPE is conducted in the future.
- The OSPE is a regular feature of assessment of practical skills in the Physiotherapy department and is familiar to all participants in the study. There may be difficulty in focusing on the familiar, and being close to the situation being investigated, there may be some neglect of certain aspects of the OSPE that are taken for granted.
- Student motivation is important for the completion of the questionnaires. From experience, students display varying degrees of anxiety before the examination and this may influence the return of completed questionnaires.

There are inherent limitations to this research project, as is the case for qualitative research. There is the question of whether different observers of the OSPE will get the same results. We know that there is always more than one valid view of any situation. There may be agreement on the facts of the situation, but not on what they mean. The reliability of the participants' information can also be questioned. The personality of the participants, the academic standing of the academic staff within the department and the relationship of the researcher and participants may influence the interpretation of the data. The data collected was interpreted with the meanings and purposes of those people who are the source of the data, namely, the staff and students involved with the OSPE.

## CHAPTER 4

### ANALYSIS

Multiple data sources were used in this study to gain varied perspectives on the OSPE process. These sources would yield insight and understanding of the OSPE at undergraduate level. Analysing the data is a reflective, reactive interaction between the researcher and yields interpretations of the social encounter through observations, interviews and questionnaires.

Several issues arise from the study on analysis of the observations, interviews and questionnaires. These include:-

- 1) Preparation of staff and students
- 2) Time allocated to testing
- 3) Mechanical or technician approach versus understanding and reasoning
- 4) Deep learning versus surface learning
- 5) Integration of theory and practical
- 6) Authentic environment versus simulated
- 7) Holistic approach versus compartmentalisation

#### 4.1 Questionnaires

The study looked at how those involved in the process experience the OSPE as an assessment form. The largest groups canvassed were the students who were being assessed. Students across four years of study received a questionnaire – a total of 117 questionnaires. There was a total return of 101 completed questionnaires giving a total percentage response of 86,3%. Appendix U and Table 2 (page 52) respectively represent the number of students responding to the advantages/disadvantages of the OSPE; Table 1 (page 50) reveals level 4 students' preference for the practical examination.

The questions relating to students perceptions of advantages and disadvantages provide an insight into their response. Eight staff interviews and the participant observations

complemented the information from these. Where quotes are used to add to an explanation of a point raised, the respective appendix is noted.

Students saw several strengths or advantages of OSPE, and it is interesting to note which features were the ones that appealed to them. Responses were recorded as follows:

- Tests practical/ theoretical knowledge quickly [7] (Appendix U). This emphasizes the issue of time and links to the pragmatic aspect of the choice of assessment and is instrumentalist in nature.
- Tests readiness/preparation for clinical application to patients [13] (Appendix U). This reveals the tensions between theory and practice and is reflective of the workplace environment. It is seen as preparation rather than actual ability and as such the relevance is high.
- Can make mistakes which can be corrected before treating real patients [8] (Appendix U). This reflects the safety within a structured space which is protective and may not reflect the real, authentic situation.
- Teaches students to think/work under stressful conditions/pressure [9] (Appendix U) This relates to the issue of time, however it shows how some aspects may help in real situations.
- Examiner/student can find out how much student understands work [6] (Appendix U)

These responses from students seem to indicate an emphasis on the practical tasks which are performed quickly, rather than on theory and has an instrumental aspect. There seems to be a similar emphasis by staff who comment on the need to gain practical skills:

“There should be compulsory attendance and practice in the presence of a lecturer” (Appendix M)

“Students are expected to practice beforehand” (Appendix M).

“(In the OSPE) you get to know the student who is a bookworm and who is a hands-on guy” (Appendix Q)

“The OSPE helps to tell if the students have been practicing or not” (Appendix Q)

“Students tend not to question or reason what they are doing” (Appendix Q).

Once again there seems to be an emphasis on practice and repetition rather than reasoning. This would not involve the higher order thinking skills as advocated by Maudsley and Strivens (2000) who felt that professionals need to apply more than the conventional knowledge base, but be able to “exploit the thinking involved with what they are doing while they are doing it.”

The staff more generally saw the advantages of the OSPE as being [Appendix H(a)]:

“Can test an aspect very quickly”

“Shorter test time”

“Gives standard across the board”

“Can get through a large number of students”

These aspects of the OSPE that the staff saw as being advantageous may impact on the competency of students to perform practical skills as none of the examiners mentioned that the OSPE is a good measure of students' competency. There seems to be emphasis on time and standardization emphasizing convenience of dealing with the numbers of students per level of study. This implies again the pragmatics rather than educational, with not much on holistic, or responsive positions. Maudsley and Strivens (2000) purport that novice medical practitioners should learn the holistic nature of this process, how best to apply the technical knowledge within skilled actions, for example, clinical decision-making in relevant settings rather than application in a technical manner without the clinical setting of experiential learning.

It may be that being able to deal with the practical and technical aspects create a sense of confidence in the students initially. Appendix Y(b) illustrates the students' responses graphically. The majority of level 1 students felt that the OSPE had equipped them to confidently apply practical skills learnt. This was perhaps an unfair question to them, as they do not have any exposure to real patients by this stage of the undergraduate programme and it is also their first exposure to the OSPE assessment. Standard setting is difficult in the first year of study, as the examination is new for students.

Level 2 students answered in the negative for the majority of students, while 52% of level 3 students felt confident and 48% did not. This may be interpreted as students showing no sense

of conviction that they feel prepared. However, the levels of confidence seem to diminish as the years pass. The students' confidence may be linked to their level of preparation for OSPE as revealed in their responses in Appendix Y(a) to their frequency of practice of the skills learnt.

Such an insight is corroborated by the fact that the majority of level 4 students did not feel that the OSPE helped them to confidently apply practical skills they had learnt. Reasons for this include: "Preparation for the OSPE is made within tight time constraints" (and this is not conducive to confidence building in students). Time and pressure impact negatively on developing confidence.

The majority of level 4 students showed preference for practical examination over the OSPE. The reasons are tabulated in Table 1, and are supported by the students' positive regard for the holistic and interactive approach to patient care. It is also the authentic situation in which the students will work once they graduate, and they appreciate this. They also noted more advantages than disadvantages to practical examinations (Appendix V). The advantages of practical skills testing are listed by respondents of practical examination (level 4) as:

"adequate time" (68.2%)

"holistic approach to patient" (63,6%)

"integrates theory and practice" (59.1%)

"hands-on/real situation" (36.4%).

It would seem that the students most appreciated the holistic approaches, and integration within a reasonable time frame. Perhaps it gives more time for reflection and helps them to feel they could deal with the real situation. Maudsley and Strivens (2000) advocate that students should develop habitual reflection and high quality performance. This they feel will promote the ability to think, consult, undertake further enquiry and keep updated. This would accommodate situations involving uncertain outcomes, limited guidance from theory, insufficient contextual knowledge and time constraints that impose pressure to follow traditional thinking patterns. Higher order thinking skills can only occur provided students are



encouraged to make timely, valid and reliable clinical decisions. The authors support the situated learning and experiential learning theories.

**Table 1: Level 4 students' responses to their choice of practical examination or the OSPE**

<b>RESPONSES</b> (no. of students who responded) [%]	<b>% Students</b> <b>(n=25)</b>
<p><b>Reasons for choice of practical:</b></p> <ul style="list-style-type: none"> <li>• More realistic situation (than OSPE )(14) [56%]</li> <li>• More time to show skill as a good therapist would be thorough (10) [40%]</li> <li>• Tests theoretical knowledge &amp; practical skills (15) [60%]</li> <li>• Allows for holistic approach and is more comprehensive (12) [48%]</li> <li>• True evaluation of student's potential (14) [56%]</li> </ul>	<p><b>72.7%</b> <b>(18)</b></p>
<p><b>Reasons for choice of OSPE:</b></p> <ul style="list-style-type: none"> <li>• Students not intimidated by patient (tests the normal) (4) [16%]</li> <li>• Testing is done in comfortable practical room environment (5) [20%]</li> <li>• Students can work out weaknesses and strengths (3) [12%]</li> <li>• Allows students to work under stress (6) [24%]</li> <li>• Tests student's ability to recall (5) [20%]</li> </ul>	<p><b>27.3%</b> <b>(7)</b></p>

The majority of students felt that practical examination tested the “real” situation and was illustrative of the manner in which responses would be made in the clinical environment. However, those who preferred the OSPE (27.3%) eluded to the idea of being intimidated by the patient, for example, a tired and uncooperative patient or a patient well-informed about

his/her condition. Perhaps this indicates a poor ability to deal with what is unexpected and what is difficult. This may impact on the students' confidence during the examination.

The situation with a model could be a set-up to test recall whereas the more realistic situation would test the theoretical and practical. This is not always the situation in the current set up of the present implementation of the OSPE. There is little or no chance for response reflection with a model. It would seem that students could identify the need for integration quite early on. "True evaluation of the students' potential" would imply practical examination in the real and authentic situation and this would allow for realistic responses of students to a real situation and encourages greater reflection that several theorists point to Kolb (1984) and Gibbs (1992).

In explaining the students' responses to OSPE, Table 2 lists the disadvantages as reported by the students. "Examiner inconsistency" rates high as a disadvantage of both examinations [Table 2 (page 52) and Appendix V].

Table 2 reflects that as the students gain experience from level 1 to 4 and get closer to completion of the programme the examination by the OSPE is likely to be seen as being "unreal."

**Table 2: Students' responses to disadvantages of the OSPE**

<b>RESPONSES</b>	<b>LEVEL 1 (n = 30)</b>	<b>LEVEL 2 (n = 24)</b>	<b>LEVEL 3 (n = 25)</b>	<b>LEVEL 4 (n = 25)</b>
<b><u>List 3 disadvantages of OSPE</u></b>				
1) Too short; time constraints	8 (27%)	6 (25%)	4 (16%)	12 (48%)
2) 'Make or break' situation	8 (27%)	3 (12.5%)	1 (4%)	-
3) No "part marks" for mistakes while thinking	3 (10%)	-	-	-
4) Marks/test do not always reflect true ability of student	9 (30%)	5 (20.8%)	8 (32%)	11 (44%)
5) Poor organisation	-	-	1 (4%)	-
6) Pace is too fast	6 (20%)	3 (12.5%)	1 (4%)	-
7) Easy to fail	10 (33%)	6 (25%)	1 (4%)	-
8) Students too nervous to perform at optimal level	7 (23%)	11 (45.8%)	8 (32%)	3 (12%)
9) Insufficient equipment	-	-	2 (8%)	5 (20%)
10) Questions are easy and difficult/change of question/ unfair to some students	4 (13%)	3 (12.5%)	4 (16%)	-
11) Stressful/Students under pressure	12 (40%)	13 (54.2%)	7 (28%)	5 (20%)
12) Does not cover much of syllabus- lots of learning for short testing time	5 (17%)	2 (8.3%)	4 (16%)	4 (16%)
13) Unfriendly examiners; biased; strict; different in rating of marks	8 (27%)	10 (41.7%)	9 (36%)	9 (36%)
14) Unfair method as questions repeated and last students advantaged	3 (10%)	2 (8.3%)	5 (20%)	6 (24%)
15) Unclear expectations of students	3 (10%)	4 (16.7%)	4 (16%)	5 (20%)
16) Sets students up for unreal situation/ Not 'real' patients/unco-operative 'models'/compartmentalised testing	-	3 (12.5%)	6 (24%)	12 (48%)
17) Examiners not always the person who lectured to students	-	3 (12.5%)	3 (12%)	5 (20%)
18) No test of theory	-	4 (16.7%)	-	-
19) Some examiners ask too many questions	-	-	2 (8%)	3 (12%)

One of the themes arising from the responses is the “fairness” of the OSPE (Table 2- [4]). Several students rated the OSPE as being an ‘unfair’ method of assessment and felt that “those students who were tested towards the end were advantaged as they were familiar with the questions being asked by the examiners” [14]. The issue of fairness in the OSPE may also be linked to the practice of one student acting as ‘patient’ for another, thus being able to observe how the OSPE is conducted and then being examined thereafter. This situation could advantage the second student and may be judged by the first student as being unfair and biased. However, the benefit of using ‘models’ as ‘patients’ is that there is no patient fatigue. The time expended on the duration of the examination is much shorter per student for the OSPE than for the practical, with possibly less patient (and examiner) fatigue. Also there are far fewer logistical implications, for example, arrangements are easier for models than for real patients. Although no evidence of this was seen in the observation, some students reported “uncooperative models” and this could influence the student’s performance at the OSPE. Such observations challenge the idea of objectivity of the OSPE implementation in that some aspects of the examination are subjective and some objective. The measure of objectivity in practical assessment in both the OSPE and practical examination presents a challenge. Maintaining constant standards in assessment is clearly an important aspect of fairness (Gonczi, 1994).

In the present implementation of the OSPE there was mixing of students; those students who had completed their OSPE could communicate with those who were still to be examined. This impacted on the students’ perceptions of fairness. Wilkinson *et al* (2000), however, showed that their OSPE was fair, as indicated by the student ratings they obtained on the relevance of the examined problems. No specific comments are published, but they found that keeping the students who had completed the examination separate from those about to start also contributed to fairness. The present implementation in this instance may therefore be perceived as being unfair and should therefore be further explored.

Another aspect relating to issues of fairness and objectivity was indicated by some students who felt the disadvantages included (Table 2):

“Some examiners ask too many questions”[19]. This reflects inconsistency among examiners.

“Unclear expectations of students” [15] reveal the students’ unhappiness with the OSPE. Table 2 figures show this to be consistent across the different levels of study. This research found that some of the students’ reports in the questionnaire to be supported by the results of the interviews with the staff [Appendix H(a)]. Staff reported that the OSPE is:

“Not a fair method as it is”

“No questions just observation of the students.”

“Examiner can ask leading questions”

This confirms the inconsistency of questioning where some examiners ask questions and some do not. This would suggest that there is a need for standard-setting procedures. Much work is being done to standardise subjective judgment and set performance standards (Friedman, 2000) and to generate best assessment evidence from multiple sources (Norcini, 1999). These studies require investigation for possible implementation in the present OSPE process, especially given the implications for the holistic care of the patient.

There was inconsistency of questions and this may also contribute to the stress and nervousness felt by students. Both open and closed ended questions were asked of those students who were questioned by examiners. Open-ended questions would require some reasoning and critical thinking, while closed questions may not. The observation record notes that random questions were asked sometimes by examiners and not others. This seemed to include different questions which varied with the student and/or the subject of the task. This tied in with the student responses on the disadvantages of the OSPE (Appendix V): “Some examiners ask easy questions and some ask difficult questions.” The examiners’ views on this include: “I ask questions to establish the students’ understanding of the task” and “I ask questions when the student is off-track with the task being performed.” This may be one way of developing integration by careful construction of questions. The role of questions seems to relate to integration of theory and practice. By asking questions in a way that stimulated critical thinking and reasoning on the part of the students, the integration of theory and practice is promoted. The questioning requires to be consistently applied with a means of objective measurement also done consistently. The students should be informed of this process so that the element of fairness is reinforced.

Whilst generally current thoughts on the OSPE seem to be that objectivity is the most important attribute of the assessment process, this is challenged by the students perceptions in their questionnaire. Objectivity also appears to be an issue for both co-ordinators and staff involved in implementing the assessment as some raised this during the interview when asked about the objectivity of the OSPE (Table 3):

**Table 3: Co-ordinators' and examiners' responses to the question:  
*Do you think that OSPE/Practical is adequately objective in testing competency skills of the students?***

CO-ORDINATORS RESPONSES			
LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<ul style="list-style-type: none"> <li>We need to look at the scoring which I feel is still very subjective</li> <li>We can use OSPE format &amp; incorporate thinking skills</li> <li>Presently we are stunting students.</li> </ul>	<ul style="list-style-type: none"> <li>Objective for that time, but it does not guarantee that the student, on retest, will perform the same way</li> </ul>	<ul style="list-style-type: none"> <li>Can be objective if we highlight different aspects.</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>It could be structured to do so.</li> <li>One cannot be truly objective when dealing with patients</li> </ul>
EXAMINERS RESPONSES			
<ul style="list-style-type: none"> <li>No standard amongst examiners; some ask questions &amp; some not.</li> <li>Not adequate in objectively testing skills.</li> </ul>	<ul style="list-style-type: none"> <li>No.</li> <li>It does not cover the syllabus for one.</li> <li>Only a small portion of what the student is supposed to have learnt during that period of testing is covered.</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to be objective when OSPE is done on models</li> <li>It would work out much better if OSPE were done on patients.</li> </ul>	<ul style="list-style-type: none"> <li>There is subjectivity when there are no specific details on marksheet</li> <li>There is also subjective assessment when there is no model answer.</li> </ul>

Co-ordinators and examiners noted:

“Difficult to be objective in the OSPE”

“One cannot be truly objective when dealing with patients”

Objectivity is difficult to attain if we move from testing purely the ability to perform practical skills, to critical thinking and responding to unexpected situations. Objectivity may also be affected by the implementation of the OSPE, the performance of examiners and the amount of

latitude they have, for example, asking questions. One could question that if we are to be more objective, do we move away from or become closer to holistic and integrated means of assessment with the OSPE and practical examination? Both the OSPE and the practical examination in their present implementation are not objective, however, both engage with aspects which impinge on objectivity.

The staff responding to the issue of the objectivity of the OSPE also raised concerns over the questioning practices which were used during the process which were similar to those that the students had identified (Appendix H(a) and Table 2 respectively).

“No standard among examiners; some ask questions and some not” “We need to look at the scoring which is still very subjective” “Difficult to be objective when OSPE is done on models.” The responses reveal the different understandings of objectivity by the participants, for example, the response of one co-ordinator was: “there is a different set of questions for students as they come in four pairs. This prevents discussion to advantage students who are still to be tested.” This reveals the issue of questioning and the way in which they are incorporated (or not) into the OSPE.

The staff also viewed the shortcomings of the present implementation: “too rigid” [Appendix H(a)]. Some co-ordinators repeat questions and one examiner felt that “repeating questions provides familiarity to the students” (and therefore advantages them) ([Appendix P]. Some staff offered suggestions, for example (Appendix U):

“The OSPE can be structured to be objective”

“better to conduct the OSPE on patients.”

Some students felt that (Table 2, page 52):

“OSPE is an unfair method as questions are repeated and the last students are advantaged”

“Questions are easy and difficult (depending on the examiner)”

“Change of questions is unfair to some students.” Questions should clearly be more structured and controlled not only for fairness of examination of all students, but also to test the integration of theory and practice.

Objectivity is closely linked to questioning and to measurability and to positivistic approaches. It is possible to be objective in some areas of the OSPE. However, it would seem that there should be an additional section for more subjective elements, as “one cannot be truly objective when dealing with patients” (Table 3, page 55). This could minimize the technical aspect of assessment by the OSPE. It would introduce a more multi-dimensional aspect, which is important to the holistic assessment of students’ practical skills. This would provide an opportunity for the students to be genuinely responsive rather than more passively choosing from limited responses to the OSPE question/task. This would also support the Maudsley and Strivens (2000) framework where students would link the holistic care approach with application and experiential learning.

The issue of objectivity of the examination arises with other responses:

“Marks/test do not always reflect true ability of student”

“Unfriendly examiners; biased; strict; (examiners) different in rating of marks.” The figures quoted in Table 2 reflect this response to be consistent across the different levels of study. Students also reported that “students are too nervous to perform at optimal level.” This would indicate the anxiety and nervousness of students during the examination. The figures reflected in Table 2 show that this is high at level 2 and 3 and diminishes at level 4.

In the observations of the OSPE for levels 1, 2 and 3, students seemed to be aware of their manner and attitude towards the patients (models), as the observation note states students generally gave good explanation and checked on the patients’ comfort. However, no allowance was made to recognize this in the OSPE checklists. This further emphasizes the tension in the OSPE of being devoid of the humanist aspect and supporting a technicist approach. The OSPE makes allowance for the technical performance of the skill and does not take into account the rapport and communication between the patient (model) and the student. Such responsiveness is difficult to include in an objective checklist. This aspect was taken into account by allocation of a mark for the practical examination in the section “interpersonal relationship” (Appendix F). As Physiotherapists spend a great amount of time per patient at each evaluation and/or treatment session, this is a crucial area of assessment. This would influence the effectiveness of the treatment and patient compliance.



Another aspect reported by students was the degree of stress and tension they felt during the OSPE. However, this was not found to be the case for level 4 students. This may imply that level 4 students are more experienced with the requirements and are familiar with both the OSPE and practical examination. By this stage they would also have more clinical experience than students at the other levels of study. Students noted that the nervousness they felt was a disadvantage and felt that this was one of the reasons for poor performance for the majority of students. Different students displayed different intensities of nervousness, students felt that the OSPE was (Appendix V) “not a true reflection of capability” and they felt negatively influenced by the “attitudes of some examiners” and they felt “restricted by time constraints of the OSPE”. The observation notes too recorded that students display varying degrees of nervousness, while some gave a show of confidence. This was revealed in the way they approached the model and the flow of their performance during the examination.

Similar issues arising from the observations filter into the analysis of the interviews with the members of staff. The issue of objectivity was also part of the observation notes made on the OSPE sessions, in relation to both the questions, and to the manner of marking.

#### **4.2 Observations**

Analogies and comparisons were made for the different levels of study following observation of the OSPE. The routine of the OSPE was observed and the perspectives of the researcher were used to analyse the implementation of the OSPE.

Harden *et al* (1979) feel an unbiased, consistent and reproducible assessment form is required so that all students may be tested fairly and consistently, and the examination should be easily reproduced to maintain a standard measure. In the interest of objectivity, assessment for the OSPE was conducted using a checklist, whilst the practical is done via an evaluation form. The checklist would provide a greater opportunity for rater reliability. One area for further research would be checklist and the evaluation form. In comparing the checklist and the evaluation form, the checklist appears to be specific, prescribed and somewhat restrictive, whereas the evaluation form for the practical examination appears less prescriptive and more

“open” to a variety of approaches to patient care. Whilst still providing a guide it allows greater flexibility for the marker, and thus allows for some subjectivity. Markers can choose to note down important responses made by the student. It is important that the student is also able to modify the situation if the circumstances present differently in a clinical situation and there are changes to the set objectives.

There is obvious tension between the need to be open and non-prescriptive and the need to be objective. This relates directly to the debate on atomistic and holistic approaches and their evaluation. Appendix E (checklist for level students) shows the marks allocated to each subsection. However, the range is not consistent and could provide uncertainty and confusion for the examiner. There is the possibility that different examiners may mark differently. Rater reliability is debatable when examining the evaluation form for level 4 students (Appendix F). The evaluation form may be seen to be less carefully drawn up with no mark allocation to the subsections, thus permitting great examiner variability. However, this checklist allows for more flexibility of student responses and the gives more responsibility to the assessor. Although this may be seen to be a set of criteria for marking, there may be inconsistencies in marking by examiners. Careful planning with all examiners before the examination could minimize inconsistencies, and the reason for this is fairness and reproducibility of the examination. Students felt that examiner consistency was important so that they were not biased by the examination or the examiners (Appendix U, [4], [5], [6], [12]).

#### **4.2.1. Level 1**

Level 1 OSPE was conducted using 4 stations, each being run simultaneously and by different examiners. Eight students came in at a time, with 2 at each station, one as candidate and one as model. All four candidates were given the same question and commenced simultaneously for the duration of 5 minutes. The five minute duration for performance of the allocated task seems to tie in with the time constraints alluded to by students. This puts pressure on students to perform within a short space of time. The students were evaluated according to the checklist for this question (an example of the checklist is shown in (Appendix E). After 5 minutes the models became candidates and the candidates became their models.

The candidates were then given a different question and the OSPE repeated. This brings in the issue of fairness as there are different questions for the different groups of students. On completion, the group of 8 students was escorted out of the examination, and the next group of 8 students entered. This new group of candidates was given a different set of questions from the previous eight. The different questions also reveal inconsistency in the examination of different students.

Each student was examined at one station only. This reveals limited exposure of the students and failure of the examination to sample the syllabus. This method of examination is contrary to the station construction used by Harden *et al* (1979) where multiple stations were used and where all students were examined at all stations. This would reduce the fairness of the OSPE in the present implementation as some students may be tested on a skill at one station that they are comfortable with, whereas another student may not feel confident with the question asked at the station that he/she was allocated to. Harden *et al* (1979) proposed more than one OSPE station which would provide the ability for a sampling of skills. This method of OSPE implementation would offer good sampling of the curriculum with all students examined at all stations. Additionally, questions could be asked at some stations and stations could be constructed such that the holistic management of the patient is brought together.

Some examiners asked questions, while others did not question at all. This indicates inconsistent practice in the types of questions asked and whether questions were asked at all. Some questions were technical and other questions demanded synthesis and ability to reason. The reasoning type of questioning would support higher order thinking and reflection. The questioning or not by the examiners contributes to assessment bias as the examiners were inconsistent. One examiner confirmed in the interview (Appendix P):

“We have to ask questions to address the different types of learners.”

The observation notes state that at stations 1 and 2 examiners seemed to observe some students and question others. Further observation noted that one examiner asked a technical question: ‘What is momentum?’ while another examiner asked a more complex question (‘What do you understand by progression of an exercise using momentum?’). The type of questioning is inconsistent; the technical type of questioning would promote surface learning

and the more complex question would promote deep learning. The role of questioning is important. The type and depth of questions asked is important to elicit the extent of understanding the student has of the task and to determine the integration of theory with practice. This provides a good opportunity to question students' ability to reason and apply concepts learnt and to determine the extent and depth of their learning. This type of questioning can only assess deep learning and would encourage reflection on practice. The different kinds of questions may also instill anxiety in students and may hinder their responsiveness.

#### 4.2.2 Level 2

Eight students came in at once as for level 1. Each station was of 12 minutes duration and consisted of 2 parts, both of which were given to students simultaneously on commencement of the OSPE. The same set of questions, as for the first group of students, was given to the next set of students. Although this question repetition could not advantage this set of students, subsequent students may be advantaged following communication with the first set of students. This was stated by students (Table 2):

“it is an unfair method as questions are repeated and last students are advantaged”

“questions are easy and difficult”

“change of questions is unfair to some students.”

Some examiners' questioning coincided with the interview response that students were questioned:

“OSPE does not allow for questioning of students, and it is therefore difficult to test understanding and the theoretical background of the skill performed” (Appendix J)

“Questions are asked to see if the student has theoretical backup” (Appendix J)

“No standard among examiners; some ask questions and some not” (Table 3)

On the whole, the examiners varied in their intervention during the OSPE. This was inconsistent and may have advantaged those students who were given the chance to explain their technique. Those examiners who did not question the students did not encourage the students to use critical thinking skills, it merely involved technical performance of the skill

with no reflection on the practice. There are varied and inconsistent messages being sent to students. There is little or no standardization and this could add to the anxiety levels of the students.

### 4.2.3 Level 3

The task or technique performed at each station was different depending on the modality being tested. Each station had three tasks, and these were rotated with one question to each student as they came in pairs, two to each station (one model and one candidate). Once the first round of the OSPE was completed, students leaving the OSPE could communicate with those who were waiting their turn. The co-ordinator felt that the time available does not allow for students to practice further or benefit from communication with students:

“Students must be fast, be able to prioritise, with speed of thought and action and this comes with practice” (Appendix M). Time seems to be important in these exchanges.

The emphasis on time and speed leaves little opportunity for students to think and reason as the staff members note:

“The OSPE does not allow for lateral thinking” [Appendix H(a)].

“The OSPE is testing just the skill in a technical fashion” (Appendix J)

Some level 1 and 2 examiners questioned students, while others observed and allocated marks on the checklist. This was reported by staff to be (Appendix G):

“Rigid testing” and “too rigid.”

The questions varied from technical questions to more complex, thought-provoking questions. The observation notes state that examples of questions asked by examiners include: ‘How does interferential therapy work?’ and ‘Explain to your patient how this treatment will help her pain.’ The technical questions did not seem to challenge the students’ ability to reason and neither did they link to the understanding of the task. The kinds of questions reflect on the inconsistency of examiners and that there is no support for reflection in the manner in which questions are posed to students. The student may lack reasoning and understanding of the task, but may perform a perfect technique at OSPE by reproducing just the technical aspect of the task. This brings into play the issue of the technical versus the holistic approach. The manner

in which examiners assess the student would either support or discourage the holistic interpretation by the student. One respondent at the interview felt that “we are not including any thinking skills into OSPE” and “OSPE reinforces rigidity of thinking at a technical level” [Appendix H(a)]. This may be interpreted as meaning that a student may pass the OSPE by performing a perfect technique, but may have little or no understanding or reasoning if questions are not asked of them. This is true for those students who are not subjected to questions or who may be asked technical and closed questions. This has relevance to the different forms of learning where technical questions would support superficial learning and more thought-provoking questions would support deep learning which is necessary for processing understanding and reasoning. This OSPE seemed to challenge the holistic concept of treatment approaches in Physiotherapy, and students generally seemed to concentrate on the technique of the task and they did not always understand the reasoning behind the technique.

#### 4.2.4 Level 4

As the examination is conducted in the authentic environment, it is more contextualised and holistic. The student has to examine and treat the patient holistically, together with planning the patient’s present and future management. Appendix H(b) records the responses of staff to the advantages and disadvantages of the practical examination:

“The practical examination is learner orientated (caters for different types of learners)”

“Skill, knowledge/theory and attitude can be assessed”

“Incorporates thinking skills”

“Allows more time to determine the critical thinking ability of the student”

The procedure used in this examination is in keeping with the study by McKinley *et al* (2000), where the student takes into consideration the patient’s emotional, social and physical status, and includes both short and long term goals for the patient. This would impact on the patient’s follow-up programme with regards to the patient’s compliance with the exercise programme, understanding of the condition, referral to the multidisciplinary team, etc. This is marked for in a subsection on the checklist (Appendix F) an aspect not catered for in the OSPE. This is linked to the experiential learning model (Figure 1, page 24) where the student learns in the

authentic environment with the patient and performs the exercise with the patient. The student then has the opportunity to reflect on the effect of the treatment administered to the patient and he/she can then decide if this has had the desired effect which would lead to a learning experience for the student.

This practical examination would test the students' critical thinking and clinical reasoning ability, and the appropriate and efficient application of skills. Students are also routinely questioned on their choice of treatment and reasons for their choice. Deep learning would have to be a requirement to accomplish the tasks effectively.

Staff considered that the practical examination (Appendix G):

“Allows for different methods of learning.” This can be interpreted as meaning that the time allocation for the practical examination allows for students to “respond at their own pace in problem-solving” (Appendix G).

Examiners “can intercept at some point to look at reasoning” (Appendix G). This would provide opportunity for questioning to determine the students' understanding and reasoning. “If we question a student, we have an idea of the way the student is thinking” [Appendix H (a)].

It is difficult to be objective and to standardize the approach in the practical examination as there may be a variety of approaches to the patients being examined by the students. Examiners need to be open-minded but to simultaneously be fair.

#### **4.2.5 General observations and reflection on the OSPE observations**

From the perspective of the researcher, the routine of the OSPE gave some sense that the examiners responded with a degree of uniformity to all the students, giving the impression that the examiners regarded students as being all alike. Given the time constraints of the OSPE, it would be difficult for the examiners to consider the differences in the students. There was, however, some inter-examiner variation for all the levels of study, providing the OSPE process with inconsistency and non-uniformity. Students confirmed this in their responses:

“Some examiners ask questions and some do not” and “Examiners are different in rating marks” (Table 2). There seems to be the perception of both staff and students that there is unfairness amongst examiners. Uniform scoring and standardization can be achieved if consensus is established among the examiners during the OSPE planning (Wilkinson *et al*, 2000). Staff reported that “planning prior to the OSPE was insufficient” in the present implementation. This has implications for the rating of students and could indicate some inconsistency and non-standardisation by the examiners.

Observation of the OSPE confirmed the conclusion by Harden *et al* (1979) that OSPE can be demanding for examiners. Examiners are required to pay close attention to students repeating the same task on a number of occasions. Observation notes stated that 40 students at 5 minutes per station per student with a total time of approximately 3½ hours, and 10 students per examiner (one hour of examination). ‘Examiner fatigue’ may have been the case for the OSPE and practical examinations observed in this study as the examiners remained at the same stations throughout the course of the examination. It is important that the examiners are alert to all of the students’ performance so that marks may be allocated fairly. If the concentration of the examiners waivers, then the students may not have the benefit of the task being fully observed by the examiner. Observation notes stated that examiner 1 sat down and recorded on the checklist while the student performed the technique. Examiner 2 observed and recorded on the checklist after the technique was completed. This would affect the mark allocated to the student and would therefore affect the OSPE process. Although this challenges the idea of objectivity, meticulous prior organisation and planning with examiners, and possible use of more examiners, could strengthen the OSPE process. Harden *et al* (1979) suggest that the examiners could change stations halfway through the examination. This may reduce the consistency of the examination, as all students would not have had the same examiner at the same station.

In the present OSPE implementation, all students are not examined at all stations. This implementation requires exploration, especially for station construction and the role of the examiners. We need to keep in mind that there should be a good sample of questions, and to do this more OSPE stations would be required. There could be a wide range of aspects in



which students could be examined through increasing the number of stations and including critical thinking and clinical reasoning in the way the questions are asked. Further investigation into this is required for implementation into the present OSPE.

The most frequent responses of level 1 and 2 students (40% and 54.2% respectively) chose 'stress' as a disadvantage of the OSPE. Examiners' familiarity with the repetition of the task could also influence the examiners' rating of the student. As the examiner becomes more familiar with the students' performing the task, the examiner could become stricter with his/her rating or the examiner could become fatigued and consequently become more lax with his/her rating of the student. As far as the students were concerned, this seemed to be an influential factor on their performance. At level 3, 36% of students rated "unfriendly, biased and strict examiners" (Table 2). The most frequent responses relating to the disadvantages of the OSPE by level 4 students was (Table 1):

"unrealistic time constraints" (45%)

"unreal situation"

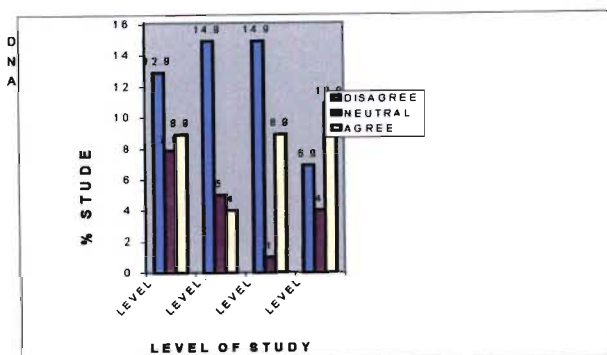
"compartmentalised testing" (45%)

A possible reason for this difference is that the senior students tend to be more confident with some experience gathered during the undergraduate training programme, whereas the level 1 and 2 students are less confident. Level 4 students have more experience with several tasks, having been exposed to it in their previous years of study.

Students were requested to rank from 1-5 on the Likert scale the statements listed below. The responses are indicated in the respective graphs (Figures 3, 4, 5 and 6). These figures illustrate the responses of the students to their classroom preparation for the OSPE and practical examination.

**Figure 3:**

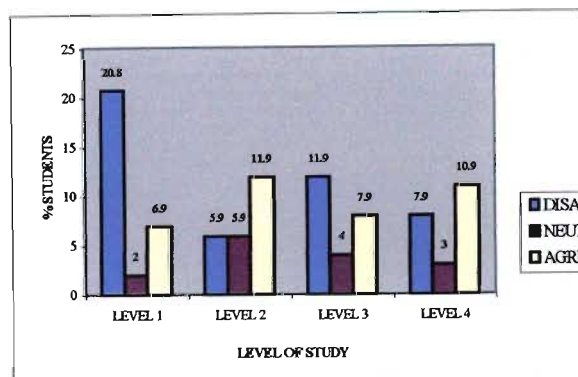
**Practical sessions were too short**



Most frequent responses of level 1-3 students was disagreement with this statement. Level 4 students most frequently agreed. This could be interpreted as meaning level 1-3 students who felt that although time was allocated to practice sessions more time and practice sessions should be included.

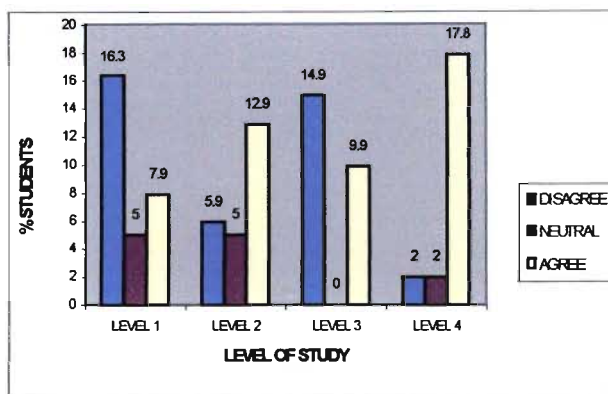
**Figure 4:**

**Practical sessions were poorly conducted**



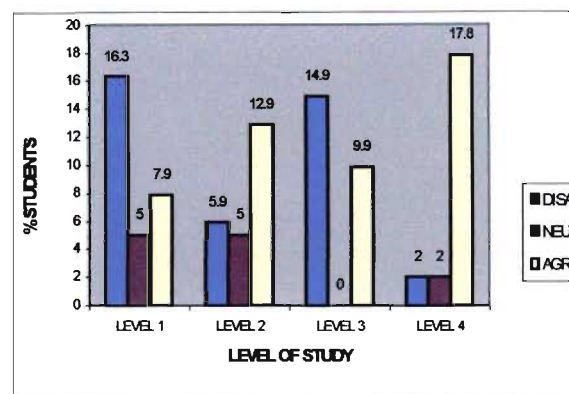
Levels 1 and 3 students both agreed and disagreed (most frequently) with this statement. Further investigation into these responses are required in order to establish reasons for this.

**Figure 5: Content was too theoretical**



Students at level 1-3 disagreed most frequently with this statement. Equal % of level 4 students agreed and disagreed. A balance of theory and practical is required for students to integrate practical and theory, and facilitate therefore their clinical reasoning skills in their application of these skills.

**Figure 6: Practical classes are too large**



Levels 1 & 3 students disagreed more frequently than agreed with this statement. They did not feel that the classes are too large. Levels 2 & 4 students agreed on large classes therefore the practical sessions are poorly conducted. Strategies need be in place to cope with the large numbers of students if we are to maintain or improve the standard of patient care. Further study is needed on specific areas.

Planning is another issue that both students and staff noted. Examiners at the OSPE and practical examination were questioned as to whether they were involved in planning. All examiners of the OSPE felt that there was a lack of planning and agreed that it would be helpful to discuss the questions beforehand with the co-ordinator and all the examiners, as well as discussion on interpretations of the questions and the role of the examiners. This would ensure standard setting and standardization of the examination, which is currently lacking in the present implementation. At level 4 there is joint discussion between the co-ordinator and examiner before the examination. However, they did conclude that practical examination is “more subjective as it is less structured compared to the OSPE” (Appendix G). It is important to determine beforehand what is to be tested, in order to establish the level of response to the questions, as well as for standardisation of testing. This would make the test reproducible and therefore objective.

Emerging from the responses was that planning seemed to be related to how they as lecturers prepare the students for the OSPE (Appendix I). This may be an issue as staff may choose to prepare students for the OSPE as a teaching strategy. The implication possibly is rather than prepare themselves, there is preparation of students. As one co-ordinator pointed out (Appendix I):

“All students would have had a chance to be examined by the OSPE on each question, either in a previous test or through a mock test session in the classroom.”

The co-ordinator felt that the issue of advantaging students by repetition of questions was dealt with by a different question being given to each group of students. This may bring into question the possibility of students being able to ‘work out’ which question they could be asked at the OSPE, and this would give these students an advantage over the others. Another co-ordinator responded (Appendix N):

“We go through the syllabus in class.”

This may give the impression that material covered in the classroom is highly content-based. The implication is that the syllabus seems to be driven by assessment and that teaching is done according to assessment. The same respondent added (Appendix N): “Principles are covered in the classroom and students are expected to apply this to practice.”

This may be interpreted as expecting students to integrate theory and practice on their own. This teaching to the assessment seems to be mechanistic and technicist. The aim is to support and encourage holistic learning (Schön, 1983) and not surface learning, and it is the feeling of the researcher that students need to be taught how to do this. Teaching strategies may need to be probed and investigated in order to determine if students are provided with adequate opportunity to develop their skills of integration. Possible inclusion of more bedside teaching, especially earlier in the curriculum may be used to encourage integration.

Learning and preparation for the OSPE is seen as occurring when students practice their skills, and when they participate in the pedagogical experience (Martenson, 2001). This may be seen as the lecturer's role to understand his or her students and their responses to particular learning environments. This could be linked to the experiential learning cycle of Kolb (Figure 1). Learning through experience of practice is more meaningful to students and is supportive of deep learning. These learning environments then need to be modified to meet the students' needs. It is recognised that students learn differently from different approaches, and students in different situations learn differently. Novices learn practice from experienced practitioners. This would pressurise the expert to keep updated with practice in order to give students the benefit of progression of practice in Physiotherapy. Students would have the benefit of expert experience and this would impact on their skills application and transfer of knowledge from the expert. This may involve monitoring students' responses to different teaching-learning strategies. There is scope in this area for further study.

Staff felt that students "should come prepared to the OSPE with theoretical knowledge" (Appendix M), however, they agreed that essentially that "practice and application" is important. If the focus is on application of skills, what about the integration and holism?

However, staff generally agreed that students responded to questions the way they were intended (Appendix R).

It was also important to the researcher to establish from the students how they felt about the practical sessions and the preparation for the OSPE (Appendix W). The common responses to all levels of study were (Appendix W):

"speed and efficiency"

"time management"

“quick application of techniques”

“work under pressure.”

Although these responses may be seen as positive aspects of the OSPE, they do not achieve the objectives of the examination of practical skills of support of deep learning for the integration of theory and practice to ultimately manage patients holistically.

Figures 3,4,5 and 6 record graphically their responses to the organization of the practical sessions. Reading into these responses, one would draw the conclusion that the OSPE does have severe time constraints and the focus may be on speed that induces “pressure.” This can create tremendous stress which the students did allude to in their responses to the OSPE.

The students’ responses on how they prepared for the OSPE are recorded in Appendix X (a) and (b) respectively. The figures indicate that most students did study for the OSPE. It is presumed that study time should be proportionate to the OSPE performance. This was borne out by the results of the study by Mavis (2000) on the extent to which second year medical students studied for the OSCE and how they studied. The study showed that performance in the OSCE was related to study time.

Level 2, 3 and 4 students ought to see preparation for the OSPE as including their interaction with patients in the empirical situation, as it is during these years of study that students are exposed to patient care under supervision. Only 12,5% of level 2 students, 16% level 3 students and 18,1% level 4 students included the exposure to clinical situations as a strategy in the OSPE preparation. It would seem that the stress on student performance is on practice to improve their skills and this brings into the question the theoretical background and understanding of the skill. The students did not mention theory in their preparation. As theory is examined separately in a theory written paper and the fact that not all examiners question students and further, some examiners do not question students in depth, could be one of the reasons for the poor integration of the practical sessions (in the classroom) with patient care (in the authentic environment).

The study by Hamo (1995) supports the fact that practice is important if skills are to be mastered. However, further to this, students need to integrate theory and practice in order not only to master the skill but also to understand and reason the use and effects of the skill.

Mastery of the skill in itself is not sufficient to support deep learning and motivation of students. Student preparedness was itself a good predictor of performance knowledge and this also had a strong link to performance (Mavis, 2000). This has implications for application in the workplace. Although this method may be inclined to be technician, it has potential to support integration of skills. This indicates that performance in clinical skills is the product of complex relationships between skill and knowledge, mediated by perceptions of anxiety, self-confidence and preparedness. Rather than practice leading to habituation, students need to link critical thinking and real practice by questioning their practice and finding reasons for action/practice.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Assessment

Clinical competency is poorly measured by knowledge-based written examinations, which tests theory only (Jain *et al*, 1997). Therefore the OSPE and practical examination are used to test students' practical skills. Educational reflection should include the development of better thinking skills and should utilise more meaningful practical experience to integrate theory and practice (Maudsley and Strivens, 2000). This would also apply to Physiotherapy students.

Good quality assessment is to elicit quality performance within a well-defined context. It must be scored fairly (in a way that the student understands) and consistently (across lecturers and students) in order to move the students on in the appropriate direction, however, this is not the case in the present implementation. Some reasons for inefficiencies in the OSPE have been borne out by this study.

##### 5.1.1 Assessment methodology

Assessment methodology should focus on creating authentic environments (Ben-David, 2000). Undergraduate Physiotherapy students' exposure to patients commences in level 2 with longer hours are spent in clinical blocks with more complicated clinical problems seen in levels 3 and 4. Assessment activities should therefore be designed such that there is gradual progress from non-authentic to authentic and from discrete to integrated to support a holistic approach to patient care. This is proposed as the level of competencies change from level 1 to 4. Clinical reasoning should show sets of rules guiding student education as the skills hierarchy is scaled (Maudsley and Strivens, 2000).

Maudsley and Strivens (2000) proposed that experiential learning is an holistic process and involves students in actively constructing their experience. Additionally, they propose that

there should be reflective interpretation of this practice in order that students may be assisted with higher order thinking and problem-solving.

As opposed to most traditional forms of testing, performance-based assessments do not have a clear cut right and wrong. There is a move away from the rigid evaluation forms which do not provide flexibility with regards to variations in the students' responsiveness to the unpredictable in the authentic environment. Thus, evaluation of performance needs to be done in a way that will allow these variations to be taken into consideration. The performance must therefore be clearly defined and accurately reflect its corresponding criteria (Stiggins, 1994). The benefits of this would include improved effectiveness, improved efficiency and higher quality of educational experience for students, as proposed by Brualdi, (1998). Appropriate teams could be constituted to study the most effective and efficient means of improving processes to get the most from the assessment by the OSPE.

## **5.2 Strengths and weaknesses of the OSPE as implemented at the institution**

The present implementation of the OSPE, as noted by the staff and students, seems to examine more the "ability to perform" according to a prescribed checklist. We could define clearly what skills, attitudes, problem-solving abilities and factual knowledge are to be assessed. With the use of checklists, planning station construction and feedback, the OSPE is easier to reproduce than the traditional clinical examination. Both staff and students reported issues around the objectivity of the OSPE; their responses note that they did not feel that the present implementation conformed to objective measures. However, subjective elements of the evaluation by the OSPE should be factored into the evaluation, that is, those elements of assessment which cannot be quantified, for example, the interpersonal relationship and rapport between the student and patient. This would allow for the element of subjectivity in this assessment form and may suggest an additional section or sections on the subjective aspects of clinical skills which need to be included.

The technician approach would be minimized or eliminated with a more robust, multi-dimensional aspect to the OSPE process. This is important if we are to encourage a global and



holistic approach to patient care. It is important that the logistic and pragmatic aspects are acknowledged whilst the best educational aspects possible are also included in the implementation. The time allocated should be meticulously structured.

The disadvantages of the OSPE amongst others include the increased preparation required, atomistic and fragmentation of skills, lack of integration of theory and practical and lack of reflection. However time spent efficiently in preparation for the OSPE will result in efficient running of the OSPE. A further disadvantage of this approach is that the student's knowledge and skills are being put into compartments and that there is neglect of the holistic approach to the patient. This may be addressed by careful station construction with realistic time allocation to the stations allowing for comprehensive and fair examination by the OSPE. The type of questions asked by examiners, feedback to students on their performance, and with strategies in place to assist students in their learning and integration, will facilitate a more efficient and reproducible OSPE.

### **5.3 Conclusion**

The assessments used to evaluate undergraduate students should reflect the sort of graduate we wish to produce. This gives examiners greater responsibility and latitude within the examination process which ultimately then decreases the objectivity.

Responses from both staff and students reflect in general the following and suggest:

- Some dissatisfaction in that there are areas of the OSPE process that are neglected
- Integration of theory and practice is not always achieved. This would impact on the kinds of learning that takes place, that is, rote learning versus deep learning
- There are several areas in which change could be implemented.

The OSPE tends to break down the clinical process into a series of discreet steps. This is in contradiction to the holistic nature of patient care in Physiotherapy and to the outcomes-based NQF philosophy. The OSPE has been shown however, to be a representative and fair assessment of the students' clinical abilities as implemented by Newble and Swanson (1988).

Further investigation is required to establish methods to incorporate the holistic nature of patient care into the present OSPE process. This is supported by staff and students. Evaluation of students in the workplace, authentic environment or in a simulated setting would eliminate this fragmentation of skills. The issue of time and the increasing numbers of students needs also to be taken into consideration when planning and implementing the assessment.

There is scope for further study in the area of throughput of students and their performance scores in clinical competencies. Also, the results at the OSPE for levels 1, 2 and 3 students could be traced and followed through with the comparison of results in the practical examination in level 4. This would show if the OSPE plays a role in compartmentalized learning and if students 'bring it together' in level 4. An evaluation in the clinical setting would be an ideal set for this examination.

The mainly technician nature of the present OSPE process in this study was reinforced by the fact that some examiners asked technical and/or thought provoking questions at the OSPE and some not. This was reported by both staff and students. Possible reasons for this include time constraints, lack of resources, possible poor planning, speed of examination to get through large numbers of students and objectivity.

The findings of this research suggest that there should be involvement of staff and students in dialogue in order to establish better communication and to put in place strategies to assist students. The kinds of questions asked could be structured such that higher order thinking by students could be encouraged to support the holistic approach by students. Unlike Martin *et al* (2000) who see the OSPE as being compartmentalised, the OSPE could be structured such that it could be used as a 'building block' towards preparation and testing by practical examination which utilises a greater amount of time, is closer to the 'real' situation and allows for testing the holistic approach to the management of patients. Students would therefore think globally and holistically, they would prepare for examination in this way, and when confronted with a

clinical problem, they would be more likely to approach the management of the patient holistically.

Students who tend to use the global, holistic approach spend a longer time studying, find the material more interesting, and feel studying is gratifying. Students who use the atomistic approach spend a great deal of time on rote memorisation of facts and may find studying tedious and unrewarding. Successful learning depends on the students' ability to combine the best learning styles. The global approach learner must learn to pay attention to details and the atomistic approach learner needs to view details in relation to the larger picture.

There should be less focus on academic components of knowledge and more acknowledgement of knowledge embedded in application and practice (Maudsley and Strivens, 2000). We must build reflection into practice (Kolb, 1984) and avoid overloading knowledge (Schon, 1983) when students might avoid uncertainty and unpredictability of the authentic environment to become technical experts.

#### **5.4 Recommendations and further research**

The checklist requires restructuring to allow for some subjective aspects to be evaluated (for example, attitude of the student towards the patient, general handling of the patient, professionalism of the student). The checklist requires structure to evaluate the student such that he/she copes with the unpredictable and unexpected in the clinical environment.

The time factor and the large numbers of students are difficult issues to resolve as the resources are poor. However, the most has to be made of the present situation in order to graduate competent Physiotherapists. However, the questions asked of students at each OSPE station needs careful planning with clear objectives borne in mind, so that these are achieved by the examination.

The feasibility and value of using real patients needs to be explored for student evaluations and learning and could provide an area for further research. This would influence the students' motivation to learn and therefore performance at OSPE as they seemed to prefer the 'real'

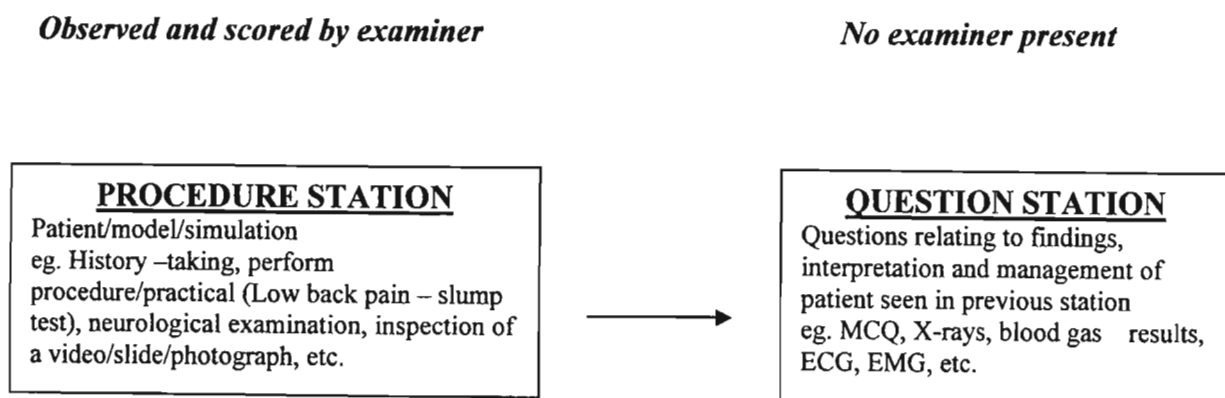
situation for their evaluation. They felt that this type of examination would prepare them for the workplace situation. Dammers *et al* (2001) found that this experiential learning stimulated the use of a wide range of resources and imaginative presentation of what had to be learnt. Examination using real patients could be initiated with the use of case-based examples in the classroom situation followed on with the authentic situation.

Knowledge and clinical skills for level 1, 2 and 3 students are each tested independently using the OSPE and written tests. The development of assessment in Health Sciences education should be towards more objective criteria while simultaneously encompassing some subjective elements. In this debate, there are tensions between objective and subjective elements which could be complimentary. Although this may appear contradictory, it is not altogether possible to be completely objective as there are some elements that require subjective assessment. A possible way around this is that the subjective and objective elements may be weighted differently as discussed by the examiners involved in the OSPE. The development of a multi-format examination incorporating a range of tests in addition to the OSCE may assist with some of these problems in trying to work with time and the large numbers of students. A comparative study of the assessment methods across Health Sciences, both inter-department and across national institutions would enlighten the process.

Contradictory to the OSPE stations described by Harden *et al* (1975), the OSPE stations at each level of this study were designed such that each student went to one station only. Although the co-ordinators did feel that this method accomplished objectivity, the students felt that this was not the case. We need to follow this with debate on the present process with the possibility of the introduction of a variety of OSPE stations as proposed by Harden *et al* (1975). Students would be evaluated on several skills with a greater degree of fairness and sampling of the syllabus. Selection of stations and questions at the OSPE could be structured such that there is theory-practice integration. This would raise the competency levels of the students' practical skills, however, this could affect the objectivity aspect.

### 5.4.1 Proposed station design for the OSPE

A proposal of the OSPE station design is set out in Figure 7. Several stations may be set up, alternating with a '*procedure station*' (observed and scored by an examiner), and a '*question station*' (no examiner is present). If the students are junior, the emphasis may be on techniques and less on findings and interpretation. At the '*procedure station*' the student may be given additional information about the patient and asked about the management of the patient. Students rotate through several stations and the number of stations may be raised to suit the requirements of the particular examination. At the end of the examination, checklists, students' MCQ answer sheets, etc. are marked according to a previously agreed method. If each of 20 stations is 5 minutes long, the examination can be completed in 100 minutes and with two complete rotations 40 students can be examined in a morning.



**Figure 7: Proposed OSPE station design for Physiotherapy**  
(Adapted from Harden *et al*, 1979)

The advantages of these OSPE stations are:

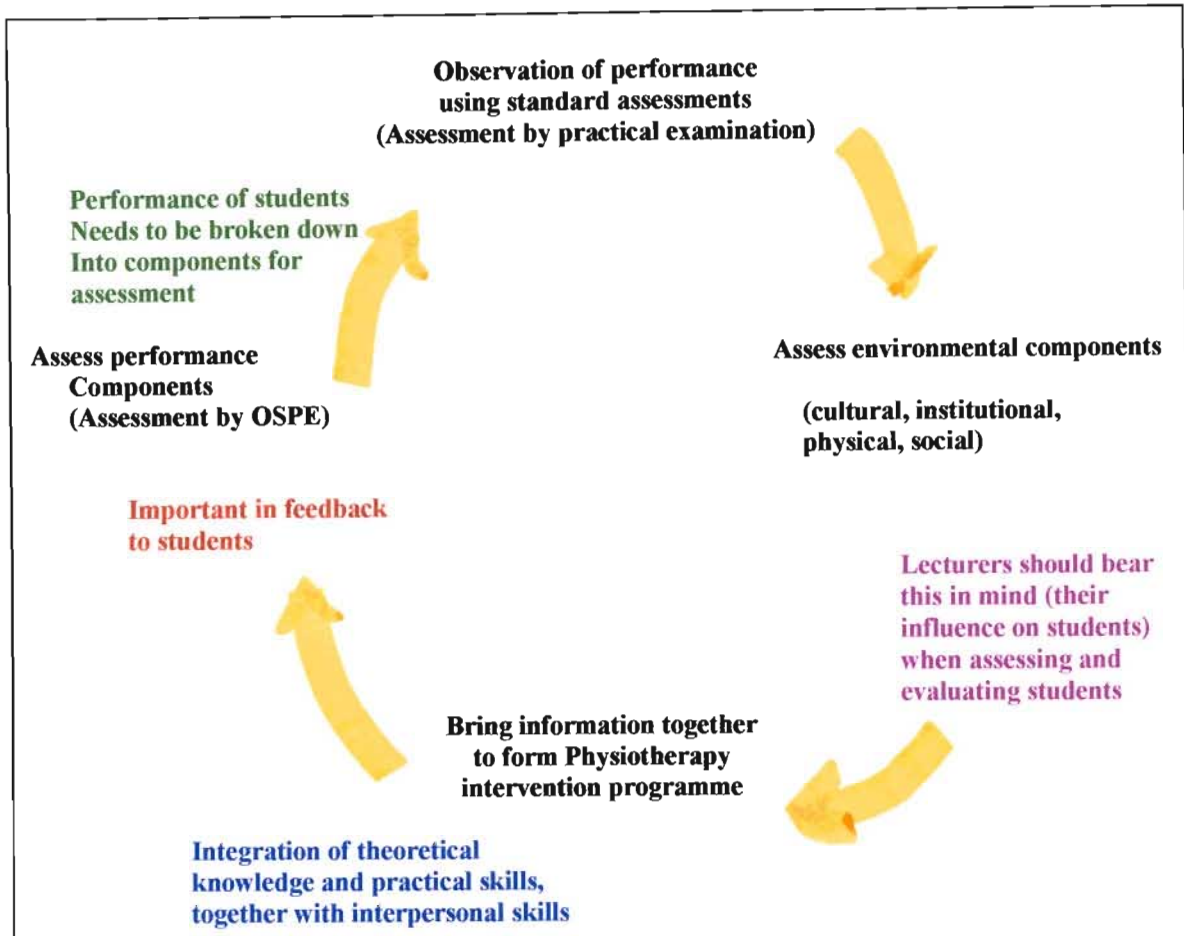
- A student is presented with a problem to solve or an examination to be carried out with the examiner present. When the student is presented with the question at the next station, the student cannot go back to rectify any omissions on the student's original examination. Thus the questions at the station without the examiner does not provide a checklist (for marking purposes) or suggest ready answers and solutions to the student's handling the problem. This presents a paper case scenario and is close to the authentic and would permit a wide range of approaches to the problem posed rather than specifications on a checklist.
- More students could be examined more comprehensively. While one student is carrying out a procedure, another student who has already completed that stage answers the questions at the second station. This is of importance especially as there are time constraints.

As the observations show in the course of this study, the student's final score is based on the points assigned by the examiner on a scale of 0-3 on each item on the score sheet (Appendix E). Scope for further study could be drawn from the correlation studies between the OSPE scores for each student and scores on their written papers. Further correlation could be drawn in a comparative study of all forms of assessment within the Physiotherapy programme. This would show the link of practice with theory and to what extent this occurs.

In the present situation, no consideration is given to the evaluation of attitudes of Physiotherapy students in patient care. Stokes (1974) emphasized the importance of the effectiveness of a doctor's work of attitudes such as poise and capacity for developing a good rapport with a patient. This could be incorporated into the present system of OSPE in Physiotherapy, especially if we support the holistic approach to patient care.

#### **5.4.2 Proposed student assessment process for the OSPE**

Figure 8 shows the proposed process of student assessment that could be implemented in the Physiotherapy undergraduate programme.



**Figure 8: Ideal process of evaluation of students in the Physiotherapy undergraduate programme (adapted from Svinicki and Dixon, 1987)**

This type of assessment proposes observation and evaluation of students' performance using specific assessment methods (practical examination). This model also takes into account the important aspect of environmental and social factors which influences students' learning and performance. This process supports the integration of the theory with the practical, as well as the students' interpersonal skills. The OSPE assessment is useful at this stage as it allows for the breakdown of skills into components for assessment purposes and could form part of the

assessment process. The assessment process can be structured such that there is no interference with the holistic approach to the care of the patient.

We need to ensure that our OSPE assessment practice achieves objectivity in its implementation and integration of practice and theory in order to achieve competency. There will always be elements of subjectivity; therefore altering the weighting of the subjective and objective aspects of the assessment would make allowance. The decision on the respective weighting must be incorporated into the planning before the OSPE for consistency among examiners.

We need to ensure for the future that students are encouraged to develop the positive and beneficial styles of learning with sensitivity towards cultural diversity among our students. This is important in order that students gain the most from clinical experience. We need to assess far more critically than previously exactly what aspects of teaching and clinical exposure are truly of benefit to our students in order that our students benefit from an integrated practical assessment. How this can be achieved is challenging both to students and lecturers and can be initiated at the planning of practical assessment procedures.

Success with the OSPE is dependent on organisational aspects and wide support from a large number of people prepared to work for a common goal. A major issue is that of standard setting and decision-making. The way forward lies with those in education concerned with accurate and fair measurement to achieve proficiency in the various practical tasks in Physiotherapy.

## **5.5 Reflection on the research process**

This research project begins the process of the complex topic of assessment and provides for further research as noted above. Data has been gathered from various sources for this project. The responses received were not always easy to collate into a single response. Scattered data was found to be difficult to structure into a coherent discussion. The best sources of information were the questionnaires and interviews using more qualitative elements and less the quantitative elements. Much of the data collected needed more in-depth explanations.



The data, being rich, has captured some important issues arising from the process given some of the inherent tensions in our health care delivery and our education system.

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**APPENDIX A****CONSENT FORM**

I, ....., having provided information for data collection for the purposes of the dissertation entitled:

**A study to investigate the use of objectively structured practical examination in the assessment of undergraduate Physiotherapy students' practical skills at one tertiary institution in South Africa.**

by Nirmala Naidoo

agree that this information may be used for the above study.

The identity of the staff member/student shall be confidential.

**Signed :** .....

**Date :** .....

**APPENDIX B**  
**OBSERVATION RECORD**  
 (An example)

Module: \_\_\_\_\_

OSPE (+ checklist): \_\_\_\_\_

Co-ordinator: \_\_\_\_\_

Examiners: \_\_\_\_\_

Date: \_\_\_\_\_

Level of study: \_\_\_\_\_

No. of students: \_\_\_\_\_

**Narrative:**

4 OSPE stations with 1 examiner at each station. Each Station of 12 minutes duration. Each station consisted of 2 questions. Both questions given to each student at commencement of the OSPE. 8 students came in at once as for level 1. All four candidates were given the same question simultaneously, while each of the other students was model at each station respectively. Examples of questions asked:

*Question 1: (a) Name 2 methods of measuring flexion of the cervical spine using a tape measure.*

*(b) Show how you would measure cervical spine flexion.*

*Question 2: Show how you would strengthen the ® knee extensor muscles with Oxford grading 2 to 5.*

Once timer went off after 12 minutes, students swapped over (candidate and model) and remained at the same station. A different set of questions were given to students on the second round of the OSPE.

Examples are:

*Question 1: Assess the muscle power of the ® hip abductor muscle using Oxford grading.*

*Question 2: Show how you would increase ® wrist extension using body weight.*

Examiners varied in intervention during the OSPE. Some asked questions while others watched only. Some examples of questions asked:

*Why are you doing this?*

*What is a grade 2 Oxford grading?*

Some gave cues to students eg. *Now change your exercises based on this* (response to question asked).

Students gave explanations in response to questions posed by the examiner and some examiners listened; some questioned students further. Some students went on to second part of question and required reminding by examiner. Some students recorded their readings. One student required explanation of question.

**Reflections:**

Some examiners asked questions and some did not. Some gave cues. Questioning varied in depth and extent when examiners did question. Some examiners requested recorded readings and this took time off the OSPE for those who did record. Some students explained technique as they performed – this may advantage these students. Different questions for each student may advantage some and disadvantage others – “luck of the draw”.



## APPENDIX C(a)

### **INTERVIEW SCHEDULE** **(Co-ordinators: Level 1, 2 & 3)**

- 1) What do you think is the difference between OSPE and practical testing?
- 2) What are the advantages/disadvantages or strengths/weaknesses of OSPE/practical tests?
- 3) How do you plan your OSPE?
- 4) Does OSPE provide the opportunity to cover the skill itself as well as theoretical background to the skill?
- 5) What are the objectives of the OSPE you conduct?
- 6) In what way does OSPE influence your teaching?
- 7) What preparation should students make for OSPE?
- 8) What strategies do you use to prepare students for this?
- 9) How do you think OSPE can help students learn and develop practical skills?
- 10) Do you think OSPE adequately addresses the different types of learners and the cultural diversity among the students?
- 11) Have you learnt anything from OSPE about the students?
- 12) Do you think that students respond to OSPE questions the way you intended?
- 13) How do you think students feel about OSPE?
- 14) Do you need any support (eg. Materials, resources, etc.) to conduct further OSPE's?
- 15) Do you think that OSPE is adequately objective in testing competency skills of the students?
- 16) What adjustments, if any, have you made to your original OSPE over the time that you have been using OSPE to assess students practical skills?

## APPENDIX C(b)

### INTERVIEW SCHEDULE

(Level 4 co-ordinator)

- 1) What do you think is the difference between OSPE and practical testing?
- 2) What are the advantages/disadvantages or strengths/weaknesses of OSPE/practical tests?
- 3) How do you plan your OSPE/Practical?
- 4) Does OSPE/Practical provide the opportunity to cover the skill itself as well as theoretical background to the skill?
- 5) What are the objectives of the OSPE/Practical you conduct?
- 6) In what way does OSPE/Practical influence your teaching?
- 7) What preparation should students make for OSPE/Practical?
- 8) What strategies do you use to prepare students for this?
- 9) How do you think OSPE/Practical can help students learn and develop practical skills?
- 10) Do you think OSPE/Practical adequately addresses the different types of learners and the cultural diversity among the students?
- 11) Have you learnt anything from OSPE/Practical about the students?
- 12) Do you think that students respond to OSPE/Practical questions the way you intended?
- 13) How do you think students feel about OSPE/Practical?
- 14) Do you need any support (eg. Materials, resources, etc.) to conduct further OSPE/Practical tests?
- 15) Do you think that Practical testing is adequately objective in testing competency skills of the students?
- 16) What adjustments, if any, have you made to your original practical testing/OSPE over the time that you have been assessing students' practical skills?

**APPENDIX C(c)****INTERVIEW SCHEDULE**  
**(Examiners: Level 1, 2 & 3)**

- 1) What do you think is the difference between OSPE and practical testing?
- 2) What are the advantages/disadvantages or strengths/weaknesses of OSPE/practical tests?
- 3) Are you involved in the planning of the OSPE in which you were an examiner?
- 4) Does OSPE provide the opportunity to cover the skill itself as well as theoretical background to the skill?
- 5) What are the objectives of the OSPE you examined?
- 6) What preparation should students make for OSPE?
- 7) How do you think OSPE can help students learn and develop practical skills?
- 8) Do you think OSPE adequately addresses the different types of learners and the cultural diversity among the students?
- 9) Have you learnt anything from OSPE about the students?
- 10) Do you think that students respond to OSPE questions the way you intended?
- 11) How do you think students feel about OSPE?
- 12) Do you think any support (eg. Materials, resources, etc.) to conduct further OSPE?
- 13) Do you think that OSPE is adequately objective in testing competency skills of the students?
- 14) What adjustments, if any, would you make to the OSPE/Practical if you could, to assess students' practical skills?

**INTERVIEW SCHEDULE**  
**(Examiner: Level 4)**

- 1) What do you think is the difference between OSPE and practical examination?
- 2) What are the advantages/disadvantages or strengths/weaknesses of OSPE/practical examination?
- 3) Are you involved in the planning of the practical examination in which you were an examiner?
- 4) Does practical examination provide the opportunity to cover the skill itself as well as theoretical background to the skill?
- 5) What are the objectives of the practical you examined?
- 6) What preparation should students make for practical examination?
- 7) How do you think practical examination can help students learn and develop practical skills?
- 8) Do you think practical examination adequately addresses the different types of learners and the cultural diversity among the students?
- 9) Have you learnt anything from practical examination about the students?
- 10) Do you think that students respond to practical examination questions the way you intended?
- 11) How do you think students feel about practical examination?
- 12) Do you think any support (eg. Materials, resources, etc.) to conduct further practical examination?
- 13) Do you think that practical examination is adequately objective in testing competency skills of the students?
- 14) What adjustments, if any, would you make to the OSPE/Practical if you could, to assess students' practical skills?

**QUESTIONNAIRE**  
**(Level 1,2 and 3 students)**

This questionnaire has been put together to evaluate the efficacy of OSPE.  
 Please answer ALL questions and thank you for your co-operation.

**A. Background**

(1) List 3 advantages and 3 disadvantages of OSPE.

<u>Advantages</u>	<u>Disadvantages</u>
_____	_____
_____	_____
_____	_____

(2) List in order of importance the 3 most important aspects of OSPE.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(3) What are the 3 most important skills you acquired during the practical sessions that prepared you for the OSPE?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**B. Learning objectives (Tick the appropriate answer)**

(4) Did you study for the OSPE?                      Yes                      No

(5) How did you prepare for the OSPE?

- Practice with colleagues/friends/family
- Readings and lecture notes
- Other (Please state)

(6) How often do you practice Physiotherapy practical skills you have covered in the practical sessions?

- Never                      Sometimes                      Whenever practical Session is scheduled                      Weekly                      Daily

- (7) Do you feel that OSPE has equipped you to confidently apply the practical skills you have learnt?
- Yes                      No
- (8) Indicate the range of marks you obtained in your previous OSPE?
- <50%              50-60%              60-70%              70-80%              >80%
- (9) How do you think OSPE reflects your competence compared with the level of mark you obtained?  
1 No correlation whatsoever; 2 Some correlation; 3 Neutral; 4 Good correlation; 5 very strong correlation

### C. Training follow-up

- (10) Look at the following statements and indicate as follows:  
1 = strongly disagree; 2 = Disagree; 3 = undecided; 4 = agree; 5 = strongly agree

#### Rank

Practical sessions were too short  
Practical sessions were poorly conducted  
Content was too theoretical  
Practical classes are too large  
Other (state and rank)

- (11) List the areas in which you would like more time allocation/practice/revision

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- (12) Please share any other comments or suggestions you have on OSPE.

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**Thank you for your co-operation.**  
**NIRI NAIDOO**

**QUESTIONNAIRE**  
**(Level 4)**

This questionnaire has been put together to evaluate the efficacy of OSPE/Practical testing. Please answer ALL questions and thank you for your co-operation.

**A. Background**

(1) List 3 advantages and 3 disadvantages of OSPE.

**Advantages**

**Disadvantages**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(2) List 3 advantages and 3 disadvantages of practical tests.

**Advantages**

**Disadvantages**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3) List in order of importance the 3 most important aspects of OSPE.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(4) What are the 3 most important skills you acquired during the practical sessions that prepared you for the OSPE?

\_\_\_\_\_

**B. Learning objectives (Tick the appropriate answer)**

(5) Did you study for the OSPE?                      Yes                      No

(6) How did you prepare for the OSPE?

- Practice with colleagues/friends/family
- Readings and lecture notes
- Other (Please state)

**(7) How often do you practice Physiotherapy practical skills you have covered in the practical sessions?**

Never                      Sometimes                      Whenever practical  
Session is scheduled                      Weekly                      Daily

**(8) Do you feel that OSPE has equipped you to confidently apply the practical skills you have learnt?**

Yes                      No

**(9) Indicate the range of marks you obtained in your previous OSPE?**

<50%                      50-60%                      60-70%                      70-80%                      >80%

**(10) How do you think OSPE reflects your competence compared with the level of mark you obtained?**  
1 No correlation whatsoever; 2 Some correlation; 3 Neutral; 4 Good correlation; 5 very strong correlation

**C. Training follow-up**

**(11) Look at the following statements and indicate as follows:**  
1 = strongly disagree; 2 = Disagree; 3 = undecided; 4 = agree; 5 = strongly agree

**Rank**

- Practical sessions were too short
- Practical sessions were poorly conducted
- Content was too theoretical
- Practical classes are too large
- Other (state and rank)

**(12) List the areas in which you would like more time allocation/practice/revision**

---



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**(13) Given the opportunity to choose, would you choose practical tests or OSPE to assess your practical skills? (circle)**

Practical                      OSPE

**Why?** \_\_\_\_\_

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**(14) Please share any other comments or suggestions you have on OSPE.**

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**Thank you for your co-operation.**  
**NIRI NAIDOO**



## APPENDIX E

KINESIOLOGY OSPE CHECKLIST

TOTAL: /31

Name of student:Reg. No:

**Grading score:** 0 = not performed  
 1 = unsatisfactory  
 2 = satisfactory  
 3 = good

**Question Demonstrate how you would use the principle of momentum to strengthen flexion and extension of the ® shoulder joint.**

CHECKLIST

1.	Introduction	0 1 2 3 4
2.	<u>Therapist demonstrates exercise</u>	0 1 2
	• Suitability of equipment – Indian club	0 1 2
	• Starting position: Half reach grasp stoop walk standing	0 1 2 3
	• Exercise performance <i>Use of speed, ROM, haltings</i>	0 1 2 3
3.	<u>Patient executes exercise</u>	
	• Starting position	0 1 2
	• Starting position corrected	0 1 2
	• ® shoulder free for movement	0 1 2
	• Patient instructed to swing arm faster and higher	0 1 2 3
	• Haltings: Turning point and mid-range	0 1 2 3
	• Correction	0 1 2
	Overall performance	0 1 2 3

## APPENDIX F

<b>Physiotherapy 4</b> <b>PRACTICAL EXAMINATION</b>
--

Name of student: \_\_\_\_\_

Name of patient: \_\_\_\_\_ Diagnosis: \_\_\_\_\_

Examiners: \_\_\_\_\_ Date: \_\_\_\_\_

Categories for marks	Comments	Marks
<b>1. General preparation and organisation</b> 1.1 Introduction and explanation  1.2 Treatment area		<b>/5</b>
<b>2. Re-evaluation and treatment plan</b> 2.1 Checks change in patient's condition  2.2 Choice of appropriate assessment techniques  2.3 Reformulation of aims and modification of treatment plan		<b>/10</b>
<b>3. Interpersonal relationship</b>		<b>/5</b>
<b>4. Treatment</b> 4.1 Choice of techniques/Strategy  4.2 Quality of Performance 4.2.1 Demonstration/Explanation/Instruction  4.2.2 Execution  4.2.3 Correction/Modification  4.2.4 Safety  4.2.5 Re-assessment where applicable  4.6 Home/ward programme/follow-up  4.7 Overall performance and effectiveness  <b>Subminimum = 35/70</b>		<b>/10</b>                <b>/30</b>       <b>/15</b>    <b>/15</b>
<b>5. Application of theoretical knowledge</b>		<b>/10</b>
<b>TOTAL</b>		<b>/100</b>

**Co-ordinators' and examiners' responses to the question:  
What do you think is the difference between OSPE and practical examination?**

<b>CO-ORDINATORS' RESPONSES</b>				
<b>Category</b>	<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<b>OSPE</b>	<ul style="list-style-type: none"> <li>Looking purely at a technical skill</li> </ul>	<ul style="list-style-type: none"> <li>Highly structured</li> <li>Have to be precise in testing</li> <li>Stations with examiners must be identical</li> <li>Marksheets must be specific and spell out clearly</li> <li>Has to be short; have to cut out some aspects of skill</li> </ul>	<ul style="list-style-type: none"> <li>Gives standard across the board</li> <li>Can isolate areas to be examined</li> <li>Can judge specific areas of performance of students</li> <li>Can also judge class as a whole</li> </ul>	<ul style="list-style-type: none"> <li>Clearly defined method of testing</li> <li>Does not allow for deviation from expected outcome</li> <li>Anyone can examine</li> <li>Rigid testing</li> <li>Very objective</li> </ul>
<b>PRACTICAL</b>	<ul style="list-style-type: none"> <li>Can intercept at some point to look at reasoning behind skill</li> <li>Can "chop and change" things around depending on type of reasoning the student comes up with.</li> </ul>	<ul style="list-style-type: none"> <li>Requires more time for skill to be tested</li> <li>Can test many components of the skill</li> </ul>	<ul style="list-style-type: none"> <li>Can look at every area of the skill</li> <li>Looking at the "whole"</li> </ul>	<ul style="list-style-type: none"> <li>Clearly defined outcome, but method is not</li> <li>Allows for different methods of learning.</li> <li>Students respond at their own pace (problem-solving).</li> </ul>
<b>EXAMINERS' RESPONSES</b>				
<b>OSPE</b>	<ul style="list-style-type: none"> <li>I cannot see the difference between an OSPE &amp; a practical examination.</li> </ul>	<ul style="list-style-type: none"> <li>Short</li> <li>Does not allow student time to think (what about the weak students)</li> <li>Does not give opportunity to understand</li> </ul>	<ul style="list-style-type: none"> <li>Not a big difference between a practical and the OSPE.</li> </ul>	<ul style="list-style-type: none"> <li>Objectively structured</li> <li>Looking for specific points to give students marks</li> <li>More structured</li> </ul>
<b>PRACTICAL</b>		<ul style="list-style-type: none"> <li>Allows more time for all the things that OSPE does not.</li> </ul>		<ul style="list-style-type: none"> <li>Student is given question &amp; examiner assesses how student answers from practical point.</li> </ul>

**Co-ordinators' and examiners' responses to the question:  
What are the advantages/strengths and disadvantages/weaknesses of OSPE?**

CO-ORDINATORS' RESPONSES				
Question 1	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>Advantages of OSPE</b>	<ul style="list-style-type: none"> <li>At 1<sup>ST</sup> year level we need to be skill-based at technical level.</li> </ul>	<ul style="list-style-type: none"> <li>Can test an aspect very quickly</li> <li>shorter test time</li> <li>Used for large numbers of students</li> </ul>	<ul style="list-style-type: none"> <li>Gives standard across the board</li> <li>Can isolate areas to be examined</li> <li>Can judge specific areas of performance of students</li> <li>Can also judge class as a whole</li> </ul>	<ul style="list-style-type: none"> <li>Quick</li> <li>Objective</li> <li>Examiner does not have to be a 'specialist' in field; Anyone who has basic knowledge or know-how could examine</li> </ul>
<b>Disadvantages of OSPE</b>	<ul style="list-style-type: none"> <li>We are not including any thinking skills into OSPE</li> <li>Time frames for OSPE stations are not known.</li> <li>Reinforces rigidity of thinking at technical level.</li> </ul>	<ul style="list-style-type: none"> <li>Many components make up a skill &amp; this cannot be seen in 5 minutes</li> </ul>	<ul style="list-style-type: none"> <li>Cannot test the same way as for a practical</li> </ul>	<ul style="list-style-type: none"> <li>Does not allow for lateral thinking</li> <li>Too rigid</li> <li>Purely skills orientated</li> </ul>
EXAMINERS' RESPONSES				
<b>Advantages of OSPE</b>	<ul style="list-style-type: none"> <li>If students came in prepared to answer questions, it would make a big difference</li> </ul>	<ul style="list-style-type: none"> <li>Shorter examining time for examiners</li> <li>Can get through a large number of students</li> </ul>	<ul style="list-style-type: none"> <li>Examiner can ask the 'leading' questions</li> <li>Fair compared to practical</li> </ul>	<ul style="list-style-type: none"> <li>Know what you are looking for</li> <li>Guided by checklist</li> <li>Objective</li> </ul>
<b>Disadvantages of OSPE</b>	<ul style="list-style-type: none"> <li>No questions, just observation of the student</li> <li>Students know the technical skill, but have no understanding</li> </ul>	<ul style="list-style-type: none"> <li>Skill cannot be tested in a short period of time</li> <li>Makes students "perish" even more because of time, time, time</li> </ul>	<ul style="list-style-type: none"> <li>Not as fair method as it is.</li> </ul>	<ul style="list-style-type: none"> <li>In both OSPE &amp; practical, students are nervous &amp; may therefore oversee something. If you question the student, we have an idea of the way the student is thinking</li> </ul>

**Co-ordinators' and examiners' responses to the question:**

*What are the advantages/ disadvantages or strengths/weaknesses of practical examination?*

CO-ORDINATORS' RESPONSES				
Question	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>Advantages of practical examination</b>	<ul style="list-style-type: none"> <li>• Incorporates some thinking skills by questions asked.</li> <li>• Time allocated to performance of entire practical</li> </ul>	<ul style="list-style-type: none"> <li>• Gives leeway to examine &amp; sample syllabus better</li> <li>• Can test students for their preparation &amp; performance of different components</li> <li>• Can correct &amp; question students</li> </ul>	<ul style="list-style-type: none"> <li>• Gives true assessment of student performance</li> </ul>	<ul style="list-style-type: none"> <li>• Learner orientated (caters for different types of learners)</li> <li>• Examiner can probe problem solving ability</li> <li>• Skill, knowledge/theory &amp; attitude can be assessed</li> <li>• Application of skill tested</li> </ul>
<b>Disadvantages of practical examination</b>	-	-	-	<ul style="list-style-type: none"> <li>• Time-consuming</li> <li>• There is always a degree of subjectivity</li> </ul>
EXAMINERS' RESPONSES				
<b>Advantages of practical examination</b>	<ul style="list-style-type: none"> <li>• Allows for questioning students</li> <li>• Establishes understanding of the background to the skill</li> </ul>	<ul style="list-style-type: none"> <li>• Time permits questioning</li> </ul>	<ul style="list-style-type: none"> <li>• Can observe the student doing the full practical/technique</li> </ul>	<ul style="list-style-type: none"> <li>• Allows more time for questioning to determine the critical thinking ability of the student</li> </ul>
<b>Disadvantages of practical examination</b>	-	-	-	<ul style="list-style-type: none"> <li>• Can be very subjective at times</li> <li>• No model answer</li> </ul>

**Co-ordinators' responses to the question:  
How do you plan your OSPE?**

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<ul style="list-style-type: none"> <li>• OSPE relates to the sections we covered over a period of time.</li> <li>• There is a different set of questions for each set of students.</li> <li>• Through the module during the semester, every student would have had an OSPE on each question.</li> </ul>	<ul style="list-style-type: none"> <li>• We go through the syllabus in class.</li> <li>• Not possible to go through everything, so we go through the principles and students use these in application to work out the procedure for all joints &amp; muscles.</li> <li>• There are mock tests before an examination.</li> <li>• We go through as many examples as possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan according to equipment available.</li> <li>• Modified OSPE done.</li> <li>• Plan to sample syllabus across the board.</li> </ul>	<ul style="list-style-type: none"> <li>• What do I need the students to know/skill</li> <li>• What are outcomes &amp; objectives; why is this required</li> <li>• How will I measure or assess knowledge, skill, and attitude.</li> <li>• Does practical mimic real-life situation (clinically-orientated)</li> <li>• Timeframe- is it enough for slower student to apply</li> <li>• Set realistic, clinically orientated questions that are not confusing.</li> <li>• Evaluation tool – assessment sheet</li> </ul>

**Co-ordinators' and examiners' responses to the question:**  
*Does OSPE provide the opportunity to cover the skill itself as well as the background to the skill?*

<b>CO-ORDINATORS' RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
No  OSPE is testing just the skill and it is a practice skill in a technical fashion.	This is difficult with the modular system, as the time is very short. A skill cannot be acquired with very good competency over a short period of time.	No  This would require more testing and therefore more time, which is not available.	It should  But not only knowledge about the skills, it should also bring out the student's character, their manner and approach as well.
<b>EXAMINERS' RESPONSES</b>			
OSPE does not allow for questioning of students, and it is therefore difficult to test understanding and the theoretical background of the skill performed.	No It depends on how you ask the question.	Ensure that both the theory and the technique are tested in OSPE. Questions are asked to see if the student has theoretical backup.	In OSPE, if there is an area where you can question the student, then I think you can test theory. Otherwise there is no time to question students. We can question students in the practical test.

**Co-ordinators' and examiners' responses to the question:  
What are the objectives of the OSPE you are involved in?**

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>Perfecting the skill with the theoretical background underlying the skill.</li> </ul>	<ul style="list-style-type: none"> <li>Assessment is the key to successful treatment</li> <li>The skill s should be applied to patients</li> <li>Address patients needs in terms of function</li> </ul>	<ul style="list-style-type: none"> <li>Safety is the primary objective as treatment involves the use of electrical equipment</li> <li>Effective treatment with details of application achieved.</li> <li>Quality of technique is important.</li> </ul>	<ul style="list-style-type: none"> <li>To test mastery of skill</li> <li>Were students able to assimilate, synthesise, analyse &amp; apply knowledge &amp; skill</li> <li>Can students internalise this &amp; make it personal</li> <li>Students to become self-critiques</li> <li>Students will learn something from the practical tests.</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>It was to basically to see how competent the student is in carrying out a task.</li> <li>To see if the students are using their theory to apply the skill (by their actions).</li> </ul>	<ul style="list-style-type: none"> <li>Basically to test theoretical knowledge &amp; how best students can integrate that into the OSPE</li> </ul>	<ul style="list-style-type: none"> <li>It is to see if students understand what was taught in class and whether students can apply it.</li> <li>Students should have theoretical background to show understanding.</li> </ul>	<ul style="list-style-type: none"> <li>I had to work this out from the questions being asked.</li> </ul>



**Co-ordinators' responses to the question:  
In what way does OSPE influence your teaching?**

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<ul style="list-style-type: none"> <li>• The practical sessions are based on a sense of familiarising students with what they are to do &amp; expected to produce.</li> </ul>	<ul style="list-style-type: none"> <li>• Students have 2 written tests + 2 practical tests before final.</li> <li>• I standardise the OSPE by having the same examiners at each practical, &amp; examiners rotate students they examine</li> <li>• Compulsory attendance at all lectures &amp; practical.</li> </ul>	<ul style="list-style-type: none"> <li>• Have not thought about OSPE influencing teaching</li> <li>• Work on key questions and my teaching are influenced by the questions I set in the OSPE.</li> <li>• Checking students' performance in the classroom with OSPE score could show areas where students need assistance.</li> </ul>	<ul style="list-style-type: none"> <li>• Check students' strengths/weaknesses</li> <li>• Check students' attitudes towards subject &amp; particular section</li> <li>• Practical examination not only tests the students, but also tests the lecturer.</li> </ul>

**Co-ordinators' and examiners' responses to the question:  
*What preparation should students make for OSPE/Practical?***

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>• Checklists are given to students &amp; they are very systematic</li> <li>• If students practiced their techniques using checklists, they could perfect techniques for OSPE.</li> </ul>	<ul style="list-style-type: none"> <li>• This is very difficult as students are so overwhelmed with work.</li> <li>• Compulsory attendance and practice in the presence of lecturer.</li> </ul>	<ul style="list-style-type: none"> <li>• This varies depending on OSPE</li> <li>• Students must be fast, be able to prioritise, with speed of thought &amp; action.</li> </ul>	<ul style="list-style-type: none"> <li>• Need to have sound theoretical base</li> <li>• Should set hypothetical clinical cases for themselves, in order to test application</li> <li>• Practice, practice, practice &amp; apply in the clinical setting.</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>• Students should come prepared with theoretical knowledge</li> <li>• More resources and enough time to practice should be given.</li> </ul>	<ul style="list-style-type: none"> <li>• The lecturers need to know what they want &amp; then pass this onto students.</li> <li>• The students should have full information of what an OSPE is, how it is to be conducted &amp; expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Students are expected to practice beforehand.</li> </ul>	<ul style="list-style-type: none"> <li>• Students need to be made aware of how marks are allocated and what the examiner is looking for.</li> </ul>

**Co-ordinators' responses to the question:*****What strategies do you use to prepare students for OSPE?***

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<ul style="list-style-type: none"> <li>• Students need to think critically, reflect and bring theoretical knowledge to practice.</li> <li>• Questions for OSPE need to bring out these aspects.</li> <li>• This would depend on what you want to get out of the students.</li> </ul>	<ul style="list-style-type: none"> <li>• Attendance is compulsory, with absence for a valid reason.</li> <li>• More practice needs to be done outside class time.</li> <li>• Assistance of ADP personnel to assist with practical classes..</li> </ul>	<ul style="list-style-type: none"> <li>• OSPE sheets are used as a guide in the classroom</li> <li>• This gives orderly approach to practice.</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion &amp; “doing” rather than reading &amp; writing only</li> <li>• Review &amp; revision of practical tests especially where there were shortcomings.</li> <li>• OSPE in preparation for practical examination</li> <li>• Practice of application of skills.</li> </ul>

**Co-ordinators' and examiners' responses to the question:**  
*How do you think OSPE/Practical can help students learn and develop practical skills?*

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>OSPE is a building block towards a full scale practical; it encompasses all of reflection, critical thinking with background theoretical knowledge.</li> <li>If the thinking behind the skill is being tested, then the question must be set differently.</li> </ul>	<ul style="list-style-type: none"> <li>My session is not purely technical; students learn to think &amp; apply.</li> <li>Teaching includes case scenarios which is on a development level of learning.</li> </ul>	<ul style="list-style-type: none"> <li>Highlighting of skills &amp; the order in which it should be done.</li> <li>Highlighting is important for carry-through.</li> </ul>	<ul style="list-style-type: none"> <li>No for OSPE</li> <li>Yes for practical, if properly structured.</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>Provided OSPE is well structured, with the theory and practice hand-in-hand, it can help students develop practical skills.</li> </ul>	<ul style="list-style-type: none"> <li>If the time allocation were not so short &amp; specified, then maybe it can help students.</li> <li>It can help students if OSPE is done through the course &amp; not just for the final examination.</li> <li>If we used OSPE type situations to practice in the classroom</li> <li>More staff for practical sessions would assist.</li> </ul>	<ul style="list-style-type: none"> <li>The student should learn something new by the time he/she leaves an OSPE</li> <li>Can use OSPE to teach students what they do not know or do.</li> </ul>	<ul style="list-style-type: none"> <li>Students should know what a pass is; what constitutes a distinction.</li> <li>Students should be given breakdown of mark allocation and they should practice with this</li> <li>Practical examination should be used to teach students when they make mistakes.</li> </ul>

**Co-ordinators' and examiners' responses to the question:**  
*Do you think OSPE adequately addresses the different types of learners and the cultural diversity among the students?*

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>• Unsure of how cultural diversity relates to OSPE</li> <li>• Repetition of questions in classroom provides familiarity to all students</li> <li>• OSPE addresses only a certain learning aspect; we have to ask questions specifically to address the different types of learners.</li> </ul>	<ul style="list-style-type: none"> <li>• OSPE requires practice so after hours practice will encourage students to form their own study groups</li> <li>• Students sometimes request being grouped for classroom activities in similar cultural groups</li> <li>• Patient contact involves cultural diversity sometimes &amp; this can start in classroom.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes &amp; No</li> <li>• Practical skill at OSPE is non-verbal</li> <li>• EL2 students do not always understand question &amp; may require guidance.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>• I do not think this should even come up as a question.</li> <li>• Why should there be a difference in the way any student handles a patient?</li> <li>• Students are made aware of requirements as part of the selection process</li> <li>• Relationship between the patient &amp; student starts in classroom.</li> </ul>	<ul style="list-style-type: none"> <li>• I don't think so.</li> <li>• If a student doesn't understand the question, it is dependent on the examiner to explain the question.</li> </ul>	<ul style="list-style-type: none"> <li>• OSPE does not even look at that.</li> <li>• Examiners should be sensitive to students (models) who have to expose themselves for the OSPE.</li> <li>• This can contribute to the candidate failing the OSPE if the model does not respond.</li> <li>• Whether the student is a fast or slow learner, they are treated alike.</li> </ul>	<ul style="list-style-type: none"> <li>• I don't think so.</li> <li>• Students may not understand question or may not be able to express themselves, especially if there is language barrier</li> <li>• It is easy for me to understand &amp; guide an English-speaking student, but difficult with EL2 students.</li> </ul>

**Co-ordinators' and examiners' responses to the question:  
Have you learnt anything from OSPE/Practical about the students?**

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>• 5 minute stations make students think on-the-spot</li> <li>• Causes students to flounder &amp; probably not perform the same if more time were allocated.</li> <li>• Students come in highly stressed for OSPE.</li> </ul>	<ul style="list-style-type: none"> <li>• Some students make poor examination candidates</li> <li>• Some are better at groupwork</li> <li>• Students tend to perform better in tests than if it is final examination.</li> </ul>	<ul style="list-style-type: none"> <li>• The variety of different learners (pace of learning) not addressed by OSPE.</li> <li>• Students are not thinkers and poor diversity of approaches is seen as OSPE restricts this.</li> </ul>	<ul style="list-style-type: none"> <li>• Students prefer practical testing rather than OSPE.</li> <li>• OSPE is good for skills testing, but practical tests should also be done.</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>• Get to know the student who is a bookworm and who is a hands-on guy.</li> </ul>	<ul style="list-style-type: none"> <li>• By observation, OSPE does not help students</li> <li>• There are slower students &amp; there are those who finish early</li> </ul>	<ul style="list-style-type: none"> <li>• You can pick out weaknesses in students</li> <li>• You can tell if the students have been practicing or not</li> </ul>	<ul style="list-style-type: none"> <li>• Students tend not to question or reason what they are doing</li> <li>• We can tell what they make of information gained, both subjective &amp; objective</li> <li>• We can also see how students carry this information through.</li> </ul>

**Co-ordinators' and examiners' responses to the question:**  
*Do you think that students respond to OSPE/Practical questions the way you intended?*

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>• There will not be much diversity as there is one question &amp; one answer to it</li> <li>• No chance of looking for lateral or horizontal thinkers.</li> </ul>	<ul style="list-style-type: none"> <li>• Some students need explanation of question in examination situation.</li> <li>• Some students "switch off" because of examination tension</li> <li>• EL2 students sometimes require question to be rephrased</li> <li>• Many students finish early</li> </ul>	<ul style="list-style-type: none"> <li>• We examine in different ways at OSPE</li> <li>• Some students don't think under pressure</li> <li>• There is some subjectivity by examiners</li> <li>• Students respond to examiners &amp; how they feel about them &amp; this influences the way they respond to questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>• After a while students got used to the fact that I asked questions</li> <li>• I informed students that I would use OSPE for teaching purposes.</li> </ul>	<ul style="list-style-type: none"> <li>• Most of the students, I think, do.</li> </ul>	<ul style="list-style-type: none"> <li>• Some students need the question explained to them</li> </ul>	<ul style="list-style-type: none"> <li>• Generally there is no problem in the practical</li> <li>• Question is usually simple, but there is a chance of being misunderstood</li> </ul>

**Co-ordinators' and examiners' responses to the question:  
How do you think students feel about OSPE/Practical?**

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>• They become very stressed</li> <li>• Students feel it is a make-or-break situation.</li> <li>• They have to make decisions quickly.</li> </ul>	<ul style="list-style-type: none"> <li>• Students do not feel confident.</li> <li>• They find the volume of study large</li> </ul>	<ul style="list-style-type: none"> <li>• Students accept this as a way of testing their practical skills</li> </ul>	<ul style="list-style-type: none"> <li>• Students prefer practical testing rather than OSPE.</li> <li>• OSPE is good for skills testing, but practical tests should also be done.</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>• Students are always stressed by exams</li> <li>• Students can get away with a lot if questions are not asked.</li> </ul>	<ul style="list-style-type: none"> <li>• Some students feel intimidated by some examiners, especially if they ask questions</li> <li>• Some students just want to do something &amp; leave the room</li> <li>• It is not a learning experience for students.</li> </ul>	<ul style="list-style-type: none"> <li>• I am sure they are not happy with OSPE</li> <li>• Some feel intimidated by some examiners</li> <li>• They see OSPE as a test</li> </ul>	<ul style="list-style-type: none"> <li>• Students are nervous &amp; on edge.</li> <li>• They use it as an opportunity to try to shine out</li> <li>• They see it as a test</li> </ul>



**Co-ordinators' and examiners' responses to the question:**  
*What adjustments, if any, would you make to the OSPE/Practical examination if you could, to assess students' practical skills?*

<b>CO-ORDINATORS RESPONSES</b>			
<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<ul style="list-style-type: none"> <li>We need to break down the skill into every component that needs to be tested for the skill to become whole.</li> <li>The time factor is important to me</li> </ul>	<ul style="list-style-type: none"> <li>There is a definite need to change</li> <li>Changes were made to marksheets due to modularisation; previously very broad, &amp; it is now very refined</li> <li>Could improve with more resources</li> </ul>	<ul style="list-style-type: none"> <li>Time</li> <li>Practical is more feasible for this section of syllabus</li> <li>To sample all questions &amp; equipment through the year with practical tests</li> <li>More equipment and resources are required.</li> </ul>	<ul style="list-style-type: none"> <li>Structure the practical to be more objective</li> <li>To cater for different types of learners and the cultural diversity of students</li> <li>To cater for the large groups of students</li> </ul>
<b>EXAMINERS RESPONSES</b>			
<ul style="list-style-type: none"> <li>Holistic approach to the patient should be encouraged &amp; reasoning behind what student is doing.</li> <li>Things are put into pockets because of modularisation; this should be changed.</li> <li>Changes can happen in the clinical area.</li> <li>Needs more examiners, planning and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Scrap OSPE &amp; opt for practical examination</li> <li>Practical examination gives students room to think &amp; apply his/her mind to what they are doing.</li> <li>This would provide room to modify whatever skills they are applying at the time.</li> </ul>	<ul style="list-style-type: none"> <li>Should be done on patients</li> <li>Does not work if students model for each other, especially if one models &amp; is the candidate immediately thereafter.</li> </ul>	<ul style="list-style-type: none"> <li>Students pick out of a hat the area of their final practical exam- this should be changed</li> <li>Some students have their weaknesses in some areas &amp; this may be the area they pick. This is not a true reflection on them.</li> <li>This exam should be a continuous evaluation &amp; not a one-off one.</li> </ul>

Students' responses to: *List 3 advantages of OSPE*

RESPONSES	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b><u>List 3 advantages of OSPE</u></b>				
1) Convenient/time-saving	1 (3%)	-	1 (4%)	4 (18%)
2) Facilitates group/individual learning	1 (3%)	1 (4.7%)	3 (12%)	2 (9%)
3) Helps with preparation/learning skill/practice/confidence	10 (33%)	7 (29%)	9 (36%)	6 (27%)
4) Examiner opportunity to individually see student's performance	-	2 (8.3%)	6 (24%)	3 (14%)
5) Examiner can ask questions	1 (3%)	-	-	1 (4.5%)
6) Examiner/Student can find out how much student understands work	8 (27%)	6 (25%)	7 (28%)	5 (23%)
7) Tests practical /theoretical knowledge, quickly & application	16 (53%)	6 (25%)	6 (24%)	6 (27%)
8) Can make mistakes which can be corrected before treating patients	6 (20%)	3 (12.5%)	8 (32%)	5 (23%)
9) Teaches students to think/work under stressful conditions/pressure	5 (17%)	4 (16.7%)	6 (24%)	7 (32%)
10) Ensures student learns everything & does not 'spot'	3 (10%)	3 (12.5%)	1 (4%)	3 (14%)
11) Specific technique tested to boost marks	2 (6%)	3 (12.5%)	5 (20%)	3 (14%)
12) Standardisation because of evaluation forms	-	2 (8.3%)	1 (4%)	2 (9%)
13) Tests readiness/preparation for clinical application to patients	9 (30%)	12 (50%)	5 (20%)	5 (23%)
14) Tests how you think/react on-the-spot	8 (27%)	1 (4.7%)	1 (4%)	5 (23%)
15) Hands-on testing/experience	1 (3%)	4 (16.7%)	2 (8%)	2 (9%)
16) Communication with different patients/language	6 (53%)	1 (4.7%)	2 (8%)	-
17) Reinforces work learnt	4 (13%)	4 (16.7%)	3 (12%)	-
18) Means of judging student progress	4 (13%)	4 (16.7%)	2 (8%)	-
19) Encourages mixing of class	-	2 (8.3%)	-	-

Level 4 students' responses to: *List 3 advantages and disadvantages of practical examination.*

STUDENT RESPONSES	NO. OF STUDENTS n = 25 (%)
<b>Advantages of practical examination:</b>	
• Helps to revise and sharpen skills	5 (22%)
• Integrates theory & practice	13 (59.1%)
• Examiner can correct student	3 (13.6%)
• Good test of competence	6 (27.3%)
• "Hands-on"; 'real' situation	8 (36.4%)
• Adequate tie/time management	15 (68.2%)
• Tests holistic approach to patient	14 (63.6%)
<b>Disadvantages of practical examination:</b>	
• Cannot perform maximally under pressure	5 (22,7%)
• Examiners intimidating (take over, correct student in front of patient)	9 (40,9%)
• Never enough time	3 (13,6%)
• Questions- difficult to answer & perform simultaneously	4 (18,2%)
• Inconsistency – lecturer/examiner not the same, therefore different mark allocation	8 (36,4%)
• No disadvantages	14 (63,6%)

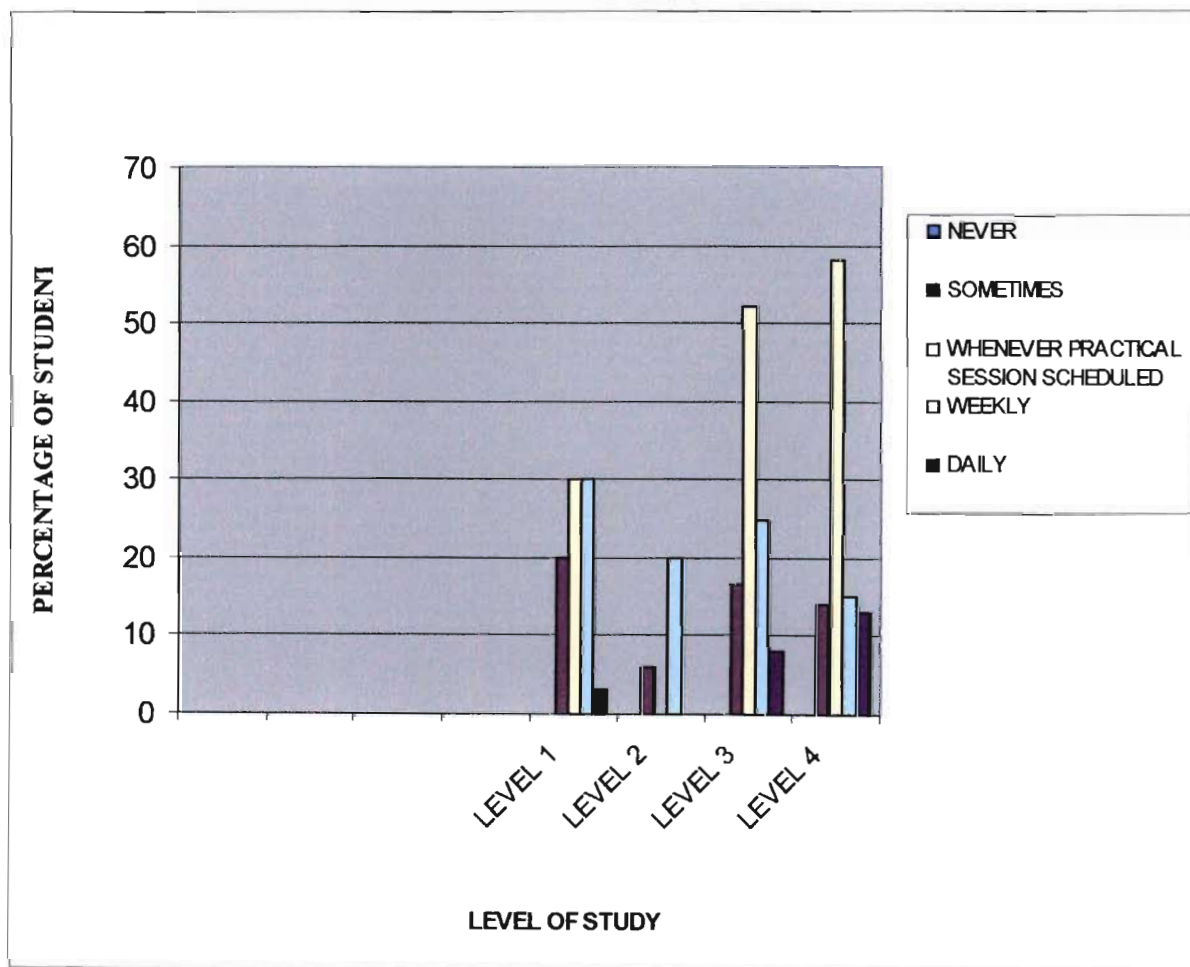
Students' responses to the question: *Did you study for OSPE?*

LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
YES	NO	YES	NO	YES	NO	YES	NO
28 (93%)	2 (6.7%)	24 (100%)	0	25 (100)	0	20 (93%)	2 (7%)

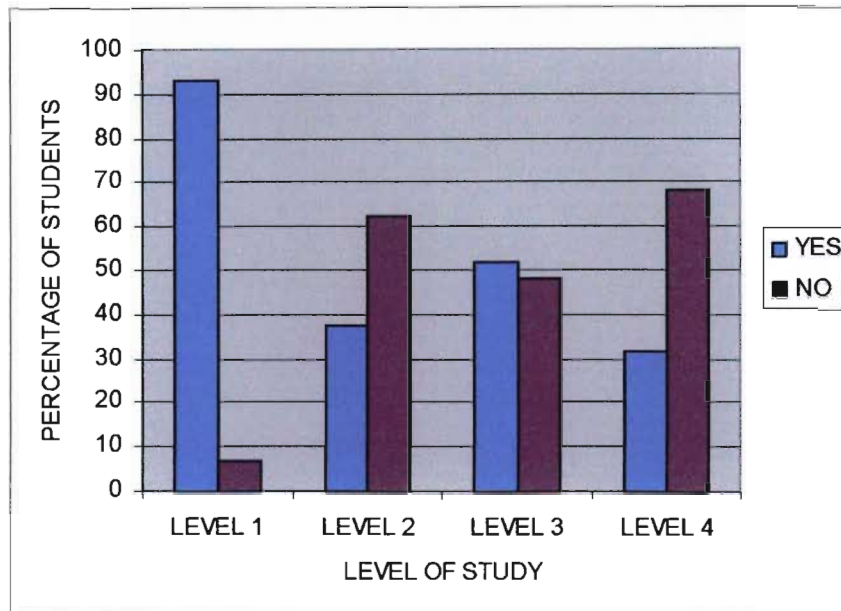
**Students' responses to the question:**  
*How did you prepare for the OSPE?*

RESPONSES	LEVEL 1 No. of students (%)	LEVEL 2 No. of students (%)	LEVEL 3 No. of students (%)	LEVEL 4 No. of students (%)
(1) Practice with colleagues/ friends/family	11 (36,7%)	5(20,8%)	5(20%)	4 (18,2%)
(2) Readings & lecture notes	0	1 (4,2%)	0	0
(1) & (2)	19 (63%)	16 (66,7%)	17 (68%)	14 (63,6%)
Other (state): <ul style="list-style-type: none"> <li>• Time spent on own to figure things out</li> <li>• Attentive at lectures</li> <li>• Practice in hospital with real patients</li> <li>• Attending ADP</li> <li>• Consulting lecturer</li> </ul>			1 (4%)	1 (4,5%)
(1) & (2) & other	0	3 (12,5%)	3 (12%)	3 (13,6%%)

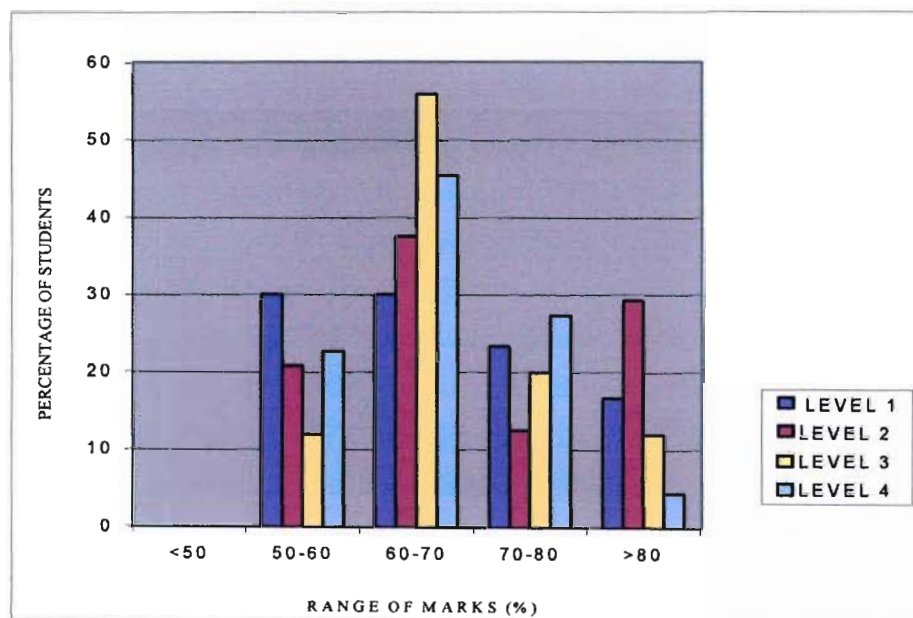
## APPENDIX Y(a)



**Graph representing the students' responses to the question:**  
*How often do you practice Physiotherapy practical skills you have covered in the practical sessions?*

**APPENDIX Y(b)**

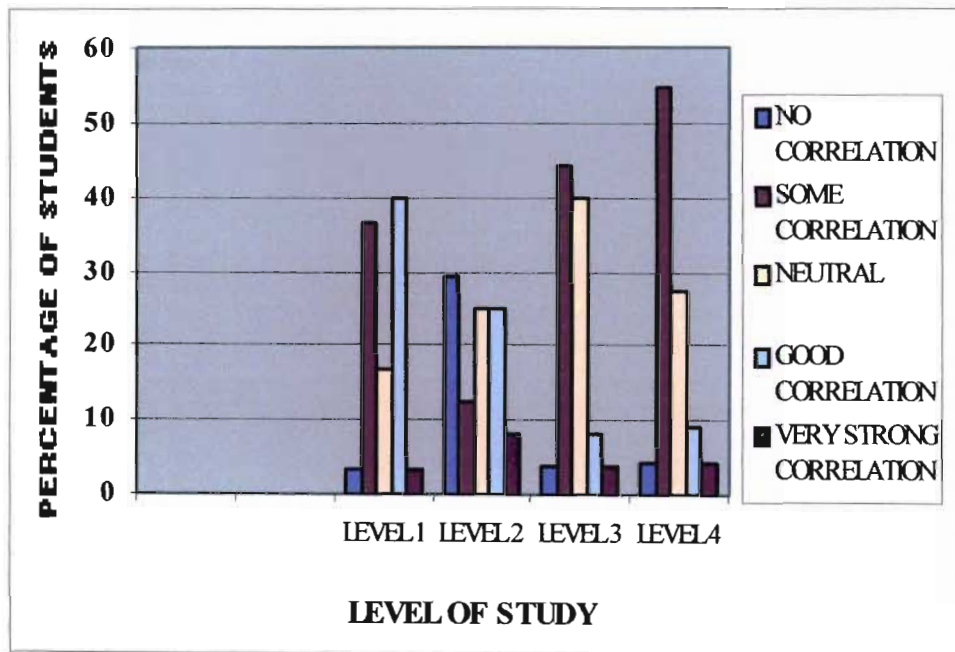
**Graphical representation of students' responses to:**  
*Do you feel that OSPE has equipped you to confidently apply the practical skills you have learnt?*

**APPENDIX Z(a)**

**Graphical representation of students' responses to the question:**  
*Indicate the range of marks you obtained in your previous OSPE*



## APPENDIX Z(b)



**Graph representing the students' responses to the question:**  
*How do you think OSPE reflects your competence compared to the mark you obtained?*