

Declaration

This dissertation, except where otherwise specifically, directly and indirectly indicated, it is exclusively my own original work.

M J Mohapi

Dedication

To all staff in higher education sector, academic, administrative and support staff, and students, especially those who participated in this research dissertation, at Durban University of Technology and University of KwaZulu-Natal:

As custodians of the education of this nation, it is our goal to ensure that we cultivate, motivate and encourage students to aspire for excellent professional education and training, with the objective of becoming competent and skillful lifelong learners. At the heart of teaching and learning is assessment. It is our duty to ensure that our assessment is contextualized, transformative, student-centered and an integrated developmental learning experience that seek to promote students' growth, development, and behavioural change.

Abstract

Assessment is the single most powerful influence on student learning, and if it is not designed well, it can easily undermine the positive academic benefits of our teaching and learning. It is therefore important to regularly review and reflect on our teaching, learning, and assessment, especially, conventional individualistic conceptions of assessment practices taken for granted in institutions of higher learning. The aim of this study was to evaluate whether involving students in assessment practices in higher education would help them acquire some understanding of how assessment and grading work, thereby influencing their approaches to learning.

Self and peer assessment are used in this study as instructional strategies to support student learning, and are integrated into essay-writing, one of the conventional methods of assessment used in an academic course. The objective was to evaluate the impact of self and peer assessment on students' learning. The study's rationale was to involve students in the assessment of their own work and work of others in order to improve substantive acquisition of subject knowledge and understanding, thereby improving their academic performance and achievement.

Qualitative data were collected using mainly questionnaires and interviews to solicit students' perceptions about the impact of self and peer assessment. Quantitative

data were used to supplement and complement the questionnaire and interviews methods.

Results showed that in the initial involvement in assessment practice students demonstrated inexperience, uncertainty, and deficiency in assessing. There was observable overmarking and undermarking in self and peer assessment, respectively. However, the research study indicated that there were some academic benefits if students are involved in assessment practice over time. There was an overall approval and appreciation of self and peer assessment by students. Furthermore, self and peer assessment promoted interactive, collaborative and cooperative learning among students as opposed to competitiveness. Given the small-scale nature of this research study, there was limited improvement in the development of assessment skills, but a marked improvement in writing an essay.

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Abbreviations	
AC	Assessment Criteria
ANOVA	Analysis of Variance
AMRF	Assignment Marking Rubric Form
COF	Class Observation Form
CR	Conflict Resolution
CS	Cultural Sensitivity
DBCT	Department of Biomedical and Clinical Technology
DUT	Durban University of Technology
E1	Essay 1
E2	Essay 2
E3	Essay 3
E2LA	Essay 2 Lecturer Assessment
E2PA	Essay 2 Peer Assessment
E2SA	Essay 2 Self Assessment
E2AV	Essay 2 Average
E3LA	Essay 3 Lecturer Assessment
E3PA	Essay 3 Peer Assessment
E3SA	Essay 3 Self Assessment
E3AV	Essay 3 Average
ES	Effect Size
FET	Further Education and Training
FOHS	Faculty of Health Sciences
FSSCI	Focus Semi-Structured Conversational Interview
HE	Higher Education
ITS	Integrated Tertiary System
KWIC	Key-Word-In-Context
LA	Lecturer Assessment
MEd	Master in Education
OBE	Outcomes Based Education
PA	Peer Assessment
PAFF	Peer Assessment Feedback Form
PGCHE	Post-Graduate certificate in Higher Education
SA	South Africa
SACF	Self Assessment Commentary Form
SAHE	South African Higher Education
SAQA	South African Qualification Framework
SPIQ1	Students' Pre-Intervention Questionnaire 1
SPIQ2	Students' Post-Intervention Questionnaire 2
UKZN	University of KwaZulu Natal

CHAPTER ONE

BACKGROUND AND INTRODUCTION TO THE RESEARCH STUDY

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democratic education system mandated us to respond creatively and innovatively to OBE in terms of how we can formulate assessment strategies that will aid student learning.

The majority of programmes in HE are dominated by conventional methods of assessment such as tests, assignments and examinations, at the sacrifice of creative and innovative methods of assessment, for example, self and peer assessment (Keenan, 2003). It has been reported that conventional methods of assessment have a tendency to encourage superficial, reproductive, and rote learning (Au and Entwistle, 1999). As a result, HE institutions' aspirations to independent, self-regulated and deep learning approaches which are appropriate to higher education studies are undermined (Keenan, 2003; Au & Entwistle, 1999). The expectation is that HE should strive to encourage students to accomplish meaningful learning through assessment practices that support learning (Morrow, 2006; van Eekelen, Boshuizen, & Vermunt 2005). Thus, it may be necessary to introduce or integrate creative and innovative methods of assessment in HE that could have a positive impact on students' learning experiences if their implementation is academically justified and appropriately applied. This study integrated self and peer assessment in conventional methods of assessment in order to look at whether the student learning experience could be enhanced.

Self assessment is when students assess their own performance and achievements and peer assessment is when students assess their colleagues' performance and achievements and vice versa. Race (2001) reported that although self and peer assessment may lack some of the precision of the best of formal assessment, what may be lacking in terms of precision is compensated for by the benefits of deeper learning. It has been reported that students' involvement in assessment practice may shift their roles from passive recipients to active participants in the assessment process (Boud & Falchikov, 2005). Some research advocates that academics should encourage the shift and start to use methods of assessment that improve students' learning and prepare them for life (Rowntree, 1987). Students' self-esteem and self-confidence would be boosted and their responsibility to direct their learning would be encouraged (Sivan, 1997).

1.2. THE AIM OF THE RESEARCH STUDY

The aim of this study was to involve first-year students in self and peer assessment, as instructional strategies, with the objective of evaluating the impact on student learning. In addition, it was anticipated that students might acquire some understanding of how assessment practices and grading processes work so that they become more motivated, their learning is supported, their essay-writing skills enhanced, and their basic assessment skills refined. These are the generic skills and competencies which higher education institutions are committed to developing in

their students (Freeman, Hutchinson, Treleavan, & Sykes, 2006). Lecturing staff, often mistakenly, assume that students entering higher education already possess the necessary evaluation, synthesis and assessment skills needed to produce quality academic writing. It has been reported that many students lack the necessary skills and/or have varied experiences of writing and producing academically acceptable essays and reports (Freeman, Hutchinson, Treleavan, & Sykes, 2006; Venables & Summit, 2003; Mowl & Pain, 1995). In order to understand and have knowledge of the abilities students possess, lecturers need to shift from lecturer-centered teaching to learner-centered, from a testing culture to an assessing culture, and from absorption and reproduction to the mastering of cognitive and affective capacities (Brown, Bull & Race, 1999; Rowntree, 1987).

An increased lecturers' workload may result in an unwillingness to involve students in assessment in HE and this could emanate from prescriptive institutional assessment policies, which restrict the introduction and integration of alternative methods of assessment, or replacement of conventional methods of assessment (Orsmond, 2004). The transformation of assessment in HE should be made on the basis of improving students' learning experiences by involving them in formative assessment practices supported by constructive and helpful feedback (Noonan & Duncan, 2005).

Furthermore, this study integrated self and peer assessment into the conventional method of essay-writing in Psychodynamics 1 in order to formatively assess students' level of academic performance and achievement (Terenzini, Theophillides, & Lorang, 1984). The selection of self and peer assessment for this study was influenced by the belief that the purpose of assessment is for instructional support for both learning and for awarding marks, and this purpose may motivate both students and lecturers (McGourty, Dominick, & Reilly, 1998). Brown, Rust & Gibbs, (1994) also reported that assessment exerts a powerful influence on how students learn, and helps students to develop the ability to make judgments about themselves, their work, and the work of others.

1.3. TRANSFORMATION IN ASSESSMENT PRACTICE

The changes in the educational dispensation in South Africa from a fragmented system to streamlined educational system brought about precipitating factors that are causing higher education to rethink and redefine its mission and role (Mouton & Killingsworth, 1995). Clinical technology education and all other educational programmes in HE have recently focused on the process of rearticulation in response to professional, societal, and government demands, and changing needs and conditions. These precipitating factors are:

- The accusation that higher education is not responsive enough to societal needs,
- The public reaction to the rising cost and declining quality of higher education,
- The decrease in funding for both education and research.

The other concern is that higher education institutions are focusing on esoteric and unfathomable research, which does not relate to real life problems and concerns (Mouton & Killingsworth, 1995). In responding to the transformational needs of today's highly competitive global, educational and industrial market, clinical technology education strives to develop professional competencies, competency-based curricula, and construct alternative viable assessment methods. The transformation of assessment should focus attention on an 'assessment for learning' strategy that involves students in classroom assessment (Noonan & Duncan, 2005).

Clinical technologists are health professionals who work in surgical and medical departments, operating theatres and intensive care units operating biomedical instrumentation systems to diagnose, to provide scientific and clinical therapy and life-support to patients. They specialize in cardiology (heart), cardiovascular perfusion (heart and blood vessels), nephrology (kidneys), pulmonology (lungs), neurophysiology (brain functioning), reproductive biology (sex organs), and critical care (theatre and intensive care units). The training of clinical technologists and other health professionals with an aptitude for life-long learning is a key factor of the modernized health care curriculum as envisaged by the introduction of the

philosophy and associated methodologies of Outcomes-Based Education (OBE). Changing current curricula to achieve life-long learning requires the integration of creative and innovative methods of assessment to develop autonomous and responsible clinical technologists. Maximizing life-long learning opportunities through formative assessment had been proposed as an effective method to achieve deeper learning (English, Brookes, Avery, Blazeby & Ben-Shlomo, 2006). The transformation and restructuring of the education system has focused attention on the role that assessment is playing in education. It is now the perfect time to also respond positively by looking at how we can change the way we teach and assess students' competencies (Dietel, Herman, & Knuth, 1991; Mouton & Killingsworth, 1995).

After years of increase in the quantity of formalized testing and the consequences of poor test results, many have begun to criticize the measures used to monitor students' performance and the mechanisms of evaluating instructional programmes (Keenan, 2003; Au & Entwistle, 1999; Meyers & Nulty, 2002). The timed tests and their format of one right answer, as seen in multiple-choice question (MCQ), meant that students practiced responding to artificially short texts and selecting the best answer rather than inventing their own questions and answers (Au and Entwistle, 1999). When lecturers teach to conventional tests by providing daily skills instruction in formats that closely resemble tests, their instructional practices are both ineffective

and potentially detrimental due to their reliance on outmoded theories of learning and instruction (Dietel et al., 1991).

Poon & Kuisma (undated) reported that self and peer assessment can be formative operating as part of learning process, encouraging reflection, helping development of criteria and standards, and finally engaging students in evaluating learning outcomes and providing a mark. Conventional approaches to teaching, learning, and assessment tend to focus on and emphasize the subject content-based dimension at the expense of developing the student's capability in overarching processes such as enquiry, reflection, creative synthesis, self-directed and self-managed learning. The integrating of self and peer assessment in my curriculum as reported in this study may assist me to work and develop theoretical understandings, to embody my educational and personal values in my teaching, learning, and assessment practice, and in the reappraisal of curriculum. Assessment for learning is not complete unless it is accompanied by positive, effective and helpful feedback.

1.4. EFFECTIVE AND HELPFUL FEEDBACK

There has been increasing interest in strategies that focus on providing high quality feedback to students' work, and in relation to getting students to take a more active role in the management of their own learning. This has led to a renewed interest in formative assessment that focuses on the improvement of learning rather than just

on judging the final achievement for the purpose of credentialing (Sadler, 1998; McDonald & Boud, 2003). Provision of feedback is located within the model of self-regulated learning, and monitoring is critical in shaping the evolving pattern of students' engagement with the task (Butler & Winne, 1995). Self and peer assessment is student-oriented, with lecturers being less central to the feedback and learning process, and provides a forum for critical reflective learning and interactive discussions about the quality of work which is important in the learning process (Noonan & Duncan, 2005; Juwah, 2003).

Certain assessment strategies that simultaneously assess not only knowledge and technical skills, but also interpersonal and humanistic qualities, are increasingly becoming explicitly recognized as core to developing a clinical health professional (Dannefer, Henso, Bierer, Grady-Weliky, Meldrum, Nofziger, Barclay, & Epstein, 2005). This research study reports on the integration of self and peer assessments into an essay-writing task in an effort to support self-directed learning, build-up confidence and competence in assessment skills.

The workplace and accreditation bodies exert a great deal of pressure on institutions and staff to integrate broad and relevant assessment techniques into educational programmes so that students' abilities are extended to include competence and skills necessary beyond the confinement of HE. There is growing awareness that students should be encouraged to think of their university degree and learning

experience as merely a milestone in a life of learning rather than as a terminal destination in their intellectual development (Meyers & Nulty, 2002).

1.5. RATIONALE AND PURPOSE OF THE RESEARCH

The rationale for the study emanates from the question: How could assessment strategies be used to enhance students' learning experiences in Psychodynamics 1? This prompted me to initially read broadly and in depth about self and peer assessment, including their advantages and disadvantages. The underlying pedagogical assumption is that assessment is the main influence on student learning, which is then either enhanced or inhibited, depending on the perceived appropriateness and relevance of the method of assessment used (Boud et al., 1999; Scouller, 1998). The study's rationale was to investigate any improvement in students' learning and in their essay-writing skills by involving them in self and peer assessment. It is hoped that this study will lead to further studies that will identify other teaching and assessment strategies that can improve student learning, and encourage the use of self and peer assessment in other subjects in the Clinical Technology instructional programme (Hammel, 2002).

Self and peer assessment may encourage students to become more self-directed and reflective learners, which is an important responsibility of higher education (Sivan, 1997; English et al, 2006; Morrow, 2006; van Eekelen et al., 2005; Boud et

al., 1999). Equally importantly Zariski (1996) pointed out that involving students in the assessment process would hopefully heighten academic staff's awareness and knowledge of how students' approach their learning, whilst also enabling students to make rational and objective judgements about their own strengths and weaknesses, and develop a range of transferable skills.

It has been reported that the tried and tested conventional methods of assessment, for example, essay-writing and examinations, are insufficient to enable the requisite development of key skills, such communication and assessment skills (Banister, 2003; Li & Steckelberg, 2006). As a positive response to OBE and with a desire to include and integrate alternative and varied methods of assessment, academics should consider what they are doing in relation to the purpose of assessment methods used currently in higher education institutions.

It is important to note that the South African education system has swung to learner-centered education in the form of Outcomes-based Education (OBE), which promotes integrated assessment as described in the South African Qualification Authority (SAQA) Guidelines for Integrated Assessment (2005). The Durban University of Technology (DUT) Assessment Policy draft was approved by Senate on 27 August 2005, and reviewed in 2008 for implementation in 2009. The policy advocates ongoing assessment of students, using appropriate methods of assessment which provide evidence that students have achieved the stated learning

outcomes and have met the assessment criteria. The DUT policy is neither descriptive nor prescriptive, but having looked at most of the Learner Guides in academic departments, most of them still advocate conventional assessment methods which encourage rote learning and memorization.

1.6. THE FOCUS OF THE RESEARCH

The primary focus of the study was to influence students learning and, hopefully, to encourage the development of assessment skills by involving students in assessment practices in higher education, especially in self and peer assessment (Wilson, 2002). It also attempted to develop essay-writing skills and determine how self and peer assessment contributed to students' understanding of learning outcomes and assessment criteria. Integration of self and peer assessment may help to develop students' self-motivation. They will then be able to master their own cognitive, metacognitive and affective capacities, through dialogic social construction of knowledge and meaning facilitated by interaction with the environment (Rowntree, 1987; Juwah, 2003; Daniels, 1993; Wilson, 2002). Human beings are active creators of knowledge, and students' involvement in the assessment procedures and engagement in cooperative learning in higher education develops them into self-directed learners (Sivan, 1997; McGourty et al., 1998; Li & Steckelberg, 2006; Palomba & Banta, 1999).

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CHAPTER TWO

LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK



With a thorough knowledge and understanding of the Quality Spiral for Assessment (Fig. 1.1.), academics will be in a better position to evaluate the academic advantages and disadvantages of assessment strategies that involve students in assessment practices and in the enhancement of learning process (Race, 2001).

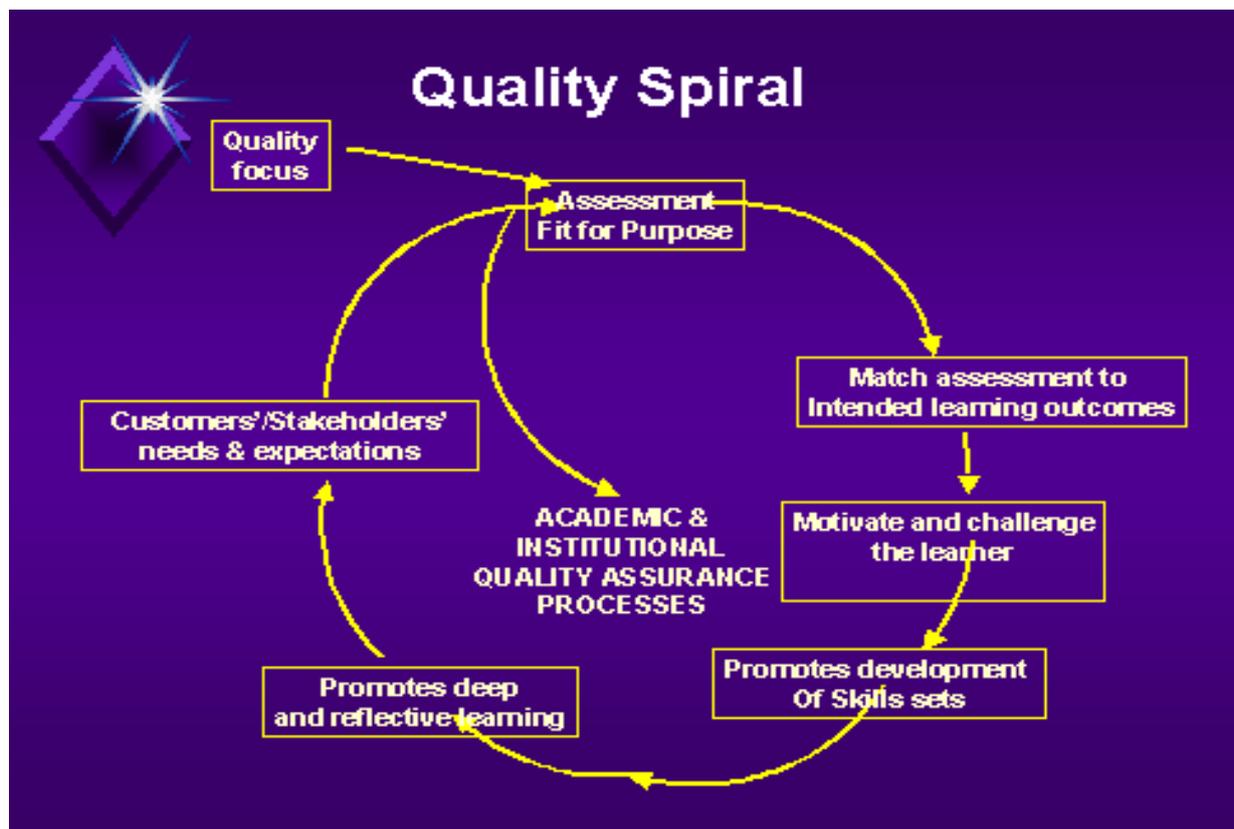


Figure 1.1: Quality Spiral for Assessment

(Source: Juwah, 2000 in Juwah 2003, Available: http://www.usdla.org/html/journal/JAN03_Issue/article04.html)

Taylor & Marienau (1997) reported that more effective teaching and learning techniques and the introduction and integration of alternative and diverse assessment strategies, such as self and peer assessment, have been found to promote the integration of moral, ego, ethical and intellectual development. Conventional methods of assessment have failed to assess significant learning outcomes, and thereby undermined curriculum, instructional and policy decisions

and it is alleged that the higher the stakes, the greater the pressure that is placed on academics and academic management to dedicate more time and effort to prepare students to do well on assessment tasks (Keenan, 2003; Au & Entwistle, 1999; Meyers & Nulty, 2002). Academics are under pressure to ensure that students are successful in their academic work, and they often rely on easy-to-administer conventional methods of assessment. They tend to narrowly focus on methods of assessment that emphasize rote learning, memorization and recall of facts without understanding (Keenan, 2003; Au & Entwistle, 1999; Meyers & Nulty, 2002).

The understanding of students and stakeholders' needs and expectations, as demonstrated in the Quality Spiral for Assessment, would assist the researchers to face the difficult task of changing the understanding of assessment issues amongst the public, policy makers, and academics (Knight, 2002). If institutions of higher learning are serious about facilitating and supporting self-directed learning, based on outcomes-based education, then their assumptions inherent in assessment practices need to be brought into the open, where they can be scrutinized and challenged. Models can then be developed which are more aligned to learner-managed learning. Student achievement is related to engagement and this does not simply equate to the amount of involvement in and time spent on a task. The Quality Spiral for Assessment advocates for students' engagement in communities of practice, to their involvement in a variety of networks, and to the amount and quality of interchange with others (Knight, 2002).

The study was undertaken as a result of reports in recent literature dealing with assessment that gave strong support to the use of self and peer assessment as a response to the recent upsurge in innovative methods of assessment (Wilson, 2002; Falchikov & Goldfinch, 2000; Gibbs, 1999; Miller, Imrie & Cox, 1998; Brown, Bull, & Pendlebury, 1997; McCune, 2004). In the intervention reported on in this study, self and peer assessment were integrated with essay-writing to encourage students' involvement in assessment practices in the hope of influencing the student approaches to learning. In addition, lecturers' knowledge and awareness of how students approach to learning can be enhanced (Wilson, 2002; Zariski, 1996).

2.2. ROLE OF ASSESSMENT IN SHAPING THE APPROACH TO LEARNING

Assessment is the single most powerful influence on learning in formal courses and if not designed well, can easily undermine the positive features of an important strategy in the repertoire of teaching and learning approaches (Brown et al, 1997; Boud et al, 1999; Falchikov & Goldfinch, 2000). The cardinal rule of all assessment is first to describe the desired learning outcomes of the subject, so that appropriate and relevant assessment methods and strategies are devised. Student learning can only improve when articulated learning outcomes are explicit so that students can accomplish learning outcomes and acquire generic transferable skills (Corno, 1992). It is my belief that students will become motivated to accomplish learning outcomes and improve their competence, skills and achieve higher marks in their subsequent

academic exercise if they are allowed to be involved in assessment practices in higher education (Topping, 1998). Boud et al., (1999) reported that students who engage in peer assisted and self-directed learning may develop reflective practice and critical awareness over time.

The Quality Spiral for Assessment advocates that the matching of assessment to intended learning outcomes, students' perception of the academic task demands, and the intellectual skills and abilities being assessed by each assessment method, may act as a filter which help to determine students learning approaches and what they learn (Scouller, 1997; Struyven, Dochy & Janssens, 2002). Some students tend to adopt surface learning approaches, which rely on rote memorization, recall and reproduction, when they are being assessed using conventional methods of assessment, rather than employing deep learning approaches which focus on the meaning and understanding of the subject learning outcomes (Au & Entwistle, 2001; Scouller, 1998). Students who adopt a deep approach to learning characteristically exhibit, and have the explicit intent to develop their own understanding of material, and the ability to apply their own and others' ideas and concepts to new situations, and aspire to highly developed integration of knowledge (Meyers & Nulty, 2002). Surface learning refers to responses with characteristics such as a focus on reproducing and memorizing information without regard to understanding material, a minimal sense of involvement with the learning process, and a motive to pass with minimal effort and interest. Deeper learning refers to responses that focus on

understanding and engaging with the material and reflects a sense of interest and enjoyment in learning (Scouller, 1997).

It has been reported that over-assessing may be attributed to conventional methods of assessment which encourage rote-learning, hinder self-directed learning, and are not responsive to the demands of the shift in the education system (Lester, 1998; Braun, 2005; Meldrum, 2002). The adherence to and continued use of the conventional methods of assessment is encouraged by the fact that teaching and assessment are viewed as separate activities, rather than integrating assessment and teaching as part of the learning process to empower students (Meldrum, 2002; Braun, 2005). It has been suggested that students are inspired to be responsible for their learning and are able to assess their own and others' academic achievements and performances when they are empowered. Students cannot be inspired and empowered when conventional assessment methods take a positivist view regarding knowledge as an end-product of learning and when discrete facts, content knowledge, and basic skills are assessed, all of which can be measured, predicted and controlled (Daniels, 1993; Cohen, Manion & Morrison, 1995; McKellar, 2002).

Carefully constructed and aligned assessment can do more than just require students to respond to assessment requirements. Latent and tacit learning may be enhanced by incorporating self and peer assessment so that students' attitudes towards assessment are transformed and assessment drives rather than impedes

students' learning experiences (Russel, Haritos & Combes 2006). Familiarity with the rationale behind each assessment practice gives us a clearer understanding of what we are trying to achieve, and it should remain explicit and definite (Brown & Glasner, 1999; McKellar, 2002).

2.3. ASSESSMENT CRITERIA AND MARKING RUBRIC

Assessment criteria are central to any form of assessment, including self and peer assessment, and they provide a more consistent structural framework for lecturers and students alike. Furthermore, students have the opportunity to challenge any issues around the development of assessment criteria (McKellar, 2002). Assessment criteria are used by students when they are writing their essays, and also when they assess their own and other's essays (Venables & Summit, 2003; Boud, 1989).

Providing explicit assessment criteria has four functions:

- To frame the provision of meaningful feedback to students.
- To show the links between the assessment task and the outcomes of the subject.
- To ensure that assessors are in broad agreement.
- To pinpoint areas of disagreement between the assessors (Brown et al, 1997).

Explicit and unambiguous assessment criteria and marking rubric reduce rater bias in both self and peer assessment (Campbell, Mothersbaugh, Brammer, & Taylor, 2001).

Dunn, Parry, & Morgan (2002) noted that criterion-referenced assessment measures students against identified criteria and standards of achievement, rather than being ranking them against each other. They further claim that the establishment of appropriate criteria and standards for student achievement are far from common among academics. Traditional assessment methods are norm-referenced, with the assumption that individuals possess fixed and measurable characteristics within individuals, which develop in a linear and orderly manner (Lunt, 1993). Self and peer assessment are criterion-referenced, with a series of defined criteria produced and each piece of work marked against each criterion. The overall mark obtained is the sum of marks awarded for each criterion. The use of explicit assessment criteria that are negotiated, and gradually internalized is associated with self and peer assessment. Students are able to develop increased knowledge and understanding of the expected abilities and knowledge that the criteria represent (Smallbone & Quinton, 2004; Hodgman, 1997). Feedback from lecturers and peers can highlight points that the student missed, can enable them to discover gaps in their analysis, and can provide other perspectives from which to view a performance, and in addition it can raise questions that might lead to further understanding (Loacker,

2003-2004). In this study, students had the opportunity to practice assessment skills using assessment criteria, with a second marker used to moderate the assessment.

2.4. SELF AND PEER ASSESSMENT AS INSTRUCTIONAL STRATEGIES

2.4.1. Self-Assessment

The ability to evaluate the state of one's own understanding and competence, developing them, and the determination of what needs to come next, are valuable personal generic attributes of a student in higher education institutions (Loacker, 2003-2004; Freeman et al., 2006). Self-assessment definitions abound, and most of them are fundamentally about individuals identifying standards and/or criteria to apply to their work and making judgements about the extent to which the work meets these criteria and standards (McDonald & Boud, 2003). It is about the evaluation or judgement of the worth of one's performance and the identification of one's strengths and weaknesses with a view to improving one's learning outcomes (Ross, 2006).

Self-assessment seems to be an ability that is essential to effective student learning (Loacker, 2003-2004). The contentious issue is the use of self-assessment as part of formal assessment procedures, and the formal development of self-assessment skills is an important part of the curriculum at all levels (McDonald & Boud, 2003).

There are academic benefits and strengths for use of self-assessment as much as there are academic pitfalls and weaknesses, but the potential benefits outweigh the weaknesses. Some strengths of self-assessment are as a valuable activity as students tend to receive potent feedback about their learning, and about the extent to which they meet educational and professional standards (Falchikov & Boud, 1989). Self-assessment contributes to the improvement of students' learning outcomes particularly if lecturers provide guidance on how to assess (Noonan & Duncan, 2005), and that it prepares them to be effective within the circumstances of their lives and work (Boud & Falchikov, 1989; Yorke, 1995).



Figure 2.1: How Self-Assessment Contributes to Learning

(Rolheiser & Ross (undated), Available: http://www.cdl.org/resource-library/articles/self_eval.php)

The potential envisaged weaknesses of self-assessment include lowering of standards and rewarding students who inflate their assessments (Ross, 2006); it is a

stressful process because it is an untrustworthy exercise and students may be unsure about how to mark and worry about being accused of cheating (Struyven et al., 2002).

Training in self-assessment is imperative so that students can focus their attention on particular aspects of their performance and redefine the standards they use to determine whether they are successful. Furthermore, training in self-assessment may increase students' likelihood of interpreting their performance as a mastery experience; the most powerful source of self-efficacy information (Ross, 2006). Self-efficacy is a precondition to behavior change and it denotes the extent to which a person believes that he or she is able to act and develop a new inherent skill, such as self-assessment. (Kim, Putjuk, Basuki & Kols, 2000). In the sphere of professional education, such as is found in clinical technology, the need to monitor one's own performance is one of the defining characteristics of professional work, but there are doubts about the value and accuracy of self- assessment as a technique, because students may have inflated perceptions of their accomplishments, and may be motivated by self-interest (Ross, 2006; Wilson, 2002).

2.4.2. Peer Assessment (PA)

The attractiveness of peer assessment is that it has a dual purpose: it includes both assessment and learning and it is an appealing method of choice for those lecturers

who are looking for alternative and diverse methods of assessment to enhance students' learning (Hammer et al., 2007; Sahin, 2008). Students involved in assessing the academic work of other students will benefit by learning from other students how they approach their academic work, gaining knowledge and understanding of academic assessment processes. They will be able to consolidate, reinforce and deepen their understanding by engaging students in cognitively demanding tasks of reviewing, summarizing, clarifying, giving and receiving feedback (Hammer et al., 2007; Wilson, 2002; Topping, 1998).

Peer assessment also promotes social, cognitive and professional skills in students who are engaged in it. Students will be encouraged to construct knowledge and make meaning through social dialogue and interaction with other students (Falchikov, 1995; Langan & Wheeler, 2003; Falchikov & Goldfinch, 2000; Gibbs and Simpson, 2004-5). Furthermore, peer assessment helps students to devise and understand standards and assessment criteria and assists them in making judgements (Wilson, 2002). Peer assessment compels students to focus on integrating learning and assessment as a result of assessment which is aligned to intended learning outcomes of the academic task as supported by the Quality Spiral for Assessment. This makes students' involvement in the peer assessment process desirable, and teaches students' to be responsible for their own learning. This leads to greater motivation and deeper learning (Wilson, 2002; Trahasch, 2004; English et al., 2006).

A limitation of peer assessment is whether it has a place in formative assessment of students in relation to the question whether students are able to give each other valuable feedback. There is the potential problem that the content of such feedback and the tone in which it is delivered may have an adverse effect on interpersonal relations and possibly on academic confidence (Zariski, 1996). The students' level of knowledge may affect the accuracy of their judgements of student work and there is also the issue of the impact of personality and related interpersonal factors which may affect the validity of student-awarded marks (Zariski, 1996). Traditionally, essay-writing involves students working independently to prepare and compile their essay which is then marked by the lecturer who assesses the work, and perhaps gives some evaluative feedback for students to reflect on (Figure 2.2).

Peer assessment modifies this cycle to involve students in reviewing and possibly rating the feedback, as indicated in the peer assessment cycle (Figure 2.3) (Hammer et al., 2007).

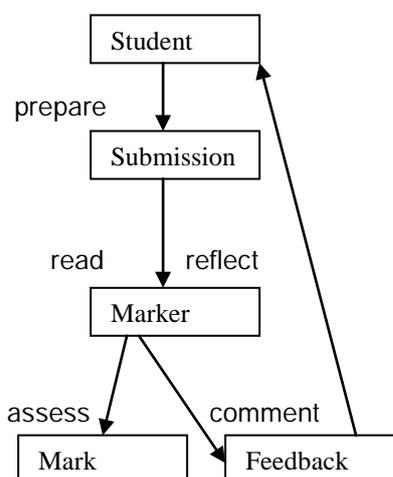


Figure 2.2: The Traditional Essay Assignment Cycle

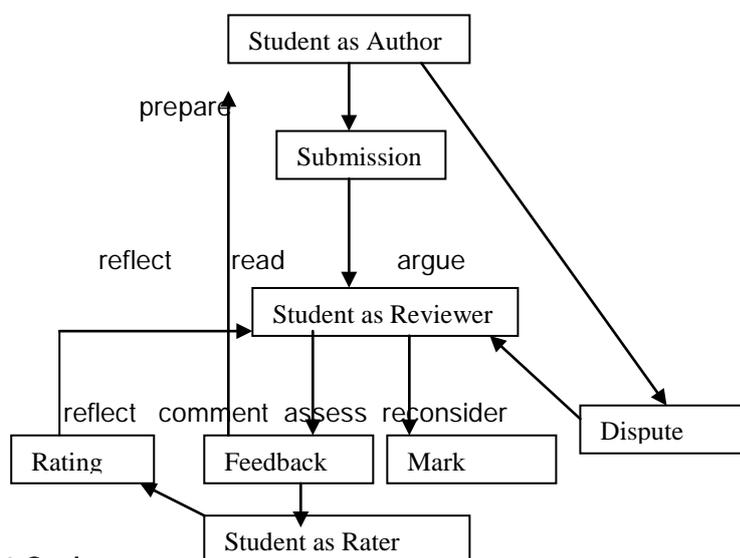


Figure 2.3: The Peer Assessment Cycle

(Adapted from Hammer et al., 2007)

In the peer assessment cycle, a student assumes multiple roles, first as a producer of material to be assessed, then as reviewer, and finally as recipient of descriptive feedback (Hammer et al., 2007). This research study hopes to shed further light on the possible academic benefits of peer assessment in higher education. It has been reported that assignments that are peer assessed may be biased, demonstrating leniency when compared to the lecturer’s assessment, and inter-rater reliability is often low, although some research has shown a high agreement between students’ and lecturers’ assessment (Nilson, 2002-2003; Orsmond, Merry & Reiling, 1996). Peer learning and assessment help students to develop communication skills,

improves their ability to collaborate, to become critical thinkers, and to develop habits of lifelong learning (Kim, Putjuk, Basuki, & Kols, 2000; Topping 1998; Boud et al, 1999). Peer assessment activities promote learning, and it is this aspect, which commonly forms the rationale for introducing peer assessment (Falchikov & Goldfinch, 2000; Hammer et al, 2007). Besides being rewarding, peer assessment is one way of controlling 'free-riders' in group-related tasks, and its important function is the provision of detailed peer feedback (Dannefer et al, 2005; Falchikov & Goldfinch, 2000).

It is often argued that peer assessment is a way to reduce lecturers' marking loads, but it does not necessarily reduce the administration of the peer assessment process or the management of inexperienced student assessors. Concerns have been reported about the unreliability of peer assessment, but there is considerable evidence that students can peer assess effectively and produce valid and reliable students' marks (Topping, 1998; Langan & Wheeler, 2003; Sivan, 1997). In the investigation done for this study, I have attempted to minimize bias and leniency, and increase inter-rater reliability by providing assessor training and conducting a mock assessment practice, averaging the peer and lecturers marks, and deducting marks from the student assessors if they have exceeded the ten percent differential mark against the lecturers' referential marking. Cho et al. (2006) noted that the reliability of several assessors' combined markings is higher than the reliability of single assessor's marking.

2.4.3. Self and Peer Assessment as Instructional Strategies

Integration of self and peer assessment with essay-writing encourages collaborative learning by allowing students to actively construct their own understanding of what should be learned (Jawah, 2003; Divaharan & Atputhasamy, 2002; van den Berg, Admiraal, & Pilot, 2003; Li and Steckelberg 2006; Brown, Rust & Gibbs, 1994; Boud et al., 1999). Self and peer assessment have been shown to be explicit, helpful, constructive, and to provide authentic and contextualized assessment that promotes deep learning and skills development acquisition (Boud, et al., 1999; Juwah, 2003). Furthermore, self and peer assessment have been reported to promote conceptual understanding of facts and information, provide access to metacognitive processes, and support self-managed and self directed learning by moving the balance of assessment from lecturers and institutions to the students (Hodgman, 1997; Lester, 1998).

Self and peer assessment addresses extreme dimensions of openness, facilitation, and interpretation because it emphasizes student-centered learning, encourages active learning and continuous engagement, fosters a deeper approach to learning, and equips learners with life-long learning skills (Brown et al. 1999). It is against this background that I embark on investigating the students' perceptions of the impact of self and peer assessment in Psychodynamics 1. Through involvement in self and peer assessment, these strategies provide strong academic support structures to

help the students to meet institutional standards in assessment practices (McKellar, 2002). Much of the literature on assessment research seeks to improve through increasing assessment efficiency, and the greatest volume of assessment literature is concerned with assessment techniques instead of the purpose and effects of assessment (Meldrum, 2002).

Self and peer assessment methods are formative and serve the purpose of providing the student with an indication of how well they are performing, and how they might be able to improve (Morrow, 2006). Used formatively, they can empower and motivate both students and lecturers (McAlpine & Higgison, 2000; Zywno, 2003). Initiatives such as encouraging of some forms of self and peer assessment, are imperative for learning and for longer term academic benefits (Boud and Falchikov, 2005). Using 'assessors' other than the lecturer has the advantage that students receive feedback from multiple 'assessors', and students that receive timely and detailed feedback are in a better position to show performance improvement and initiate discussions with their lecturer and peers (Campbell et al. 2001). The authentication of peer feedback is corroborated by lecturer feedback and discussions with the feedback recipient. By reviewing feedback results, lecturers can better tailor their teaching activities to the specific needs identified for individual students and the total classroom. Doing so is likely to promote even greater learning and improvement by students (McGourty et al., 1998). In this study, self and peer assessment, as

instructional strategies, are used in addition to lecturers' assessment for the purpose of acquiring assessment skills, improving learning and awarding marks.

Self and peer assessment encourage students to take ownership of the assessment process, whilst also developing autonomous learning, assessment skills, intrinsic motivation and deeper learning. Based on these academic benefits, several researchers asserted that it is apparent that higher education institutions need to look at the inclusion and integration of alternative and diverse assessment methods such as self and peer assessment in their assessment practices (Wilson, 2002; Brown et al., 1994; van den Berg et al., 2003; Li & Steckelberg, 2006). Self and peer assessment are responsive to the Test-Teach-Test model, in which instructional objectives are broken down into skills components and programmed into manageable incremental steps. This combination of self and peer assessment with the Test-Teach-Test model provides multiple feedback on which students are expected to act, enhances interactive learning, develops student self-confidence and self-esteem (Daniels, 1993; Meyers & Nulty, 2002).

2.5. INCORPORATING FEEDBACK INTO THE ASSESSMENT PROCESS

It is necessary to distinguish between the motivating effect of knowing that you are to be assessed and the quite different sort of motivation resulting from knowing how you performed on the assessment exercise (Rowntree, 1989)

Feedback reinforces existing strengths and increases students' abilities to identify and improve on the shortcomings of their work. However, when done poorly, the feedback can be demoralizing and may discourage students from trying their best (Roberts, 2007). Good feedback helps students to reflect on their own knowledge and gain deep and rich understanding of the topic. If they are given the opportunity to improve and learn from their mistakes, they will develop a sense of responsibility and competency in their learning. Self and peer assessment are intended to generate feedback on performance and achievement to improve and accelerate learning (Sadler and Good, 2006). This research study briefly investigates the perceptions of the role of verbal and written assessment feedback in terms of whether the students are using this information to make subsequent improvement so that their learning is enhanced (Nicol & MacFarlane-Dick, 2006). Feedback has to be quite specific, descriptive, detailed and facilitative to be useful, and if the recipients are to be able to act upon it (Gibbs & Simpson, 2004-5; Topping, 1998). In a cooperative learning environment, students themselves are often in the best position to provide one another with meaningful feedback regarding both their technical and interpersonal performance (McGourty et al., 1998).

Feedback facilitates the deepening of understanding and the realignment of concepts within each individual student's conceptual framework (Keenan, 2003:6). If students are engaged in giving and receiving feedback, they should be encouraged





CHAPTER THREE

RESEARCH METHODOLOGY, DESIGN AND METHODS



National Diploma: Clinical Technology students in their second semester of their health sciences studies were the subjects of the study. This research study adopted the interpretive research paradigm to evaluate the impact of self and peer assessment, thereby enabling the researcher to give an in-depth description of the contextualized meaning and understanding of students' involvement in assessment practice in HE (Fossey, Harvey, McDermott, & Davidson, 2002; Hammel, 2002) The research methodology in the interpretive paradigm has as its central goal understanding how humans make meaning of their lived experiences: how they contextualize issues of causality. It tries to ensure sensitivity to ambiguity, to recognize that meanings are negotiated and constructed, and with often deliberate investigation efforts, how humans promulgate or resist particular meanings as well as the variations of meanings across context. It also relates to the fact that "meanings depend on context" (Robert, 2002:21). Admittedly, when I evaluated the objective reality of self and peer assessment, I did so through the subjective reality of my personal understanding and explanations (Huitt, 2001).

Interpretivist researchers recognize that participants may "know more than they can say," this is what has been termed, "tacit knowledge" (Schwartz-Shea, 2004:12). Black (2006) asserted that the strength and power of the interpretivist approach lies in its ability to address the complexity and meaning of situations. The research strategy will use qualitative (textual) and quantitative (numerical) data collection (Bertram, 2004; Tellis, 1997; Chenail, 1997; Jakob, undated; Mackenzie & Knipe,

2006; Risjord et al., 2001; Carter & New, 2004). The study attempted to understand the students' perceptions about their role when they are involved in assessment practices in HE and how self and peer assessment influenced their learning experience (Reeves, 1996), with the view to remedy any ineffective teaching, learning, and assessment practices or to reinforce those factors that may facilitate and enhance student learning (Gersten, 2005).

3.3. RESEARCH DESIGN AND METHODS

The research design is qualitative but will use quantitative data to shed more light on the students' perception of the impact of self and peer assessment in their learning experience. The quantitative data will complement and supplement qualitative data in order to strengthen the analysis and the interpretation of the research findings (Johnson & Onwuegbuzie, 2004). Some of the questions and statements of the questionnaire and interviews will yield numerical data as a result of counting the 'yes' and 'no' responses. Some of the quantitative data will come from students' essay results. Likert scale opinions are used in the study to provide a descriptive base that will be complemented by more explanatory qualitative data. Students will be able to give their opinions in response to more open-ended questions.

Reeves (1996) in his 'eclectic-mixed methods-pragmatic paradigm', explains that the 'eclectic' refers to its openness to borrowing the methods of the other paradigms to

collect information and solve a problem. The 'mixed-methods' aspect relates to the recognition that multiple perspectives are necessary to triangulate or bracket information and draw conclusions regarding complex phenomena. The 'pragmatic' aspect reflects the practical orientation that things can get better. He viewed modes of inquiry as tools to better understanding and more effective problem-solving, and he did not value one tool over another any more than a carpenter would value a hammer over a saw. He recognized that a tool is only meaningful within the context in which it is used (Reeves, 1996).

3.3.1. Research Sample and Process

Purposive sampling was used to select information-rich respondents to enable the researcher to answer the research questions (Hoepfl, 1997), and to elicit appropriate, relevant, sufficient and adequate assessment information from students to explore their meanings, develop and fully describe the phenomena being studied (Fossey et al., 2002). As noted by Sandelowski (1995:179), "a common misconception about the sampling in qualitative research is that numbers are unimportant in ensuring the adequacy of a sampling strategy". To enhance the appropriateness of sampling, relevance and adequacy of information gathered, the purposive sampling strategy is designed to maximize representation of a range of perspectives on an issue and to help capture and describe the central themes or principal outcomes that cut across a great deal of participants. (Fossey et al., 2002;

Horsburgh, 2003; Hammell, 2002; Hoepfl, 1997). Table 3.1. below shows the cohort of first-year Clinical Technology students who participated in this study.

Table 3.1: Sample Population Characteristics

Africans		Whites		Indians		Coloureds		Total
Male	Female	Male	Female	Male	Female	Male	Female	
11	12	-	-	4	11	-	-	38

All 38 students in first-year Clinical Technology consented to participate in the study and were expected to complete three essay writing tasks as assignments for the course and agreed that the material could be used in the study. Students were informed that they could withdraw from the study, but they could not be exempted from being involved in self and peer assessment since it was part of the normal assessment methods for Psychodynamics 1. Race and gender issues are considered for demographic representation only. The sample population is not representative of the demographics of KwaZulu Natal, let alone South Africa in terms of race. Indian male students tend to be under-represented and prefer more non-health programmes so their representation is particularly low. It is important to note that Brown et al., (1994) recommended the following steps when students are involved in assessment practices in higher education:

- Brief students thoroughly before introducing the process, making it quite explicit in advance what is expected of them;

- Explain the purpose of self and peer assessment carefully, so that they don't see it as a dereliction of duty on the part of their lecturers;
- Explain the skills development and academic benefits to the students of becoming involved in assessment practices in Higher Education;
- Ensure that assessment criteria are jointly negotiated, developed and agreed on by all involved in the exercise;
- Ensure that students are working with explicit criteria which have been negotiated and agreed with them;
- Provide an opportunity for a rehearsal of assessment practice in a stress-free context, with small scale exercises so that small problems do not become disasters;
- Take note of what worked and did not work in the first instance and build on it.

3.3.1.1. Essay Topics

The choice of essay writing as method of assessment is premised on the findings that students tend to employ a deep learning approach when preparing for the essay, and there are studies that support the view that students are strategic learners and differentially employ learning approaches according to the requirements of assessment tasks (Scouller, 1998). The choice of essay-writing was based on the rationale that essays offer students the opportunity to consolidate and extend their learning. Furthermore, essay writing is a good way of learning in-depth about the

subject, and simultaneously, also honing their writing skills and the ability to think and argue clearly. The students' assessment marks were compared to the lecturers' assessment marks which were regarded as the referential mark (Clark, Davies, & Skeers, 2006; Russel et al., 2006). The students' were expected to write three essays based on different themes, that is, (1) students' teaching, learning and assessment strategies, (2) conflict resolution, and (3) cultural sensitivity.

Essay 1: Teaching, Learning and Assessment Strategies - The purpose of this essay was to establish students' preferred teaching, learning and assessment strategies so that an attempt could be made to accommodate individual preferences. Furthermore, it was to determine students' knowledge and experience of essay-writing so that I would be able to inform them of how essay-writing in Clinical Technology, especially in HE, had been devised and implemented. This essay was lecturer-marked and a percentage mark given. No marking or assessment criteria were used during marking. The pre-intervention questionnaire (SPIQ1 – Annexure A: see Appendix) was then completed by students. The SPIQ1 is discussed further on page 42.

Essay 2: Conflict Resolution – This essay focused on students' use of assignment marking rubrics and assessment criteria. The content-focused Assignment Marking Sheet Rubric (AMSR – Annexure G: see Appendix) clarified the scoring criteria and gave a relatively brief detailed description of expected achievements with associated numerical ratings. The assessment criteria focused on coherent and logical

articulation of the topic with an emphasis on the utilization of a literature review to support the essay topic. The use of explicit and unambiguous assessment criteria and a marking rubric reduce rater bias in both self and peer assessment (Campbell et al., 2001). This essay was assessed by students (self and peer assessment) and the lecturer using the Assignment Marking Sheet Rubric (AMSR). Self and peer feedback forms (Self-Assessment Commentary Form (SACF) - Annexure D and Peer Assessment Feedback Form (PAFF) - Annexure E: see Appendix), with a percentage mark, were completed. The SACF and PAFF focused on the strengths and weaknesses identified by students, provided suggestions for improvement, and commented on the impact of the assessment exercise on their learning experience.

Essay 3: Cultural Sensitivity - The AMSR and assessment criteria were also used by the students and the lecturer to assess this essay. Self and peer feedback forms with a percentage mark, were completed. A post-intervention questionnaire (SPIQ2 – Annexure B: see Appendix) was completed by students after assessment of the second and third essays. The SPIQ2 is discussed below.

3.3.1.2. Questionnaires

The pre-intervention questionnaire (SPIQ1) was given to students after Essay 1: Teaching, Learning and Assessment Strategies. The purpose of SPIQ1 was to solicit students' perceptions and opinions about their knowledge of and experiences with

methods of assessment used in Clinical Technology prior to the integration of self and peer assessment as instructional strategies. The post-intervention questionnaire (SPIQ2) was administered after the other two essays, Essay 2 : Conflict Resolution and Essay 3 : Cultural Sensitivity were completed. The intention was to solicit the students' perceptions about the impact of self and peer assessment methods. The administration of SPIQ2 after both Essay 2 and 3 was to determine if there was any observable improvement in the students' assessment skills and any improvement in marks obtained by individual students. A pilot study of both these questionnaires was conducted with previous and current students, and all ambiguous questions were reviewed and rephrased to avoid receiving biased responses and to increase the accuracy and reliability of the participants' responses. The participating students completed pre- and post-intervention questionnaires which used a four point Likert scale ranging from 'very important/very useful' to 'not at all important/not at all useful' to provide an overview of the major areas of satisfaction and/or dissatisfaction among students. The questionnaire explored the perceptions and opinions of students concerning their exposure and involvement self and peer assessment, and comprised questions and statements on the appropriateness and fairness, or lack thereof, of the assessment methods used in the Clinical Technology programme.

3.3.1.3. Interviews

The purpose of these interviews was to gain more insight into interesting or unexpected qualitative and quantitative findings. Six students were selected to participate in semi-structured conversational interviews and students' selection was based on their general academic performance. Students recommended that the interviews be held in my office as it provided a familiar and supportive territory. Two students from each of the high, middle and low mark range were interviewed to explore areas that warranted additional information by asking the same questions to all selected six students. The interviews were used to consolidate and concretize the students' responses from the questionnaires and to assist in triangulation during analysis and interpretation of data. Using considered questions and careful scrutiny and description of responses, the interviews act as supplementary and complementary material to the questionnaires. They also shed more light on the perceived appropriateness and fairness, or lack thereof, of self and peer assessment methods. The students were given the opportunity to preview the interview schedule prior to interviews, so that they could be better prepared and build their confidence when engaging in the conversational interview.

We jointly agreed that I would take notes during the interviews. I noted verbatim students' responses and paraphrased summaries of the position taken by the students. Students made some allowances for my note-taking, giving me time to

write down their responses and generally pacing themselves for my benefit. Doing my own recording was easier since I was familiar with what was being discussed. Notes were handwritten and elaborated on immediately after the interviews, and followed by coding and interpretation. Students completed the Focused Semi-Structured Conversation Interview (FSSCI) – Annexure C, two days after the interviews. This exercise was to compare their interview responses with written responses to validate the trustworthiness and authenticity of their responses. Furthermore, this was done to look for any naturally occurring shifts in interview thematic content, that is, thematic transition (Ryan & Bernard, 2000). The responses to the closed questions were considered quantitative since the frequency of responses is counted and answers to questions weighted with a numerical value.

I was aware of my influence as their lecturer and the researcher, which may give rise to students' response bias, that is, the tendency to answer according to perceived social desirability of the response alternatives, the reactivity of the research or the Hawthorn effect, that is, the impact of participants knowing that they are part of a research undertaking (Tiainen & Koivunen, 2006). These potential biases were neutralized by interpreting interviewees' narrations using my own knowledge of assessment practices, including self and peer assessment, in higher education to choose the interesting parts of narrations and rewriting them. Through flexible probing and expanding of interviewees' responses it was possible to establish some kind of balance between myself, as the interviewer, and students as interviewees, to

provide room for negotiations, discussions, and the expansion of the interviewees' responses.

It was regretful and disappointing that the responses from the interview were largely repetition of the responses that came out of the post-intervention questionnaire rather than expanding and providing new insights. It is important to note that the six students' responses were not aligned to the selection of interviewees, which was based on the high, middle and low mark range, but were scattered through the pairs. Similar and dissimilar comments were not confined to high, middle or low achievers, but came from any respondent in any group.

3.3.1.4. Observations

During oral feedback the lecturer completed an observation form to record the students' interaction during feedback sessions. The observation form (COF – Annexure H) is used to record individual student provision of feedback on peer assessment and the responses of feedback recipients (Sivan, 1997). Observational data is used to describe and interpret the academic class environment, feedback on activities, and students' reaction to activities. Verbal and nonverbal cues from the provider and the recipient of the feedback were noted. A full description of the feedback scene was constructed immediately after the feedback. It would have been

advisable to videotape or audiotape the feedback interaction, but the presence of the technological gadgets could have distorted the natural academic setting and induced the Hawthorne effect (Hill, Le Grange, & Newmark, 2003). During observation, I maintained a passive presence, engaging in limited interaction, intervening only when further clarification of facts was needed, or to elicit specific information (Hoepfl, 1997). The advantage of this strategy is that it complies with the interpretive view of inquiry, which is fundamentally concerned with meaning and seeking to understand the individual perspective and responsiveness during feedback. The disadvantage may stem from favouritism and/or the protection of particular participants (Gephart, 1999).

Since I intended to evaluate students' perceptions and performance with regard to their involvement in assessment practices in higher education, the research method decided upon is essentially evaluative as opposed to exploratory, I used different research methods to increase the accuracy, trustworthiness and quality of results and to provide a more comprehensive and deeper understanding of and insight into the research questions and analysis of the phenomena (Sydenstricker-Neto, 1997; Terre Blanche, Kelly & Durrheim, 2006). The multiple methods of data collection associated with qualitative inquiry in this study are questionnaires, interviews and behavioural observation. The adopted mixed-methods approach to data collection is based on the complementary use of qualitative and quantitative methods in order to quantify and measure the effectiveness of the impact of self and peer assessment in

the learning experience of students (Casebeer & Verhoef, 1997; Terre Blanche, Kelly & Durrheim, 2006).

3.3.2. Reliability and Validity

The credibility of qualitative research depends on the richness of the information gathered, the analytic abilities of the researcher in interpreting a variety of data collected which can be enhanced through triangulation, in vivo coding to generate categories, theoretical sensitivity, testing hypotheses and recording data objectively and comprehensibly (Hoepfl, 1997). In summary, data reduction began with memoing, pattern coding, immersion, familiarization, prolonged engagement in the field, member checks, and audit trails (Hoepfl, 1997).

The credibility of assessors' marking was determined by using the Cronbach's alpha to ensure inter-rater reliability that measures how well a set of items or variables measures a single one-dimensional latent construct (Gliem & Gliem, 2003). Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Measurement of inter-rater reliability is used where there are multiple-assessors. Below, for conceptual purpose, I show the formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N \cdot \bar{r}}{1 + (N - 1) \cdot \bar{r}}$$

Here N is equal to the number of items and \bar{r} is the average inter-item correlation among the items. It is evident from this formula that if the number of items is increased, then Cronbach's alpha increases accordingly. Additionally, if the average inter-item correlation is low, alpha will be low. As the average inter-item correlation increases, Cronbach's alpha increases as well. This makes sense intuitively, if the inter-item correlations are high, and there is evidence that the items are measuring the same underlying construct. This is really what is meant when someone says they have 'high' or 'good' reliability. A reliability coefficient of 0.80 or higher is considered 'acceptable'. The suggested coefficients of 0.70 or higher are recommended between the markers' scores, with 1.0 being the perfect reliability and 0.0 representing total unreliability. Consistency in this research study means a process of confirmation rather than one of independent replication (Palomba & Banta, 1999). Colleagues were requested to review the research methods to ensure reliability and validity.

There are unique problems associated with descriptive studies such as lack of responses when questionnaires and interviews are used for the study. This may result in skewed relationships and strong conclusions may be drawn from under-represented sample sizes (Gay, 1987). Such problems were not applicable in this research because the participants were full-time students in the programme and self and peer assessments were an integral part of the methods of assessment in the

subject assessment strategies. The research questions formed the basis for development of research instruments, with joint reviews and revisions with colleagues and the research supervisor, and suggestions and recommendations from UKZN higher degree research and ethics committees. I was the sole observer and subjectivity is acknowledged in the process of participant observation. The participants' responses to the research questions were facilitated through a dialogic process to ensure minimization of researcher bias and impositions. Consideration of researcher dominance and authoritative power over the students is hereby acknowledged, not excluding my affective reactions to events as they unfolded, particularly as they "challenged my perceptions about myself as a detached and objective observer" (Fregona, 2004:25).

3.3.3. Preparation for Self and Peer Assessment

The students' mark allocations are taken from individual assessments. The students are often the best sources of meaningful data, and self and peer assessment are a valuable part of the whole assessment practice (Clark et al., 2006) The average final pass mark a student can obtain is 50%, and if the student achieves less than 50%, they are expected to redraft the assignment utilizing the feedback from the assessors. The redrafted assignment is resubmitted for reassessment. They were informed of the advantages and disadvantages of self and peer assessment, and an interactive 'workshop' and pilot study on how to self and peer assess was held to

instill a sense and feel of how assessment is done. There are challenges in awarding marks to oneself and these include inflating marks and the fear of intimidation by peers. The differential penalty mark between lecturer and student marks may be deducted from the students' assessment mark, and students with an assessment mark similar to the lecturer's mark for self and peer assessment may be awarded an extra mark for accuracy (Sadler & Good, 2006).

3.4. QUANTITATIVE RESEARCH DATA ANALYSIS TECHNIQUES

3.4.1. Effect size calculations

The effect size (ES) is the difference in marks in units of standard deviation between the assessors. The effect size characterizes the magnitude of the difference in mean marks between students and the lecturer (Sadler & Good, 2006). The effect size is a standardized index of deviation in a situation where minimal deviation is required, so small effect size is sought. In this research study, the smaller the absolute effect size, the greater the resemblance between students' assessment and lecturer assessment. Positive d value indicates that students tend to be more generous in their marking than the lecturer, referred to as overmarking and vice versa (Falchikov & Goldfinch, 2000).

Effect size is calculated as follows:

$$d = (\text{E group mean}) - (\text{C group mean})$$

(C group SD)

where C = Control and E = Experimental (Glass et al., 1981 in Falchikov and Boud, 1989).

In this research study, the lecturer assessment results were designated the control (C) group and self and peer assessment results were the experimental group (E) to effect the calculations.

3.4.2. Direct comparisons between assessors' marks

The research study uses direct comparison between lecturer and student assessment marks, and marks are regarded as corresponding/agreeing/matching if the mark is equal to, or lies within ten percent of the differential mark. Any mark outside of the ten percent mark differential on the lower and upper bounds, is regarded as undermarking or overmarking respectively.

3.4.3. Hypothesis testing

Hypotheses tests: p-values and statistical significance. The traditional approach to reporting a result requires a statement of statistical significance. A p-value is generated from a test statistic. A significant result is indicated with " $p < 0.05$ ". A *t*-test

is any statistical hypothesis test in which the test statistic has a Student's t-test distribution if the null hypothesis is true. It is applied when sample sizes are small enough that using an assumption of normality and the associated z-test leads to incorrect inferences. It is used to compare means on the same or related subjects over time or in differing circumstances.

3.5. THE ETHICS OF THE INTERPRETIVE APPROACH IN EDUCATIONAL RESEARCH

The Executive Dean of the Faculty of Health Sciences (FoHS), at Durban University of Technology (DUT), gave written permission for the undertaking of the research study to be conducted on first-year clinical technology students. The Higher Degrees and Ethics Committee at the University of KwaZulu Natal (UKZN) approved this research study. All thirty-eight students from the Clinical Technology programme in the Department of Biomedical and Clinical Technology (DBCT) participated in this research study. Students were chosen because they were registered for Psychodynamics 1, which is the subject chosen for conducting this research. At the same time, they were in their first year of study and far from finishing their course so they may have been motivated to be involved in the process of higher education assessment improvement.





CHAPTER FOUR

RESEARCH DATA MANAGEMENT, ANALYSIS METHODS AND FINDINGS



■

- What are students' responses to marking their own work and the work of their own peers?
- How valuable do students find the assessment criteria in relation to learning outcomes?
- How do students find the rubric sheet works in assessment practice in Psychodynamics 1 subject?
- What effect does the integration of self and peer assessments, as instructional strategies, have on students' overall performance?
- How does the lecturer's assessment compare to the students' self and peer assessment?

The key to good a sound interpretive research analysis is to stay close to the data, to interpret it from a position of empathic understanding, and to provide a contextually thick description of the phenomena under study (Terre Blanche et al., 2006: 321). Pope, Zieband, & Mays (2000) reminded us to use sequential or interim analysis in the analytical process which begins during data collection, as the data already gathered is analyzed there is ongoing data collection. The first step in qualitative data analysis is the conceptualization of verbal and textual data, followed by a process of grouping the data into relevant categories, and employing in vivo coding. This involves the naming of categories derived from participants' responses, and open coding to identify the categories emerging from the data (Strauss & Corbin, 1990; Dey, 1993). Empirical and professional reading assisted in making sense of

collected data, identified patterns, and built a logical chain of evidence (Wong, 2008). Familiarization with and immersion in the data gave me a preliminary understanding of the meaning of data and the ability to develop ideas and theories from which the identification and exploration of categories and coding started. It also gave theoretical and conceptual understanding in the interpretation and explanation of the impact of self and peer assessment on students' perceptions of their learning experience (TerreBlanche et al., 2006; Ryan & Bernard, 2000). Coding, elaboration, interpretation and explanation were word-based (word repetition/frequency/counts, and key-word-in-context), scrutiny-based (compare and contrast/constant comparative analysis), linguistic-based (connectors), and physical manipulation of text, for example, pawing (Ryan & Bernard, 2000).

4.2. RESEARCH DATA ANALYSIS TECHNIQUES

One important aspect of qualitative data is that it does not yield up its meaning easily (Denzin & Lincoln 2005). I used some concepts of grounded theory such as sensitization and familiarization, which provided me with a general sense of reference and guidance in approaching empirical instances. As the study continued, reduction in data collection was observed and coding, analysis and theory building became more dominant (Denzin & Lincoln, 2005; Basit, 1988; Babbie, 1998). Emerging concepts from the data were compared and contrasted with literature to establish assumptions and these were then refined and elaborated to develop theory

(Gephart, 1999; Pauleen & Yoong, 2004:144; Smith & Stewart, 2001; Patton, 1990). Analytical techniques were linked and made mutually informative, while respecting the distinctive contributions and integrity of each perspective and its complementarity (Miller, 1997). The three analytic techniques employed in this research study are constant comparative method, content analysis and descriptive statistics.

Word-based techniques included word repetitions, for example, some students responding by commenting that they '*think peer assessment is good*', and are conducted by generating a list of all the unique words in students' responses and counting the number of times each word occurred. Key-word-in-context (KWIC), for example, the '*think*', which draws on a simple observation that words that occurred in many responses are often seen as being salient in the minds of research participants. In KWIC, I identified key words and then looked at how they were used in context. This information assisted in the actual coding of the texts. Categories are formed by physically sorting the examples into piles of similar meaning.

Physical manipulation of texts includes pawing. This is proofreading the material and simply underlining key phrases because they make some as yet not understood sense. This is referred to as the ocular scan method or eyeballing (Sandelowski, 1995, Ryan & Bernard, 2000). Using these methods gave me a feel for the text by handling the data multiple times. This qualitative research study yielded unstructured text-based data mainly from questionnaires, interviews, observation notes, students'

peer feedback and self-assessment commentary notes. Equally important, I looked for any deviant or negative cases such as comments and writings that ran counter to the emerging propositions or hypotheses and these were used, if applicable, to refine emerging propositions (Pope et al., 2000:114). It was reported that researchers should be theoretically sensitive by giving meaning to data, and by developing the understanding and capability to separate the pertinent from the not. (Strauss & Corbin, 1990). This interpretive, descriptive research study adopted the qualitative data analysis process as illustrated below:

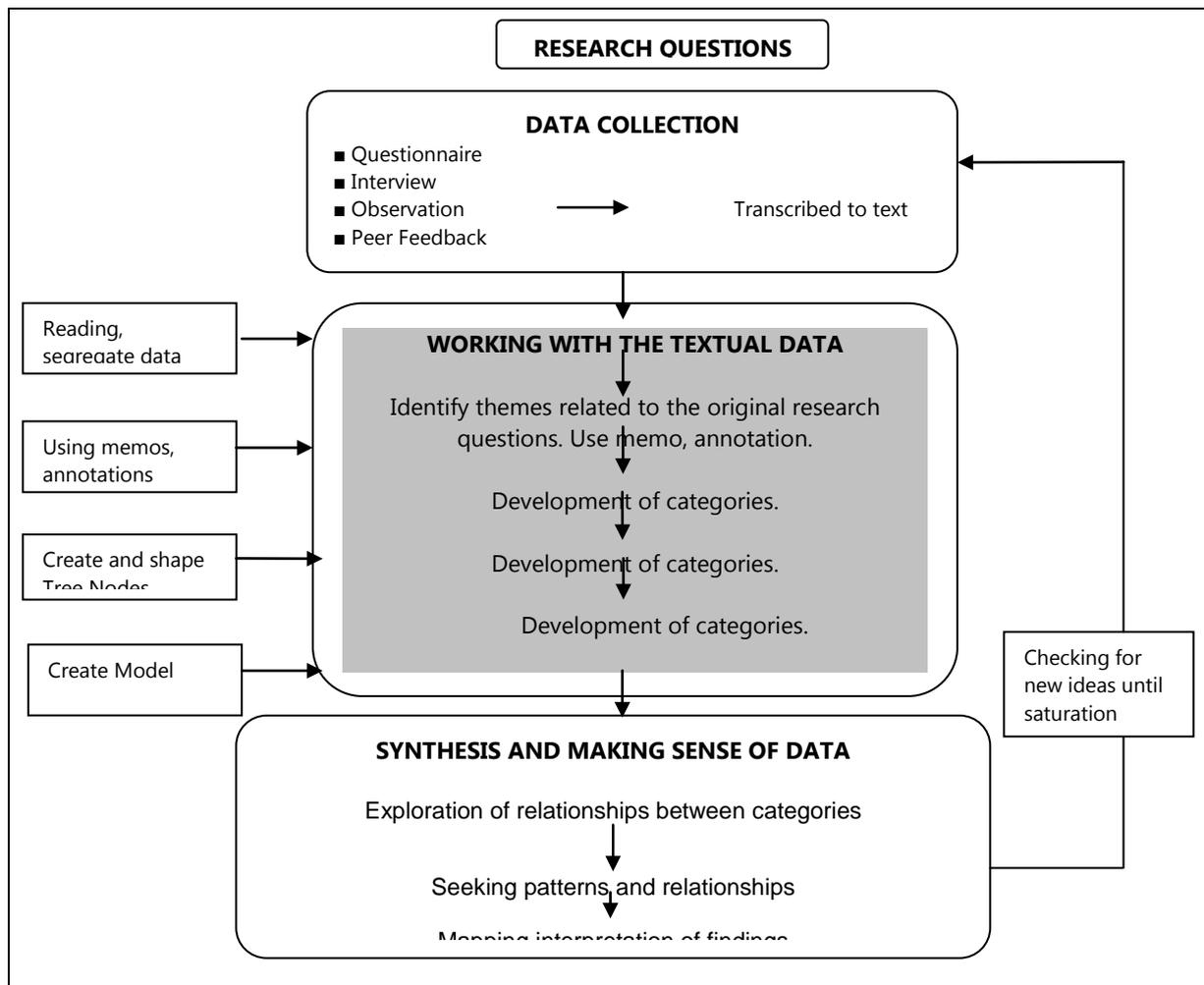


Figure 4.1: Qualitative Data Analysis Flowchart (Adapted from Wong, 2008:15)

4.2.1. Constant Comparative Method

Using this method, I grouped students' responses to common questions and statements with the objective of qualitatively analyzing their varied perspectives by means of inductive category coding and comparing academic incidences observed (Dye, Schatz, Rosenberg & Coleman, 2000). Theory generation was determined by discovering relationships. I began with an analysis of initial data observation and, as is the nature of qualitative data analysis, the process of categorization underwent continuous refinement throughout data collection and analysis processes and with continuous feeding back into the process of category. As phenomena and events are constantly compared and contrasted with previous events, new typological dimensions and relationships may be discovered (Dye et al., 2000). Obviously, when I chose this method, I knew that I had to carefully conduct line-by-line analysis, and read each line or sentence and ask myself questions such as: What is this about? How does it differ from the preceding or following statements?

This kind of detailed work kept me focused on the data rather than on theoretical flights of fancy that are usually expected by people who are unfamiliar with qualitative research and its methods of analysis, or are in absolute denial that some methods not usually used in qualitative research can be used to enhance data analysis and interpretation (Charmaz in Ryan & Bernard, 2000). Theoretical sampling is an inductive technique that is used when data does not exhaust the

theoretical category that is being developed. The researcher is expected to return to the domain until categories have been saturated, that is, the researcher must sample particular categories to ascertain that its properties and dimensions cannot be elucidated further. This exercise checks both the scope and the depth of a category. Theoretical sampling is theory-driven. As new incidents and concepts emerge from the other dimensions, they need to be compared against existing concepts and categories for both similarities and differences.

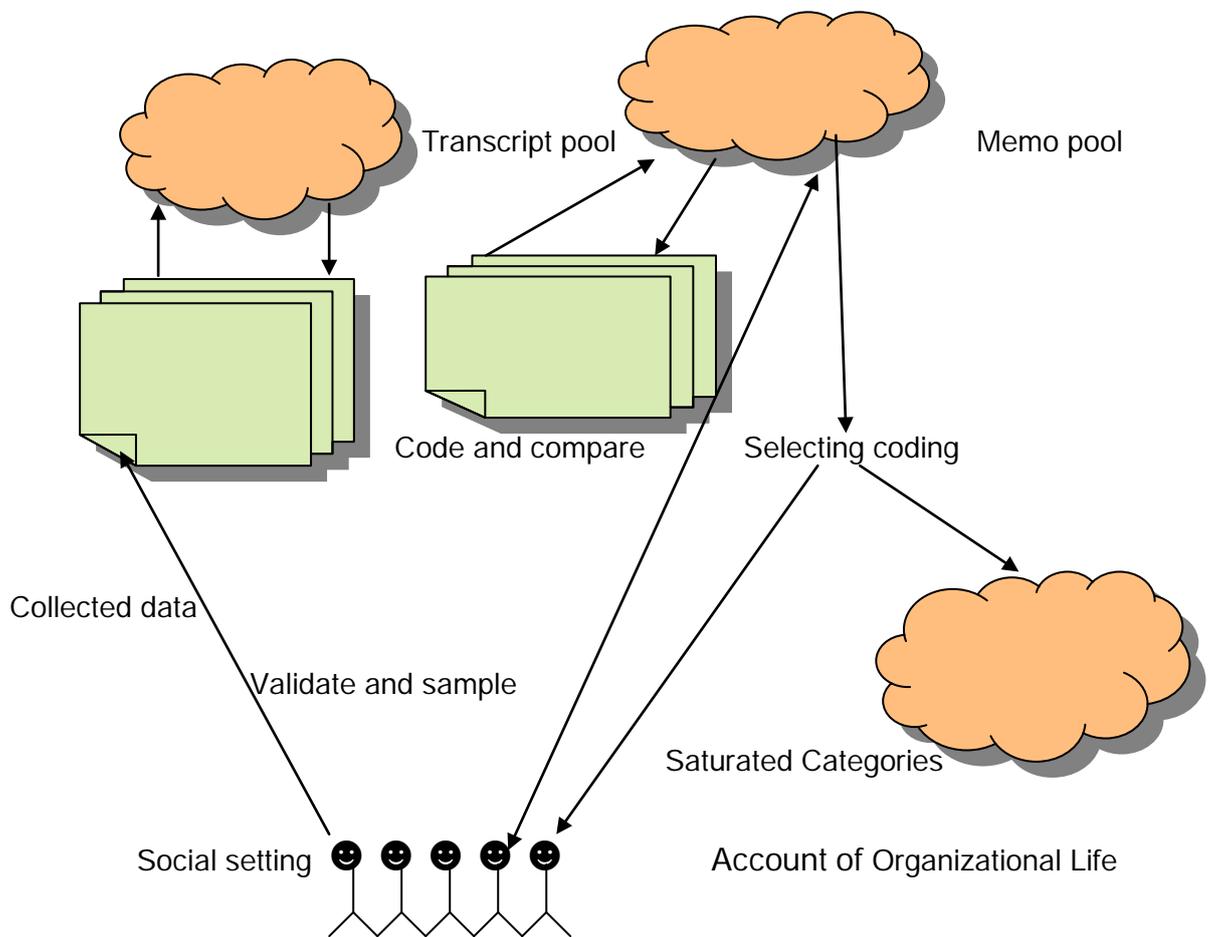


Figure 4.2: Constant Comparative Analysis and Theoretical Sampling

(Adapted from Jones & Hughes, 2001)

4.2.2. Qualitative Content Analysis

Qualitative content analysis was used in this study because it is an inductive research method that allows for the subjective interpretation of the content of text data through the objective and systematic identification and classification of specified patterns of messages from the raw data in an attempt to generate theory (Stemler, 2001). This technique allowed the researcher to sift through large volumes of data in a systematic fashion with relative ease. The practical application of content analysis is to correlate the frequency of nouns or functions of words to help generate a case of probability of, in this case, each student's perception of self and peer assessment, and their associated shifts in educational assessment practice in higher education (Stemler, 2001).

4.2.3. Descriptive Statistics

Descriptive statistics were used to describe or summarize the data and provide simple summaries about the samples and measures, i.e. enabling comparisons across students' performance and achievements (Trochim, 2006; Gay, 1987). Descriptive statistics permit meaningful description of numerical data with a small number of indices, enabling inferences to be made about assessment results by estimating the data and finding reliable differences or relationships. The major types of descriptive statistics used are measures of central tendency, for example, mean,

distribution, and dispersion, for example, standard deviation (Gay, 1987; Trochim, 2006). Revisions were made where necessary and categories tightened up to the point that maximized mutual exclusivity and exhaustiveness. The statistical methods used to compare the marks awarded by lecturer and students include effect size calculations, direct comparison of assessors' marks and hypothesis testing.

4.3. QUANTITATIVE DATA ANALYSIS AND INTERPRETATION

Descriptive statistics were used to describe the main features of a collection of data in quantitative terms, aiming to quantitatively summarize a data set and not a perception of assessment methods. Descriptive statistics on the marks of the students and lecturer were calculated, establishing means and standard deviations of the essay. Using lecturer-awarded marks only, gains from the individual second and third essays were calculated and a Student's *t*-test was used to establish the significance of the mean. In other words, it was used to compare the means on the same or related subject over time or in differing circumstances and to see if there is a significant difference between means of the students and the lecturer (Gay, 1987). Results were also reported as effect sizes ($ES = \Delta\text{mean}/\text{standard deviation}$) as a matter of methodological triangulation to validate the results of other statistical tests (Sadler & Good, 2006).

4.3.1. Quantifying the Experimental Effect: Calculation of Common Metrics

4.3.1.1. Descriptive Statistics

Table 4.1 below displays the three most frequently used indices of central tendency, namely mean, median and mode for the data gathered.

Table 4.1: Measures of Central Tendency Statistical Dispersion

	N	Missing	Mean	Median	Mode	Std. Deviation	Skewness
E1	38	0	55.71	55.5	50	10.99	-3.48
E2PA	38	0	62.18	64.5	60	18.09	-1.13
E2SA	38	0	71.63	71.5	70	11.18	-0.08
E2LA	38	0	67.39	68.5	72	9.14	-0.28
E2AV	38	0	65.71	69	66	15.22	-2.24
E3PA	38	0	67.79	70	70	14.86	-2.48
E3SA	38	0	70.92	72	60	14.96	-2.92
E3LA	38	0	67.29	72	62	13.85	-3.17
E3AV	38	0	68.61	71.5	64	13.65	-3.50

A large standard deviation would indicate that the data points are far from the mean, which means there is a significant difference between the scores of the assessors, while a small standard deviation would indicate that they are clustered closely around the mean, which means there is no significant difference between the scores

of the assessors (Gay, 1987). In the first column, the symbol (E) stands for essay, numerical values (1,2, and 3) depict the number of essays written. PA stands for peer assessment, SA for self-assessment, LA for lecturer assessment, AV for average, and IND for individual.

This research study used Cronbach's alpha (Table 4.5.) as one of the various measures of inter-rater reliability that can be considered when comparing student-assigned marks with those of the lecturer (Sadler & Good, 2006).

Table 4.2: Case Processing Summary and the Reliability Statistics

Case Processing Summary			Reliability Statistics	
	N	%	Cronbach's Alpha	No. of Items
Cases Valid	37	97.4	.872	14
Excluded	1	2.6		
Total	38	100.00		

In Table 4.5 above, the reliability score of this research study is 0.872, indicating a high degree of acceptable, consistent scoring for the different assessors, i.e. students and the lecturer. This shows that there is high degree of reliability when students assessment of Essay 2 and 3 where compared, meaning that students' assessment is reliable when given a marking rubric and assessment criteria to write and assess their essays. The inter-rater reliability has been demonstrated between students and the lecturer assessment capability.

4.3.1.2. Paired Student's T-Test

The Student's *t*-test (Table 4.3.) was used to compare the difference in mean mark between lecturer-assigned marks and student-assigned marks, with small and large standard deviation indicating that results are close together and more spread out, respectively (Sadler & Good, 2006; Trochim, 2006; Gay, 1987).

Table 4.3: Paired Samples Statistics and Paired Samples Correlations

Paired Samples Statistics					Paired Samples Correlations			
	Mean	N	Std. Deviation	Std. Error Mean		N	Correlation	Sig.
Pair 1 E2PA and E2SA	62.18 (-9.45) 71.63	38 38	18.088 (6.913) 11.175	2.934 (1.121) 1.813	Pair 1 E2PA and E2SA	38	.429	.007
Pair 2 E2PA and E2LA	62.18 (-5.21) 67.39	38 38	18.088 (8.945) 9.143	2.934 (1.451) 1.483	Pair 2 E2PA and E2LA	38	.615	.000
Pair 3 E2SA and E2LA	71.63 (4.24) 67.39	38 38	11.175 (2.032) 9.143	1.813 (0.330) 1.483	Pair 3 E2SA and E2LA	38	.736 (0.59)	.000
Pair 4 E3PA and E3SA	67.79 (-3.13) 70.92	38 38	14.862 (-0.098) 14.960	2.411 (-0.016) 2.427	Pair 4 E3PA and E3SA	38	.774	.000
Pair 5 E3PA and E3LA	67.79 (0.50) 67.29	38 38	14.862 (1.016) 13.846	2.411 (0.165) 2.246	Pair 5 E3PA and E3LA	38	.803	.000
Pair 6 E3SA and E3LA	70.92 (3.63) 67.29	38 38	14.960 (1.114) 13.846	2.427 (0.181) 2.246	Pair 6 E3SA and E3LA	38	.881 (0.82)	.000

* The bracketed () numbers are the mean of the pairs, for example, (-9.45).

The paired *t*-test samples statistics in Table 4.3 above show mean, standard deviation, and standard error mean of the pairs. The calculated difference, in brackets, of standard deviation is large in E2PA/E2SA (6.913), E2PA/E2LA (8.945), and E2SA/E2LA (2.032). This means that the mean marks are more spread out, indicating a significant difference between the means of two groups. The standard deviation is small in E3PA/E3SA (-0.098), E3PA/E3LA (1.016), and E3SA/E3LA (1.114).

Correlation compared the difference in marks on a case-by-case basis, using the squared differences score, and ascertained the goodness-of-fit of a linear relationship (Sadler & Good, 2006). Correlation coefficients (*r*) relating to the relationship between the lecturer and students' marks varied from medium (0.429) to large (1.000), with the mean value of *r* being 0.795. The mean correlation coefficients (*r*) in this study are regarded as the independent variable (Falchikov & Boud, 1989). In quantitative self and peer assessment, the comparison is between the marks awarded to the same essay by the lecturer and students. All the pairs in this study approached a near perfect positive correlation between the students' and the lecturer's marks, with other correlations distributed around the mean of 0.795. Studies have shown that Pearson's correlation values indicated that peer and lecturer mean marks are significantly interrelated (Struyven et al., 2002). In this study, there is a progressive observable interrelatedness between students' mean

marks although the students were more generous in self-assessment. Wheater, Langman & Dunleavy (2005) reported that “student marks correlated strongly with tutors’ marks (high precision), but students were more generous, awarding -5% higher marks (moderate accuracy)”.

Table 4.4: Paired Samples Test

Paired Samples Test								
	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 E2PA-E2SA	-9.447	16.689	2.707	-14.933	-3.962	-3.490	37	.001
Pair 2 E2PA-E2LA	-5.211	14.402	2.336	-9.944	-.477	-2.230	37	.032
Pair 3 E2SA-E2LA	4.237	7.617	1.236	1.733	6.741	3.429	37	.002
Pair 4 E3PA-E3SA	-3.132	10.017	1.625	-6.424	.161	-1.927	37	.062
Pair 5 E3PA-E3LA	.500	9.073	1.472	-2.482	3.482	.340	37	.736
Pair 6 E3SA-E3LA	3.632	7.122	1.155	1.291	5.973	3.143	37	.003

The result indicated that there is a difference in the scores between the pairs of variables for all pairs (since $p < 0.05$), except for E3PA vs E3SA and E3LA, where the p-values are greater than 0.05, indicating no significant difference in the scores between the pairs.

4.3.1.3. Analysis of Variance (ANOVA)

Table 4.5: Analysis of Variance (ANOVA)

	p-value
E2: PA vs SA vs LA	0.010
E3: PA vs SA vs LA	0.502

The analysis of variance is used to see if there is a significant difference among the means of three or more groups (Gay, 1987). The ANOVA tests confirmed the results obtained for the paired *t*-test results. In this study, there is a significant difference among the means of the three groups of assessors for E2 ($p < 0.05$), demonstrating that there exists dissimilarities in students and lecturer assessment. E3 demonstrates that there is no significant difference among the means of the three groups of assessors ($p > 0.05$), showing that the difference that existed in E2 has now been improved significantly by similarities in the marks between students and the lecturer. This suggests that there seems to be significant improvement in the understanding of how assessment should be carried out by the students and also there is significant understanding of assessment criteria and marking rubric.

4.3.1.4. Effect size (ES)

The effect size is the difference in the subgroup means in units of the whole group's standard deviation of the score distribution, and its application in this research study is the effect size between assessors' mean marks. ES characterizes the magnitude

of the difference in mean marks between students and the lecturer on a particular assignment. Measured in units of standard deviation, the magnitude of the ES has accepted ranges, with effects of 1.0 and above considered to be large. Small effect sizes are to be interpreted as showing that lecturers and students made similar judgements, or is seen as evidence of agreement. Positive effect sizes indicate overmarking and vice versa (Sadler & Good, 2006; Falchikov and Boud, 1989). Effect sizes are small (.40), medium (.50) and large (.60 and above), and small effect sizes are sought. The smaller the absolute effect size, the greater the similarity between student assessors and academic assessors (Ross, 2008; Falchikov & Goldfinch, 2000).

4.3.1.5. E1 vs E2AV vs E3AV

Table 4.6: Effect Sizes and Mean Percentage Marks

	Pair 1 E1/E2AV	Pair 2 E1/E3AV	Pair 3 E2AV/E3AV	Pair 4 E3AV/E2AV
	d-value = - 0.66 - undermarking - large	d –value = - 0.95 - undermarking - large	d –value = - 0.21 - undermarking - small	d-value = 0.21 - overmarking - small
Mean	56% / 66%	56% / 69%	66% / 69%	69%/66%

E1/E2AV and E1/E3AV shows large absolute effect sizes respectively, indicating lesser resemblance between markings. This means that the assessment between the students and the lecturer are dissimilar, and the negative d value indicates undermarking in the pairs. E2AV/E3AV and E3AV/E2AV shows small absolute effect

sizes indicating a greater resemblance between the markings, that is, the assessment of the students and the lecturer are similar. The negative d value in the former indicates undermarking in E2AV, with a positive d value in the latter indicates overmarking in E3AV/E2AV. The small effect size between E2AV and E3AV indicates a greater degree of similarity between the markings of the assessors (students and the lecturer). The progression from undermarking in E2AV to overmarking in E3AV is indicative of students' understanding of the subject and the criteria for high achievement.

Table 4.7: Paired Sample Test for E1 vs E2AV vs E3AV

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 E1 – E2AV	-10.000	18.569	3.012	-16.104	-3.896	-3.320	37	.002
Pair 2 E1 – E3AV	-12.895	16.196	2.627	-18.218	-7.571	-4.908	37	.000
Pair 3 E2AV –E3AV	- 2.895	19.000	3.082	-9.140	3.351	-.939	37	.354

Looking at E1 and E2AV and E1 and E3AV (Table 4.7 and Fig. 4.3), the p-values are less than 0.05, implying that the mean values are dissimilar. Therefore, it can be inferred that there exists a significant differences between the Essay 1 marks when compared with the Essay 2 and 3 average marks. The large effect size for the variables (Table 4.8 above) supports the inference in that it indicates lesser

resemblance, and there is evidence of disagreement, between the averages of the pairs. However, pair 3 p-value is greater than 0.05, implying that the mean values of E2AV and E3AV are similar. The inference is that there is no significant difference between the pair. The reason for the small effect size (Table 4.6) is greater resemblance, indicating evidence of agreement between the average marks.

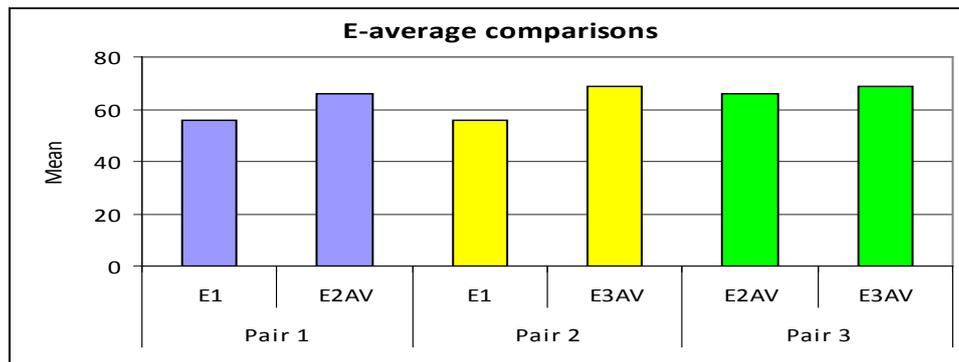


Figure 4.3: Pair Mean Marks E-Average Comparisons

The use of effect size and paired sample test in the analysis of variables demonstrates the utility of mixed-methods of data collection contributing to the pursuit of knowledge in different but complementary ways. The descriptive statistics are complemented by explanatory qualitative data (Johnson & Onwuegbuzie, 2004). The research has the following mean percentages (Table 4.6.): 56% (E1), 66% (E2AV) and 69% (E3AV), showing that the mean marks increased with subsequent markings pointing to an average increase in the performance of students in essay writing which is evident in percentage mark increase. It had been reported that the average marks were higher in the next set of assessment exercise (Topping, 1998). The differential decrease in mark variation may be attributed to an improvement in

the utilization of the marking rubric, increased assessment skills, a change in the students' perception toward assessment practice in higher education, and lecturer's involving students in assessment process.

4.3.1.6. PA vs SA vs LA for Essay 2 (E2): Conflict Resolution (CR)

Table 4.8: Effect Size Calculation and Self and Peer Assessment Percentage Markings

Effect Size (ES) Calculation				Marking Status (%)		
Pair 1: E2PA/E2SA	Pair 2: E2PA/E2LA	Pair 3: E2SA/E2LA	Pair 4: E2SA/E2PA	Pair 1 PA/SA	Pair 2 PA/LA	Pair 3 SA/LA
d-value = -0.85 - undermarking - large	d-value = -0.57 - undermarking - large	d-value = 0.46 - overmarking - medium	d-value = 0.52 - overmarking - medium	21%↑ 76%↓ 4% =	29%↑ 63%↓ 8% =	76%↑ 21%↓ 4% =

Small effect size, for example, 0.3 and below, is the desired effect that would indicate greater resemblance, similarities and evidence of agreement. In Essay 2: Conflict Resolution, all pairs show large and medium effect sizes (Table 4.8), meaning that there is less resemblance, more dissimilarities and evidence of disagreement in student (self and peer assessment) and lecturer assessment. The negative effect sizes for pair 1 (-0.85) and pair 2 (-0.57) indicate undermarking in peer assessment (PA-76%) when compared with self-assessment (SA). In fact PA undermarked (63%) when compared with the lecturer assessments (LA). SA overmarked (76%) when compared with the lecturer's marking. Other researchers

have found that self-assessments are generally higher (56%) than lecturer assessment, although there are exceptions (Ross, 2006; Struyven et al., 2002).

Table 4.9: Paired Sample Test for PA vs SA vs LA for E2

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 E2PA-E2SA	-9.447	16.689	2.707	-14.933	-3.962	-3.490	37	.001
Pair 2 E2PA-E2LA	-5.211	14.402	2.336	-9.944	-.477	-2.230	37	.032
Pair 3 E2SA-E2LA	4.237	7.617	1.236	1.733	6.741	3.429	37	.002

The p-values for all three pairs (E2PA-E2SA, E2PA-E2LA and E2SA-E2LA) are less than 0.05, implying that the mean values are dissimilar. The inference is that there is a significant difference in all the pairs' marking (less resemblance and evidence of disagreement between assessors in all three pairs). This analogy is evident since the standard deviations are large compared to their respective means, implying that there is a wide spread of the raw scores. The large effect size and large standard deviation are in agreement with the wide spread of the raw score of the pairs in this study.

The bar graph (Fig. 4.4) below shows the dissimilarities clearly.

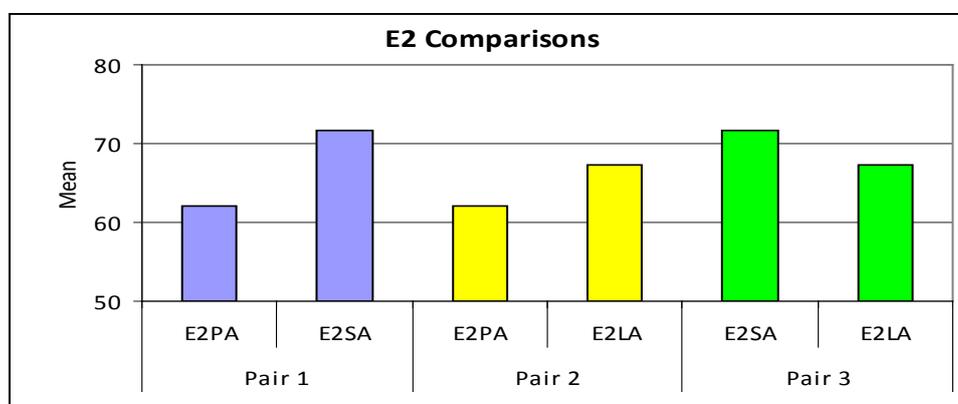


Figure 4.4: Pair Mean Marks E2 Comparison

All the pairs' p-value of less than 0.05, large effect size and large standard deviation are indicative of dissimilarities, disagreement and less resemblance between the pairs.

4.3.1.7. PA vs SA vs LA for Essay 3 (E3): Cultural Sensitivity (CS)

Table 4.10: Effect Size Calculations and Self and Peer Assessment Percentage Markings

Effect Size (ES) Calculation				Marking Status (%)		
Pair 1: E3PA/E3SA	Pair 2: E3PA/E3LA	Pair 3: E3SA/E3LA	Pair 4: E3SA/E3PA	Pair 1 PA/SA	Pair 1 PA/LA	Pair 2 SA/LA
<i>d</i> -value = -0.21 - undermarking - small	<i>d</i> -value = 0.04 - overmarking - small	<i>d</i> -value = 0.26 - overmarking - small	<i>d</i> -value = 0.21 - overmarking - small	32%↑ 53%↓ 15% =	48%↑ 48%↓ 4% =	66%↑ 27% ↓ 7% =

In Essay 3: Cultural Sensitivity, all pairs showed small effect sizes (Table 4.10), meaning that there is greater resemblance, similarities and evidence of agreement in student (self and peer assessment) and lecturer assessment. The negative effect sizes for pair 1 (-0.21) indicates undermarking in peer assessment (PA-53%) when compared with self-assessment (SA). PA undermarked (48%) when compared with the lecturer assessments (LA). SA overmarked (66%) when compared with lecturer's marking.

Table 4.11: Paired Sample Test for PA vs SA vs LA for E3

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 E3PA-E3SA	-3.132	10.017	1.625	-6.424	.161	-1.927	37	.062
Pair 2 E3PA-E3LA	.500	9.073	1.472	-2.482	3.482	.340	37	.736
Pair 3 E3SA-E3LA	3.632	7.122	1.155	1.291	5.937	3.143	37	.003

The p-values for pairs 1 and 2 are greater than 0.05 (0.062 and 0.736). This means that the mean values are the same. Therefore, there is evidence of agreement, similarities, and greater resemblance, which is in agreement with the calculation of the effect sizes. The p-value for pair 3 is less than 0.05, which implies that the mean values are dissimilar, there is evidence of disagreement and lesser resemblance. There is observable disagreement with the effect size calculations and paired

sample test for pair 2, which can be attributed to the assertion that self-assessment is always typically higher than lecturer assessment (Ross, 2006). Fig. 4.5. below corroborates the findings.

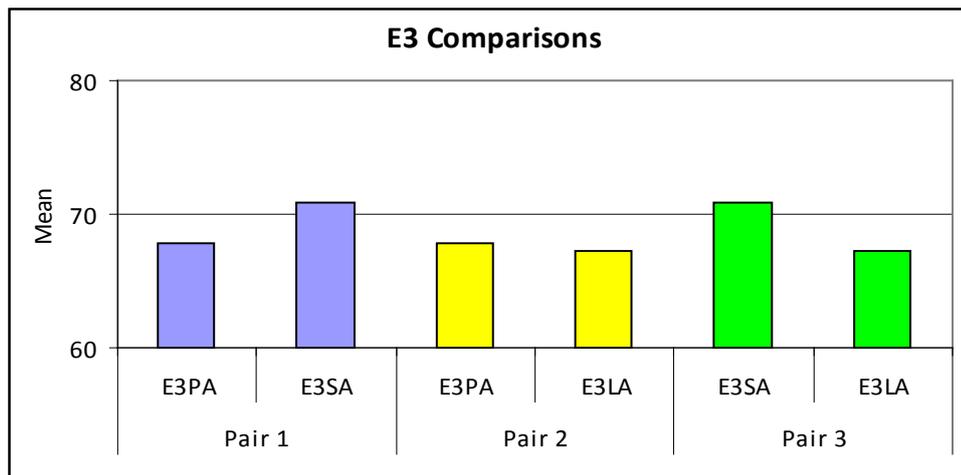


Figure 4.5: Pair Mean Marks E3 Comparison

The pairs p-value of greater than 0.05, small effect size and small standard deviation are indicative of similarities, agreement and greater resemblance in pairs 1 and 2. Pair 3 is the opposite.

4.4. QUALITATIVE DATA ANALYSIS AND INTERPRETATION

The intention is to create conceptual categories through abstraction of complex data to classify and compare the essential features of the phenomena under study. Abstraction is a powerful means to achieve greater clarity and precision in making comparisons without forgetting their origins and limitations (Dey,1993). The research

findings elicited from students' responses from various research methods and related literature, have resulted in the generation of categories and subcategories. Categorization is defined as the process of grouping concepts together that seem to pertain to the same phenomena (Strauss & Corbin, 1990) and their identification and definition is subjective. It is important to encapsulate these focal research areas when I explain and discuss each category and subcategory that I have developed, and give examples of each (Babbie, 1998). Simply put, Durrheim (2006) describes data analysis as the transformation of textual and statistical data into answers to the research questions.

Overlapping of categories may occur and some of the texts may not be assigned to any category. Continuing revision and refinement of the category systems may occur as a response to contradictory points of view and new insights (Thomas, 2003). Superficially, I will also determine students' assessment preferences (Birenbaum, 1997). The three main learning orientations are deep, surface, and achievement/strategic (Biggs, 2005; Birenbaum, 1997). Learning orientation consists of a strategy and a motive to achieve the learning outcomes of the subject content (Au & Entwistle, 1999). The responses must be content-analyzed and grouped into categories and subcategories. The percentage of respondents and/or responses for each category within each question or statement is given a specific category heading along with illustrative respondents' quotes (McDonald & Boud, 2003).

4.4.1. Generation of Categories and Subcategories for Student Pre-Intervention Questionnaire 1 (SPIQ1)

Table 4.12: SPIQ1 Categories and Subcategories

Category		Subcategory	
1	Suitability and Utility of the Methods of Assessment	1.1	Students acknowledged the suitability and utility of the methods of assessment.
		1.2	Students were aware of the impact of the assessment methods on their learning.
		1.3	Students have their own preferred methods of assessment.
2	Frequency and Timing of Methods of Assessment	2.1	Students recognized the impact of frequency of assessment methods.
		2.2	Students perceived an increase in academic workload as counterproductive to the learning experience.
3	Academic and Infrastructural Support	3.1	Students acknowledged academic and infrastructural support.
4	Provision of Student Feedback	4.1	Students recognized the educational benefit of feedback.

All the questions and statements in the Student Pre-Intervention Questionnaire 1 (SPIQ1), were used to develop these categories and subcategories.

Category 1. Suitability and Usefulness of the Methods of Assessment.

All students acknowledged the existence and usefulness of a variety of methods of assessment used in the Clinical Technology programme. Most students (83%) note that these diverse methods of assessment offer academic benefits, and the remaining (17%) cited management and administration issues as key factors that blurred their envisaged benefits.

Subcategory 1.1. Students acknowledge the suitability and utility of the methods of assessment.

The students' acknowledgement of the variety of the methods of assessment used in Clinical Technology programme subjects were supported by student responses when they repeatedly describe the methods as 'various', 'many', 'sufficient', 'other methods', 'different types of assessments', 'assessment methods used', including listing of methods of assessment. For example, '*I have been assessed on various methods of assessment such tests, essays, assignments and oral presentations*' (Student R); '*there are various methods that are used*' (Student C); '*uses sufficient assessment methods*' (Student D); '*The other method of assessment*' – (Student G). These varied and diverse methods of assessment give students the opportunity to vary their learning approaches and change their attitudes towards learning (McKellar, 2002). This notion is supported by Scouller (1998) when she reports that

assessment methods influence students' approach to learning and determine how much and what students learn. The effects of these methods of assessment have both a positive and negative impact on the perceptions as demonstrated by their responses such as *'they improve our thinking and also motivated us to pass very well'* (Student D); *'I managed to understand what was expected of me'* (Student Y); *'require research skills'* (Student AA); *'oral assessments boost our self-esteem and confidence'* – (Student AA). Students derived satisfaction when they saw the academic benefit of an assessment method and they prepared for what they expected to be performance requirements (Scouller, 1998). Methods of assessment also affect the attitudes and cognition of students as reflected by comments which claimed they boost self-esteem and confidence, and improve their thinking and required them to use their research skills. The negative impact of the conventional methods of assessment are evident in the responses such as *'the exams give us nervous breakdown, they stress me out cause you are being tested on a great volume of work'* (Student H), and *'written tests and exams I find them very intimidating'* (Student T). In retrospect, it is evident that conventional methods of assessment fail to develop assessment skills as students are not involved in assessment practices in higher education (Snow, 1998; Dietel et al., 1991).

Subcategory 1.2. Students' awareness of the impact of the assessment methods on their learning

The students' responses revealed that they interpreted the impact of assessment methods as *'beneficial and easily understood and gave a better understanding'* (Student Q), and *'test my knowledge and understanding and being able to apply knowledge'* (Student O); *'Challenging assessment that are introduced to us help us learn'* (Student L). These responses demonstrate that students consider these assessment methods as beneficial and that they assist in student learning, but students are not involved in assessment practices in higher education. The negative impact of conventional methods of assessment is illuminated in responses such as *'finding written test and examination very intimidating and most of the tests expect us to spew back information'* (Student T); *'final examinations are actually very difficult to do well in'* (Student U); *'I think exams must be cancelled'* (Student E); Student H's response was that *'lecturers expect us to phrase the answers as they appear in the book. If we put it in our own words, they disregard it'*.

Conventional methods of assessment inhibit students' thinking and engagement by encouraging them to memorize and rote learn what was taught in class and written in textbooks (Scouller, 2000). Furthermore, students are seen as recipients of pre-existing knowledge and lecturers are the transmitters of knowledge (McKellar, 2002). These expectations encourage a surface approach to learning and are associated

with conventional methods of assessment such as written theory tests and examinations. Student T's response was that '*the tests and exams expect us to spew back information*'. This student's responses show that because the students may feel constrained by the staff's expectations of seeing the lecturers' views written on paper, their curiosity is suppressed, and there is an impediment to their freedom and the capacity to explore and discover (Meldrum, 2002; Ramsden, 1992 in McKellar, 2002).

Subcategory 1.3. Students have their own preferred methods of assessment

Students' tendency is to have their own preferential methods of assessment, and their approach to learning is influenced by methods of assessment (Scouller, 1998). The comments such as '*tutorials and practicals are still the best as they help us understand the work further*' (Student A); '*tests are difficult ... assignments give us a chance to explore more about the subject*' (Student H); '*I managed to understand what was expected of me because I did practicals*' (Student Y). The comments from these students indicated that their preferred methods of assessment impact on their understanding of the subject matter. Student A demonstrated misinformation when referring to tutorials as a method of assessment. Student BB responded that '*practicals enable us to apply our knowledge and I don't think practical exam is necessary*'. The student preferred formative practical assessment and is opposed to summative practical assessment. The student commented that they learn best

through a hands-on approach i.e. tactile kinesthetic students (Putintseva, 2006), where they are able to apply their theoretical knowledge in the performance of their practicals, and feel that this may enhance their learning.

Some students acknowledge the negative impact of certain methods of assessment when commenting that *'exams give us nervous breakdowns, they stress me out cause you are being tested on a great volume of work'* (Student H); *'written tests and exams: I find them to be very intimidating'* (Student T); . Others find exams stressful and very difficult to a point where they suggest that exams should not be used at all, for example *'final examinations are actually difficult to do well in'* (Student U); and *'exams must be cancelled because we write tests and assignments'* (Student E). According to these students' responses, the examination is the least favoured method of assessment, and I suspect that the students' negative attitudes towards examinations is a result of the way examination are administered, that is, as a summative assessment within a timed period and the expectation to remember all learned knowledge of the subject within the 3 hours examination period. Students find this exercise daunting, stressful, and hectic. Notwithstanding, most students did well in the examination, and this may be attributed to students who were oriented to cues about what was rewarded in the assessment system and who resorted to spot learning certain exam questions. The knowledge and understanding of the subject may be assessed by continuous assessment with final summative mark constituting

of the average of an array of assessment strategies employed in continuous assessment.

Category 2: The Impact of the Timing of Methods of Assessment

The students' schedule of assessment should allow students enough time and space to prepare for various subjects' assessments and assist students to dedicate equitable effort to study for assessment. The scheduling of assessments should be organized and made available to students so that they can plan their engagement with learning material. Well-planned and organized assessment schedules contribute towards facilitation and the meeting of intended learning outcomes, and ultimately towards promoting learning for understanding for students (Jawah, 2003; Knight, 2002; Biggs, 2005; Osborne, undated). If the timing of assessment is disorganized, it impacts negatively on the students' attitudes and learning. They then approach the task of learning as an activity aimed at producing what the lecturer has taught them without trying to understand (Jackson, 1995).

Subcategory 2.1: Students' recognized the impact of the timing of methods of assessment.

The scheduling of assessment may have a positive or negative impact on students' learning. For example, *'tests for all annual subjects fall in the same week/within a*

week...creates a lot of pressure...which is very daunting and *'final examinations are actually very difficult to do well in ... due to the enormous amount of work that has to be covered'* (Student U). Student's responses show a lack of or little co-ordination of the total assessment tasks or awareness of when they are going to be administered (Soliman, 1999). If students are not allowed enough time to prepare for individual subjects assessment, they tend to adopt a surface approach to learning, and as a result, memorize information without understanding. If students feel pressurized by assessments, they fail to develop sophisticated conceptions of learning and resort to cramming learning material and concentrating on factual recall and reproduction. *'The fact that some of the tests were not spaced out was stressful. They need some order in a way the assessments are layout out'* (Student BB). Assessment schedules should encourage students to engage with learning tasks and construct their hierarchy of knowledge while studying. This will encourage students to put more emphasis on thinking and allow them to develop a more sophisticated conception of learning, rather than merely reproducing information which has been presented to them (Meyers and McNulty, 2002). Students have indicated that *'the department needs to be more organized in terms of test dates'* (Student K). Meyers & McNulty (2002) noted that by providing students with the assessment tasks in the first lecture, we ensure that students focus their energy on accumulating appropriate resources and knowledge. The disorganized assessment schedules and timing of assessment practice in the Clinical Technology programme results in students being under *'a lot*

of pressure to learn for all subjects simultaneously which is very daunting' (Student U).

Subcategory 2.2: Students' perceptions of an increase in academic workload

The students' responses indicated that having too much academic work impacts negatively on their learning process, and according to Clark et al., (2006) assessment drives student learning, and workload drives assessment. The department was advised that it needs to be *'more organized in terms of test dates so that pupils aren't suffocated with loads of work and learning'* (Student K); similar comment such as *'test and practicals should be set every 2 months or so, this would ease the workload'* (Student U); and *'cramming 2 to 3 sections before an exam or test is hectic and stressful'* (Student A). The antagonistic practice of traditional methods of assessment discourages students from managing and directing their own learning because assessment is lecturer-controlled and not student-focused. Increased academic workloads encourage students to prepare for what they expect to be the performance requirements, and this discourages deep approaches to learning (Fransson, 1977; Hammer et al., 2007)). Students will then have the tendency to memorize learning material and regurgitate it during tests and examinations, which inadvertently, becomes stressed, nerve-racking, and obstructive to the process of learning.

Category 3: Student Academic and Infrastructural Support

It is the responsibility of higher education institutions to provide daily academic support services including needs assessment, tutoring, peer mentoring and subject/programme reviews. The continuous reporting system is necessary for academic progress. The aim of the academic support services is to help students develop confidence in their abilities and to achieve their academic potential. At present, there is no dedicated unit to offer such services to students. The Centre for Higher Education and Development (CHED) caters for both staff and students, resulting in inadequate provision of services as outlined above.

Subcategory 3.1: Students acknowledge academic and infrastructural support.

Students appreciated the provision of infrastructure and technology as it supports them in their learning, academic achievement and performance. Comment such as *'assistance was good. There are libraries, computer laboratories and practical laboratories for assessment procedures'* (Student Z); *'computers were rendered for us to research our assignments'* (Student Y). The teaching strategies should be maximized to supplement and complement such support for students to realize a holistic approach to teaching, learning and assessment.

Most of the tutorial questions that are given to students are repeated in theoretical test questions that make it easy for students to pass the test and promotes a surface approach to learning. For example, *'I was given tutorials to prepare for the test'* (Student H); and *'we receive tutorials and guidelines as to how to pass the subject'* (Student U). The way tutorials are described by these two students, encourages the adoption of a superficial approach to learning and memorization, which is counter-productive in fostering a deep learning approach. Responses such as *'we receive hints and tips from the lecturers before an exam or test'*, and *'we are given tutorials so that we understand the way of answering questions'* (Student A). Students' perceptions are that tutorials are the lecturers' way of helping them pass the test and exams. This strategy may be adopted by the lecturers to ensure that the institution's expectation of increasing the pass rate is realized to the detriment of the achievement of learning by students. The academic integrity of the programme and institution is compromised at the cost of satisfying the management and education system's expectation of excellent throughput rates.

Category 4: Provision of Student Feedback

Learning theory suggests that learning is reinforced by prompt feedback and knowledge of results (Soliman, 1999). Furthermore, it involves motivating students by giving them feedback about how they performed in the assessment exercise (Rowntree, 1997). The latter is much more clearly perceivable by students as being

meant to help them learn. The faster the rate of feedback return, the more helpful the feedback is (Roberts, 2007; Soliman, 1999). Most of the students (83%) demonstrated a lack of knowledge of what feedback is.

Subcategory 4.1: Student recognized the educational benefit of feedback.

It is human nature, especially with students, to need to know whether they have satisfactorily communicated what they intended to communicate, whether what they said seemed right or wrong, appropriate or inappropriate, useful or irrelevant to the lecturer. The objective of feedback is to confirm or modify the present understanding or approach to learning (Rowntree, 1987). A number of students appreciated knowing what their performance had been on assessment tasks. For example, one response was that the feedback was of a high quality and that lecturers '*showed concern and tried to help in the most appropriate way*' (Student V). In response to the question 'in what ways did you use received feedback in your learning experience', the response was that '*it gave me confidence and self-respect*' (Student V). It is unclear what Student V meant by 'appropriate way', and I presumed it meant providing a model answer or an example of what an appropriate answer consisted of. When feedback is given, it must be positive, sufficient, explicit, prompt and constructive and must explain and justify the mark awarded. It is unclear what made the student feel confident and develop self-respect. When feedback is effective and helpful, students are able to recognize and identify their strengths and weaknesses,

especially when they are being made aware of where they can improve (Rowntree, 1987).

Feedback cannot be given on an ad hoc basis as demonstrated by the response that *'good feedback and constructive criticism when necessary'* (Student O), who felt that feedback was used as part of a learning experience *'through one-to-one feedback'*. One of the students had this to say about the kind of feedback received: *'was good in a way that the lecturer tells us what is expected of us'* (Student P). Student Z and Student AA concurred with the aforementioned students' responses when they respectively responded that *'lecturers set aside time for consultation'* and *'lecturers offered us consultation times if we encountered problems with a module'*. It is evident that there is a misunderstanding among the students regarding what is understood by feedback, and this is being encouraged by conventional methods of assessment which does not augur well for students learning experience.

Student Y's response about what type of feedback is given by the lecturer was that *'they marked and returned the assignment and tests and we revised to see where we went wrong and corrected our work'*, and *'most of the time, they just put the mark on the assignment, but some give the assessment back and make us redo it according to our capabilities'* (Student T). It is apparent that there is misinterpretation of the purpose of feedback from both the lecturer and students. Students are expected to correct their mistakes and redo their assignment without helpful and

positive feedback to enhance learning. When students are given marks, they regard it as 'feedback'.

4.4.1.1. Summary of Pre-Intervention Questionnaire Finding.

There is a general consensus that the Clinical Technology programme has an array of assessment methods and caters for most students' preferred methods of assessment. The most preferred assessment methods are essays and practicals. In practicals, students are expected to perform a clinical procedure, for example, the measurement of blood pressure. They must demonstrate a level of understanding of the associated anatomy, physiology, pathophysiology, and a basic knowledge and understanding of biomedical medical instrumentation systems in use when performing the procedure, i.e. baumanometer and stethoscope (Birenbaum, 1997). The least liked method of assessment is the examination where they cite stress, work overload, time constraints as some of their reasons for feeling negative about them. Some would prefer that examinations to be cancelled. The analysis of student responses has indicated that the influence of conventional assessment methods is varied and has both beneficial and detrimental effects on the students' learning process (Struyven, et al., 2002). Once students are allowed to be involved in assessment practices in higher education, for example, participating in self and peer assessment, these misconceptions might be minimized.

4.4.2. Generation of Categories and Subcategories for Student Post-Intervention Questionnaire 2 (SPIQ2)

Related questions and statements from the post-intervention questionnaire were used to develop analytical categories and, indirectly, students' content-analyzed responses as subcategories. I used a general inductive approach to interpret and analyze individual responses and a constant comparative method by grouping and discussing similar data and discovering patterns that contextualized a central phenomena, i.e. "in vivo coding" (Thomas, 2003; Scott, van der Merwe & Derek, 2005; Strauss & Corbin, 1990:69). According to McKellar (2002), the implementation of student self and peer assessment as instructional strategies develops critical reflective abilities in students who are then in a position to make personal judgements on their progress. Inadequate reflection on these strategies will limit student gains and may create far-reaching problems, while deliberate attention to them amplifies the power and precision of self and peer assessment as instructional strategies. The aim of these strategies is to make the assessment requirements explicit to students and in so doing to empower them to meet or exceed the requirements.

Table 4.13: SPIQ2 Categories and Subcategories

Categories		Subcategories	
1	Feelings about self assessment experience.	1.1.	Students valued working independently.
		1.2.	Students acknowledged their strengths and weaknesses.
		1.3.	Students recognized their capabilities.
		1.4.	Students appreciated the development confidence and competence.
2	Feelings about peer assessment experience.	2.1.	Students recognized the academic benefit of peer assessment.
		2.2.	Students acknowledged advancement of skills.
		2.3.	Students recognized their strengths and weaknesses.
3	Satisfaction with self and peer assessment.	3.1	Students appreciated the impact of self-assessment.
		3.2	Students valued the impact of peer assessment.
4	Rating of self and peer assessment.	4.1	Students recognized the importance of self-assessment exercise.
		4.2	Students recognized the importance of peer assessment exercise.
5	Assessment criteria and marking rubric.	5.1	Students appreciated the role of assessment criteria.
		5.2	Students recognized the usefulness of the marking rubric.
6	Perception regarding peer feedback.	6.1	Students recognized the usefulness and helpfulness of peer feedback.
		6.2	Students recognized the impact of peer feedback

Category 1: Feelings about self-assessment experience.

I included self-assessment as part of this research study to evaluate its impact on students' learning and the development of the basic assessment skills. Some researchers have reported that students who are involved in self-assessment are able to assess and monitor their own learning performance, and progress and this can provide a mechanism to improve and appraise their learning (Noonan and Duncan, 2005; Falchikov & Boud, 1989). Other researchers have confirmed that students lack the necessary skills that are academically necessary to write essays and reports, and assert that self-assessment is a transferable skill and a principal part of the student learning experience (Wilson, 2002; Freeman et al., 2003). The majority of students (74%) felt that their experience with self-assessment was a rewarding and fulfilling one. A minority of the students (26%) did not support self-assessment.

Subcategory 1.1: Students valued working independently.

Responses such as '*self-assessment is good because you learn to do things on your own and it helped me to do my work properly, because at the end, I am the one who's going to assess my work*' (Student B), demonstrated his/her acknowledgement and recognition of independence, acceptance of responsibility to do academic work correctly, and the willingness and recognition of involvement in

assessment practice in higher education. Such involvement in assessing one's own work performance and monitoring one's progress, as in long-term involvement in self assessment, may ultimately lead to meaningful lifelong learning, and improved achievements of learning outcomes. This will produce responsible, self-regulated and self-directed learners (Falchikov & Boud, 1989; Noonan & Duncan, 2005; Sadler, 1998). Student I's response was that when one *'works as an individual you can actually discover problems that you did and correct yourself'*. Student C responded that *'assessing my own essay, I could see my mistakes, and I improved my marks'*. Discovery of own problems and mistakes, correcting them may lead to self-learning and self-improvement. These responses were corroborated by interviewees when they commented that they were *'able to see what they wrote and could have been written better'* (Student F), and *'I was able to see where I went wrong and will be able to avoid the same mistakes in my following assignment'* (Student C).

Involvement in self-assessment exercises made students aware of their mistakes and weaknesses when writing their assignment and assisted students to avoid those mistakes and improve on their weaknesses. In so doing, their subsequent assignments will show improvement and result in achievement of higher marks in future assignments. The paired sample statistics (Table 4.1.) showed an insignificant decrease in the mean marks from 71.63 (E2SA) to 70.92 (E3SA). Given the nature of the small-scale nature of this study, one cannot expect the marks to improve

instantly, but with more involvement in self-assessment, the expectation is that marks may improve. Student E responded that *'when I assess myself in learning, I feel positive about it. I am able to accept when I do not understand something and try to learn it'*, and *'allows me to look at my views and realize my mistakes and misunderstandings for future improvement'* (Student V). The interviews yielded similar remarks when students commented that *'I was able to find my own faults and therefore, I was able to correct my mistakes. It helped me to focus on my weak points so that I am able to perform at my optimum in my next assignment'* (Student C). Students' responses indicated that they felt it was their responsibility to learn from their mistakes and produce good quality academic work in the future. It has been my experience that most students submitted their academic work without first reviewing it to ensure that their work was of a good standard and quality. Self-assessment encourages them to draft and review their own academic work before it is submitted for marking. Research evidence suggests that self-assessment contributes to higher achievement, better performance and improved behavior in future academic activity (Ross, 2006).

However, some students said that involvement in self-assessment is *'not effective because the same thing that you write is what you will assess, so it will be difficult to see your mistakes'* (Student O), and they found it *'hard to assess my own views'* (Student Z). Student F had this to say during the interview: *'I don't like it, it is unprofessional and lecturers are to mark the essay'*, and *'I do not like self-*

assessment because I will obviously gave myself high mark' (Student B). The students' responses indicated that it might be that self-assessment was introduced to students without adequate preparation or training and the time required to cover subject content in a shorter time period in a semester. These responses may have jeopardized students' opportunity to be motivated, to practice and learn from the self-assessment process, so that student develop their abilities to assess their own academic performance and progress which may have resulted in better future academic work (Boud & Falchikov, 1989, Brown et al., 1994; Freeman et al., 2006; Venables & Summit, 2003). The comments by Student O that *'it will be difficult to see your mistakes'* is evidence that the student may have missed the opportunity to learn from his/her own mistakes and through trial and error, that is, learning by doing through involvement in self-assessment (Race, 2001). These are some of the limitations of self-assessment when it is being done under less favourable conditions and with implicit assessment criteria which students have difficulties understanding (McDonald & Boud, 2003). Others were 'annoyed' and defiant: *'It is terrible because you are the one who was writing the essay, and everything I wrote was right'* (Student F).

Subcategory 1.2: Students acknowledged their strengths and weaknesses.

The responses such as *'we get to learn from mistakes done by us and improve them'* (*sic*) (Student K); *'I am able to accept if I do not understand something and try to*

learn it' (Student E); and *'the result of that assessment is purely my work and therefore I have no one to blame or praise but myself' (sic)* (Student Y). Students' responses illustrated that their involvement in self-assessment gave them the opportunity to enhance their potential in relation to making judgements and to accept their accomplishments and shortcomings. Students have the ability to predict and estimate their own accomplishment as compared to lecturers who may have restricted knowledge about the students' capabilities. Students' responses demonstrated that they are capable of taking ownership of their learning processes and recognize their strengths and weaknesses in their own work, and this makes them better students who are responsible for their own learning (Brown et al., 1994; Wilson, 2002; Zariski, 1996). By acknowledging their strengths and weaknesses, they are committed to the learning outcomes, rather than dismissing them as the ramblings of an inadequate or biased lecturer and this helps develop students into self-directed and self-regulated learners (Brown et al., 1994; Boud, 1992; Schon, 1993 in Boud & Falchikov, 1989).

The positive attitude demonstrated by students supports the reasons why students should be involved in the assessment of their own work, actively using and developing their own assessment skills. Assessment should be treated as part of learning rather than as an adjunct to it. Superficial attempts to regurgitate information are then replaced by a greater commitment to understanding and applying information (Brown et al., 1994). Locker (2003-2004) assert that with self-

assessment, as with any other ability, understanding increases with practice and further understanding refines practice. It would have been desirable for this cohort of students to continue with self-assessment in all subjects going forward.

Subcategory 1.3: Students recognized their capabilities.

The response that self-assessment '*expanded my assessment on all my choices and it showed my skills were not limited*' (Student M), suggest that students may have greater insights into their own capabilities and achievements than generally thought, especially about the development of their ability to judge their own performance which results in general progress of their achievement (Boud and Falchikov, 1989; Brown et al., 1994; Loacker, 2003-2004). The students' comments written on SACF (Annexure D) in relation to Essays 2 (E2) and 3 (E3) demonstrate some progress in their learning (Topping, 1998). For example, recognition on E2 that '*headings and numbering*' (Student A), were the areas that needed improvement, and on E3 the same student commented that '*so far I think there are no areas that I need to improve on*'. Quantitative data (Fig. 4.3.) support this student acknowledgement that his or her academic performance had improved with the mean percentage mark showing improvement from 56% (E1), 66% (E2) and 69% (E3). Another student's comments on E2 and E3 was that more clarity on what is required in section dealing with content of the AMSR (Student K), as it carries fifty percent (50%) of the total

marks for the essays, and I observed a slight increase in his or her percentage mark obtained (70% - 75%).

Such assessment skills promote independence and interdependence amongst students and encourage interaction and information sharing (McGourty et al., 1998). Comments such as *'I did not like it, as I felt that I could not be objective, as it was my essay and quite frankly I wouldn't want a low mark'* (Student S); *'pupils tend to favour their own work'* (Student X), and *'everybody wants to give themselves higher marks than usual'* Student P). These students' comments indicate that conventional methods of assessment are generally dubious about their objectivity (Jawah, 2003; Orsmond (2004). Some of the students' comments demonstrated a lackadaisical attitude towards self-assessment, potential bias and subjectivity when responded that *'it's not actually fair because you become more lenient on your things'* (Student J). This behaviour may occur with inexperience and unqualified assessors in self-assessment (Wilson, 2002). It is clear that the ability to assess is a core educational skill which is necessary for lifelong learning and it is desirable to develop this skill as part of higher education (Boud, 1994). The small-scale and once-off nature of this study could not, convincingly, have the desired impact on students' perceptions of the intervention. Loacker (2003-2004) noted that self-assessment is an ability that is essential to effective lifelong learning, and skills that the students have to systematically develop. She further argued that self-assessment enhances learning and extends the responsibility that students assume for their own education if they

take self-assessment seriously and work to develop it with increasingly sophisticated understanding.

Subcategory 1.4: Students appreciated the development of confidence and competence.

Loacker (2003-2004) & Freeman et al., (2006) reported that the capacity to assess the status of one's knowledge and expertise, to enhance it, and to realize what is required to happen next, are indispensable individual general characteristics of a student in university education. The responses of students acknowledged these authors' assertions in comments such as the following: *'self assessment does give you the correct information because one assess according to the understanding, and not what is required by the assessor'* Student Q), and *'self assessment is good because you learn to do things on your own'* (Student B). When students understand what is required and they are able to do things on their own, then one can say that these students are able to identify the standards and criteria to apply to their work. They are then in a better position to judge their performance in ways that influence and inform their future learning and performance (McDonald & Boud, 2003; Palomba & Banta, 1999). For example, comments such as *'allows you to look at your own views and realize your mistakes and misunderstanding for future improvement'* (Student V), and *'I got to see my mistakes and learn how to improve and perform at my ultimate best'* (Student K) indicated that students are willing and committed to

improve their future work when they better understand learning outcomes and assessment criteria (Ross, 2006).

If the intention of assessment is to support self-directed learning, then part of that learning must develop confidence and competence in self-assessment. Students become responsible for checking whether their theories and actions are effective and correct, and are required to take appropriate and relevant action if they are not. The students' comments demonstrate their willingness to engage in independent and self-directed learning. Involvement in self-assessment requires some form of interpretation, judgment, and development (Lester, 1995; Taylor & Marienau, 1997).

Category 2: Feelings about peer assessment experience.

The majority of students (69%) described their feelings about their involvement in peer assessment as a learning experience and a worthwhile enterprise. Topping (1988, 1996) reported that 88% described peer assessment as a conduit to learning, an interactive and participative learning process, and students felt responsible for their own learning. However, a minority (31%) of students in my study expressed skepticism about peer assessment, and perceived lecturer assessment as more authentic and trustworthy. The 31% who felt skeptical is large and can be attributed to the small-scale and short-term nature of the study, and I believe that if these students were given more time to do peer assessment exercises, this percentage

may significantly decrease. The 19% discrepancy in my findings, compared to Topping's (1988) may be attributed to the inadequate training of the student assessors, misunderstanding of assessment criteria and inappropriate use of marking rubric.

Subcategory 2.1: Students recognize the benefit of peer assessment.

Most students felt that their involvement in peer assessment makes them *'learn from other students and get different opinions'* (Student I), and *'allows me to gain insight on the things I neglected in my own essay, as well as getting an idea of how other people's perceptions and views differ from mine'* (Student V). The student recognized the academic benefit of peer assessment as it promoted deep and reflective learning as demonstrated in the Quality Spiral for Assessment model. The peer feedback emanating from peer assessment encourages peer learning as demonstrated by comments from student assessors when giving peer feedback, for example, *'there is improper numbering, inconsistent font and content information is not based on the topic'* (Student N), and *'layout not well presented, lack of page numbering and conclusion not understood'* (Student V). Peer assessment encouraged collaboration among students and in this way students learn from each other. Collaborative learning that takes place in a non-threatening environment not controlled by the lecturer is encouraged (Freeman et al., 2006). The comments from students concurred with the perception of sharing educational ideas and seeing what

other students have written, which inadvertently aids in the process of learning and assessment (Topping, 1996; Struyven et al., 2002). Students' responses showed they appreciated their participation in peer assessment because it allowed them to *'get the chance to share ideas and discuss the issues'* (Student B), and *'students share their point of views'* (Student A), with other students and in that way learn from each other. Similar comments from the interviews echoed the same sentiments, for example, *'see class mates viewpoints and learn from them'* – (Student E).

Students noted that they benefited academically from seeing other students' approaches to learning as indicated by Student D's response that *'I get the opportunity to see and associate my methods with other students'*. This gives students the confidence to collaborate with other students as opposed to competing with each other. In so doing, social and professional skills are being promoted (Brown et al., 1994; Langan & Wheeler, 2003; Falchikov & Goldfinch, 2000). Other comments from students illustrated that peer assessment may contribute to conceptual understanding of the subject. For example, students *'read and assess other students' opinions and thoughts'* (Student AA), and *'viewing other students thoughts and helping in increasing my knowledge'* (Student M). Student comments on PAFF (Annexure E) played a role in focusing them on the importance of self-managing and self-directing their learning by moving the balance of assessment from the sole controllers, the lecturer and institution, to the students. For example, students commented that peers had to *'read assessment criteria and follow*

instructions' (Student DD), and *'follow assignment guidelines that were given to us by our lecturer that would help us a lot'* (Student N). It is rewarding to see that the majority of students appreciated assessing the academic work of other students and learning how other students approached their academic work (Sahin, 2008; Hammer et al., 2007; Wilson, 2002).

Some students, however, had a different opinion and were doubtful about the legitimacy of students assessing the academic work of other students because they lacked the assessment expertise and experience. This opinion is supported by the following response, *'it is unnecessary because we all don't have experience or knowledge on whatever subject we are assessing each other on'* (Student D). This student's remarks were supported by Student S's response that *'I was very unhappy due to the fact that many students base their marks on personal feelings rather than on academic knowledge'*. Student P responded *'no to peer assessment. If the person marking your assessment doesn't like you, they will give you a low mark, it is unfair'* and *'we all don't have the experience or knowledge on whatever subject we are assessing'* (Student B). These students' comments demonstrated to me that, as much as I am keen to encourage peer assessment, there are limitations and prejudices involved in the process. For example, it could have adverse consequences for students, their interpersonal relations, raise doubts about the assessment practices that involve students assessing other students' academic

work, and negative friendship effects, especially when it contributes to a summative mark.

The academic potential of peer assessment outweighs any potential or actual limitations as raised by these students, as shown by the majority of students (69%) who felt that their involvement in peer assessment was a worthwhile enterprise. Furthermore, the majority of students (69%) rated peer assessment as an important exercise that encouraged collaboration and peer learning. What I should do, or any other researchers in the future, who study peer assessment, is to delimit these concerns by looking at other strategies to overcome or lessen these doubts and uncertainties. One way would be to maintain the anonymity of both the writer of the essay and the assessor. In this study I did not maintain anonymity because I relied on students to exercise confidentiality, responsibility and honesty, especially since these qualities are the attributes expected of health professionals.

During the interviews of six students, half of them perceived peer assessment as an enterprise that they can be involved and take pleasure in, for example, peer assessment *'make us to understand how lecturers assess our work, not easy, but it can be done. I enjoyed it'* (Student D), and *'it was beneficial'* (Student C), and *'see classmates viewpoints and learn from it'* (Student E). Some students, however, felt that it was *'not a good idea because students are not qualified to assess'* (Student A), it was *'biased and unfair'* (Student F), and *'student do not use assessment*

criteria and marking rubric and one ends up with a low mark' (Student B). In terms of our interview selection, the students who enjoyed peer assessment were two high achievers and one middle achiever, and those students who did not perceive peer assessment as beneficial activities were the two low achievers and one middle achiever. It is evident that high achievers appreciated peer assessment, sharing of ideas and approaches to tackling academic tasks, and middle and low achievers are skeptical about their work being seen and assessed by other students, which may deprive them of benefiting from the learning opportunities peer assessment have to offer.

Subcategory 2.2: Students acknowledged advancement of skills.

Peer assessment increased the students' learning of a variety of generic transferable skills and subject academic knowledge, for example, peer learning, critical thinking, reflection, communication and assessment skills (Juwah, 2003; Divaharan & Atputhasamy, 2002). The responses such as *'peer assessment helps to me to gain more knowledge about the learning process and it helps me with my communication skills'* (sic) (Student T), and *'exchanging views with peers and reflecting on my mistakes to make room from improvement'* (sic) (Student V). Students recognized their own limitations. Some students had reservations about their inexperience but could see the benefits as is evident from the following response, *'it is difficult when it comes to a mark allocation, but at the same time, it is good and it improves my marking skills'* (Student B), while others appreciated the peer assessment exercise

but accepting their restrictions, *'it is easy to assess people but I may not have the skills to assess properly'* (Student Z). The development of student essay-writing skills and refinement of their basic assessment skills was beginning to materialize as the result of students' involvement in assessment practices in Psychodynamics 1 (Falchikov and Goldfinch, 2000; Boud et al., 1999). A deep approach to learning and peer learning may be judged in terms of its effect on subject content learning as reflected in assignment essay results. The effect size calculation showed that there is a small absolute effect size that indicated that there is a strong correspondence between students' and the lecturer's marks (Table 4.6.). The paired sample test (Table 4.7.) shows the p-value greater than 0.05, which implies that the mean values are similar. The evidence is that students have developed some basic skills in assessing other students and as well as the development of essay-writing skill as evident in the absolute effect size.

Subcategory 2.3: Students recognize their strengths and weaknesses.

Students' comments attest to the principle of self-regulated learning and the development of the ability to recognize their potential, as well as problematic academic performances. However, some students still have reservations about the reliability of peer assessment, for example, *'I like peer assessment because sometimes it helps me to see where I am strong and weak, but it shouldn't be considered for year mark'* (Student R), and *'it is easy to assess people but I may not*

have the skills to assess properly' (Student Z). The acknowledgement by Student R of a lack of assessment skills is supported by a p-value less than 0.05 in the initial essay marking, indicating a significant difference in the lecturer's and students marks (Table 4.9. and Fig. 4.4.). The effect size calculation (Table 4.8.) indicated overmarking (76%) in the self-assessment exercise when compared with lecturer and peer assessments, and undermarking (63%) in the peer assessment exercise when compared with lecturer and self assessments. The students responses indicated that it would be desirable to use students' assessment formatively to enhance learning because of their involvement in and benefit from peer assessment. Topping (1998) and Brown et al., (1994) reported that peer assessment assists students to identify their strengths and weaknesses, and develop effective self-learning characteristics resulting in autonomous learners.

The response that *'knowing how others elaborate their state of mind help me to contrast and compare my state of knowledge'* (Student K), and *'it let me know what other students are thinking and let me also know where I rank with other students in class'* (Student P). These responses are evidence of the impact peer assessment had on students' learning especially when students compare their knowledge and understanding of the academic work with other students so that they are able to improve. Peer assessment has given the students an opportunity to share and gain knowledge in an interactive and collaborative way so that learning is positively directed and is productive (Boud, 1986; Schon, 1993 in Boud & Falchikov, 1989).

However, some students expressed concerns that peer assessment encouraged underhandedness when they responded that *'it is unfair because the students can be biased in assessing fellow student'* (Student R), and *'anybody wouldn't want to belittle their friends, therefore, they would give their friends a good mark'* (Student X). Students' responses expressed some reservation regarding the inclusion of the mark in summative assessment confirming the suspicion of bias and leniency reported in literature (Nilson, 2002-2003; Orsmond, Merry, & Reiling, 1996). However, some research studies showed a fairly high agreement between students' and lecturers' assessments, as well as acceptable levels of credibility and trustworthiness (Topping, 1998). This study too shows that there is greater resemblance, similarities and evidence of agreement in student (self and peer assessment) and the lecturer assessment when the effects size (Table 4.10) was calculated. Furthermore, the p-value in pair 1 and 2 (Table 4.11) are greater than 0.05 (0.062 and 0.736), interpreted that the mean values are the same, with the exception of pair 3 (Table 4.11) with p-value of less than 0.05 implying that the mean values are dissimilar.

Subcategory 2.4: Student valued the impact of peer assessment.

The students' responses on how peer assessment impacted on their learning is manifested in students' responses such as, *'it helps me to learn about the way they perceive things, and I learn from it'* (Student E), and *'it is right and a nice thing to do,*

because as I said before, you can actually learn from others' (Student I). These students' responses confirmed the notion of collaborative and peer learning that uses teaching and learning strategies through which students learn with and from each other without the immediate intervention of a teacher. Furthermore, peer learning promotes greater conceptual and procedural gains for students resulting in greater enjoyment of the learning task, and encouraging stronger persistent learning (Boud et al, 1999; Cooper, 2005). Improved students assessments through peer learning is verified to some extent by the observable decrease in peer assessment undermarking from 63% to 48% and the decrease in overmarking in self-assessment from 76% to 66% between Essay 1 and 2 (Table 4.8 and Table 4.10). This research study seems to show that the students' academic performance has slightly improved because of the impact of peer assessment as evident in the increase in the mean percentage marks from 66% (E2) to 69% (E3). It is acknowledged that this is only an indication of the possibility and it is too soon to convincingly report. There is need to a more sustained and large improvement over time to make any serious claims. Therefore, peer assessment and peer learning are mostly judged in terms of their effect on subject-content learning and assessment skills development, which may be reflected in the subsequent assignment essay (Boud et al., 1999; Falchikov & Goldfinch, 2000).

Category 3: Satisfaction with self and peer assessment

The responses to the question: '*What did you enjoy the most during the self and peer assessment exercise?*', the majority of students took pleasure in the self (70%) and peer (74%) assessment exercises. The majority of students enjoyed, showed acceptance of and satisfaction in self and peer assessment (Li & Steckelberg, 2006). Self and peer assessment can be used to improve student learning and performance and are outstanding variables which influence the students' approaches to their studies and the content of their learning (Noonan & Duncan, 2005; Scouller, 1997). The efficacy and accuracy of self and peer assessment accrue when the lecturer and students negotiate assessment criteria and expected learning outcomes are clearly defined. As a motivating factor, formative assessment marks should contribute to the summative mark.

Subcategory 3.1: Students appreciated the impact of self-assessment

The students' responses such as '*going over your own work and correcting mistakes*' (Student M), '*recognizing my mistakes*' (Student L), and '*obtaining new methods without any assistance*' (Student A), attest to the students' appreciation of their involvement in assessment and their ability to assess their own intellectual capacity and proficiency, especially recognizing their inaccuracy when completing a particular academic task and being capable of rectifying their inaccuracies (Loacker, 2003-

2004). The identification of one's weaknesses will provide the means to improve learning and such an attitude will boost one's confidence (Hammer et al., 2007). The ability to evaluate the state of one's understanding and competency is further supported by the response from Student K who *'felt like a boss'*, demonstrate self-confidence and a positive feeling about his/her ability to regulate and be responsible for his/her own learning (Palomba and Banta, 1999).

In terms of marking, some students showed they had integrity when they responded that *'I try to mark myself correctly'* (Student F), and *'I gave my honest opinion'* (Student D), while others indicated that marking for them encouraged deception when they responded that *'increasing your marks because you can and realizing that I have given myself a high mark and I don't understand the work'* (Student P). The responses from these students indicate that self-assessment can be reliable when students focus on the achievement of learning outcomes, or it may be unreliable when students increase their marks to pass. Student P's response shows some kind of inflated perceptions of the accomplishment and is motivated by self-interest which threatens the reliability of marking (Ross, 2006).

Subcategory 3.2: Students appreciated the impact of peer assessment

The responses that *'I got to see how and hear what other people think and how they understand things'* (Student L), and *'other students are brighter than you are, and because of that you get a chance to gain new knowledge and information'* (Student A), are testimony that peer assessment had a positive impact on their learning by gaining knowledge and understanding of the academic work (Hammer et al., 2007; Topping, 1998). Engagement in peer assessment encouraged students to construct knowledge and make meaning during shared discourse and relations with other students (Falchikov & Goldfinch, 2000; Gibbs & Simpson, 2004-5; Langan and Wheeler, 2003). The students enjoyed being involved in the peer assessment exercise as they enjoyed *'sharing ideas as students and having discussions'* (Student B), and *'the interaction between your friends thoughts and points and your personal thoughts on the topic'* (Student X). Discussing and sharing essay topic information promotes learning from peers and students are able to feel confident in tackling future academic tasks and will be eager to seek advice and help from peers, without feeling ashamed and uncomfortable. Similar responses were reverberated during interviews show students that they learnt from other students in peer assessment and identified their shortcomings and limitations.

However, the responses from some students indicated that they were not ready and confident enough to be involved in assessment of others and their own academic

tasks. Student L responded that *'not knowing what to do when you don't understand'* is indicative that the minority of students (4% in both self and peer assessment) did not understand or develop the ability to make judgements, and this could be attributed to the inadequacy of training to the level where students would feel confident in their ability to self and peer assess. The responses such as *'I ended up not on good terms with my peers'* (Student D), and *'when you get marks back and not all the marking is done in an efficient way'* (Student C), coincided with the preceding comments from Student L which pointed to the inefficiency of self and peer assessment. The limited time and the small-size nature of the study might have also contributed to students' deceptive behavior and attitude. During the interviews, Student E responded that *'I tend to doubt students' judgement and disagree with them'* and in her own assertion, responded that when she was giving feedback, she *'avoided to ruin friendship and could be seen as a bad person'*. The responses that self and peer assessment *'takes too long and is time consuming'* (Student X), and *'lots of work which requires time'* (Student J), demonstrated students conviction that assessing is lecturers' work since they are better equipped to assess students' academic work. It also somehow concurred with Student O's view that *'it will be difficult to see your mistakes'*. The students' subjective responses to the self and peer assessment exercise emphasized its fairness because it was assessment that was done by a greater number of people, and the formative utility of feedback (Topping, 1998:252).

Category 4: Rating and Inclusion of self and peer assessment.

Table 4.14: Rating of Self and Peer Assessment

	4. Very important	3. Somewhat important	2. Not very important	1. Not at all important
SA	48%	17%	31%	4%
Total	65%		35%	
PA	19%	50%	27%	4%
Total	69%		31%	

Quantitative data analysis in Table 4.3. shows that 65% and 69% of students rated self-assessment and peer assessment respectively, as important exercises that encouraged collaboration among students, thereby enhancing peer learning, especially through academic discussion when students were providing feedback. Furthermore, involvement in peer assessment exercises, improved social, communication and assessment skills which are important for professional work post-graduation (Brown, et al., 1994). This study has shown that peer assessment seems to be a preferred method of assessment when compared with self-assessment.

The majority of students (48%) agreed that peer assessment should be included in all Clinical Technology subjects, and only 44% agreed to the inclusion of self-

assessment. 17% of the participants totally rejected the inclusion of self and peer assessment, and this can be attributed to the students' understanding that marking is the academic staff responsibility and student assessors are biased and inexperienced. 22% did not tick any box.

Subcategory 4.1: Students recognized the importance of self-assessment exercise.

The majority (65%) of students' responses recognized the importance of self-assessment in their learning experience. For example, '*I was able to improve myself*' (Student K), '*be able to analyze our own work*' (Student U) and '*you get the chance of looking over your work*' (Student N). These students' responses are indicative of the impact of self-assessment in encouraging them to review and reflect on their essay before submitting it to the lecturer and in that way, any mistakes that might have been made during essay-writing can be corrected before submitting. It has been my experience that students do not review their work before submitting, it is for this reason that their academic task is presented in a muddled manner. Self-assessment also transformed their role from being passive recipients to active agents of their own learning. Their positive responses to active involvement in assessing their academic performance and achievement is encouraging, and is indicative that perhaps we should include them more in assessment practices in higher education in other programme subjects (Boud & Falchikov, 2005). Another

reason to encourage students to be involved in self and peer assessment may be the opportunity to redraft and resubmit their essays for a better improved mark and thus further enhanced learning. The research study has shown that there is a slight improvement in the difference mean values of 0.71 between E2SA (71.63) and E3SA (70.92) as indicated in Fig. 4.4.

The minority (35%) of students were unimpressed with self-assessment as shown when they commented that '*students are biased when it comes to themselves*' and indicated that he/she '*didn't enjoy it at all*' (Student S), '*because you benefit nothing from the same mistakes*' (Student O), and '*you would not see the mistakes because it will be the same person*' (Student H). The responses cited self-assessment as being biased, subjective and non-beneficial because one cannot learn from your own work and students have the inclination to inflate their marks, referred to as 'mark sharks' (Ross, 2006).

These students made rational and objective judgments about their own unfair assessment of their work and weaknesses. The other point that may have influence the students to increase their mark deliberately was that they knew that the marks were part of the final summative mark, but they also knew that if their self and peer assessment marks differed from the lecturer's mark by 10%, their marks would be reduced by the dividend mark. This strategy was intended to discourage students from increasing their marks. The lecturer's assessment mark was regarded as the

referential mark, and this has been the common practice in most research papers on self and peer assessment. The rationale is that the lecturer is experienced, trained and fully understands the expected learning outcomes (Ross, 2006).

Subcategory 4.2: Students recognized the importance of the peer assessment exercise.

Most students (69%) who elaborated on their rating for peer assessment, had varied positive responses such as *'it allows me to have other people view my work, so it gave me a guideline on how I could improve my work'* (Student U). Students can use peer assessment to reward friends or collude in awarding high marks to each other, for instance, *'anybody wouldn't want to belittle their friends, therefore they would give their friends a good mark'* (Student X). Students were influenced by the friendship effect when they were awarding the marks, that is, some felt compelled to award high marks to their friends and to those that they liked or fancied.

The response that students *'learn from each other'* (Student I), and *'some students are brighter than others so that one gets the chance to acquire new knowledge and information'* (Student A), indicated that peer assessment aims to improve the quality of student learning experience by integrating learning and assessment and students felt empowered as it encouraged interactive and collaborative learning (Trahasch, 2004).

Interviews with a selected group of students yielded responses that self and peer assessment increased their confidence, and decreased their level of anxiety, and, in addition, they improved their knowledge and the ability to communicate (Topping, 1996). For example, '*students have different interpretation of essay requirement, and as a result, learn from them*' (Student B), and you are able '*to see viewpoints other students' and learn from them*' (Student E). This demonstrated the value and usefulness of collaborative and peer learning.

A minority of students disapproved of peer assessment as evident in their responses that peer assessment is '*unfair, as learners can be biased in assessing fellow student*' (Student R), '*not all students can attain the ability to assess a fellow students*' (Student AA), and '*because the lecturer end up not using peer assessment results*' (Student D). I acknowledge that I did not expect these students to perfect their assessment skills as this was a fairly small-scale study and the objective was to involve them in the study to develop their understanding of the assessment processes in higher education and to refine their already existing evaluation skills. However, other students alluded to problems with implementation, peer pressure and objectivity when they responded that peer assessment is '*time-consuming, and the student cannot be objective when it comes to friends*' (Student S), and '*takes too long and is time-consuming*' (Student X). During the interviews, students reiterated that bias, lack of fairness and "the friendship effect" played a role. For example, comments such as '*students assess on who they know*' (Student C), '*I disagree*

because it is biased and unfair (Student F), and *'marking people down'* (Student Y). Student Y went further to point out that it is the lecturer's responsibility to assess, *'subjects need a lecturer to assess'*. Student Y does not perceive peer assessment as a worthwhile enterprise that students should be involved in. This shows that this student is totally unaware of the academic benefits of peer interaction and learning as a consequence of peer assessment.

Subcategory 4.3: Students agreed to the inclusion of self and peer assessment.

There is general agreement that self and peer assessment should be included in all the subjects in Clinical Technology programme, with more students expressing a preference for peer assessment as compared to self assessment (inclusion: 44% SA and 48% PA; satisfaction: 70% SA and 74% PA; rating: 65% SA and 69% PA;) The only time SA (74%) ranked higher than PA (69%) was in relation to students' feelings about their experience with self and peer assessment. This could be attributed to participants personal comfort and security with own work. When students were asked to provide a brief support statement to their answer, their comments were repeating all of the responses in the questionnaire ranging from positive to negative responses. For example, on the positive side: *'enhancement of skills'*, *'building confidence'*, *'interaction and discussions'*, *'spreading ideas'*, and on the negative side: *'not important'*, *'biasness'*, *'not useful'*, and *'lecturer to assess'*. Li and Steckelberg (2006) reported that peer assessment is the preferred method of

assessment by most students (85%) as compared to other methods of assessment (Li and Steckelberg, 2006), and the data from this research study seem to corroborate this assertion.

Category 5: Assessment criteria and marking rubric.

The use of assessment criteria may increase the accuracy of self and peer assessment to a degree and reduce assessors' bias and increase accuracy of marking as noted by some students when they responded to the rating of self and peer assessment. The students' feedback on the usefulness of both assessment criteria and the marking rubric was overwhelmingly positive. The majority of students (95%) was very pleased and indicated that the assessment criteria assisted them in tackling their academic tasks. Though the minority did not provide a brief explanation of their choices, 100% indicated that the marking rubric was useful in assisting them to assess.

Subcategory 5.1: Students appreciated the role of assessment criteria.

Students' responses to the statement that asked them to describe how assessment criteria helped them to engage in essay-writing were overwhelmingly positive as verified by the following responses, *'it helped me in that I knew what to do, and what I must write'* (Student J), *'it helped me to know the follow-ups of what is expected*

when I was preparing my assignments so that I would come up with the best assignment' (Student O), *'it gives me guidelines towards what is expected from me'* (Student T), and *'It gives me a guideline of what needs to be done and how I will be assessed'* (Student U). Their responses confirm that explicit and specified assessment criteria guided students to do their assignments to the best of their ability as evident from the mean percentage increase from 66% (E2AV) to 69% (E3AV)(see Table 4.6.). Assessment criteria had assisted students to have the knowledge and understanding on how they are going to be assessed (Brown and Knight, 1994). Students are able to expand their comprehension and understanding of the kind of capabilities and factual information that the criteria are representing (Smallbone and Quinton, 2004; Hodgman, 1997). Somehow, the credibility of self and peer assessment can be upheld as a result of explicit assessment criteria. Students have had the opportunity to practice assessment skills, the rating instruments are simple, multiple assessors are used and the average final mark is moderated to improve assessors marking for greater correspondence and similarities (Wilson, 2002; Brown et al., 1997).

Evidence that supports the preceding sentence is that there is improvement in consistency of the assessment between students and the lecturer in Essay 3: Cultural Sensitivity (Table 4.9, 4.10, and Figure 4.1.) with effect size being small, for example, 0.04, indicating a greater resemblance in the assessment of all the assessors. The p-value is greater than 0.05, indicating that the mean values of

E3PA/E3SA and E3PA/E3LA are the same, with p-value for E3SA/E3LA being less than 0.05, indicating that the mean values are dissimilar. This research has found that self-assessment grades are generally higher than those awarded by the lecturer and peers, although there are exceptions. Other researchers have found similar results (Ross, 2006; Struyven et al., 2002).

However, a minority of the students (5%) did not respond to the question, and the only student who responded indicated that assessment criteria *'did not'* help him/her in tackling academic tasks (Student Q). These students were supposed to have been identified and given support to understand the purpose and academic benefit of assessment criteria so that their overall learning experience was impacted upon.

5.2. Students recognized the usefulness of the marking rubric.

The marking rubric (AMSR-Annexure G), with rating scales and percentage mark allocation for different elements, ensured that assessors' marking bias was reduced and the effect size calculations showed small absolute effect sizes of 0.21 (Table 4.6.) which indicated a greater resemblance between markings of all the assessors (students and lecturer). The students' responses attested to this as evident in the following example, *'you know exactly what you looking for and what must be marked'* (Student K), *'it gave guidelines on how to assess and understand things'* (Student L) and *'took us step-step into the process of accurately marking the work for*

assessment' (Student V). These comments indicated that the marking rubric helped them to assess their own and others' essay-writing satisfactorily and with relative confidence as a result of specified and explicit marking rubrics and assessment criteria (Soliman, 1999). Topping (1998) reported that marking rubrics assisted students in achieving learning gains from assessment processes, and students' attitudes and self-concept may be improved as a result of using marking rubrics in self and peer assessment. A minority of the students did not indicate whether they appreciated the usefulness of the marking rubric and this may be, perhaps, because marking rubrics are used commonly at the institution, and they are familiar with their use or take them for granted.

Category 6: Perceptions regarding peer feedback.

The majority of students' (54%) descriptions of their impression regarding peer feedback was positive and pointed to them finding the process helpful in their learning experience. One would expect the responses to increase as students are engaging with peer feedback more often to gain familiarity with their involvement in assessment practices in higher education coupled with peer feedback. Peer feedback was made more credible and trustworthy when the lecturer concurred with the peer assessment and gave an opinion on some contentious peer feedback comments. Controversial comments were observed when the recipient and the assessor were debating the awarding of marks and feedback on a personal basis,

especially when they questioned the expertise and capability of the peer on the subject and assessment skills. In some instances, students' facial expressions suggested that other students did not possess the expertise and experience to assess accurately and fairly. A minority of students (23%) were negative about peer feedback. However, 23% did not respond to the question. The rationale for not responding can be attributed to participants exercising their right not to respond or to a misunderstanding regarding the meaning of feedback. Feedback from multiple sources, that is, from the students and the lecturer, provides critical information and varied perspectives from different sources. This multiple feedback mechanism can provide the students with a better understanding of their personal strengths and weaknesses (Clark et al., 2006). The two major properties of feedback is the provision of data that enables recipients to modify, adapt, and improve their work, and the other factor is to influence motivation, that is, by using feedback that identified the student's potential for improvement (Falchikov, 1995).

Subcategory 6.1: Students recognized the usefulness and helpfulness of peer feedback.

The responses that *'it was positive in such a way that we managed to interact and discuss things'* (Student L), *'it helps me to realize what I did wrong or how can I improve my work'* (Student U), and *'it helps me realize where my shortcomings are and I am able to work on them'* (Student T), confirmed that various opinions from

multiple assessors give students an improved understanding of the task at hand and encourages interaction and discussions among the students which may result in improved learning experience (Clark et al., 2006). It has been reported that if students are given the opportunity to enhance their performance and learn from their mistakes, they develop a sense of responsibility and competency in their learning (Sadler & Good, 2006). The credibility and trustworthiness of peer assessment is that it provides a fair and unbiased peer feedback which positively influences student learning, and encourages students to work together to enhance their learning (Li et al., 2006; Keenan, 2003). For example, students' description of their impression regarding peer feedback is that *'it helped me to realize what I did wrong or how can I improve my work'* (Student U), and *'it was positive in such a way that we managed to interact and discuss things'* (Student L). The students realize the importance of discussions in a way that it changes them from being dependent on the lecturer to fully accepting and embracing self-directed and autonomous learning, with responsibility. For example, *'it's good and I wish it must continue so that peers will share ideas'* (Student A), (See above Student L's comments above).

The response that *'it's good and I hope it continues so that peers will share their views'* (Student A), shows peer assessment is academically beneficial to students and supported the notion that students are in the best position to provide meaningful feedback regarding their peers' performance (Keenan, 2003). They are comfortable

giving and receiving feedback from their peers because they are at the same level of study and do not feel threatened by them (Clark et al., 2006).

However, some students voiced their reservations about their own ability to assess as evident in responses that *'I do not know how to assess properly'* (Student K), *'they did not know how to assess properly and I felt I deserve better'* (Student Y), and *'was not impressed at all'* (Student D). Feedback elicited mixed feelings and surprises in some students when they responded that they found the assessment *'very biased but constructive'* – Student H, and another noted that *'get the marks that one did not expect'* (Student I). The reservations and suspicions emanating from the students' responses gives support to sustained involvement in assessment practices in higher education that, over the long-term, students may change their perspective about self, peer, and student feedback. Some of their perceptions may be as a result of being accustomed to the conventional way of giving a mark as feedback, misunderstanding the meaning and purpose of peer feedback, and may have adverse effects on interpersonal relations and academic confidence (Brown et al., 1994; Zariski, 1996).

Subcategory 6.2: Students recognized the impact of peer feedback

The impact of peer feedback is demonstrated evidently when students responded that *'constructive criticism, betters your work and confidence when the assignment*

mark is given' (Student X), *'it helps me realize where my shortcomings are and I am able to work on them'* (Student T), and *'I appreciated constructive criticism, it help me to improve'* (Student S). It is apparent that feedback reinforces existing strengths and increases students' abilities to identify and improve shortcomings of their work, (Roberts, 2007). It is important to receive positive and helpful feedback rather than negative feedback as this has an impact on student confidence and self-esteem, as indicated in the response that *'it's good and I hope it does continue so that peers will share their views'* (Student A). It is only through reflection and input from your peers that one's work can improve as a result of interaction and collaborative learning.

Some students displayed mistrust as confirmed by the following response, *'not exciting because one has the expectation that the other will not say anything positive'* (Student M). A definite limitation in this study was that there may have been students who did not have faith in the system, and who felt that peer feedback was done poorly. As a result, feedback became demoralizing and discouraged the students from trying and doing their best (Roberts, 2007). Overall, students do not think that their colleagues are in a position to give feedback. For example, Student E, when interviewed after the self and peer assessment, responded that *'I tend to doubt their judgment and tend not to agree with them'*. Other students had mixed feelings. Student D responded that *'I was surprised because sometimes I got the results I expected, but sometimes I got the results that did not make me happy'*. Student D's response may arise from the concern that the criteria needed to be explicitly





CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS



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practices in higher education and alluded to the fact that they are not being trained and are inexperienced to assess themselves and others. I am confident that if self and peer assessment, as instructional strategies, could be integrated in other subjects and through their higher education life, could make them responsible and self-regulated learners. Initially, I had students who totally rejected self and peer assessment as they felt that assessment was the responsibility of the academics and not the student, but ultimately they took to the self and peer assessment process like fish in the water and became engaged in the assessment process as it was part of the assessment in Psychodynamics 1.

5.2. CONVENTIONAL METHODS OF ASSESSMENT AND ALTERNATIVE AND DIVERSE METHODS OF ASSESSMENT

This study's intention was not to compare traditional and alternative diverse methods of assessment, but to involve students in assessing their work and the work of other students. Thereafter, record and interpret their perceptions about the impact of self and peer assessment and determine students' impression along with a superficial comparison quantitatively with their assessment results. It is pleasing to notice that the majority of students acknowledged the variety of academically beneficial methods of assessment. However, students were concerned about the haphazard scheduling of assessment which put pressure on and stressed students, especially written theory tests and examination, which students recommended to be cancelled.

The practicals and essays were cited as their preferred methods of assessment because of the time they spend on their preparation and application of learnt theory in practice. It is of great concern that some staff, unintentionally, encouraged students to adopt superficial learning, resulting in memorization without understanding (Meldrum, 2002).

The students' responses regarding the value of conventional methods of assessment contained in the notion that the actual assessment that is undertaken has a broad emphasis on subject-specific skills. Furthermore, conventional methods of assessment imposed a common framework across all students taking part in a particular learning unit. Conventional methods of assessment ask the question 'can you do this?' rather than the question 'what can you do?' (Yorke, 1995), and are oriented towards the acknowledgement of idiographic, rather than embracing both idiographic as well as the nomothetic. The students noted that conventional methods of assessment encouraged superficial and rote learning since lecturers' expectation is that students are to accurately produce material taught in class. This pressure is put on lecturers by the pedagogical delivery of prescriptive and dogmatic instructional approaches demanded by the institution to meet specific targets such as pass rates and throughput rates, without a consideration for quality of learning. These types of perceptions suppress the students' curiosity and impede both their freedom and the capacity for exploration and adventure. Methods of assessment should be able to open up the assessment process to the non-standardized

responses of individuals who are seeking to demonstrate what they can actually do, rather than whether they can score well on an academic task that has been specified by lecturers from their particular perspectives.

Alternative and diverse methods of assessment embrace the development of lifelong learning and make students responsible for their own learning. Students appreciated the feedback from lecturers, but cited the mark they achieved as some form of feedback, indicating that students regard grading of their work as a form of feedback. Helpful and positive responsive feedback will make students aware of their strengths and weaknesses, and indicate what they should do to improve their subsequent academic tasks. The analysis of students' responses revealed that the influence of conventional assessment methods is varied and has both limited beneficial and enormous detrimental effects on the students' learning process (Struyven, Dochy, & Janssens, 2002). The objective of self and peer assessment was to partially move assessment from the exclusive domain of the lecturers into the hands of the students, and by so doing, ensure that assessment met the needs of the present students and prepared them to meet their own future learning needs (Boud, 2000).

This research study heightened student awareness that they possessed the potential to assess their own work performance and those of their peers, the ability to detect and admit to what they can do and not do, and the willingness to reflect on their work with the aim of improving in the future. It was equally gratifying that some of the

students were able to point out the limitations of self and peer assessment. Given the nature of this small-scale study, I did not expect that students would accomplish effective assessment of their own and others learning, but they needed to be encouraged to continually engage with self and peer assessment throughout their lives when new and anticipated challenges present themselves. When students are satisfied with their involvement in assessment practice such as in self and peer assessment, their approach to learning and how much they learn, is influenced by method of assessment. Students were prepared to accept responsibility for their own strengths and limitations and demonstrated their readiness and eagerness to improve, therefore learning is likely to occur. Improvement of performance and development of capacity is realized when students become involved in assessment practice in higher education. Moreover they develop an understanding of the assessment criteria and are able to apply it in their work. This exercise encouraged students to assess what they know and what they can do, that is, mastery of the subject content and assessment of their own and others' work.

Students enter higher education with a certain degree of assessment skill. Their involvement in assessment practice can only nurture those basic inherent assessment skills to increase the effectiveness of the student learning experience and promote self-reflection on the part of the student as an 'assessor' (Falchikov and Boud, 1989). The understanding of explicit assessment criteria and marking rubrics made it possible for students to assess their own work and the work of their peers.

Students involved in self and peer assessment are able, with continuous and consistent training, to take a more active and participatory role in the management of their learning process, especially if used to improve learning. The focus of this study was to establish how closely students' assessments agree or match those of the lecturer, and to compare and contrast self and peer assessment the degree of agreement, resemblance and similarities. In summarizing the quantitative data as shown in Table 5.1, we can come to some conclusions as discussed below:

Table 5.1: Summary of Quantitative Data Analysis

	Freq. Count	P-value and Statistical Significance	Effect Size
Essay 2 : Conflict Resolution (E2:CR)			
Pair 1 : PA/SA	76%↓	p value less than 0.05 (dissimilar)	d-value = -0.85 ↓ - large
Pair 2 : PA/LA	63%↓	p value less than 0.05 (dissimilar)	d-value = -0.57 ↓ - large
Pair 3 : SA/LA	76%↑	p value less than 0.05 (dissimilar)	d-value = 0.46 ↑ - medium
Essay 3 : Cultural Sensitivity (E3:CS)			
Pair 1 : PA/SA	53%↓	p value greater than 0.05(similar)	d-value = -0.21 ↓ - small
Pair 2 : PA/LA	48%↓	p value greater than 0.05 (similar)	d-value = 0.04 ↑ - small
Pair 3 : SA/LA	66%↑	p value less than 0.05 (dissimilar)	d-value = 0.26 ↑ - small

N.B: Key: ↓undermarking; ↑overmarking

This research study has undoubtedly proven that, in their first attempt to be involved in assessment exercise, students' assessment demonstrates inexperience, uncertainty, and deficiency in assessment skills. This is evident when I compared student assessment (PA and SA), with the lecturer's assessment as the results shows that the students have a tendency to overmark in self-assessment and undermark in peer assessment. In the Conflict Resolution essay, the paired T-Test, effects size and percentage frequency count reveal similar findings for undermarking and overmarking in peer and self-assessment respectively, when compared with the lecturer's assessment. In the Cultural Sensitivity essay, the trend of undermarking and overmarking continues in the frequency count, but there is a reduction in the percentage difference in undermarking and overmarking when compared with the Conflict Resolution essay. The overmarking report in this study may be because students are aware that self assessments contribute to the final summative mark (Boud & Falchikov, 1989), and there were no punitive measures for overmarking and undermarking.

This study has shown that it is possible to develop students' ability to make judgements about their own work and the work of others. This is an important life and academic skill which may lead to a general improvement in their achievement. Higher education should not overlook the importance of developing students' ability to assess their own and other's performance because students are expected, after leaving higher education, to heavily rely on their judgement of themselves and their

peers in terms of how effective they are in a wide variety of professional contexts. If they develop good assessment skills, they will not be dependent on lecturers or other formal sources of advice, but they will be able to work with others and deploy existing proficiency in a give-and-take approach. Students thus equipped will be able to contribute to their own learning and that of others. As part of being lifelong learners, they will also become effective lifelong assessors (Boud et al., 1994).

A minority of students expressed their displeasure, although this was predominantly with self-assessment rather than with peer assessment. Among their concerns were the issues of bias and subjectivity as a result of students not having knowledge of the subject and not being properly trained in assessing academic work. I did not expect students to be competent in assessing their own and that of others when involved in assessment practice. Students appreciated their involvement in assessment as it attempted to make them aware that they are able to become the active agents of their own learning, and to be able to assess and monitor their own progress and achievement post-higher education endeavors. Every employer expects employees to be able to determine whether they add value to the organization by evaluating and monitoring their contribution to the organization. Most organizations implement some form of performance management system to assess each employee's contribution to the company and they expect self-evaluation and the evaluation of peers to inform the company on issues of promotion and demotions.

The students' responses to the pre-intervention questionnaire that asked them to comment on their involvement in assessment practices in Clinical Technology revealed that students perceived their involvement in assessment when they are being assessed, and not themselves assessing. Tutorials were the students' third preferred 'method of assessment' and indicated that tutorials were helpful. They saw tutorials as a summary of the subjects sections which prepared them for the test and examination. They also perceived the tutorial to be a carbon copy of the test and examination questions. Furthermore, students appreciated that most lecturers gave them notes, hints and tips before the test or examination to help them pass. The unsystematic and haphazard scheduling of assessment impacted negatively on students' organization, planning and preparation of their learning to be ready for and comply with the expected learning outcomes of each subject assessment criteria. This diminished students' ability to 'learn for understanding' (Jawah, 2003; Knight, 2002; Biggs, 2005). A disorganized assessment schedule, combined with differential subject choices, influenced students to adopt superficial learning and encouraged memorization without understanding, which does not occur with autonomous and self-directed learning over time.

The challenge that is faced by Department of Biomedical and Clinical Technology with regard to assessment schedules is that most of the subjects are serviced, and these servicing departments have a tendency to adhere to their specific assessment

schedules and ignore resident department of the programme. This arrangement impacts negatively on both the administration and management of assessment practice in Clinical Technology since each servicing department has its own assessment schedule. Assessment schedules should be set in such a way that they require the students to engage with learning tasks and conceptualize subject knowledge at their own pace. These untimely and disorganized assessment schedules increase academic workloads for students, which in turn impacts negatively on their performance and achievements. Qualitative data shown that too many assessments, and unscheduled and haphazard schedules may lead to superficial approaches in dealing with the subject learning content. Over-assessment can arise from lecturers' perception that multiple assessments will produce a more valid result and too many learning outcomes in a learning area each of which must be assessed.

This research study did not determine which students are overmarking, but other research shows that low-achievers tend to overmark their work, whilst high achievers tend to undermark (Struyven et al. 2002). Students tend to over-or under-mark themselves compared with lecturer markings, and the question that we should ask ourselves is whether these variations are dependent on factors such as the ability of students, the level of study and the use of student markings for formal assessment purpose (Boud & Falchikov, 1989). The assertion that weaker students tend often overmark themselves is not necessarily a scientific observation, but a trend in all

students involved in self assessment (Clark, 2002). A study by Falchikov (1986) claimed that there is a relationship between undermarking and overmarking, with first year students being more generous with self-assessment than second and third year students. This study has shown that students overmarked (53%) in self-assessment in Essay 2, supported by students' responses that *'it did not help me at all because I only wanted to get the best mark without looking at weak points'* (Student O), and *'I gave myself a higher mark'* (Student R). Overmarking in Essay 3 was down to 37% which may be attributed more understanding of the assessment criteria, effective use of marking rubric and beginning of the development of assessment skills with practice. Training and support in the use of marking rubric, understanding of assessment criteria and development of assessment skills over time is necessary for accurate assessment. The number of marking rubric categories can also be reduced to lower the pressure and increase the marking agreement (Sadler & Goods, 2006).

The reduction in the percentage difference may be attributed to improved student assessment skills, which can be further enhanced with continuous involvement and supervised guidance. Peer and self-assessment showed greater resemblance in the Cultural Sensitivity essay when compared with the Conflict Resolution essay (lesser resemblance). The dissimilarities that are observed in both essays regarding self-assessment and over-marking is a normal phenomena reported by other authors (Ross, 2006; Falchikov & Boud, 1989; Topping, 1998). It should be appreciated that there is a reduction of 10% in the frequency count of over-marking. This is not

greatly significant in a short time span, but is a movement in the right direction. The effect size shows a very small degree of overmarking, indicating that there are insignificant differences in assessment between students and the lecturer. The study has demonstrated that student reflection on performance and achievement as a result of involvement in self and peer assessment, can be encouraged and facilitated to improve learning activity (Noonan & Duncan, 2005; Struyven, 2002). In retrospect, I appreciate that recognition and effective use of self and peer assessment must be based on sound guiding principles and the maintenance of high levels of validity during the implementation of these assessment methods (Sahin, 2008).

Wilson (2002) drew attention to the fact that creating greater student involvement and ownership of the assessment process is intended to sharpen their awareness of the key issues, particularly if students are involved in assessment design themselves. Some students in this study realized the benefits for learning as they engaged with assessment exercise (Hamer et al., 2007). Overwhelmingly, students found the integration of self and peer assessment to be a useful, valuable and important, albeit demanding, exercise which helps them to focus and engage in the learning (Boud, 1992). Students appreciated the usefulness of self and peer assessment which provided opportunities for successive student performance, assisted by the use of assessment criteria and marking rubric. Hamer et al. (2007) said in their study that marking rubrics should be reasonably vague and general, because when rubrics are too specific, one eliminates some of the critical thinking

and makes the whole exercise a mechanical process. My research findings found that students improved with practice, which compels lecturers to involve students in assessment practices in higher education. Some of the students were negative about the assessment process, but these perceptions can be overcome by improving the self and peer assessment process scaffolding to reduce the difficulty of the task, or providing more effective assessment skills training to help students get a deeper understanding of the subject requirements and acquiring basic assessment skills (Li et al., 2006).

5.3. CONCLUSION

Assessment methods influence students' approaches to learning, and if not designed well, will encourage students to embrace superficial approach to learning which will be detrimental to effective learning. Involving students in assessment practices is burdensome because it increases staff already overloaded workload, but when one looks at the academic benefits that students' gained, it is worth the exercise. The students' skepticisms and doubts about the subjectivity of assessment were demystified to some extent by their involvement in assessment practice, the positive impact it had on their learning and interactive personal relationship.

Self and peer assessment offered the opportunity for students to see what their own essays lacked and what others had done differently. Some of the students who were

unsuccessful in their essay-writing were allowed to redraft their essays and to include new and learned information which helped them to pass their essay as a result of peer learning. The experience I gained from integrating self and peer assessment in essay-writing has convinced me that if higher education questions the efficiency of their current assessment practices and systems and ignores their effects, the debate will continue to centre on means rather than ends (Meldrum, 2002). This study highlighted some of the challenges inherent in the descriptive, conventional unvarying assessment practices and illuminated some concerns about their perceived utility (Lunt, 1993). Furthermore, the study raised awareness of how the discrepancy effects of conventional methods can be enriched through the integration of self and peer assessment into the assessment processes (Ross, 2006).

The *raison d'être* for this study was to balance the power and control of assessment, which is traditionally exercised by academics, between students and academics (Boud et al., 1999). As the researcher of this study, I am under no illusion that the sentiments, opinions, and perceptions expressed by the students who participated in this study are not to be generalized to students in higher education, or in particular, to students in health science education, given the small-scale nature of this study. However, the encouraging responses may motivate other academic to explore similar activities in their own discipline to compare the findings.

There is a large portion of literature that evaluated and reviewed the way assessment influences students' learning approaches and a preferred method of assessment (Gibbs and Simpson, 2002; Ramsden, 1992; Scouller, 1998). The design of assessment systems, what and how much they study, the quality of their engagement, and the influence of feedback are the categories that influence the students' approaches to learning (Gibbs and Simpson (2002). Self and peer assessment are effective and efficient in ensuring the development of the desired knowledge, skills and attitudinal behaviors that are fundamental to the Clinical Technology programme. Essay-writing, as one of the conventional methods of assessment could be made more effective by integrating alternative and diverse methods of assessment into conventional methods of assessment to enhance student learning experience.

The students' positive responses about self and peer assessment are evident to the internalization of the academic benefits of these instructional strategies. Equally important, are the concerns raised by other students which should be taken into consideration to avert such challenges. Admittedly, it is a challenge to introduce, prepare and coach students to be involved in self and peer assessment, however, the quantity of time needed should not be confused with the quality of the experience. Obviously, all of the benefits cannot be accrued on a short-term basis in once-off involvement in self and peer assessment exercise. The findings of this study provide basic, small-scale guidance and perspective on how assessment for learning

and formative assessment strategies have been implemented, and point out that the assessment principles and practices inherent in higher education institutions need elaboration and development beyond generally accepted practices (Noonan and Duncan, 2005).

It is my conviction that the Clinical Technology programme may shift from lecturer-centered and student-focused assessment to lecturer-led and student-centered assessment, including collaborative and dialogic engagement. I would like to suggest that, through this study, self and peer assessment are useful alternative instructional strategies for empowering the students to become the subject and the makers of history, not simply passive recipients of knowledge. The conclusion must include the following summary in words from an informal conversation with one Alverno College student about self assessment:

“I think I kind of figured out what the goal is behind this whole self assessment thing that I have spent three and half years on. The whole goal is to become a self-directed learner, to become responsible for your own education because we are not going to have the opportunity to be here and guided by a teacher and to lean on a teacher. You have to be able to have an accurate idea of where you are and how you are doing, especially when you take in new information or new areas and you do not have these people as resources anymore. It’s very difficult to get all this knowledge and keep going unless you

are able to figure out how it is that you are doing – and that takes practice to get accurate and realistic” (Loacker, 2003-2004).

Limitations of the research study:

- I acknowledge that there is inadequate student training with regard to the full understanding assessment criteria requirements, and their alignment to learning outcomes.
- I limited my study to first year students in this research study as opposed to third year students as advised by Topping (1998). Falchikov & Goldfinch (2000:288) reported that “students on advanced courses appeared to be more ‘accurate’ assessors than those on introductory courses”.

5.4. RECOMMENDATIONS

This research study has the following recommendations about the incorporation and/or introduction of alternative and diverse in higher education:

1. The students’ appreciative responses with regard to their involvement in assessment practices in higher education is indicative that students are too involved in assessment practices in higher education. Their involvement may also allow the students to develop of explicit assessment criteria/standards

and the application of assessment criteria to meet the learning outcomes of the learning area being assessed. Their involvement enables them to make judgments about the quality and develops students' capacity to monitor their own performance. The nature of assessment criteria provision and a detailed explanation of the assessment process directly influence the acceptance, willingness and understanding of students, and transform their attitudes and perceptions towards assessment practices and processes in higher education.

2. Encourage students to engage in a deep learning approach where students aim for meaning and understanding as opposed to a surface learning approach where students approach the task of learning by reproducing what the lecturer has taught, without understanding. Students can be encouraged to develop this skill by incorporating alternative and diverse methods of assessment such as self and peer assessment. Students' perceptions of teaching and assessment methods in higher education are associated with their approach to learning (Jackson, 1995).
3. Formal training of students earmarked to be involved in assessment practices in higher education.
4. A combination of written and oral feedback is recommended, as students tend to focus and interrogate their written feedback and become involved in interactive communication through questioning, explaining and making remarks for improvement (SACF – Annexure D and PAFF – Annexure E).

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Your response to this questionnaire is highly valued and appreciated, and will be treated with the strictest confidentiality. The final research report will be made available for your scrutiny on request.

1. Briefly describe your experience of involvement in peer assessment.

2. Briefly describe your experience of involvement in self assessment.

3. Briefly describe your feelings about peer assessment (assessing others academic work) in your learning experience.

4. Briefly describe your feelings about self assessment (assessing own academic work) in your learning experience.

5. How would you rate peer assessment as a way to help students learn?

4. Very important	3. Somewhat important	2. Not very important	1. Not at all important
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Explain your choice of rating peer assessment:

6. How would you rate self assessment as way to help students learn?

4. Very important	3. Somewhat important	2. Not very important	1. Not at all important
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Explain your choice of rating self assessment:

7. Describe how assessment criteria affected the way you tackle your other later academic tasks.

8. How useful was the assignment mark-sheet rubric in assisting to assess?

4. Very useful	3. Somewhat useful	2. Not very useful	1. Not at all useful
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Explain the usefulness of the assignment mark-sheet rubric:

9. What did you enjoy the most during the peer assessment exercise?

10. What did you enjoy the least during peer assessment exercise?

11. What did you enjoy the most during the self assessment exercise?

12. What did you enjoy the least during self assessment exercise?

13. Briefly describe your impressions regarding peer assessment feedback, i.e. comments from other student about you academic performance.

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MARK ALLOCATION

A	Layout and Presentation	16%
B	Introduction	10%
C	Explanation	10%
D	Content	50%
E	Referencing	10%
F	Conclusion	4%
TOTAL		100%

A. Layout and presentation

A1. Is the name of the university of technology, faculty, school, department, topic title, students' name, students' number, and the submission date written on the cover sheet = (8 mark).

1	2	3	4
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A2. Is the binding acceptable, typed, pages numbered, and table of contents, as per guidelines, written? (1 mark each)

1	2	3	4
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A3. Is the introduction, conclusion adequate, text referencing, and referencing according to Harvard Style of referencing? (½ mark each).

A5. Are the caption to tables, diagrams, figures, illustration, headings numbering, , and spacing adequate, spelling correct and consistent formatting and arrangements? (½ mark each).

1	2	3	4
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TOTAL = ____/16

B. INTRODUCTION

B1. Does the introduction clearly defined and brief focus on the subject matter?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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B2. Are the terms of the topic clearly defined and the topic clearly interpreted?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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TOTAL = ____/10

C. LANGUAGE

C1. Is the spelling correct and grammar acceptable?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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C2. Is the punctuation appropriately used?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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TOTAL = ____/10

D. CONTENT

D1. Is the review of literature acceptably presented?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D2. Are the complex terms, and abbreviations fully defined at first use?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D3. Is the presentation, and format clear, legible, uncluttered and logical?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D4. How well do the discussions link to introduction?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D5. Is the subject adequately discussed in the text?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D6. How well does the discussions cover all aspects of the topic?

5. Very good	4. Good	3. Satisfactory	2. Unsatisfactory	1. Poor
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D7. Are the enough details and examples to make the ideas understandable?

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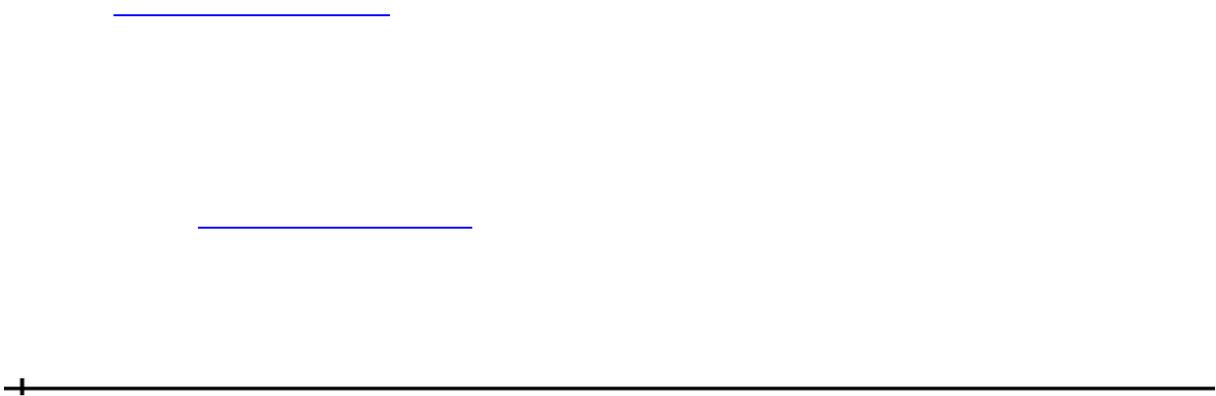
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Mr I. Mkhapi
HoD: Clinical Technology
DUT

Prof. N S Gwele
Executive Dean: Health Sciences
DUT

Dear Mr Mkhapi:

PERMISSION TO CONDUCT RESEARCH INVOLVING CLINICAL TECHNOLOGY STUDENTS AT THE DUT

Your letter requesting permission to conduct a research study on assessment refers:

Permission is granted to undertake such a study provided that:

- Individual students sign written consent assuring them of freedom to withdraw from participating in the study at any time as well as protection from intimidation of any form (i.e. participating in the study).
- As HoD and a teacher in psychodynamics, a research assistant is used to collect data (administer) the questionnaires. NB! Students might feel intimidated if the HoD and teacher concerned administers the questionnaires.
- A copy of the research thesis is provided to the DUT library.

Wishing you success with your studies.

Sincerely



Professor N. S. Gwele
Executive Dean: Health Sciences

HDC 3

FACULTY OF EDUCATION
HIGHER DEGREES

NOTICE OF INTENTION TO SUBMIT A DISSERTATION FOR EXAMINATION



(TO BE COMPLETED THREE MONTHS BEFORE SUBMISSION OF DISSERTATION/THESIS, PROVIDE THE TITLE OF THE DISSERTATION AS WELL AS SHORT OVERVIEW NOT EXCEEDING 350 WORDS AND HANDED IN AT HIGHER DEGREES OFFICE)

NAME OF STUDENT: MOGAPI IERENIA MOHAP
STUDENT NUMBER: 200500048

CAMPUS: Edgewood Pietermaritzburg

DEGREE (e.g. MED (Educational Psychology)): MED (Higher Education)

SCHOOL: ADULT AND HIGHER EDUCATION

NAME OF SUPERVISOR: MS RUTH SEARLE

TITLE OF THESIS/DISSERTATION: EVALUATE THE IMPACT OF ALTERNATIVE ASSESSMENT METHODS ON THE FIRST-YEAR CLINICAL TECHNOLOGY STUDENTS' PERFORMANCE AND PERCEPTIONS IN PSYCHODYNAMICS 1 SUBJECT.

DATE OF INTENTION TO SUBMIT: 31 AUGUST 2009

POSTAL ADDRESS: 149 CATO MANOR ROAD, MANOR GARDENS, DURBAN, 4001

TELEPHONE NUMBER: 031-2615710 (H); (CELL): 031-9735296

CELLPHONE : 0823185133

E-MAIL ADDRESS: mohapi@puuleba.co.za

DATE: 12 JUNE 2009 SIGNATURE: 

Supervisor to acknowledge that the student intends to submit the dissertation for examination

SUPERVISOR

SIGNATURE.....Date.....

IMPORTANT NOTE:

1. According to Rules MR8 for Masters and DR8 for Doctoral students, this form MUST be submitted 3 months before the dissertation is to be submitted for examination. In the event that the student fails to submit the thesis for examination within six months hereafter, the notice will lapse and a further notice of intention must be submitted.
2. If there are any examiners that should NOT be appointed to examine your thesis/dissertation, on the basis that you are unable to liaise or that they may be prejudiced in whatever manner, please state their names below:

.....



03 January 2009

Faculty Research Committee
Faculty of Education
Edgewood Campus
University of KwaZulu-Natal

Dear Dr Searle,

Consideration of Ethical Clearance for student:

Mahapi, Magapi Jeremia - 200800048

Your student's ethical clearance application has met with approval in terms of the internal review process of the Faculty of Education.

Approval has been obtained from the Faculty Research Committee, and the application will be forwarded for ratification (MEd) or recommended in the case of PhD and Staff applications, to the Ethics Sub-Committee of the University of KwaZulu-Natal. All Masters applications approved by Faculty Research Committee may commence with research.

Both you and the student will be advised as to whether ethical clearance has been granted for the research thesis (PhD), once the Ethics Sub-Committee has reviewed the application. An ethical clearance certificate will be issued which you should retain with your records. The student should include the ethical clearance certificate in the final dissertation (appendixes).

Should you have any queries please contact the Faculty Research Officer on (031) 260 3524 or on the email buchler@ukzn.ac.za

Yours faithfully




Professor D. Bhana
Acting Deputy Dean Postgraduate Studies and Research