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Formulation of an evaluation instrument and facilitator development program for problem-based learning

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CHAPTER ONE

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

This chapter provides an overview of the study that includes a background on problem-based learning (PBL). The problem statement, rationale and purpose of the study are set out together with the research questions and objectives. A definition of terms and a brief overview of the conceptual framework and research methods are included. This study used a systematic and structured outcome-based approach that developed a program, to equip problem-based learning facilitators, to effectively facilitate a PBL curriculum. A valid and reliable self-assessment tool was developed to evaluate the facilitator's effectiveness in PBL tutorials. The content of the tool serves to stipulate the outcomes required for effective facilitator development in problem-based learning. Together with the self-assessment evaluation tool the study provided a teaching model, teaching standards and a curriculum for facilitator development, based on the constructs and sub-items within the constructs featured on the evaluation tool.

According to Lack (2009:26), in a PBL approach to teaching and learning the role of the lecturer providing a teacher-centred approach to learning has been replaced with that of a facilitator providing a student-centred approach to learning. The success of PBL is determined by the effectiveness of the facilitator to assist the student in becoming a self-directed learner (Salinitri, Wilhelm and Crabtree, 2015). It is therefore necessary for faculty to support the need for development of the facilitator to enable this person to acquire the knowledge, skills and personal attributes to become an effective facilitator.

1.2 BACKGROUND TO THE STUDY

Problem-based learning (PBL) is an educational approach to teaching and learning based on the PBL program introduced in 1969 in the medical program at McMaster University, Canada. This approach pioneered by Barrows and colleagues focuses on

self-directed learning, critical thinking and problem solving amongst others. A clinically-based patient problem serves as a starting point for the learning process. In a small group tutorial students examine the problem to create a hypothesis. Each student will establish what they already know, relative to the problem and what they still need to know. Through self-directed learning, information is gathered and shared amongst the group members. The knowledge is then applied to solve the problem. New knowledge is constructed and added onto old knowledge, thereby adding depth to one's knowledge base and learning occurs.

Barrows (1996:4) asserts that the process of PBL in healthcare education should enable the student to identify patient health-problems, whilst taking into account the biological and behavioural mechanisms, relating to that problem when developing a health management plan. It should further help the student develop a knowledge base in the physical, emotional and social aspects in the process of solving the patient problem. This approach should assist the student in developing skills, becoming a self-directed learner and to function effectively within a group. Furthermore, it should enable the student, to develop problem-solving skills, be able to critically appraise information and develop sound decision making skills amongst others.

Barrows (1996: 3-11) further adds that the PBL process is supported by a facilitator who has relinquished his/her traditional role of teacher-centred approach with control over the students. The role of the facilitator within the PBL tutorial is to promote a learning approach that is student-centred. Furthermore to encourage students to build their confidence, in order to become self-directed learners in solving the patient problem. The facilitator ensures that the students maintain professional behaviour within the tutorial. Furthermore to develop with the student good communication skills, allowing them to ask the right questions and enter into discussion thereby enabling them to find the correct answers for themselves.

Figure 1.1 represents the characteristics associated within a problem-based learning approach (adapted from PROBLARC University of Newcastle Australia 2000).

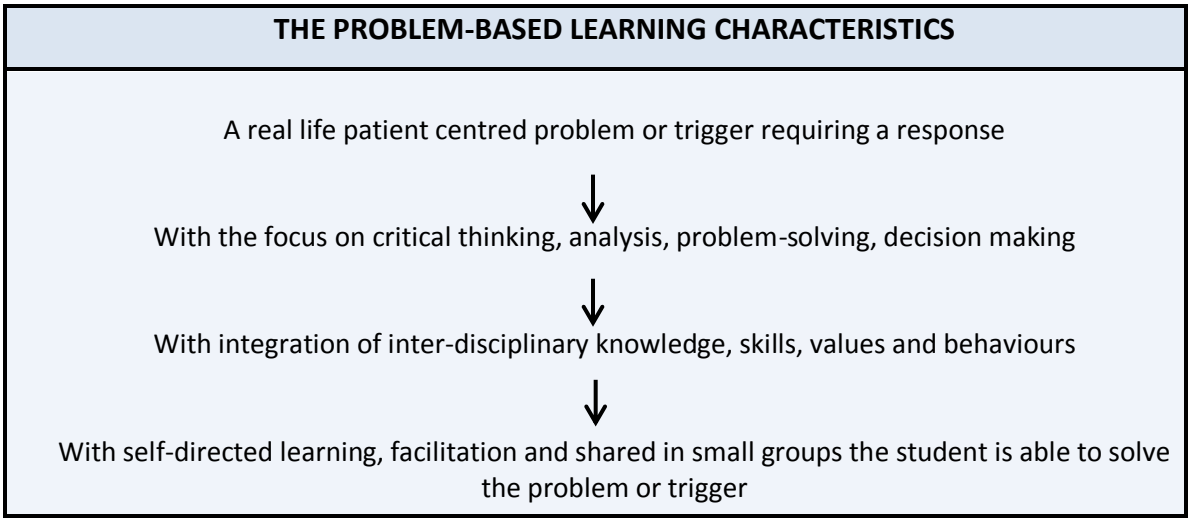


Figure 1.1: The problem-based learning characteristics

1.2.1 Teaching and Learning Philosophy of Problem-based Learning

According to De Boer (2007:1), the PBL model is a result of the central assumption of social constructivism. Knowledge and skills are acquired, not only as a result of the direct transfer of knowledge by a lecturer but also, by constructive thinking and linking new knowledge to prior knowledge. PBL supports the student's ability to learn how to learn and together with the interaction within groups, supports the development of personal and professional competencies i.e. communication skills and problem solving skills amongst others.

In describing the PBL curriculum, Barrows (1996:4) points out that the curriculum was developed to stimulate and enable students to acquire and construct their own knowledge, acquire life-long learning skills and maintain an ethical attitude. Unlike traditional instruction, PBL engages the student to construct knowledge. According to Schmidt, Loyans, Van Gog and Paas (2007:91) PBL can be referred to as a constructivist approach to learning that highlights collaborative and self-directed learning whilst being supported by a facilitator. Schmidt and Rotgans (2011:793) state that PBL strives to promote lifelong learning skills through obtaining knowledge and incorporating the constructivist theory.

1.2.2 Teaching and Learning Philosophy of Constructivism

In defining the concept of constructivism, Walker and Lambert (1995) maintain that constructivism is an epistemological concept that draws from a number of fields including psychology together, with philosophy and science. Kincheloe (2001) refers to Constructivism as having roots in chemistry, education and social constructivism. Dougiamas (1998) and Von Glasersfeld (1995) describe constructivism as:

- *Trivial or Personal Constructivism*

  "Knowledge is actively constructed by the learner, not passively received from the environment." (Dougiamas (1998:3)

- *Radical Constructivism*

  Von Glasersfeld (1995) states that knowledge is not a commodity transported from one mind to another. It is the individual who has to link up experiences with their own reference of what is viable.

- *Social Constructivism*

  Individuals participate in the learning of the collective, sometimes with what is learned distributed throughout the collective more than in the mind of any one individual.

- *Cultural Constructivism*

  Cultural Constructivism asserts that in the individual's cultural context knowledge is constructed. Within social and cultural interactions there are elements that affect the thinking patterns of individuals.

- *Critical Constructivism*

  Myths that keep individuals from being empowered should be made visible and hence open to question.

1.2.3 Teaching and Learning Philosophy of Andragogy

Knowles (1990:63) an American educationalist and a contributor to the concept of andragogy (the teaching of adults), noted that all the great teachers in history such as Confucius and Socrates were teachers of adults. He maintained, that the educational system was based on the principles of pedagogy (the teaching of children), defined as "the art, science and profession of teaching" (Oxford dictionary 2012:643). Knowles (1990) stated that both pedagogy and andragogy could be used for adults and children however the two models are based on different assumptions in that adult

learner's need to know why they learn and possess a readiness to learn. There is a perception that adults are self-motivated. Life experiences play a big role in the learning process.

Knowles (1990) further maintains that individuals need to diagnose their learning needs and be self-directed in their learning. The andragogical model involves a process model, for human resource development. The latter includes creating a climate conducive to learning and a mechanism for mutual planning. Designing a program and formulating program objectives that will provide learning experiences.

Theorists such as Tennant and Kolb followed Knowles with their reconstructed charter for andragogy and Kolb with his theory on experiential learning (Quinn and Hughes. 2007: 27-34, Kolb 1976).

1.2.4 Government Policy on Higher Education

The problem-based approach to teaching and learning within a University setting needs the understanding of the Government Policy on Higher Education and the University Senate Policy on Teaching and Learning.

The Council for Higher Education (CHE) was established in 1998 based on the policies of the Higher Education Act (101 of 1997) as amended by Act 55 of 1999 and Act 54 of 2000. Furthermore, policies were developed based on the Education White Paper 3 of 1997 titled 'A Program for the Transformation of Higher Education' and the Department of Education policy documents. One of the functions of the CHE is to consult and advise the Minister of Education, on issues concerning higher education. These matters refer to, "equity, quality, responsiveness to economic and social development needs, effective and efficient management and contributes to the public good" (Menon 2003:17-21). A quality assurance committee was established within the CHE and referred to as the Higher Education Quality Committee (HEQC). Menon (2003:18) refers to the objectives of this committee to promote and audit quality assurance in higher education institutions and to accredit programs of higher education

The HEQC's primary purpose is to ensure effective delivery of education and ensure and maintain quality assurance in higher education institutions.

In planning a PBL facilitators' development program it was essential to do so with the criteria of the CHE and the HEQC in mind. One has to concentrate on the aspects of quality assurance and developing the capabilities of the student to the benefit of both the student and the economy.

1.2.5 University Senate Policy on Teaching and Learning

The University document S2005/548a 'Principles of Teaching and Learning' refers to academic staff and states that without such staff the learning and teaching experience cannot happen. These principles are to be applied in all modules and courses provided by the institution. The university seeks to employ academic staff with expertise together with a commitment to quality teaching. Furthermore where an academic requires mentoring or support in their development and teaching skills provision needs to be made by faculty.

1.2.6 University Student

The university student, whether undergraduate or postgraduate, will be instructed using different teaching and learning approaches. One of these approaches will be problem-based learning where the lesson will take place in a small group tutorial with a facilitator. The student's performance within these tutorials is evaluated periodically. In a study done by Lack (2009), a computer based evaluation instrument referred to as the 'Tutorial Performance Evaluator' was developed with constructs and sub-items chosen by content experts. These constructs are the skills required by the student to function effectively in the PBL tutorial (see Fig.1.2). The evaluation instrument is used for facilitator assessment of the student and a self-assessment done by the student

Lack (2009:38) and Ling and Jee (2007:13) state that the success, of a problem-based learning approach is determined by the effectiveness, of the facilitator. The role of the facilitator in PBL has shifted from a teacher-centred to a student-centred approach to teaching and learning (Ling and Jee 2007:15). It is assumed that the paradigm shift from traditional teacher to PBL facilitator comes automatically and

that all teachers can effectively wear the facilitator hat. Many facilitators revert back to the traditional method of teaching that allows him/her to feel in control. It is, therefore, necessary to encourage and support facilitators together with regularly evaluating their performance. Faculty are also required to evaluate facilitators on a regular basis and provide feedback on the outcome of such an evaluation. Furthermore a sound program of staff development should be provided, in the development of skills and knowledge to maintain the standards that have been set for PBL facilitators.

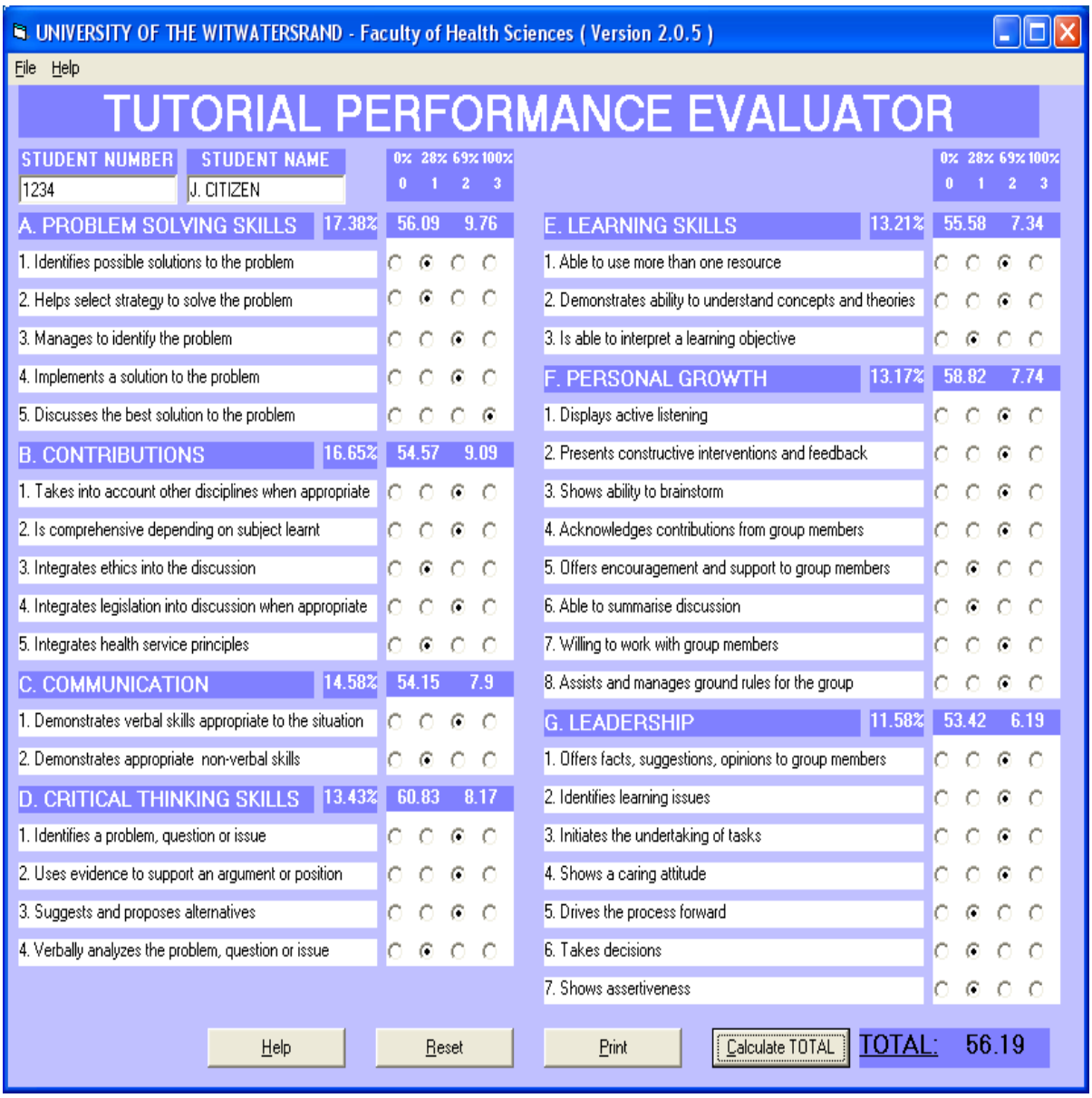


Figure 1.2: Tutorial Performance Evaluator (Lack 2009)

1.3 PROBLEM STATEMENT

The lack of facilitator support could result in less than effective facilitation in PBL tutorials and a poor result for students in the PBL program. However there is no validated, tested curriculum with which to guide the preparation, monitoring and performance evaluation of facilitators engaged in the PBL approach to learning and teaching. The researcher communicated with academics from McMaster University (Canada), Edinburgh University (UK), Dublin University (Ireland) and Maastricht University (Netherlands), to ascertain whether there was a formal curriculum available for facilitator development. The academics stated that there was no such program available in their institutions.

1.4 RATIONALE FOR THE STUDY

In adopting problem-based learning as a teaching and learning approach, the curriculum for such an approach has to be facilitated and totally student-centred. One of the fundamental issues in PBL in health science education is the training, development and support that faculty should provide to the facilitators. The rationale for conducting this study was to construct an evaluation instrument that would inform the development of a curriculum for PBL facilitator development and provide a strategy, to ensure that facilitators maintain the required standards. The curriculum can be used in an orientation program for new facilitators.

Cunningham, Mc Calister and Mac Vicar (2011), state that the recruitment of staff members to join a de nova facilitator training group causes anxiety. These facilitators will need more support at least at the start of the new group. The literature describing facilitator training programs come from many disciplines in health sciences such as medicine (Barrows, 1988) and dentistry (Dalrymple and Schuler, 2007). Salinitri et al. (2015: 74), states that literature regarding facilitator training programs advocates using the PBL method to drive the training session, there is a paucity of literature regarding the best practices in facilitator training programs. Salinitri et al. (2015) further state that more research is needed to determine the most effective models of facilitator development.

In the South African context the students and facilitators come from different cultures and certain of the aspects required in a PBL tutorial are often unacceptable to students and facilitators alike. The researcher has observed that many students find it difficult to refer to the facilitator by a first name. Certain facilitators enforce a hierarchy, in terms of 'respect for an older person' or 'respect for a person's academic standing' and wish to be referred to by their academic title. This prevents a relaxed group atmosphere and immediately creates a barrier to communication. Lekalakala-Mokgele (2006:61) describes some of the emotions experienced by facilitators include the difficulties associated with facilitation, loss of control and lack of knowledge. Students, experienced the facilitation process negatively in the beginning feeling that they were doing the facilitators work.

1.5 PURPOSE OF THE STUDY

The purpose of the study was to formulate a self-assessment evaluation instrument and develop a curriculum for PBL facilitator development.

1.6 THE RESEARCH PROCESS

The research process within this study moved through four phases. Each phase in the process became the starting point for the next phase with the development of an evaluation instrument containing the constructs that were identified by an expert panel, developing models based on the constructs, developing standards and finally the development of a curriculum for facilitator development. Figure 1.3 illustrates an overview of the research process.

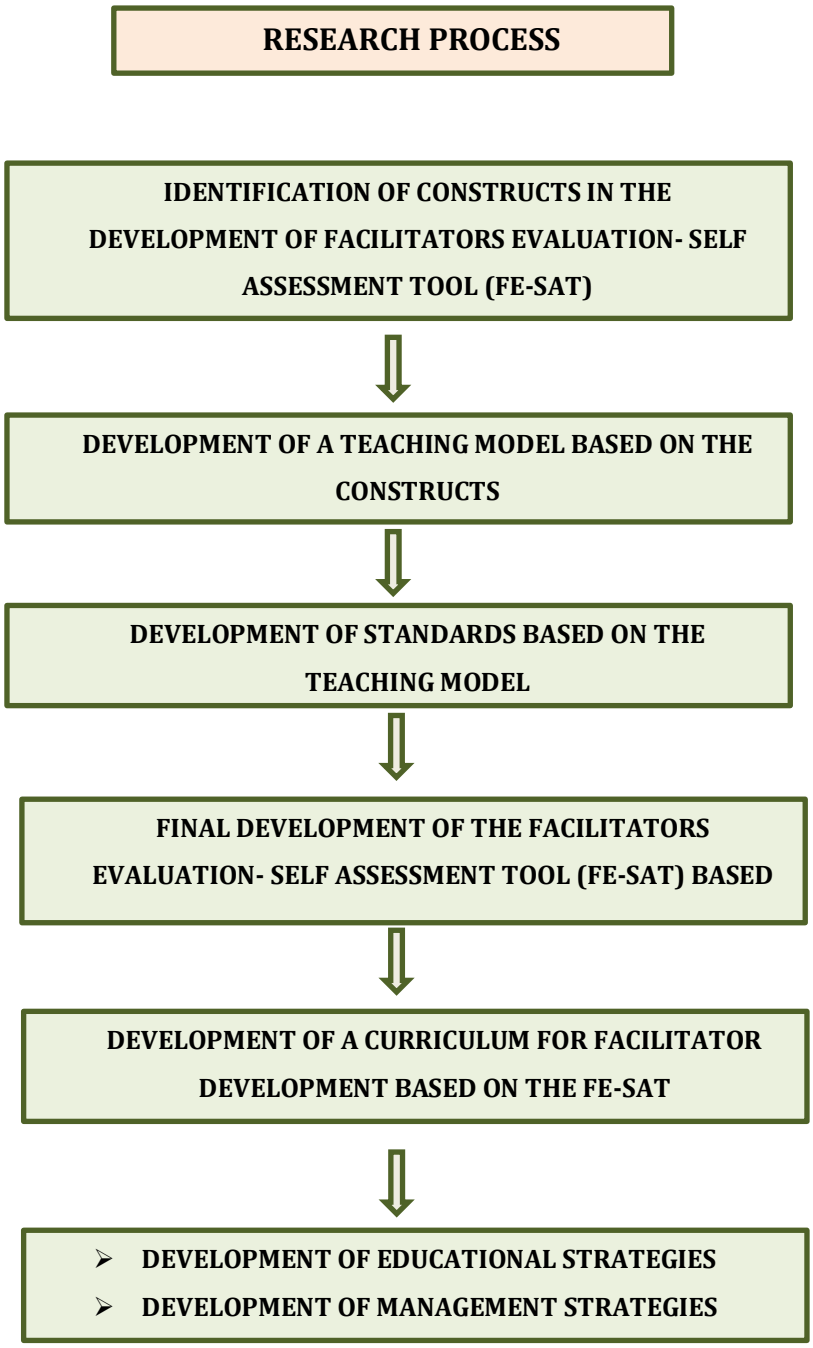


Figure 1.3: The research process

1.7 RESEARCH QUESTIONS

- What is a valid and reliable self-assessment tool to evaluate facilitators' knowledge and skills for effective performance in PBL tutorials?
- What is the required content within a curriculum for facilitator development?

1.8 RESEARCH OBJECTIVES

The objectives of the study are set in four phases:

Phase-One:

- To develop the early stages (domain identification) of a self-assessment tool for PBL facilitator evaluation
- To determine the content validity of the identified items on the self-assessment evaluation tool using Lynn's model (CVI) on the determination and quantification of content validity
- To determine the construct validity of the self-assessment evaluation tool using the Subjective Judgement model.

Phase-Two:

- To develop a PBL facilitator teaching model based on the constructs and sub-items identified in **Phase-One.**

Phase-Three:

- To develop teaching standards and criteria indicators based on the teaching model developed in **Phase-Two**
- To complete the final stage of the facilitator's evaluation-self-assessment tool (FE-SAT) based on the standards and indicators.

Phase-Four:

- To develop a curriculum for facilitator development based on the standards and criteria indicators featured on the FE-SAT
- To set out educational strategies taking into account the vocational relevance of the facilitator development program together with the personal growth of the facilitator
- To set out management strategies in relation to the facilitator development program to achieve the educational goals of the university in an efficient and ethical manner. The financial aspect and resources of such a program will be taken into account. Table 1.1 provides an overview of the research methodology

Table 1.1: Overview of the research methodology

PHASE	OBJECTIVE	SAMPLE	DATA COLLECTION	DATA ANALYSIS
1	Early development of FE-SAT. Domain identification and collection of items	Expert Group	Delphi survey to identify constructs and sub-items	Calculation of Index Of Content Validity (CVI) and Subjective Judgement Model (SJM)
	Determine Content Validity	Expert Group	Delphi survey to identify constructs and sub-items	Calculation of Index Of Content Validity (CVI)
	Determine Construct Validity	Expert Group	Delphi survey to identify constructs and sub-items	Calculation of Construct Validity using Subjective Judgement Model (SJM) Regression analysis
2	Develop a teaching model	Researcher	Literature related to the constructs identified in Phase-One	n/a
3	Development of Standards and Indicators Final stage development of FE-SAT	Researcher and Expert Group Researcher	Delphi survey and questionnaire containing Standards and Indicators Standards and Indicators	Calculation of Index Of Content Validity (CVI)
4	Development of the facilitator development program Educational Strategies Management strategies	Researcher and Expert Group Researcher Researcher	Constructs, sub-items, Standards, Indicators on FE-SAT National and University Policy University Policy	

1.9 DEFINITION OF TERMS

Construct: Concepts at a high level of abstraction that have general meanings (Grove Burns and Gray, 2013:690).

Operational definition: Within the content domain similar items are placed into groups referred to as constructs within which are sub-items representing the group.

Construct Validity: Examines the fit between conceptual and operational definitions of variables (Grove Burns and Gray, 2013:690).
Operational definition: Determines that the instrument measures what it is meant to measure.

Content Validity: Examines the representativeness of the content domain (elements /items) on an evaluation instrument (Lynn 1986:382).
Operational definition: Content domain representing elements /items available from literature and content experts.

Educational strategies: Educational methods used to present the curriculum in the education and training of facilitators. (Quinn and Hughes, 2007:183).
Operational definition: Personal growth of the facilitator and meeting the objectives set out in the curriculum.

Expert: Practiced, skilful, well-informed in a subject (Oxford dictionary 2012:299).
Operational definition: An academic with experience in PBL.

Facilitator: A facilitator works with a group to assist it to achieve a 'self-defining' purpose (Gregory 2002:10).
Operational definition: An educator who provides the student with the necessary means to solve the 'problem' and guides the process through a PBL tutorial.

Facilitator Evaluation: Appraisal, assessment, rating of the facilitator (Oxford Dictionary 2012:213).
Operational definition: Assessment on the performance of a PBL facilitator during a PBL tutorial using a reliable and valid evaluation instrument.

Management strategies: A plan to achieve organisational objectives in an effective and ethical manner (Werner, 2011:14).
Operational definition: Development of a strategic plan to drive the process forward taking into account the financial impact on faculty, available resources in terms of space and teaching staff together with the logistics of planning 'workshops' and the absence of 'facilitators' from various departments whilst in training.

Paired Comparisons: Measuring the size of *n* entities, by comparing the relative largeness (not value), of one entity against a second entity (Miranda, 2001:87).
Operational definition: Comparison of one construct against another construct

Problem Based Learning (PBL): Learning that results from the process of working towards the resolution of a problem. (Barrows and Tamblyn, 1980:2).
Operational definition: Facilitated process in the PBL approach to teaching and learning with emphasis on facilitator development.

PBL Curriculum: A curriculum is a plan or design for education and training (Quinn and Hughes, 2007:108).
Operational definition:
A curriculum, specific to PBL for facilitator development.

Sub-items: An item of a lower position (Oxford Dictionary, 1978:907).
Operational definition: The relevant items within a construct on an evaluation tool against which a student can be assessed.

Subjective Judgement Model: A process of weighting entities on various levels of a hierarchy (Crawford and Williams, 1985:387).
Operational definition: The weighting of all constructs and sub-items.

Teaching Model: A physical or conceptual representation, of an object or concept (Quinn and Hughes, 2007:10).
Operational definition: A teaching model based on the results of the evaluation tool.

Teaching standards: Desired and achievable levels of performance against which, actual performance in practice is compared (Quinn and Hughes, 2007:145).
Operational definition: The standards developed from the teaching model required in the PBL approach to teaching and learning, against which the facilitator is measured.

Visual Analogue Scale (Magnetic scaling): A line 100mm in length with right angle stops at each end on which subjects are asked to record their response to a study variable (Quinn and Hughes, 2007:814).

Operational definition: A technique which measures interval-level data (constructs and sub-items) on a horizontal line measuring 100mm in length.

1.10 CONCEPTUAL FRAMEWORK

The conceptual framework is based on the conceptual thinking and techniques that apply in the development of an evaluation instrument. A conceptual framework was developed for **Phase-One** of the study, using the techniques set out in the Content Validity Index (CVI) model and the Subjective Judgement Model (SJM).

The Content Validity Index model was chosen since the validity of an instrument is an important factor to consider during the development of an instrument. The two stage process being the developmental stage and the judgement quantification stage provided rigor in the development of the instrument. During the developmental stage the content domain (characteristics needed by a facilitator) was identified, categorised and placed into groups referred to as constructs. Within each construct sub-items relating to the construct were listed. The judgement quantification stage was carried out using the subjective judgement model that provided a process where each construct and sub-item was rated on a four point Likert scale by a panel of content experts followed by the weighting of these items. This determined the content validity of the constructs and sub-items and the instrument as a whole.

1.10.1 The Determination and Quantification of Content Validity (CVI)

Content validity can be defined, as the determination of all the items or elements on an evaluation instrument as to their content relevance. This is done using, a two-stage process referred to as the *Developmental Stage* and the *Judgement Quantification Stage.* The *Developmental Stage* consists of domain identification, item generation and instrument formation. The *Judgement Quantification Stage* is carried out by a specific number of content/domain 'experts'. A minimum of five 'experts' provides a sufficient level of control for chance agreement. The 'experts' are provided with specific instructions by which to determine the domain and content relevance of all the items and the instrument as a whole. Each item is rated on a 4-point ordinal rating scale, where 1= not relevant, 2=unable to assess relevance, 3=relevant but needs minor alteration, 4=relevant. For the content validity index (CVI) to be meaningful all items should be rated as 4 (Lynn 1986:384).

1.10.2 The Subjective Judgement Model (SJM)

According to Crawford and Williams (1985:390) the SJM describes a process of weighting entities on various levels of a hierarchy. Entities can be items on an evaluation tool. This weighting is carried out measuring paired comparisons (two items) using a 100mm visual analogue scale.

1.11 INSTRUMENT

The instrument developed in this study will serve as a standards-based self-assessment tool for facilitator evaluation. In searching the literature there was no existing instrument that would serve the purpose. It was therefore necessary to develop an instrument that would serve the dimensions of each construct. The instrument was developed in two parts. In **Phase-One** the initial early development stage items were generated then rated by content experts and 'weighted'. The second and final part of the instrument development was reached in **Phase-Three** when the standards and performance indicators for each standard were accepted. The instrument was completed following the inclusion of relevant constructs and sub-items together with performance standards for each construct.

1.12 OVERVIEW OF RESEARCH METHOD

The study process and procedures set to achieve the objectives described separately in the four phases of the study:

1.12.1 Phase-One

This phase concentrated on the development of a valid and reliable self-assessment tool to evaluate the effectiveness of facilitators in PBL tutorials. This instrument is referred to as the FE-SAT (Facilitators Evaluation-Self-Assessment Tool). A quantitative research approach was used as the overarching **Phase-One** study design to identify constructs and sub-items placed within each construct to feature on the FE-SAT. Statistical techniques were applied, to place the constructs and sub-items in a hierarchy from most important to least important. This was carried out by examining the relationships firstly between the constructs and secondly between the sub-items. To enhance the rigour of the study, the process of data collection was constantly examined for weaknesses.

1.12.1.1 Population and sample

In **Phase-One**, the researcher was interested in a population of academics involved with facilitation in PBL tutorials for undergraduate and postgraduate students, in selected Health Sciences degrees. A sample referred to as the 'sample pool' (n=10) was selected from which expert groups (n=5) were formed. Throughout **Phase-One** five different expert groups were selected with five experts in each group. The first expert group identified the constructs and the remaining groups were content experts on each construct, who then identified the sub-items within that construct.

1.12.1.2 Data collection methods

Questionnaires were sent to the expert group requesting a list of possible items representing the characteristics expected of a PBL facilitator that could be used, on the FE-SAT. Four rounds of a Delphi survey was conducted, in the collection of data and the items were rated, using the CVI. Once rated the relevant items were placed on a single survey list and assimilated into groups based on similarity of meaning, with each group representing a construct. Further questionnaires representing each construct were sent to the relevant expert group (expert in the construct) for identification of sub-items, to be placed within each construct. The sub-items were again rated with the relevant ones remaining. Using a subjective judgement the constructs and sub-items were weighted and placed into a hierarchy from highest weighting, to the lowest weighting. This list of constructs and sub-items provided the starting point, in the development of the FE-SAT.

1.12.1.3 Data analysis

With regression analysis, relative weights were determined on the constructs and sub-items from the measurements on visual analogue scales. Following statistical analysis, ratio scales were developed affording each construct and sub-item a unique weight represented in a percentage.

1.12.2 Phase-Two

Based on the constructs set out on the FE-SAT a diagrammatic model was developed by the researcher on each construct. Each model was finally combined into a single diagrammatic teaching model. This process was carried out by the researcher.

1.12.3 Phase-Three

Standards and indicators were developed for each construct based, on the teaching model. The researcher developed draft standards and indicators that were circulated to a panel of experts to be rated. A Delphi survey was used for this purpose. Once accepted the standards and indicators were included in the evaluation tool thereby, completing the development of the FE-SAT.

1.12.4 Phase-Four

The standards and indicators, within each standard, that featured on the FE-SAT dictated the content of the curriculum that was developed by the researcher and sent to a panel of experts for evaluation. The curriculum was built around the principles of curriculum development. Furthermore the curriculum was subjected to audits and monitoring throughout its development against criteria considered for the development of a quality curriculum. The criteria for curriculum development offered by Ashworth and Harvey (1994) as quoted by Quinn and Hughes (2007:150) was considered. These criteria are listed as follows:

- Relevance and content
- Aims and Objectives
- Progression
- Sequencing
- Integration
- Core skills
- Accreditation

1.13 ETHICAL CONSIDERATIONS

- Permission to conduct this study was granted by the Head of the Department of Nursing Education, Faculty of Health Sciences University of the Witwatersrand **(Annexure A).**
- Approval of the protocol was received from the Graduate Studies Committee, Faculty of Health Sciences University of the Witwatersrand **(Annexure B).**
- Ethical clearance and permission for the study to be conducted was received from the University of the Witwatersrand Human Research Ethics committee (Medical) No. M130637 **(Annexure C).**

- An information letter and consent form was sent to the 'expert groups' inviting them to take part in Phase One of the study. The letter described the research methodology and explained their involvement and approximate time that they would spend on the study. They were told that participation was voluntary and that they could discontinue at any stage.
- All raw data was kept in a locked cupboard for two (2) years if the study is published and destroyed thereafter and six (6) years if the study is unpublished and destroyed thereafter.

1.14 CONCLUSION

This chapter focused on the introduction, background and rationale for the study. The research problem, research questions and objectives were set out. Operational definitions and an overview of the methodology were given.

1.15 OUTLINE OF THE STUDY

PHASE-ONE:

Chapter One: Orientation of the Study includes an introduction and background the problem statement and rationale for conducting the study. The research question and objectives are set out. A definition of terms, conceptual framework and an overview of the research method is provided.

Chapter Two: Literature Review (Phase-One) on PBL, andragogy and constructivism is presented together with literature reflecting the facilitator in PBL.

Chapter Three: Methodology relating to instrument development

Chapter Four: Statistical Analysis relating to instrument development

PHASE-TWO:

Chapter Five: Development of Models relating to each construct

Literature review on construct and the content of models

PHASE-THREE:

Chapter Six: Development of Standards and indicators.

PHASE-FOUR:

Chapter Seven: Development of a curriculum for the facilitator development program.

Chapter Eight: Main findings, discussion, recommendations, limitations and conclusions.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents interdisciplinary, international and national literature from a wide selection of databases. Primary categories provided information from research reports with secondary categories providing information from articles, reviews and professional books. Whilst the researcher focused on literature from 2008 forwards, relevant literature prior to 2008 was included.

The study was conducted in four phases. Within each phase a separate review was carried out as and when findings within the study became available. The completion of one phase dictated the content of the next phase, each phase therefore providing more information. This chapter provides a review of literature on Problem-based Learning; Adult Learning Theory; Constructivism and the history of Constructivism; Facilitator in PBL.

The search for all the literature within the study was sourced from the following:

- Government and University websites on policy
- Faculty of Health Sciences University of the Witwatersrand library catalogue
- Journals on health sciences, education and management
- Text books on health sciences, education and management
- Google Scholar

The search was conducted using electronic databases available online. CINAHL (Cumulative Index to Nursing and Allied Health Literature), SCOPUS, SA ePublications and MEDLINE (Medical Literature online accessed through PubMed, Cochrane Database of Systematic Reviews and Educational Resources Information Centre (ERIC) were accessed.

2.2 PROBLEM-BASED LEARNING

Pioneers of PBL Barrows and Tamblyn (1969) from McMaster University in Hamilton, Ontario, Canada developed this approach to teaching and learning to

replace traditional medical education in the 1960s. Bokonjic, Mimica, Pranjic (2013:1) state that PBL originated from McMaster University and Maastricht University in the Netherlands. Bokonjic et al. (2013), further add that PBL has been introduced into the curriculum of facilities all over the globe. According to Giribet and Moya (2014:2) PBL has evolved as a philosophy, a form of understanding education and a learning style.

Problem-based learning is an approach to active learning whose starting point is a problem situation of real life on a particular subject from which a hypothesis is developed. The problem is analysed through the process of problem-solving and learning is self-directed. According to Hmelo-Silver (2004:1), the purpose of a PBL approach is to encourage students to construct knowledge, develop self-directed learning skills, collaboration skills, intrinsic motivation and problem-solving skills. The view of Azur (2009:240) reflects PBL as an excellent opportunity for students to become responsible for their learning where deep learning is enforced. Furthermore, the development of cognitive skills such as problem-solving and interpretation of findings. It promotes group interaction and improves communication skills. It enables the student, to use critical analysis effectively.

According to Hoffman, Hosokawa and Blake (2011:1) a problem-based learning curriculum introduced into the Missouri-Columbia School of Medicine 13 years before, was not only a success but cut lecture time by 60%. It decreased rote memorization and achieved excellent academic results. Furthermore, in the United States 80% of the medical schools use PBL.

Kolmos, Du, Holgaard and Jensen (2008:11) quote Confucius (551BC) who stated, “Tell me and I will forget, show me and I may remember, involve me and I will understand.” The philosophy of PBL is based on these words in that learning should be student-centred and self-directed. PBL can be traced back to early forms of learning where, there was a demand for diversity in problem solving. Under the guidance of Socrates (469BC), Plato (424BC) and Aristotle (384BC) students were presented with problems which, when interrogated, assisted them in exploring their assumptions, values and the inadequacies of their proffered solutions.

Dewey (1938), as cited in Garrison (2012:1-13) was a philosopher, psychologist and the founder of the progressive education movement. Dewey argued that the philosophy of progressive education required the participation of the learner, in developing the skills which would direct his activities in the learning-process.
Dewey rejected rote memorization of facts and described a version of his five-step analysis of effective logic inquiry:

1. The occurrence of a problem since all inquiry begins with a doubt
2. The specification of how the problem is structured, data selected
3. Introduce a supposition, hypothesis or suggestion that could solve the problem
4. Compare hypothesis to other hypotheses to determine its relative value
5. Having elaborated the hypothesis by constructive reasoning, test the hypothesis

According to Saloojee and Van Wyk (2013:1-4) the performance of South African medical students in a PBL group was compared with students in a traditional group. The results showed that there was no significant difference in knowledge and skills between the two groups. Malan, Ndlovu and Engelbrecht (2014: 1-6) describe the introduction of a PBL approach into a one year foundation program at a South African university. The findings showed that the PBL approach allowed students to develop meaningful learning patterns such as critical analyses, self-directed learning skills and lifelong learning.

Whilst there are many strengths, associated with the PBL approach to teaching and learning, weaknesses have been identified. Dolmans, Grave, Wolfhagen and Van Der Vleuten (2005: 738), assert that many problems occur due to the poor implementation of PBL together with problems such as dominant or passive facilitators and dysfunctional tutorial groups. Ates and Erilmaz (2010) describe facilitator weaknesses where different facilitators display different attitudes and behaviours. Many showed a knowledge deficit on the particular subject. Students complained about a lack of information given to them. Students who did not understand the PBL approach became disinterested and demotivated. If there is no standard assessment procedure to evaluate students in PBL tutorials the evaluation differs from one facilitator to another.

Before implementing a problem-based approach facility should consider the cost of implementing a new educational innovation. Do the challenges justify the learning effectiveness and strengths associated with this educational approach. PBL is time consuming and a resource intensive was of teaching students (Azur 2001:391).

Weimer (2016: 1-10) states that the benefits of PBL include a student centred approach to learning, it encourages understanding and develops lifelong learning skills amongst others. The weaknesses associated with PBL include student anxiety and stress, poor group dynamics compromise the effectiveness of PBL, less content knowledge may be learned, problem scenarios are often difficult to write, it is time consuming and it is resource intensive s amongst others.

PBL has its roots in cognitive learning theory designed around solving clinical 'problems' in a realistic environment, with a strong emphasis on problem-solving, student motivation to learn and the development of life-long learning. It involves a student-centred educational approach developed in small groups. PBL has been compared to Adult Learning Theory which emphasizes that adults are self-directed in their learning needs, reflect on previous experience, have clear set goals and know what and why they need to learn.

2.3 ADULT LEARNING THEORY (ANDRAGOGY)

Knowles (1990) developed the theory of adult learning, referred to as andragogy and became an authority in the promotion of adult education. However, many of his critics argue that his theory is merely a set of assumptions adding to what was already known on the subject of adult learning. One of Knowles' assumptions referred to the characteristics of adult learners: being more self-directed and taking responsibility for themselves; embarking upon the learning cycle with life experiences; as people mature and there is an interest to learn and to apply what they have learnt; there is a motivation to learn by both intrinsic and extrinsic motivators; learning should be relevant. Despite its limitations Keesee (2011:2) points out that a direction towards adult learning is provided by Knowles' theory.

Schreyer (2007:1) argues that it is the chronological age that defines the individual as an adult learner in higher education institutions. The literature suggests that there are more significant factors than chronological age these include experience, beliefs and values, ethnicity and culture. Adults take their academic work seriously and bring experience that will result in different forms of learning with faculty also becoming learners.

Both the Adult Learning Theory and PBL can be likened to the Social Development Theory of psychologist Lev Vygotsky (1896); this theory being one of the foundations on which constructivism was formed and described as a learning concept that draws from fields such as philosophy, science and psychology.

2.4 CONSTRUCTIVISM

Constructivist philosophy developed in the twentieth century by Jean Piaget (1997) and Lev Vygotsky (1986) and pioneered by John Dewey (2004) has been widely applied to teaching and learning methodologies in healthcare education (Salinitri et al. 2015:74) It can have several meanings such as philosophical and epistemological. Within education it describes teaching and learning process as well as curricula and assessment. Sjoberg (2007:1-9) refers to constructivism, as having a strong theoretical influence on the theory of learning however, there is opposition to that argument and critics have argued that constructivism has lost its power.

A philosophical view of constructivism as stated by Johnson (2013:5) is that knowledge is not absolute but is constructed by the learner through interaction with peers and the physical world.

According to Rideout (2001:215), Vygotsky (1978) described constructivist epistemology, its central theme being that knowledge is 'constructed' cognitively by the learner during interaction and participation with the learner's social community. Learning takes place through social interactions and it is through questioning, assistance and continuous feedback that the learner is able to perform independently and with competence.

Based on the analysis of Taber (2006:135) there are certain characteristics associated with the constructivist theory. It is asserted that learners actively construct their own knowledge and create their own ideas about life and the world. They enter the learning environment with existing ideas that should be taken into consideration and construct knowledge through social interaction and communication in a cultural environment.

Hein (1991: 2) sets out certain guiding principles of constructivist thinking:

- Learning is an active process using sensory input.
- People learn to learn.
- Understanding knowledge happens in the mind.
- Learning is inextricably intertwined with verbal communication.
- Learning is a social activity.
- New knowledge is built on previous knowledge.
- Motivation is a key component of learning.

Whilst Constructivism has many benefits it is not without its flaws. Rhinehart-Neas (2012), describes the negative aspects of Constructivism in that there is a lack of structure since the standard curriculum has been discarded. Students construct knowledge from what they already know. A further criticism is the lack of formal grading allowing the student to carry out a self-evaluation which may well lack accuracy. Rhinehart-Neas (2012), maintains that a student requires structure and evaluation.

There are many versions of Constructivism with similarities and major differences. According to Gordon (2009:40), constructivist principles are set from psychological, sociological and philosophical perspectives. These theories are difficult to transplant into the field of education and often present with problems.

Constructivism stems from a number of philosophies and early development can be attributed to the thoughts of Greek philosophers. The following provides chronological statements and viewpoints made by Greek philosophers from 544 BC to 384 BC:

Heraculitis (544 BC)

"Everything flows and nothing stands still" (Internet Encyclopaedia of Philosophy, 2015).

Protagoras (490 BC)

"Man is the measure of all things" (Internet Encyclopaedia of Philosophy, 2015).

Socrates (469 BC)

"True knowledge and moral virtues are inscribed within the soul of every individual. Learning is therefore, to cultivate the soul and make implicit understanding of truth explicit" (Stanford Encylopaedia of Philosophy 2009).

Plato (424 BC)

Plato used the life and methods of his teacher Socrates to advance philosophy and the development of the Western civilization (Stanford Encylopaedia of Philosophy 2009).

Aristotle (384 BC)

Aristotle studied at Plato's Academy until Plato's death. He studied education amongst other things and also wrote about Socrates. Aristotle's philosophical endeavours encompassed all facets of intellectual inquiry which is linked to reasoning. He founded logic as a formal science (Stanford Encylopaedia of Philosophy 2009).

Lewin (1890)

Kurt Lewin had a profound impact on social psychology and an appreciation of group dynamics and experiential learning, where he involved himself with active dialogue with students and discussed the differences of interpretation and the observation of events by those, who had participated in them (infed.org/thinkers 2013).

Vygotsky (1896)

Lev Vygotsky was the pioneer of the 'Social Development Theory' that argues that social interaction, ultimately produces consciousness and cognition. This theory forms the base of constructivism. The application of Vygotsky's theory changes the

role of the teacher to one of facilitator, who will collaborate with the students and facilitate a construction of learning (Learning – Theories.com 2012).

Piaget (1896)

Jean Piaget in 1967 was the first person who referred to 'constructivist epistemology' and was later acknowledged as "the great pioneer of the constructivist theory of knowing and the most prolific constructivist of our century" (Quinn2007:18).

Rogers (1902)

Rogers was a humanistic psychologist responsible for the Human Potential Movement. He described the relationship between facilitator and student and the qualities required for this: genuineness, trust and acceptance, empathic understanding. By using the students' own experiences and problems, there will be a freedom to learn. The goal of education is to allow a student to become a fully functional person (Quinn 2007:25).

Maslow (1908)

Maslow's Theory of Human Motivation describes a hierarchy of needs and in particular the need for self-esteem with feelings of confidence, competence and achievement with the last level need being Self Actualisation (Boeree 2011).

Knowles (1913)

An educationalist and one of the foremost contributors to the teaching of adults referred to as andragogy (leader of man). The model is based on the assumptions that an adult, needs to know why they need to learn something; are self-directed; have more experience; their readiness to learn is based on what needs to be done in real life; have a life-centred orientation to learning; have internal motivation. Knowles argues that traditional education does not equip the learner with lifelong learning skills because of their dependence on teacher stimuli (Quinn 2007:27).

Bruner (1915)

Associated with Discovery Learning, which is a process of acquiring knowledge through active involvement. Discovery learning can be used to good effect when the student is given a problem to work through (Quinn 2007:81).

Ausubel (1918)

In his Assimilation Theory, Ausubel describes meaningful learning and rote learning both of which could fall under reception learning or discovery learning. The latter approach, allows the student to discover what it is they need to know and discover the principles of the content. He maintains, that meaningful cognitive learning results from interaction between new information the student requires and the information the student already possesses. (Quinn 2007:76).

Kolb (1939)

In describing his theory of experiential learning Kolb expressed the practicality of working with a good theory. It is referred to as experiential to tie it to the original work of Dewey, Piaget and Lewin that emphasizes the role that experience plays, in the learning process (Quinn 2007:34).

Wenger (1952)

Etienne Wenger argues that one assumes that learning has a beginning and an end resulting entirely from teaching with no external influences such as social interaction amongst others (Communities of Practice. 'Learning as a Social System' 1998).

Lave (1968)

The basic argument, is that communities of practice are everywhere and one is involved in a number of them, work, school, home, civic or leisure interests. They are formed by people who engage in a process of collective learning, in a shared domain of human endeavour (Communities of Practice infed.org/thinkers 2012).
"Learning is ubiquitous in ongoing activity, though often unrecognised as such" (Lave1993:5).

Heraculitis 544 BC stated, that life and learning followed a process and later in 490 BC Protagoras maintained, that man was the influence behind all situations. Socrates did not teach knowledge but entered into dialogue, to 'awaken the soul of a partner'. Socrates believed that one needed to understand the meaning of wisdom and how to achieve that wisdom. Aristotle was a student of Plato who in turn studied under Socrates. Both Aristotle and Plato developed the teaching style of Socrates whose main concept, was to enter into dialogue with his students. In later years Lewin,

Piaget, Dewey and Kolb spoke of Experiential Learning and emphasized the importance of life experiences in learning. This was followed by Vygotsky who developed constructivist epistemology, where he stated that knowledge was built by 'adding on' information. Knowles spoke of Andragogy – Adult learning. Rogers described the importance of a good relationship between the facilitator and the student, whilst Maslow described the Theory of Motivation. Bruner described Discovery Learning and Ausubel described Meaningful Learning. Finally Lave and Wenger describe how learning takes place in teams within the community.

One is able to identify the trend from 544 BC to the present day where the approach to teaching and learning can be described, by the characteristics found in the problem-based approach to teaching and learning i.e.:
-Student-centred learning based on experience and finding information that builds on existing knowledge
- Guidance of a facilitator to motivate and keep students on the right track
- A learning approach that is carried out in small groups of students analysing a 'problem' through constructive argument.

The researchers Wang, Tai, Huang, Bian, Shang, Wang and Song (2008:610) stated that in 1994, it was recommended by the World Health Organisation (WHO) that dental education should be community oriented, culturally and socially relevant and problem-based and that PBL would achieve the WHO recommendations. Since its inception in the 1960's at McMaster University in Canada, many versions of PBL have arisen. Its role and advantages, as an innovative approach to health care education, is well documented; amongst others the structuring of knowledge, effective reasoning skills, self-directed learning skills and a motivation to learn.

Sweller (2006:165-169) argued that early on in the learning process, students are unable to deal with their working memory limitations and cognitive load and are unable to process large amounts of information sometimes required for problem-solving. Once students become more competent, in dealing with the cognitive load the ability, to problem-solve shows an improvement. Lack (2009:129) describes the poor results achieved by first-year Bachelor of Nursing students in problem-solving skills within the PBL tutorial. These results improved in the second-year of study. No

further improvement was seen in the third-year of study however, in the fourth-year of study students showed a marked improvement in their problem-solving skills.

PBL assists students in developing the ability, to critically appraise information from peers and literature surveys related to the 'problem'. New information is constructed and added to what is already known through a process of critical and analytical thinking.

Barrows (1996:4) states, that one of the characteristics associated with the PBL model is that students work in small groups of approximately 6- 10 people. Within the group the students establish the level of knowledge they have and what they need to acquire, to resolve the 'problem' given to them. Communication skills are developed, resulting from the discourse within the small group tutorials. A faculty tutor referred to as a facilitator is present within the group and encourages, supports and guides the students through the learning process to find a resolution to the 'problem'.

2.5 THE FACILITATOR IN PBL

The problem-based learning approach has certain fundamental characteristics; one being that the traditional teacher has been replaced by a facilitator with a complex role to play that is no longer directive but supportive.

Facilitators are people who have the ability, to draw out the wisdom embedded in the psyche of the students and create conditions, to enable them to direct their own learning and development. A facilitator guides a group, to assist it to achieve a self-defining purpose. "The facilitators' philosophy informs their approach and it is manifested as a concern with the psychological growth of the person" (Kolmos, Du Jette, Holgaard and Jensen 2008:10).

According to Gregory (2002:40) the facilitator's philosophy can be described in terms of the individual's beliefs, values, attitude and behaviour. A study was conducted to explore the lecturer as facilitator in PBL. Moore (2009:156) found that the concept of practice in PBL has been extensively explored in certain areas, not much has been discussed in the perspective of lecturer as facilitator particularly in

terms of personal values and beliefs. The application of the role as facilitator was interpreted according to the individual's beliefs and values.

In becoming an effective facilitator one has to change the way one thinks.

De Grave, Dolmans and van der Vleuten (1998:901) set out four dimensions which could describe the thinking of an expert facilitator i.e:

- To stimulate the learner to create ideas and information
- To direct and facilitate the learning process
- To stimulate the learner to construct and integrate knowledge
- To stimulate student communication and social interaction and accountability.

According to Kolmos, Du, Holgaard and Jensen (2008:21) facilitation is connected to a large amount of inferred knowledge and even an experienced facilitator finds it hard to explain why and how they practise in different settings. In this dynamic situation the facilitator still tries to achieve a positive and productive atmosphere in the group and strives to develop cooperation between the students, whilst providing a friendly learning atmosphere. According to Mohamad, Suhaimi, Das et al.(2009:245) whilst facilitators do have knowledge, facilitator training and development is necessary. The facilitator's level of knowledge does not always correlate with their skill level. This statement illustrates that the change in mind-set and tools required to become an effective facilitator will require faculty to offer a staff-development program. Such a program will help with the transition from teacher to facilitator. Dolmans and Ginns (2005:534) state that since the facilitator is integral, to group functioning, it is important to assess the skills and provide feedback on performance. In this way any improvement can be implemented.

Lekalakala-Mokgele (2006:61) describes the experiences of facilitators in a study conducted to identify the challenges faced by PBL facilitators. Some of the problems experienced included, the anxieties involved in facilitating, coupled with a fear of loss of control, a lack of knowledge and the anger of learners who feel that they are carrying out the facilitator's work. Some facilitators see this, as a challenge with advantages such as self-development and learning to manage group dynamics and come to prefer facilitation to lecturing. In a later study on 'facilitation to experience

the locus of control' Lekalakala-Mokgele (2010:40) stated that the traditional methods of teaching which facilitators brought with them and were not able to relinquish, became a problem to the students and facilitators found it difficult, to allow the students to take control of their learning in a self-directed manner.

Kolmos et al. (2008:22) describe the complexity of facilitating PBL and refer to the values of the facilitator in terms of cultural differences. In cultural diversity there are different belief systems and many different ways in which one 'feels'. The increase of cultural diversity within institutions of higher learning, presents challenges to teaching staff and students alike. This results from miscommunication of expectations between the facilitator and students. The facilitator is faced with many challenges, not only in the educational context but also in the organisational context.

Students are becoming independent in their search for knowledge and it is therefore necessary for these institutions to provide for such learning and teaching opportunities. As stated by Kolmos et al. (2008:13) student-centred learning requires direction and has to be facilitated.

The PBL facilitator has to manage a different role from that of a traditional teacher. Hitchcock and Mylona (2000:52), state that "the transition from a more traditional teaching role to that of PBL facilitator is inherently difficult. New skills must be acquired and multiple roles redefined." According to Papinczak, Tunny and Young, (2009:378) the PBL facilitator's role, is to guide and support a group of learners "in much the same way as a conductor handles a symphony orchestra."

The facilitator has a direct influence on group functioning during a PBL tutorial and has a role that is never static but rather dynamic and has to adapt to the way in which the group discussion progresses yet, at the same time keep the discussion on track. In the researcher's experience as a facilitator there is an assumption that the facilitator possesses group dynamic skills together with a broad knowledge base on the subject being discussed, good interpersonal skills, self-confidence and a motivation to develop the PBL skills required by the students. These are not always accurate assumptions and can leave a facilitator feeling inadequate and filled with anxiety.

Murray and Savin-Baden (2000:107) argued that for PBL to succeed a sound program of staff development is required. They further added that not enough research has been done into the process and management of PBL staff development which is seen, to be the key component in any PBL implementation strategy. Whilst facilitators' competencies have a positive effect on learning, these competencies should be included in a staff development program. Researchers are still advocating the need for sound facilitator training. Papinczak, Tunny and Young (2009:337) state that facilitators have a complex role to play, in providing support to students, in the acquisition of knowledge and development of the student. The need for tutor training programs on professional development for PBL facilitators was emphasized. Sadaf, Ali and Zuberi (2009: 1-7) maintain that effective facilitation of PBL tutorials requires tutors to develop observation and motor skills together with cognitive strategies.

According to Zaidi, Zaidi, Razzaq, Lugman and Moin (2010:440), faculty must be familiar with PBL and comfortable with the role transition of teacher to facilitator and provide support to the facilitator. This is critical for the success of PBL if it is to be used as a teaching tool. Cunningham, McCalister and MacVicar (2011:10) studied the motivations in becoming and continuing to be a facilitator. They concluded that amongst other recommendations the need for on-going support for facilitators after initial training was essential. Cunningham et al. (2011) stated that there were several methods of providing ongoing support such as mentorship, email support groups and co-facilitation. The more experienced facilitators viewed their commitment to facilitation in a positive way. It kept them learning and the tutorial was seen as a platform to facilitate and learn. McLean (2003:1-6) argued that the small group tutorial was the cornerstone of PBL and the role of the facilitator was of great importance. The facilitator should be aware of his/ her role, in the PBL process and duties within the institution. Through training workshops the facilitator should be given the tools on how, to manage a tutorial, become familiar with the philosophy of PBL and realise that ethical principles, will have an impact on student learning. Kitchen (2012:8) described the implications of active facilitation and group management as being the important aspect of small group tutorials. Improving facilitator skills provides a better learning outcome.

2.5.1 Facilitator challenges

Mohamad, Suhaimi, Das (2009: 243) describe a study conducted at the University of Malaysia, on the challenges facing PBL facilitators in higher education. They identified the following: facilitators who are actively involved and probe the students; facilitators who are dominant and do not allow free discussion; facilitators who are passive. It was concluded that whilst each group had a satisfactory knowledge of the PBL process, knowledge in facilitator skills was lacking. Although facilitators were supplied with facilitator guides, it was found that the roles expected of them were much greater than what the guide provided and this became a challenge. Oliffe (2000:2) gave reasons why a tutor may not make a good PBL facilitator: lack of skills and experience; personal educational philosophy; lack of confidence; personal ego; resistance to change. Each of these reasons presents a challenge to the PBL process. De Grave, Dolmans and van der Vleuten (1998:902) refer to the 'expert facilitator' who should possess a high level of appropriate skills, knowledge, communication skills and motivational skills amongst others. Azur, (2005:676) refers to the challenges that face PBL facilitators such as: building trust within the group; improving group dynamics; facilitating discussion and understanding; motivating students; being a role model.

2.5.2 Facilitator evaluation

Facilitator evaluation in PBL tutorials can be carried out as a self-assessment, peer-assessment or by the students using a reliable and valid instrument. Feedback to the facilitator is necessary and can be used to implement further training and self-directed learning. "Data collected can then be used for summative purposes" (Dolmans and Ginns 2005: 534). "Both qualitative feedback (student comments) providing formative feedback and quantitative feedback for summative purposes are important for facilitator development and training" (Van Wyk and McLean 2007:e26). The majority of facilitator evaluations are carried out by students. Papinczak (2010:898) argues that there is a dichotomy amongst students when defining the ideal tutor (facilitator) between the reality of the students' perception of the tutor and the tutors' sometimes false perception of that reality.

Di Prospero and Bhimji-Hewitt (2011:65) state that a skilled teacher, is required to facilitate small group learning and it is imperative that faculty, is able to provide feedback and formalised facilitator training.

2.5.3 Facilitator evaluation instruments

De Grave et al.(1998), developed a 33 item questionnaire and Dolmans et al.(2003), developed a 22 item questionnaire. The latter is based on the constructivist theory approach to PBL. Questionnaires made up of many items proved to be time consuming and a shorter questionnaire containing 11 statements within 5 factors (constructs) was developed and proved to be both valid and reliable. The factors were: constructive learning; self-directed learning; contextual learning; collaborative learning; intra-personal behaviour. The majority of facilitator evaluation questionnaires developed by other institutions are based on similar factors. One particular questionnaire referred to as the Facilitator Observation Form developed by the Centre for Educational Development (CED), Republic Polytechnic, Singapore included factors such as: setting up an inviting learning environment; communication skills; management skills related to managing behaviour and time management. The CED provides a student evaluation survey on the facilitator based on a 6 point Likert scale with items such as: the facilitator helps me understand the model; the facilitator encourages discussion; the facilitator is attentive, approachable and fair; the facilitator communicates effectively; the facilitator challenges my thinking.
In the majority of cases the students are asked to carry out an evaluation on the facilitator. In the literature review no instrument could be found that provided a self-assessment tool based on standards such as the one developed in this study.

2.5.4 Facilitator development workshops

The literature refers to facilitator training; facilitator training workshops; facilitator development in training workshops. For the purpose of this study the term ‘facilitator development workshops’ will be used.

Zaidi et al. (2010:6) describes the transitional role from teacher to facilitator, as paramount to the success of PBL and that a facilitator development process must be undertaken, to alleviate concerns and fears regarding this transition. Training

workshops have shown to positively influence faculty understanding and appreciation of PBL and should involve experiential learning, small group work, critical reflection and the process of problem based learning. Furthermore, Zaidi et al. (2010) stated that a study conducted in South Africa (1999) showed that following a training workshop, members believed in the PBL philosophy and were motivated to its success. It was felt that it was the facilitators' responsibility to work towards the PBL curriculum and its development.

Wang, Tai, Huang et al. (2008:610) found that changing the concept of teaching to facilitating amongst faculty was a major challenge. Faculty should focus on developing the behaviours required for a facilitator to function effectively in the student centred discussions. The goal was that each facilitator should understand three concepts: first to learn about PBL, second to understand the facilitators role within a PBL discussion and thirdly to acquire the skills needed by a facilitator.

Whilst facilitator development workshops are necessary for self-development it is necessary to evaluate the performance of the facilitator in the form of self-evaluation, peer-evaluation and student evaluation. Ling and Jee (2007) conducted a study to assess the final year students' perceptions of good PBL facilitation. A written questionnaire was administered to the students consisting of five questions followed by a focus group interview with structured questions relating to the facilitator's performance. The results showed that good facilitation was described as: facilitator's guidance and assistance in the learning process and group dynamics; helps students develop higher thinking skills; communication skills; assists in self-reflection.

Workshops offering facilitator development often refer to the improvement of 'skills' however these skills are often related to the PBL process.

2.7 CONCLUSION

This chapter provided an overview of literature related to problem-based learning, adult learning theory, constructivism and the facilitator within the PBL context. The latter refers to challenges associated with facilitation, facilitator evaluation, instruments used in facilitator evaluation and facilitator development workshops.

As the study progresses, more information will emerge, together with a literature search relevant to this new information.

The next chapter presents the methodology in the commencement of **Phase-One** of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research methodology and includes the study design, the sampling process and sample inclusion criteria together, with the data collection procedures in each of the four -phases of the study:

Phase-One: Instrument Development

Phase-Two: Development of a Teaching Model

Phase-Three: Development of Teaching Standards

Phase-Four: Development of a Curriculum

Relevant ethical considerations related to this study are included in this chapter. An overview of the methodology and research design was provided in Chapter One.

3.2 CONTEXT OF THE STUDY

The study was conducted in a large urban university with five faculties encompassing Sciences; Commerce; Law and Management; Engineering and the built environment; Health Sciences and Humanities with 33 schools offering 3000 courses. Health Sciences is the largest faculty and prepares students at both undergraduate and postgraduate level. The faculty includes medicine, dentistry, occupational therapy, physiotherapy, nursing, clinical associates, sports medicine and pharmacy. In dentistry PBL is used in the final year of study to teach integration of patient problems. Other disciplines do not use PBL comprehensively. There are four disciplines within faculty, using the problem-based learning approach as a fundamental means of implementing the curriculum. The PBL approach is well established in these disciplines. The disciplines are Nursing, Occupational Therapy, Medicine and Dentistry. The researcher was able to draw on three of the four

disciplines in the faculty: Nursing, Occupational Therapy and Medicine in the collection of data.

3.3 RESEARCH PARADIGM

A paradigm is a world view, a general perspective on the complexities of the world. Paradigms for human enquiry are often characterised in terms of the ways in which they respond to basic philosophical questions, such as, what is the relationship between the enquirer and those being studied? (Polit and Beck 2012).

The philosophical paradigm of epistemology informed the study. Epistemology is a branch of philosophy responsible for investigating and acquiring human knowledge. Certain key elements of epistemology were carried out in the study. Concepts (constructs) were identified using logical reasoning to validate relationships between the constructs thereby, providing a reasonable way to gain knowledge and acquire understanding. Objectivity and logic were applied associating knowledge with reality to determine its validity.

This study was based on the positive paradigm which asserts that the researcher is independent from those being researched. The researcher had no influence over the findings of the expert group who identified and rated constructs and sub-items that were included on the evaluation instrument.

A quantitative research method using a positivist scientific method was employed. Empiricism is the foundation of positivism as it views reality as universal, objective and quantifiable (Polit and Beck 2012). Quantitative research is a formal, objective, systematic approach to describe and test relationships and to examine cause and effect (Grove, Burns and Gray 2013:24). Data were collected using an orderly, disciplined process to gather information. The researcher conducted a systematic approach by using logical reasoning, progressing through various phases in accordance with the set plan of action. The latter provided the opportunity to move from the problem statement, development of concepts to the solution of the problem. Control was employed to maximise the validity of the evaluation instrument.

Data for the study in the positive paradigm is gathered, in a structured way using Quantitative methods and measurements that are statistically analysed and give a numeric value to express quantity.

3.4 PHASE-ONE: INSTRUMENT DEVELOPMENT

This phase concentrated on the development of a valid and reliable self-assessment tool, against which PBL facilitators can measure their effectiveness in PBL tutorials. This instrument is referred to as the Facilitator Evaluation-Self-Assessment Tool (FE-SAT).

3.5 RESEARCH DESIGN

A quantitative research approach was used as the overarching design in all phases of the study. Statistical techniques were employed, in the development of the FE-SAT. The instrument was used as the basis leading to **Phase-Two** of the study.

Phase-One of the study used quantitative methods to examine relationships among the constructs and sub-items (variables) featured on the self-assessment tool. The rigour of the study was enhanced by attention to detail and accuracy, in the collection of data and the measurements that were carried out by the researcher. The research process was constantly examined for weaknesses.

3.6 RESEARCH METHODS

Research methods refer to the methodological perspectives of the study to address the research questions. These methods include "decisions about the population, samples and sampling, data collection, instruments and procedures, data analysis together with measures of validity and reliability" (Grove, Burns and Gray 2012:34).

3.7 POPULATION AND SAMPLE

3.7.1 Target Population

A population refers to "All elements (individuals, objects, events or substances) that meet the sample criteria for inclusion in a study, sometimes referred to as the 'target population" (Grove, Burns and Gray 2013:44). The study population is "the entire aggregation of cases in which a researcher is interested" (Polit and Beck 2013:59). In this study the target population consisted of all the facilitators in the three disciplines

within the faculty where the data collection took place. The target population of PBL facilitators are as follows: Nursing (N=10), Occupational Therapy (N=14) and Medicine 30 different facilitators for each learning block and there are ten blocks over two years of study. Two facilitators were chosen from medicine with experience of facilitation across several different blocks in the two years.

3.7.2 Sample

A sample is referred to as a "subset of a population selected for the study" to represent the target population (Grove, Burns and Gray 2013:708).

3.7.3 The Sampling Method

The target population consisted of academics involved with facilitation in PBL tutorials for undergraduate students in selected health sciences degrees in the faculty of Health Sciences. The sample was selected from the target population forming an expert group to develop a list of constructs and sub-items to be placed on the FE-SAT.

3.7.4 The inclusion criteria

Facilitators who were actively involved with PBL tutorials with not less than four years of facilitation experience were considered to become a member of the expert group.

3.7.5 The sample selection

The number of experts who are available and willing to participate in the study will not be less than three (n=3). However, "a minimum of five experts (n=5) provide a sufficient level of control for chance agreement" (Lynn 1986:383).

From the three disciplines: Nursing, Occupational Therapy and Medicine academics (n=10) were purposively selected and referred to as a pool of experts. The reason for selecting the sample from various disciplines was, to avoid a singular curriculum philosophy. The sample eligibility criteria were that the experts have at least four years of experience in PBL facilitation. The sample selection throughout the study, changed five times, as a result of different knowledge and skills required to provide opinion and judgement in each construct. Each selection of experts (n=5) was drawn from the pool of experts (n=10) who met the inclusion criteria.

The experts were selected and placed in a group, to participate in a Delphi survey to generate items that could be included on the FE-SAT. The generated items were grouped and represented as constructs. Further items became sub-items within the constructs. The groups of constructs represented different disciplines thereby, requiring more than one sample selection forming an expert group since each construct was dealt with separately. The first sample selection (n=5) were asked to commence the first round in the Delphi survey to generate items, that could be used as constructs. The same group of experts remained throughout the first three rounds of the Delphi survey. In Round Four, experts were selected based on their availability. Three of the original experts remained with two new selections being made from the pool of experts. (vide Table 3.1). Once the constructs were selected a second, third, fourth and fifth sample of academics were purposively selected from the pool of experts, to generate sub-items to be placed within each construct. The third, fourth and fifth sample selection each dealt with a construct. The second sample selection (n=5) dealt with two constructs. In the third sample selection, after two rounds in the Delphi survey, one expert was no longer available and was replaced. In the fifth sample selection, two experts were no longer available and were replaced after two rounds in the Delphi survey. The replacements met the inclusion criteria (see Table 3.2). The red text represents the change within the expert group.

Table 3.1 Codes and academic qualifications on the sample selection (constructs)

EXPERT CODES	ACADEMIC QUALIFICATIONS	
	FIRST SAMPLE SELECTION Constructs	
	Original	Replacement
01	PhD	MSc
02	MSc.	
03	PhD	
04	PhD	MSc
05	MBBCh	

Table 3.2 Codes and academic qualifications on sample selection (sub-items)

EXPERT CODES	ACADEMIC QUALIFICATIONS			
	SAMPLE SELECTION (sub-items)			
	SECOND SAMPLE SELECTION	THIRD SAMPLE SELECTION	FOURTH SAMPLE SELECTION	FIFTH SAMPLE SELECTION
01	PhD	MBBCh	PhD	MSc (MSc)
02	MSc	PhD (MSc)	MSc	MSc
03	MSc.	MSc	MBBCh	PhD. (MBBCh)
04	PhD	PhD	MSc	MSc
05	MSc	MSc	PhD	PhD

3.8 DATA COLLECTION TECHNIQUES

Data collection, were influenced by the conceptual framework selected for the study. The framework was developed using the following theoretical models:

- The Content Validity Index in determining content validity
- The Subjective Judgement Model in determining construct validity

3.8.1 The Determination and Quantification of Content Validity

Content validity is related to the items that make up an evaluation instrument. The relevance of these items, are judged to determine there, representativeness and acceptability for inclusion on the evaluation instrument. Content validity is tested using the two-stage process described by Lynn (1986:382) referred to, as the *Developmental Stage* and the *Judgement Quantification Stage.* "The *Developmental Stage* has three steps: domain identification, item generation and instrument formation. The *Judgement Quantification Stage* is described as having two steps. These steps require individual domain experts firstly, to determine that each item has the required content validity and secondly, to determine that the content of the entire instrument has the required content validity" (Lynn 1986:384).

According to Lynn (1986:382) this two-stage process using the Content Validity Index (CVI) is necessary, to validate an evaluation instrument. This process is carried out by asking a group of experts for their opinion regarding the relevance of each item on the evaluation instrument using a four point Likert scale. An even number rating scale is preferable to avoid the possibility of using the middle rating that occurs when an odd numbered scale is used

Each construct and sub-item was rated by each of the participants, within the selected expert group, on a 4-point rating scale developed by Lynn (1986), (1=not relevant; 2= unable to assess relevance without item revision or item is in need of such revision that the item would no longer be relevant; 3=relevant but needs minor alteration; 4=very relevant).

In this study rigor was applied and for an item to be included on the FE-SAT, a rating of 4=relevant had to be obtained from each of the five experts. Items rated a 1=not relevant, by any of the experts were excluded. When an item was rated a 2= unable to assess relevance without item revision or item is in need of such revision that the item would no longer be relevant, by any of the experts a consultation was held between the researcher and the expert concerned. This was to establish if that item could be amended, if unable to do so the item was excluded. Items rated a 3= relevant needing minor alteration, by any of the experts, such item was altered and a further Delphi round was conducted for a rating to be made on the altered item. Items rated a 4= relevant, were included on the FE-SAT.

In this study specific guidelines were applied to the selection of experts. Ten experts were identified and willing to cooperate. This selection formed a 'pool' of experts and a selection of five experts, were drawn from the pool as required to form a group. The table developed by Lynn (1986) indicating the required number of experts who are required to agree on a particular item was used. This table provides for a calculation to be conducted based on the experts who agree relative to the total number within that group of experts.

"The proportion of experts whose endorsement is required to establish content validity beyond the 0.05 level of significance" is reflected in Table 3.3 (Lynn 1986:384).

Table 3.3: Number of experts endorsing item or instrument as content valid

Expert	2	3	4	5	6	7	8	9	10
2	1.00								
3	.67	1.00							
4	.50	.75	1.00						
5	.40	.60	.80	1.00					
6	.33	.50	.67	.83	1.00				
7	.29	.43	.57	.71	.86	1.00			
8	.25	.38	.50	.63	.75	.88	1.00		
9	.22	.33	.44	.56	.67	.78	.89	1.00	
10	.20	.30	.40	.50	.60	.70	.80	.90	1.00

(Figures reflected in red represent acceptable level of content validity)

In this study five experts were selected and based on the above table for content validity of the FE-SAT to be determined, each of the five experts had endorsed each item with a rating of four.

3.8.2 The Subjective Judgement Model (SJM) –the Determination of Construct Validity

Construct validity "examines the fit between conceptual and operational definitions of variables and determines whether the instrument actually measures the theoretical construct that it purports to measure" (Grove, et al 2013:690).

In determining construct validity, the weighting of all constructs and sub items were carried out, using the Subjective Judgement Model, which describes a process of weighting entities on various levels of a hierarchy. In this study a process of paired comparisons enabled the weighting to be carried out, using matrices and horizontal linear scales (visual analogue scales) with the measurements being represented by ratio scales.

Bruce and Lack (2009:5) assert that the mathematical model presents, with more accuracy and validity than subjective judgement by experts, it continues to function as a tool for the development of evaluation instruments. It was suggested, that these judgements made subjectively be quantified. This will apply greater validity in determining content and construct validity of an evaluation instrument.

The Subjective Judgement Model describes a process of weighting entities on various levels of a hierarchy. This weighting, can be carried out using matrices or vertical/horizontal linear scales. “Entities (units) can be requirements, features, objects and modules” (Lack 2009:50). In this study, units referring to the content items identified for the FE-SAT, were weighted by the experts on visual analogue scales, using the process of paired comparisons. An individual weighting was allocated to each construct and sub- item. This weighting, was converted to ratio scales and represented in a percentage thereafter being placed on a hierarchy from highest to lowest percentage.

Saaty (1977:234-281) states that complex problem solving and decision making on objects, should be viewed on a hierarchy determined by preferential weighting. Subjective judgements are used to estimate a merit scale of the objects. Following hierarchical analysis the scales are combined mathematically to provide quantitative information, on the problem as a whole. The method for estimating subjective scales in which a judge makes pairwise comparisons, on objects stating which object is preferred and to what degree the object is preferred. “This scale is determined on an eigenvector analysis” (Saaty 1977:234-281).

Lack (2009:51) quotes Crawford and Williams (1985:387) in explaining how Saaty (1977–1983) presented the Eigenvector (EV) process for analysing matrices of subjective ranking of one unit in relation to another. The process is effective for the analyses of hierarchical problems where one item or construct is subjectively measured against a second item or construct. Despite the absence of a formal proof that the procedure has desirable qualities as an estimator of the underlying relative utilities, the process has gained an active following. The paper describes the geometric mean (GM) vector that compares favourably with the EV and in certain respects is preferable.

The geometric mean (GM) vector that can also be referred to, as the logarithmic least squares method (LLSM) can be applied in a similar way to hierarchic problems. This application is carried out utilizing statistical data and is beneficial to the results when judgemental errors are multiplicative with a lognormal distribution.

"In the estimation of item weights all items possess varying degrees of common value measured in ratio scales that are applied to various levels of a hierarchy" (Crawford and Williams 1985:393-4). Statistical procedures suitable for interval level data are also appropriate for ratio-level data. "Ratio measurement is the highest measurement level providing information between the intervals of objects, because they have a rational meaningful zero" (Polit and Beck 2012:380).

"The geometric mean analysis method in multi-criteria decision analysis (MCDA) and the use of pairwise ratios is used to establish item weights. Each of the experts contributed to an own *n y n* judgement matrix $A=(a_{ij})$ with the *ij*-th element a_{ij} denoting the ratio between w_i and w_j where w_i is the importance of item I and a_{ij} therefore represents the importance of item *i* relative to item *j*. The value for a_{ij} follows when the expert denotes with a single marking on the VAS represents the importance of item *i* relative to item *j*. The mark divides a bar of standard length into a left part, denoting the importance of item *i* and the right part indicating the importance of item *j.* The length of the left divided by that of the right assigns a numerical value of a_{ij} " (Becker, Wolvaardt, Hennessey and Maree 2009:2).

Crawford and Williams (1985:389) explain the difference between a geometric mean and the arithmetic mean. The arithmetic mean divides the quantity of items into the total sum of items. A geometric mean uses the product of their values thereby normalising the ranges. This prevents a domination of weighting by any one range. Saaty's examples show that the relationships of objects on the different levels of a hierarchy are determined by the ranked importance of these objects, at each level of the hierarchy. The measurement, in terms of the relative importance, of objects on any level in the hierarchy, is represented as ratio scales. One, needs to be assured that the calculation of estimates relative to the ratio scales, are rooted in statistical theory based on their importance in the study of hierarchies. On each level of a hierarchy, there is a ratio scale for the value of objects, at that level relative to any object at the

next level up. When the ratio scales are combined multiplicatively they give a view of the entire hierarchy.

To obtain ratio scales on the value of objects on each level of the hierarchy, each object has to be weighted relative to a second object. This process is referred to as paired comparison and was carried out in **Phase-One** of the study, by comparing each item with a second item featuring on the evaluation instrument.

According to David (1963:4) the pioneers of the procedure for estimating scales of value were Churchman and Ackoff (1954). In the 1950s their method was applied by Wells and others, in the process of decision making regarding military problems. The air force in many countries including South Africa, use this method to make assessments and decisions regarding long-range planning (David 1963:4).

3.8.2.1 Paired Comparison Analysis

Subjective scales of measurement estimates data from pairwise comparison. Lavrakas (2008) refers to paired comparison as a technique that dates back to the 1800s. It is described as a research design where ratings from paired items on visual analogue scales that have been created by the experts, provides interval level scaled scores. The technique produces a reliable ranking of the items that have been rated however a great deal of data, has to be collected placing a burden on the experts together, with it being a costly exercise.

"Paired-comparisons estimate the size of *n* entities by asking one or more experts to judge the relative largeness of the entities, rather than providing size values. Although this method is not new, it has received little attention in the literature. Social science researchers, use this method for measuring, when an accepted measurement scale or a measurement instrument is not available" (Miranda 2001:87).

The aim of such analysis is to weight entities in order to develop ratio scales represented as a percentage for each entity, relative to the entity above on a hierarchy. One is therefore able to assess the ranked importance of entities, objects

or items. In this study, it allows the researcher to assess the ranked importance of the constructs and sub-items on the FE-SAT.

In the early writings of David (1963:4-9) as quoted by Lack (2009:52) it is stated that Fechner (1860) introduced the earliest form of paired comparisons the method was later improved on by Thurstone (1927). In a basic and simple experiment involving paired comparison a pair of objects were examined, by a group of experts who were asked which object they preferred. It was only the preference that was considered important and not the strength of preference.

David (1963:8) refers to second method of estimating subjective scales using pair-wise comparisons where, not only is preferred object noted but the degree of preference is noted. A preference scale is then based on an eigenvector analysis of the matrix of pair-wise comparisons. The paired comparison analysis employed in this study was carried out, using the linear model of visual analogue scales.

Lack (2009:50) explains mathematical terminology when using paired comparison analysis. An *item* is referred to as an *entity*. The weighting is therefore, compared by using one entity against a second entity. One visual analogue scale (*unit)* is referred to as an *element.* For the purpose of this research *item* and *unit* was used.

3.8.2.2 Visual Analogue Scales

A visual analogue scale is a psychometric measurement scale. Participants can place a mark on the horizontal line of the scale to represent their subjective judgement of any given phenomenon. Grove, Burns and Gray (2012:433) describe the use of the linear model consisting of horizontal or vertical visual analogue scales 100mm. in length with anchors at each end. A mark is placed through the line at a position that represents the expert's judgement to ascertain the weighting of two items. The distance between the left end of the line and the mark placed by the expert is measured in millimetres.

Grove, Burns and Gray (2012:434) further state that a problem in scaling procedures was the difficulty of obtaining fine discrimination of values. The visual analogue scale sometimes referred to as magnitude scaling appears to resolve this problem. They

further add that this technique seems to provide interval-level data, and some researchers argue that it provides ratio-level data: "Although visual analogue scales have been used in clinical and research settings since the 1920s, their use in nursing is more recently evident" (Wewers and Lowe 1990:227).

Wewers and Lowe (1990:233) point out that in the 1960's the VAS featured in the literature quite frequently and originally used by assessment raters, to evaluate individuals. The VAS using the graphic rating method is now being used to rate subjective phenomena.

The weighting of all the constructs and sub items was done using the Subjective Judgement Model. A pair-wise comparative weighting was carried out and each pair of constructs and sub-items was displayed on a 100mm linear visual analogue scale (VAS) so that each expert could do a comparative pair-wise weighting of one item compared with a second item. Weights were established by modelling relative scores from each individual from the 'expert' group who gave a subjective weighting to the various constructs and sub items to identify the relative importance of these items within the given hierarchy. An example of a visual analogue scale is reflected in Figure 3.1.

(A) Item x v. **(B)** Item y

AB 0mm |————————————————/———————— | **100mm**

Figure 3. 1: Example of a visual analogue scale

(An example and does not necessarily represent 100mm)

- The length of the scale is 100mm
- Anchors are placed at 0mm and 100mm
- The AB refers to the paired comparison of two constructs or two sub-items
- The expert places a mark along the 100mm line
- The distance between 0mm to the mark placed by the expert is the weighted measurement of (A) vs (B).

- An accurate measurement in mm. between 0mm. to the expert's mark is carried out by the researcher on all the visual analogue scales and sent to the statistician for conversion to ratio scales.

A graphic illustrating the incorporation of the content validity model and the subjective judgement model is presented in (Fig.3.2).

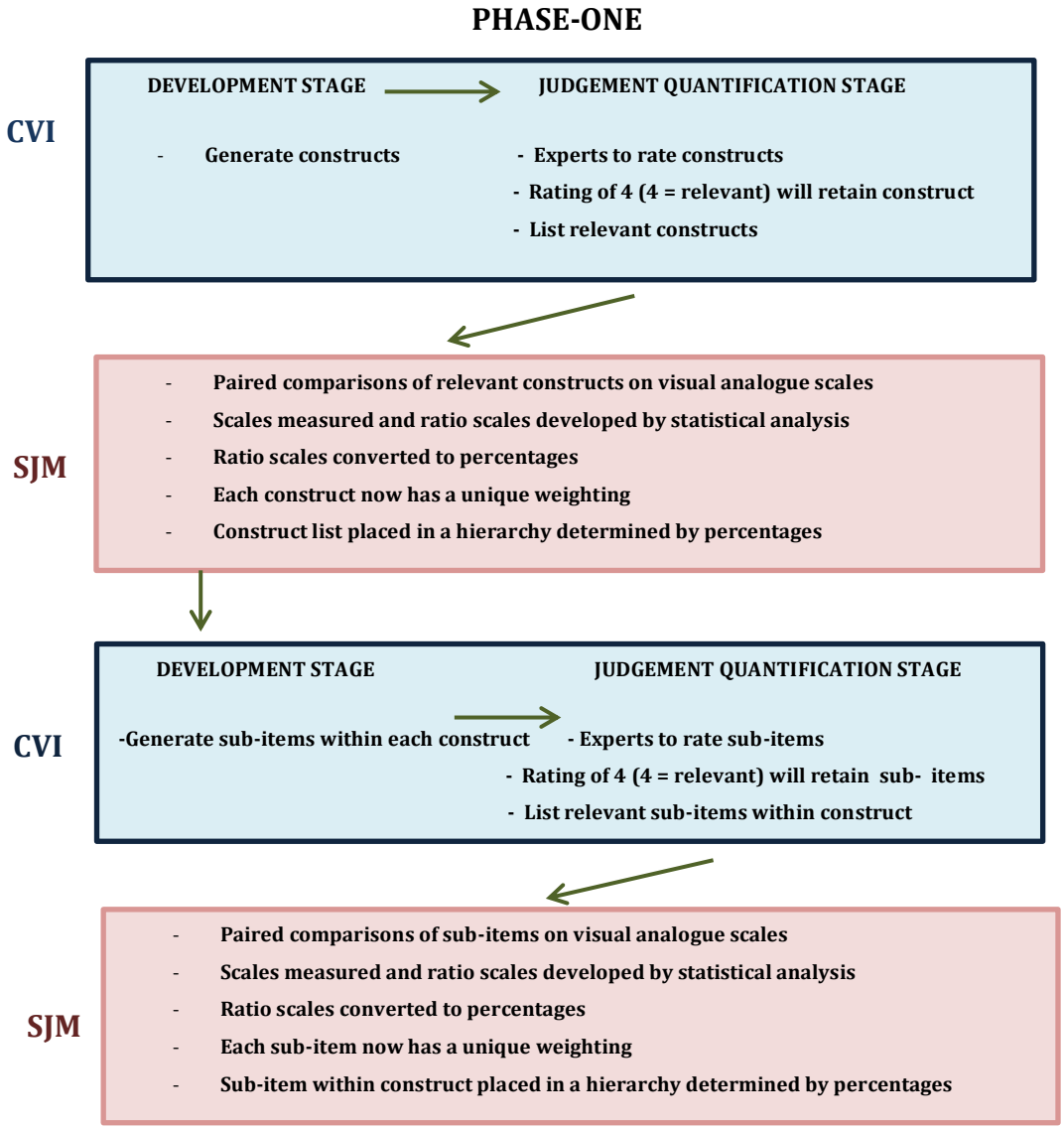


Figure 3.2 Conceptual framework on two theoretical models

The Delphi Technique was used to implement the Content Validity Index and the Subjective Judgement Model.

3.8.3 The Delphi Technique

A series of surveys are conducted, amongst a group of subject experts with the purpose of obtaining information on a given subject. A questionnaire together with a set of instructions is circulated to the individual experts, asking for their subjective judgement on the different items set out on the questionnaire. The members of the group remain anonymous to each other thereby preventing, collaboration with each other taking place. The researcher analyses each questionnaire and measures the judgements made by the experts. Further rounds of the survey can be conducted depending on the result of the analysis.

In the determination of the content validity the CVI and construct validity the SJM of items, on an evaluation tool and the evaluation tool as a whole, a Delphi survey was implemented. The survey provided consensus of professional opinion and the required data for the development of the FE-SAT.

According to Grove, Burns and Gray (2012:435) refer to the Delphi technique as a survey to obtain information that is used to make decisions, assess priorities and make forecasts. Polit and Beck (2012:267) describe the Delphi technique as a method that will assist in problem solving, by assessing the judgements made by the expert group. Information is gathered in a series of surveys that will continue through the process of "response, analysis, feedback, response" until consensus is reached.

According to Maleka (2011:71) the Delphi technique has become a useful research tool used, to obtain consensus from a selected group of experts. Gupta and Clarke (1996: 185-211) describe the primary purpose of the Delphi to be "a method to obtain the most reliable consensus of opinion of a group of experts."

Keeney et al. (2001:200) state that consensus of opinion "does not imply that the answers are correct; results are experts' *opinions* and not irrefutable fact." In this study a consensus Delphi was not required and a decision Delphi was used.

According to Powell (2003:376) the Delphi technique makes use of a series of sequential questionnaires interspersed by controlled feedback seeking reliable consensus of opinion from a group of experts. Furthermore, the Delphi serves as a

useful tool for solving problems in health care settings. The Delphi methodology can be confusing and it can be difficult to distinguish between the lack of methodological rigour and the fact that the Delphi comes in different guises. The application and interpretation of this method is varied. The strengths of the Delphi technique according to Powell (2003:377) is the achieved consensus in an area of uncertainty; the feedback between rounds that is able to broaden knowledge and stimulate new ideas is a quick, efficient and cheap way to generate knowledge from an expert group. It is a democratic and structured approach that combines the collective wisdom of experts. The anonymity afforded the expert group could lead to a lack of accountability on the views expressed. The success of the study is determined by the expertise of the participants making up the expert panel and their ability to make valid contributions. Powell (2003:379) discusses the scientific merit of the Delphi technique and bases it on the Lockean notion of the function of human experience and agreement as a basis of truth. The above researcher states that scientific merit of the findings in such a study can be compared with the term 'goodness criteria' that was proposed by Heshusius in 1990 (Powell 2003), and rests on the justification of decision-making and rigour in conducting the study:

- If something is good it will be recognized as such. One does not require criteria to prove this but should stay true to the context of the study
- Criteria separate fact from fiction.

According to Schell (2006:440), the Delphi technique provides important expert insights into a topic. Results do not reflect irrefutable fact; only expert opinion. Whilst the Delphi technique is time-efficient for the experts who are not asked to attend formal meetings, this technique is time-consuming for the researcher. Questionnaires have to be analysed, summarized and new questionnaires prepared.

The Delphi technique has advantages according to Hardy et al. (2004:98); it is considered cost and time-efficient and in the second and third rounds it allows the participants to consider the opinions of the other experts.

3.8.4 Data collection procedure

Determination of content validity was based on Lynn's two-stage process referred to as the *Developmental Stage* and the *Judgement Quantification Stage.* The *Developmental Stage* of domain identification, item generation and instrument formation was carried out using a Delphi survey during which data were collected.

Data collection took place in two stages:

Stage One: Identification of constructs

Stage Two: Identification of sub-items within the constructs

3.8.5 Stage One (Identification of constructs)

At the commencement of each round, an information letter was sent electronically to each expert within the expert group. They were thanked for their contribution in the survey and provided with specific instructions relating to that round. The rating procedure was explained. Each construct would receive a rating on a 4-point ordinal rating scale, where 1= not relevant, 2=unable to assess relevance, 3=relevant but needs minor alteration, 4=relevant. The information letter reflected a date for submission together with the researcher's contact details, should there be any queries. The constructs that received a rating of 4=relevant and the altered constructs that received a rating of 3=relevant but needed minor alteration, were placed onto the next survey round questionnaire for further rating by the expert group. Constructs that were rated 1= not relevant, 2=unable to assess relevance were excluded from the questionnaire. For the content validity index (CVI) to be meaningful, only items rated a 4= relevant were included on the evaluation tool.

3.8.5.1 Round One Delphi Survey

The survey commenced in generating items that would be used as the main constructs that featured on the Facilitator Evaluation-Self-Assessment Tool (FE-SAT). A Round One information letter **(Annexure E)** was sent electronically to each of the five experts, explaining the requirements for the Round One survey. The experts were asked to list items that in their opinion should be placed on the FE-SAT. Furthermore, the experts were asked to present a list of items representing the characteristics specific to a PBL facilitator. They were informed that there were no limits placed on the number of items required and each individual expert was given

the opportunity to include on the list as many items as they felt necessary. The completed lists were returned to the researcher and the items from each expert were placed on a single list and assimilated into a useable form. The researcher was able to identify themes that described the items on the assimilated list. Each theme would represent a construct. The relevant items within each theme were subsequently rated as sub-items within the specific construct.

3.8.5.2 Round Two Delphi Survey

The Round Two Delphi survey (constructs) commenced, with a Round Two information letter and questionnaire **(Annexure F)** being sent to each of the experts. The questionnaire represented the themes that were identified from the Round One assimilated list of items. The Round Two information letter requested each expert to provide an alternative to the construct, should that construct be rated a 3. Should the expert feel that certain constructs needed to be included on the questionnaire they were able to do so in the 'comments' section featured on the questionnaire.

The completed questionnaires were returned to the researcher. The constructs that received a rating of 4=relevant and the altered constructs that received a rating of 3=relevant but needed minor alteration, were placed onto the Round Three questionnaire for further rating by the expert group. Constructs that were rated 1= not relevant, 2=unable to assess relevance were excluded from the Round Three questionnaire.

3.8.5.3 Round Three Delphi Survey

The Round Three Delphi survey (constructs) commenced with a Round Three information letter and questionnaire **(Annexure G)** being sent to each of the experts. The questionnaire represented the constructs, that were rated 4 and the amended constructs that were rated 3 in the previous round. The constructs that in the expert's opinion should be included on the FE-SAT were included on the questionnaire. The completed questionnaires were returned to the researcher.

On completion of the first three rounds of the Delphi survey, constructs were identified and the content validity was determined. In the fourth round of the Delphi

survey a process of judgement quantification commenced using paired comparisons on all the constructs.

3.8.5.4 Round Four Delphi Survey

In Round Four of the Delphi survey the construct validity was determined. The Subjective Judgement Model was used to 'weight' each construct. This was done using pair-wise comparisons of all the constructs on 10cm linear visual analogue scales (VAS). A Round Four information letter and VAS **(Annexure H)** relating to the selected constructs that will appear on the FE-SAT was prepared. Photocopying was relied upon to produce copies of the VAS units. The measurement on each scale of each unit was co-checked for exactness of 100mm. prior to being handed out. Photocopying of the VAS units could cause distortion in the length of the scale. The researcher held a meeting with each expert, the VAS units were handed out and an explanation was given on how the VAS should be used. The explanation was further set out in the information letter that was handed to the expert at the time of the meeting.

The data were sent back to the researcher where each unit was accurately measured from 0mm, to the expert's mark. This measurement was entered onto an Excel spreadsheet and sent for statistical analysis.

Following statistical analysis a preferential weighting was given to each construct and construct validity was determined. The list of constructs was placed in a hierarchy from the construct with the highest weighting to the construct with the lowest weighting.

The five constructs generated in the first three rounds of the Delphi survey are represented by letters from A-E with each construct being returned for a further Delphi Survey, to generate sub-items within each construct.

The data collection methods to identify sub-items for each of the constructs (A-E), is presented as follows:

3.8.6 Stage Two (Identification of sub-items within the constructs)

During the **Stage One** Round One survey items were grouped together to form themes. Within each group the items making up that group were transferred to the **Stage Two** survey. These items, referred to as sub-items were transcribed onto the **Stage Two** Round One (sub-items) questionnaire for each construct A-E.

An information letter was sent to each of the experts thanking them for their contribution in the (sub-items) survey. The experts were provided with specific instructions on the requirements relating to each round and the rating procedure on a 4-point ordinal rating scale, where 1= not relevant, 2=unable to assess relevance, 3=relevant but needs minor alteration, 4=relevant. The letter further reflected a date for submission of the completed questionnaires together with the researcher's contact details should there be any queries. The sub-items that received a rating of 4=relevant and the altered constructs that received a rating of 3=relevant but needed minor alteration were placed onto the next survey round questionnaire for further rating by the expert group. Sub-items that were rated 1= not relevant, 2=unable to assess relevance were excluded from the questionnaire. For the content validity index (CVI) to be meaningful only items rated a 4= relevant were included on the evaluation tool.

3.8.6.1 Round One Delphi Survey (sub-items within Construct A)

A Round One (sub-items) information letter **(Annexure I)** and questionnaire containing sub-items generated from **Stage One** relating to Construct A, was sent electronically to each of the five experts (second sample selection) explaining the requirements for the Round One survey and the rating criteria.

The completed questionnaires were returned to the researcher. There were no changes made to the sub-items and were all given a rating of 4.

3.8.6.2 Round Two Delphi Survey (sub-items within Construct A)

A subjective judgement weighting on the paired comparisons of the sub-items generated by the experts was carried out by the experts. An information letter and

units of VAS relating to the selected sub-items **(Annexure J)** were provided to each expert together with the hand delivered VAS. The data were sent back to the researcher where each unit was accurately measured from 0mm to the expert's mark. This measurement was entered onto an Excel spreadsheet and sent for statistical analysis.

3.8.6.3 Round One Delphi Survey (sub-items within Construct B)

The survey commenced in generating and rating sub-items from **Stage One** that would be included within Construct B. The Round One (sub-items) information letter **(Annexure K)** and questionnaire, was sent electronically to each of the five experts (third sample selection) explaining the requirements for the Round One (sub-items) survey. The experts were asked to rate these sub- items using Lynn's 1-4 rating scale and to include items, that in their opinion should be placed on the questionnaire. The completed questionnaires were returned to the researcher. Sub-items rated a 3=needing minor alterations were altered according to the experts' opinion.

3.8.6.4 Round Two Delphi Survey (sub-items within Construct B)

The individual experts were provided with an information letter and questionnaire **(Annexure L)** that included the items that were rated 4 = relevant together with the alterations made to the items rated 3. Each altered sub-item was rated on the 4-point ordinal rating scale. The completed questionnaires were returned to the researcher.

3.8.6.5 Round Three Delphi Survey (sub-items within Construct B)

Once all the sub-items within the construct received a rating of 4=relevant, the Subjective Judgement Model was used to 'weight' each sub-item. This was done using pair-wise comparisons on all the sub-items on 10cm linear visual analogue scales (VAS). An information letter and units of VAS relating to the selected sub-items **(Annexure M)** were provided to each expert within the selected group. The VAS units were hand delivered by the researcher together with the information letter at a meeting held with each expert. In this round expert 02 was replaced. The experts were provided with specific instructions on how to use the VAS. On completion the data were sent back to the researcher, where each unit was accurately measured from 0mm to the expert's mark. This measurement was entered onto an Excel spreadsheet and sent for statistical analysis.

3.8.6.6 Round One Delphi Survey (sub-items within Construct C)

The survey commenced in generating and rating sub-items from **Stage One** that would be included, within the Construct C. A Round One (sub-items) information letter **(Annexure N)** and questionnaire containing sub-items relating to Construct C was sent electronically to each of the five experts (fourth sample selection) explaining the requirements for the Round One (sub-items) survey. The completed questionnaires were returned to the researcher and collated.

3.8.6.7 Round Two Delphi Survey (sub-items within Construct C)

The individual experts were provided with an information letter and questionnaire **(Annexure O)**. The questionnaire included the items that were rated 4 = relevant together with the alteration of items rated 3. Each altered sub-item was rated on a 4-point ordinal rating scale and returned to the researcher.

3.8.6.8 Round Three Delphi Survey (sub-items within Construct C)

The Subjective Judgement Model was used to 'weight' each sub-item. This was done using pair-wise comparisons on all the sub-items on 10cm linear visual analogue scales (VAS). An information letter and units of VAS relating to the selected sub-items **(Annexure P)** were provided to each expert. The same procedure was carried out as in 3.6.6.3. The data were sent back to the researcher where each unit was accurately measured from 0mm to the expert's mark. This measurement was entered onto an Excel spreadsheet and sent for statistical analysis.

3.8.6.9 Round One Delphi Survey (sub-items within Construct D)

A Round One (sub-items) information letter and questionnaire **(Annexure Q)** containing sub-items relating to Construct D was sent electronically to each of the five experts (the forth expert group) explaining the requirements for the Round One (sub-items) survey and the rating criteria. The completed questionnaires were returned to the researcher and collated.

3.8.6.10 Round Two Delphi Survey (sub-items within Construct D)

Linear visual analogue scales (VAS) were used to carry out a subjective weighting on the paired comparisons of the sub-items. A hand delivered information letter and units of VAS relating to the selected sub-items **(Annexure R)** were provided to each

expert. Data were returned and measurements entered onto an Excel spreadsheet and sent for statistical analysis.

3.8.6.11 Round One Delphi Survey (sub-items within Construct E)

The survey commenced in generating and rating sub-items that would be included within Construct E. A Round One (sub-items) information letter **(Annexure S)** and questionnaire, containing sub-items relating to Construct E, together with an information letter was sent electronically to each of the five experts (third sample selection) explaining the requirements for the Round One (sub-items) survey. The experts were asked to rate these items using Lynn's 1-4 rating scale and to include items that in their opinion should be placed on the FE-SAT. Completed questionnaires were returned to the researcher and collated.

3.8.6.12 Round Two Delphi Survey (sub-items within Construct E)

The individual experts were provided with an information letter and questionnaire **(Annexure T)** that included the items that were rated 4 = relevant together with the alteration of items rated 3. Each altered sub-item was rated on a 4-point ordinal rating scale. The completed questionnaires were returned to the researcher with all the sub-items receiving a rating of 4=relevant.

3.8.6.13 Round Three Delphi Survey (sub-items within Construct E)

The Subjective Judgement Model was used to 'weight' each sub-item with the same procedure being used as in 3.6.6.3. An information letter and units of VAS relating to the selected sub-items **(Annexure U)** were hand delivered to each expert by the researcher. The data were sent back to the researcher where each unit was accurately measured from 0mm to the expert's mark. This measurement was entered onto an Excel spreadsheet and sent for statistical analysis.

Figure 3.3 demonstrates how the Delphi Survey sequence was used

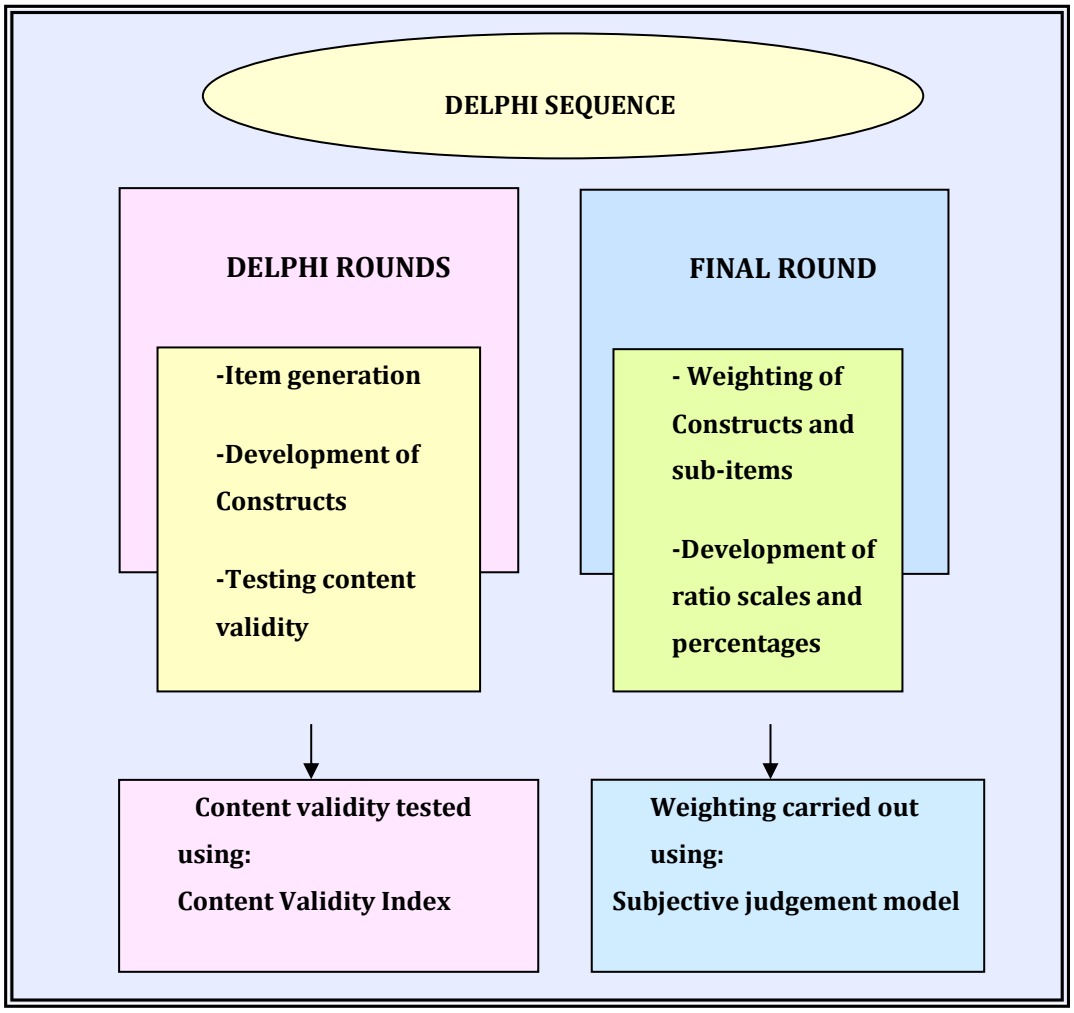


Figure 3. 3: Delphi technique sequence (adapted from Lack 2009)

3.9 APPROACH TO DATA ANALYSIS

Data analysis is described by Grove, Burns and Gray (2012:691) as a process conducted to reduce, organise and give meaning to data. The raw data sets collected during **Phase-One** of the study were reduced to an understandable format and organised for statistical analysis to be carried out to obtain results.

Data were collected on the VAS and were constantly checked for accuracy. An accurate measurement in mm. between 0mm. to the expert's mark was carried out by the researcher on all the visual analogue scales. The measurements were entered onto an excel spreadsheet and sent to a statistician for conversion to ratio scales. The data were captured in the EPI-INFO-6 database specifically formulated, for the coding

of the data content. Stata statistical software Release 8.0 (Statacorp 2003) was used to determine item weights. A bivariate regression analysis was applied to the data to predict values of the dependent variable (second item on the VAS) based on the independent variable (first item on the VAS) and thereby provide ratio scales.

Results included a presentation of mathematical matrix notation where different elements of the design matrix *X* represents a column for each item with values of -1; 0; 1. According to Becker *et al.* (2009:2) to find the weights of the *n* item of the metric, defined as the sum of the weighted scores for the *n* items, each of the experts compiled a *n x n* judgement matrix $A=(a_{ij})$.In the estimation of item weights according to Crawford and Williams (1985:393-4), calculating a preference vector from the ratios entered in a judgement matrix can be presented in a linear model.

3.10 VALIDITY AND RELIABILITY PHASE-ONE (instrument development)

The construct validity of the FE-SAT was determined during the final round of the Delphi survey on all the constructs and sub-items following the decisions and judgements made by the expert group. According to Polit and Beck (2012:237), construct validity is defined as the degree to which an instrument measures the construct under investigation. Polit and Beck (2012:238) further state that it is a challenging task to validate an instrument in terms of the construct validity. They set out key questions relating to construct validity, for example:

- What is the instrument measuring?
- Does it adequately measure the abstract concepts of interest?

According to Grove, Burns and Gray (2012:45), validity of an instrument is determined by the extent to which the instrument reflects the construct that is being examined. They further add that no instrument is completely valid and that one should measure the degree of validity rather than whether the instrument is valid or not. Testing validates the use of the instrument and constructs for a specific group of people.

Reliability concerns the consistency with which the measurement technique measures a concept. Only once the instrument has been used, one is able to test its reliability.

Whilst the content of the FE-SAT possessed a degree of validity, each construct and sub item had to be rated a four to apply rigor to the evaluation tool (content validity). The weighting process carried out during the final round of the survey on constructs and sub-items (construct validity) was based on honouring the decisions and judgements made by the expert group.

3.11 ETHICAL CONSIDERATIONS

The researcher is bound to follow ethical guidelines, in behaviour and decision making. According to De Vos, Strydom, Fouche and Delport (2011:114-115) ethics is defined as the preferences that affect human behaviour in human relations, that conforms to a code of principles of conduct, responsibility of the researcher and conduct of a profession. Furthermore, that no physical harm is inflicted and that stress be minimised by allowing the respondents to complete questionnaires in their own time and in a private place. Participants should be allowed voluntary participation, be given information and assured that their non-participation will not affect them negatively. A written informed consent should be obtained from the participants. Anonymity, privacy and confidentiality of all participants should be protected. Researchers are obliged to conduct the research study with honesty and competency.

Ethical requirements were carried out as follows:

- Permission to conduct this study was granted by the Head of the Department Nursing Education, Faculty of Health Sciences, University of the Witwatersrand **(Annexure A)**
- Approval of protocol was obtained from the Graduate Studies Committee, Faculty of Health Sciences, University of the Witwatersrand **(Annexure B)**
- Ethical clearance and permission for the study to be conducted was received from the University of the Witwatersrand Human Research Ethics committee (Medical) No. M 130637 **(Annexure C)**
- Letter to respondents and consent form **(Annexure D)**

Each of the participants (n=10) who signed the consent form were asked to tick 'yes' or 'no' to 4 questions. The inclusion of these questions was a request made by the ethics committee. The results are as follows:

	YES	NO
-Do you wish to be identified in the above study?	0	10
-Do you wish to be credited for your intellectual input?	0	10
-If you answered 'NO' to the above do you agree to be referred to as e.g. 'Expert 01'	10	0
-Do you wish to be cited as co- author in a publication containing your input ?	6	4

- All raw data was kept in a locked cupboard and will be kept for two (2) years if the study is published and destroyed thereafter and six (6) years if study is unpublished and destroyed thereafter.

3.12 CONCLUSION

The methodology was influenced by the research design. The latter was based on the purpose of the study and the objectives that were set in **Phase-One**.

In **Phase-One** the process of determining content validity using the Content Validity Index was described. Furthermore, the process in utilising the Subjective Judgement Model to determine construct validity was described. Both the Content Validity Index and the Subjective Judgement Model were conducted through a Delphi survey.

The next chapter presents the results from the data obtained during **Phase-One** of the study.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS PHASE-ONE

4.1 INTRODUCTION

This chapter provides an analysis of the data and results in **Phase-One** of the study. A description to the approach to data analysis based on the conceptual framework, being the Content Validity Index and the Subjective Judgement Model is included. The results of the Delphi survey conducted with an expert group of professionals are presented.

Data were collected in two stages:
Stage One –the development of constructs
Stage Two –the development of sub-items within the constructs.

Data collected in both **Stage One** and **Stage Two** were analysed with the assistance of a statistician leading to the development of ratio scales. The latter were represented in a percentage thus enabling each construct and each sub-item to possess a unique weighting. The early development of the FE-SAT commenced, where constructs and sub-items were placed in a hierarchy from highest percentage to the lowest percentage.

Tables represent the study results in **Stage One** and **Stage Two** of the process.

4.2 SUMMARY OF DATA COLLECTION

Data were collected as described in Chapter Three. In order to finalise the constructs, a total of four rounds were required in the Delphi survey. Likewise finalisation of the sub-items, required three rounds in the Delphi survey for each construct (B,C,E) and two rounds each for the remaining constructs (A,D). Domain experts were utilised in the identification and rating of both the constructs and the sub-items within the constructs. The experts were drawn from a selected pool of experts (n=10) into five selected groups with five experts in each group. The groups worked consecutively.

4.3 THE STUDY RESULTS (Phase-One – Instrument Development)

The study results are presented under the headings:

- **Stage One (constructs)**
- **Stage Two (sub-items within the constructs)**

In both **Stage One** and **Stage Two,** results are presented in tables in the following order:

- The list of items generated by the experts in the development of constructs (**Stage One**) and sub-items (**Stage Two**)
- Themes developed from the list of items generated by the experts
- The individual experts' ratings on the themes from each Delphi round
- Paired comparisons of constructs and items chosen by the experts
- A mathematical matrix together with the measurements on the paired comparisons on each VAS
- Coefficients, exponential coefficients and weighting (%) of constructs and sub-items based on VAS measurements
- Hierarchy of constructs and sub-items based on the weighting (%)

4.3.1 Stage One

In this stage the constructs were identified using the first sample selection of experts (n=5) as presented in Table 4.1.

Table 4.1 Codes and academic qualifications of the sample selection (constructs)

EXPERT CODES	ACADEMIC QUALIFICATIONS	
	FIRST SAMPLE SELECTION Constructs	
	Original	Replacement
01	PhD	MSc
02	MSc.	
03	PhD	
04	PhD	MSc
05	MBBCh	

4.3.1.1. Delphi Survey Round One

Each of the five experts in the first Delphi round, compiled a list of items that they deemed fit for inclusion on the FE-SAT. The lists were returned to the researcher who sorted and collated them into a single list of items. The researcher placed items similar in nature into groups. Eight groups were identified and each group was colour coded, as presented in Table 4.2 and each group was given an appropriate heading by the researcher as presented in Table 4.3. The colour coding in Table 4.2 matches the colour coding in Table 4.3 providing easy identification of a group within the specified heading. The groups were numbered 1-8 thereafter they were given an appropriate heading (Table 4.3).

Many of the items listed by the experts included a description on how the item should be managed. To simplify Table 4.2 only the items are listed. The full lists containing the items and the management as suggested by each expert are included as Annexures:

Expert 01 - Annexure V
Expert 02 - Annexure W
Expert 03 - Annexure X
Expert 04 - Annexure Y
Expert 05 - Annexure Z

Table 4.2: Round One Delphi Survey expert lists

GROUP-THEMES	EXPERT 01	EXPERT 02	EXPERT 03	EXPERT 04	EXPERT 05
1	-Group conflict management -Keep control Assertiveness -Evaluation of individual and group performance	-Conflict resolution -dealing with group dynamics, benefits and challenges -Motivating and encouraging the group.	-Construct rules for the session - Identify and support stress management	-Organisation skills (time management) -Resources books/venues -Factors affecting group process	-Discuss and encourage adherence to group norms -Role model punctuality (starting time).Keep to the allocated time for the session
2	-Active listening -Observant Encourage participation clarification creativity	**-Verbal skills** -concrete and emotional contents -Professional language **Non-verbal skills** -Proxemics; Gestures; Appearance -Barriers to communication	-Don't be overwhelming in discussion Create a story line, a narrative stringing ideas together	-Use an official language for communication -Ethnocentrism	-Be interactive and participatory when appropriate (communication model) -Guidance to students
3	-Flexibility Enthusiasm / energy Sense of humour	-Flexibility Enthusiasm Sense of humour -Role Model	-Share life experiences in the facilitation	-Availability and accessibility of the facilitator	-Be attentive and acknowledge when the students report back on their learning topics Develop a rapport with the students Be patient / nurturing
4	-Knowledge of subject matter	-Knowledge of PBL Learning outcome Learning objective -Adult learning principles -Avoid didactics	-Provide information to guide students not give them solutions Practical External examples –use specimens, images, music	-Facilitating stud-centeredness -Facilitator development -Understanding of Technology -Principles of facilitation	-Explain the PBL process allow students to follow the process. -When knowledge is lacking, selection of self-learning topics and preparation by all the students -Avoid didactics
5	-Tolerance -Provide educational needs to student	-Tone of voice -Cultural sensitivity -Allocating and supporting role development in others -Self-directed learning Small group discussion Student centred	-Positive attitude drives the feel of the session -Highlight but never focus on student weakness -Motivate and support	-Mutual respect -Show professional responsibility and accountability -Self/Peer evaluation -Passionate about one's profession	-Prepared for the week`s problem in question. -Be dedicated and committed to the process and ensure that the students benefit fully.
6	-Protect and affirm participants -Honesty openness -Fairness / consistency	- Personal value system -individual diversity -- provide emotional, physical and psychological care	-Respect and equality – ethos - Engage students, don't torment them -environment conducive to learning	-Facilitate competently, ethically and creatively -ethical principles - Justice; autonomy Beneficence and non-maleficence	- Take cognizance of all the students, the outspoken, smart including the quieter, weaker ones
7		Responsibility for teaching and learning with adult learner			
8		Understanding facilitation		development in PBL facilitation	

Table 4.3: Round One Delphi survey Constructs (n=8)

1	MANAGEMENT
2	COMMUNICATION
3	INTERPERSONAL SKILLS
4	KNOWLEDGE
5	PROFESSIONALISM
6	ETHICS
7	ADULT LEARNING SKILLS
8	FACILITATION SKILLS

Table 4.2 and Table 4.3 are set out in eight colour coded groups (1-8). Each group now referred to as a construct is discussed separately:

Group 1: Management

The main focus in this group is on the management of conflict, management of group dynamics, organisational skills, availability of resources, motivation and management of stress amongst students. It was for this reason that this group of concepts would assume the heading of MANAGEMENT. Whilst the description of management is broad, in this instance management refers to the control by a facilitator over the activities and behaviour of the individual student or a group of students. Conflict can be defined as a situation where "differences in power, values or attitudes give rise to disagreement, opposition or animosity between two or more parties" (Werner 2011:296). In the 21st Century the diversity in university student population in South Africa has become evident. The environment has become competitive with high expectations and emphasis on teamwork. Whilst conflict can have disastrous effects it can also be beneficial. It is therefore necessary for the facilitator and the group to understand the concept of functional and dysfunctional conflict. According to Werner (2011:296) functional conflict can be valuable, in order to achieve productive teamwork if it is managed effectively. Andrade (2008: 23-38) states that, "dysfunctional conflict focuses on emotions, relationship conflict and interpersonal conflict." The majority of the experts (Table 4.2) expressed the need for managing

conflict, it is therefore important that group members and facilitators are able to recognise dysfunctional conflict and are equipped with the skills to deal with it.

"Group dynamics is the study of actions, processes and changes that occur within and between groups" (Forsyth 2010:2). Potgieter (2011:160) describes Lencione's model setting out the five dysfunctions associated with a team /group namely:

- Absence of trust
- Fear of conflict
- Lack of commitment
- Avoidance of accountability
- Inattention to results.

The knowledge of group dynamics including group norms is essential in the understanding of the psychology of a group. Furthermore knowledge of the process and problems associated with group development, to steer the group in a productive and creative way.

According to Bagraim (2011:81) "motivation is the force within us, that arouses, directs and sustains our behaviour and effective managers understand motivation." It can therefore be said that effective facilitators should understand motivation, be familiar with the motivational theories and apply these theories to motivate the group. Opinions by the experts express the need to motivate, encourage and support the group.

University students are faced with many stressors. (Barkhuizen and Rothman 2008:439). Stress is defined as the body's reaction to demands and changes that requires it to adapt physically, mentally and emotionally. According to Oosthuizen and Berndt (2008:90-105) "one is faced with many stressors- work pressure, difficult home life, poor time management amongst others". The response to these stressors and the way a person manages them is the cause of the stress. A facilitator should understand the theory of stress, the consequences of stress, be able to identify stress and be able to provide supportive management to the individual. Table 4.2 (expert 03) suggests that stress management should be provided if necessary.

Organisational skills are essential to execute and manage the above concepts in an expert manner.

Group 2: Communication

A consensus of opinion amongst the experts is the importance of communication skills in terms of verbal, non-verbal and cultural communication. It was proposed by Kreitner and Kinicki (2001:479) that communication is a form of social language in which, receivers interpret messages by cognitively processing information. The basic communication model can be transformed into a perceptual model, when the receiver is able to create meaning in his/her own mind. Kelly (2000:92-101) states that there is often a difference in the receivers understanding of the message, from what was intended thereby causing a breakdown in the communication process. The breakdown can result from process, physical and/or personal barriers to communication. Personal barriers include cultural differences related to semantics, language amongst others. The facilitator requires skills in verbal and non-verbal communication together with the ability to overcome communication barriers.

Group 3: Interpersonal skills

The expert group referred to the need for flexibility, enthusiasm, humour, sharing of life experiences, nurturing, patience, availability of the facilitator and developing a rapport with the students'. These items form in part the characteristics identified in a workshop of the National Research Council, Washington 'Assessing 21st Century Skills' on interpersonal skills (2011). Further characteristics identified in the workshop included communication skills, social skills, teamwork, cultural sensitivity, dealing with diversity. Unlike technical skills (hard skills) interpersonal skills can be referred to as soft skills and in particular emotional intelligence (EQ). According to Cunningham (2011:72), "EQ refers to more than polite relationships with others and is more about managing our own emotions in a positive way."

Group 4: Knowledge

The experts identified the importance of knowledge i.e. the knowledge required in the PBL approach to teaching and learning; the theoretical and practical knowledge of subject matter, the PBL characteristics, adult learning principles; information to

guide students, understanding of technology, the need for self- development; improving self- knowledge, self-development and self-assessment as a facilitator. Muller (2001:25) states that a professional should possess the theoretical knowledge and skills required for the profession together with specialised knowledge related to a particular subject area. To improve knowledge the PBL facilitator is required to read research reports, articles, attend workshops or enrol on a short course to gain insight on new developments and trends within a chosen field. Quinn and Hughes (2007:445) refer to knowledge–in-action where expert knowledge can be elicited by observation. It is important for facilitators to assess their knowledge and skills level on a regular basis and effect improvement whenever necessary.

Group 5: Professionalism

The experts' opinion is based on the concept 'Professionalism' related to the student, the teaching process and the facilitator in terms of respect, fairness to the student, responsibility and accountability. "Responsibility in maintaining professional competence and accountability in complying with rules, policies, standards, codes of conduct and legislation" (Searle 2008:328). According to Muller (2001:17) professionalism implies that the practitioner who practises within a profession fulfils all the norms and expectations thereof. The values, attitudes and behaviours displayed should be in line with the rules set out by the profession. Professional accountability refers to *ability* that includes knowledge, skills and values. *Responsibility* includes job responsibility in terms of the contract between the employer and employee. *Authority* to perform one's duties within the framework of legislation.

Group 6: Ethics

The expert opinions are based on the ethical principles of justice to treat fairly with respect and equality; autonomy to function with personal freedom within the realms of professional accountability; beneficence in doing good and non-maleficence by not inflicting hurt on others. Furthermore, when adopting the philosophy of PBL, the facilitator requires an understanding of the PBL curriculum. In the decision making regarding the student, the learning process and the organisation, the ethical decision process should be based on ethical principles and a philosophical and legal

framework. According to Searle (2008:89), ethical codes are essential constituents for a profession. They are sociologically determined and set out to regulate occupations dealing with human life. A code of conduct or professional ethics is a social instrument designed by members of a profession to guide and control practitioners, in this instance, the PBL facilitator.

Group 7: Adult Learning skills

Assume responsibility for teaching and learning with the adult learner. Acknowledge the practice and characteristics of andragogy. Quinn and Hughes (2007:27-32) quote Knowles (1990), "adult education reflects a specific philosophy about learning and teaching based on the assumption that adults want to learn, take responsibility for that learning and that the learning itself will respond to their needs." Adults are self-directed and intrinsically motivated in their learning skills however, a curriculum based on specific subject matter provides an important concept in educational delivery. The curriculum is the plan on which educational provision is based and the adult learner is given autonomy to utilise any learning skill to obtain knowledge specific to the curriculum. Steinhouse, 1975: 86) formulated the 'process' curriculum model where the acquisition of knowledge is a process of constructing new knowledge onto what is already known.

Group 8: Facilitator skills

Understanding facilitation, regarding PBL facilitation. Mohamed *et al.* (2010:103), emphasises the importance in the training and development of facilitators. This would ensure the successful implementation of the curriculum. According to Wardale (2008:50) much of the literature on effective facilitation focuses on facilitator competencies /skills. The facilitator's attributes are crucial to the process of PBL. Attributes suggested by the literature may be grouped under the following terms: neutrality, humility, flexibility, sincerity, professionalism and awareness. Humility refers to the facilitator being approachable, flexibility to be willing to change according to the group's needs. Facilitators should display sincerity in their values and beliefs together with empathetic understanding and ethical principles. In maintaining professionalism and awareness they need to be self-aware and act with integrity.

4.3.1.2 Delphi Survey Round Two

This round provided the same selected group of experts from the target population from the round one survey with a questionnaire listing eight constructs (vide Table 4.3). The information letter that accompanied the questionnaire asked the experts to rate each of the constructs on a scale from 1 (not relevant) – 4 (very relevant). A representation of the ratings is presented in Table 4.4.

Table 4.4: Round Two Delphi survey ratings

NUMBER	CONSTRUCT EXPERT	01	02	03	04	05
1	MANAGEMENT SKILLS	2	4	4	4	2
2	INTERPERSONAL SKILLS	4	4	4	4	4
3	KNOWLEDGE	2	4	3	4	4
4	ADULT LEARNING AND TEACHING SKILLS	4	4	2	4	4
5	COMMUNICATION SKILLS	2	4	4	4	4
6	PROFESSIONALISM	4	3	4	4	4
7	ETHICAL PRINCIPLES	4	3	4	4	2
8	FACILITATION SKILLS	4	4	4	4	4

Number in parenthesis represents the rating that was given by the expert. Verbatim comments made by the experts are as follows:

MANAGEMENT SKILLS

Expert 01: 'Management skills very broad, it is therefore difficult to comment on. One needs to be specific e.g. management of time, management of documentation etc.' (2). Following a consultation with expert 01 an explanation was given by the researcher that in Stage Two of the process, specific sub-items within the construct will be identified.

Expert 05: 'Managing/organizing the students is largely unnecessary. In the event of a group problem one may need, to intervene' (2). In discussion with Expert 05 it was explained that management skills pertained to the development of the facilitator and again these skills were determined by the sub-items identified within the construct.

Both items were upgraded to a rating of four by the experts.

KNOWLEDGE

Expert 01: 'Knowledge needs to be specific – if it is knowledge regarding e.g. subject matter then it would be rated a four' (2).

Expert 03: 'If knowledge will become specific at a later stage then it can be rated a four' (3). In discussion with the expert 01 and 03 the researcher explained that sub-items would identify what knowledge is required.

ADULT LEARNING SKILLS

Expert 03: 'Adult learning skills should slot in under the construct-Knowledge' (3). This change was reflected on the Round Three questionnaire.

COMMUNICATION

Expert 01: 'Communication skills should be incorporated with interpersonal skills' (2). Following a discussion it was decided to combine communication skills with interpersonal skills. This change was reflected on the Round Three questionnaire.

PROFESSIONALISM

Expert 02: 'Professionalism overlaps with ethical principles' (2). In consultation it was decided to leave it as a separate group.

ETHICS

Expert 03: 'Not all ethical principles that we use in the therapy context apply here. The applications of the ethical principles need to be tweaked, so that they can reflect the educational, rather than the clinical context' (3). The construct was changed to EDUCATIONAL ETHICS and reflected on the Round Three questionnaire.

Expert 05: (2)-'Need to be aware of ethical clinical situation. Facilitation skills are important, need to let the students get on with the process and redirect them and to

bring them back on track when necessary. One must willingly facilitate and not be obliged because one is a member of staff. This doesn't benefit the students.' Following a discussion it was agreed to let ETHICS remain until the sub-items were identified.

FACILITATOR SKILLS

It was stated by the experts (n=5), that there was no necessity to dedicate a construct specifically to facilitator skills since the remaining constructs incorporate facilitator skills.

4.3.1.3 Delphi Survey Round Three

Round Three Delphi Survey commenced with the eight constructs from the previous round being reduced to five constructs, Facilitator Skills was eliminated, Communication was incorporated into Interpersonal skills (IPS) and Adult Learning Skills incorporated into Knowledge. The same selected group of experts from the round one and round two survey were provided with a questionnaire and information letter listing the alterations made by the experts in round two.

The experts were asked to rate each of the altered constructs on a scale from 1 (not relevant) – 4 (very relevant)

These ratings are represented in Table 4.5

Table 4.5: Round Three Delphi survey ratings (n=5)

NUMBER	CONSTRUCT EXPERT	01	02	03	04	05
1	MANAGEMENT SKILLS	4	4	4	4	4
2	INTERPERSONAL SKILLS	4	4	4	4	4
3	KNOWLEDGE	4	4	4	4	4
4	EDUCATIONAL ETHICS	4	4	4	4	4
5	PROFESSIONALISM	4	4	4	4	4

4.3.1.4 Delphi Survey Round Four

At the end of round three all the constructs were rated a four. Content validity had been determined. In round four the determination of construct validity commenced.

The selection of the expert group was determined by the availability of the academics. Three of the original experts remained and two new experts were selected. These experts met the inclusion criteria and were available and agreed to participate in the study and were provided with the requirements.

Ten visual analogue scales were developed on the group of constructs (Table 4.6). Each unit (scale) represents two items on which a paired comparison analysis (weighting) was completed. A list of ten units – (visual analogue scales) was assigned to each expert. A paired comparison weighting of the constructs was carried out and was accurately measured from 0mm. to the expert's mark.

Table 4.6: Visual Analogue Scales (Constructs) (n=10)

	CONSTRUCTS
AB	(A) Management vs (B) Knowledge
AC	(A) Management vs (C) Interpersonal Skills
AD	(A) Management vs (D) Educational Ethics
AE	(A) Management vs (E) Professionalism
BC	(B) Knowledge vs (C) Interpersonal Skills
BD	(B) Knowledge vs (D) Educational Ethics
BE	(B) Knowledge vs (E) Professionalism
CD	(C) Interpersonal skills vs (D) Educational Ethics
CE	(C) Interpersonal skills vs (E) Professionalism
DE	(D) Educational Ethics vs (E) Professionalism

A mathematical matrix together with the VAS measurements from each individual expert is presented in Table 4.7. Standard weights percentages, coefficients and exponentiated coefficients on constructs, are presented in Table 4.8. Hierarchy of Standard weights percentages on constructs is presented in Table 4.9.

A linear regression model was fitted to the logarithms of the relative weights, obtained during the pair-wise assessment of items. The regression analysis provided correlation coefficients and regression coefficients; the latter, being exponentiated and standardised to add up to 100%. Thus the sum of the constructs =100% and the sum of the sub-items within each construct =100%.

In the development of a mathematical matrix, each of the experts provided a $n\ y\ n$ judgement matrix $A=(a_{ij})$ with the ij-th element $a_{ij.}$ Denoting the ratio between w_i and $w_{j.}$ Where w_i is the importance of item 1 and $a_{ij.}$ represents, the importance of item $_i$ relative to item $_{j.}$

The value for a_{ij} is the result when the VAS is divided by a single mark denoting the importance of item $_i$ relative to item $_{j.}$ The length of the left divided by that of the right assigns a numerical value of $a_{ij.}$.

A mathematical design matrix was applied, with a column allocated to each item that takes on a value of -1, 0, 1. The item weights $w_{i\ \ldots\ Wn.}$ with $w_{i=}$ exp(In w_i) followed by determining the vector $_b$ that minimises the sum of squares using ordinary least square regression software and not fitting the constant (Becker et al. 2009:1-4).

Table 4.7: Matrix and measurements in mm. of constructs on visual analogue scales (n=10)

Matrix - CONSTRUCTS										
EXPERT						01	02	03	04	05
Pair	Item 1(A)	Item 2(B)	Item 3(C)	Item 4(D)	Item 5(E)	VAS mm.	VAS mm.	VAS mm.	VAS mm.	VAS mm.
Con. (AB)	1	-1	0	0	0	90	85.5	82	66	87.5
Con. (AC)	1	0	-1	0	0	72.5	55	70	65	88
Con. (AD)	1	0	0	-1	0	82.5	.48	68	52	70
Con. (AE)	1	0	0	0	-1	90	80	76.5	50	88
Con. (BC)	0	1	-1	0	0	80	55	48	67	88
Con. (BD)	0	1	0	-1	0	90	62	40	70	70.5
Con. (BE)	0	1	0	0	-1	90	44	48	55	88
Con (CD)	0	0	1	-1	0	90	65	40	55	70
Con. (CE)	0	0	1	0	-1	90	84.5	58	57	90
Con. (DE)	0	0	0	1	-1	90	62	52	50	90

Table 4.8 Standard weights percentages and coefficients on constructs (n=5)

Construct		Coefficient	Exp. (coef.)	Std. Weight (%)
Item_1 (A)	Management	0.222264	1.2489	22.08
Item_2 (B)	Knowledge	-0.10112	0.9038	15.98
Item_3 (C)	Interpersonal skills	0.166481	1.1811	20.88
Item_4 (D)	Educational. Ethics	0.280333	1.3236	23.40
Item_4 (E)	Professionalism	0	1.0000	17.68
			5.6574	**100.00**

Table 4.9 Hierarchy of standard weights percentages on constructs (n=5)

	CONSTRUCT	WEIGHTING %
1	Educational. Ethics	23.40
2	Management	22.08
3	Interpersonal skills	20.88
4	Professionalism	17.68
5	Knowledge	15.98

4.3.2 Stage Two

Based on the results of **Stage One** five constructs were identified and placed in a hierarchy according to individual weighting. These constructs were:

- Educational ethics
- Management
- Interpersonal skills
- Professionalism
- Knowledge

In **Stage Two** each construct received individual attention. Four sample selections were made during this stage (Table 4.10). The experts (n=5) per selection were drawn from the original pool of experts (n=10). The selections in each of the four groups were made based on the experts' knowledge and skills relative to the construct for which they were chosen.

During **Stage One,** similar items were placed together in eight different groups each with its own heading. The items within each group were included on the Round One questionnaire of each of the five constructs. These items were rated as possible sub-items within the constructs.

Table 4.10 Codes and academic qualifications on sample selection (sub-items)

EXPERT CODES	ACADEMIC QUALIFICATIONS SAMPLE SELECTION (sub-items)			
	SECOND SAMPLE SELECTION	THIRD SAMPLE SELECTION	FOURTH SAMPLE SELECTION	FIFTH SAMPLE SELECTION
01	PhD	MBBCh	PhD	MSc (MSc)
02	MSc	PhD (MSc)	MSc	MSc
03	MSc.	MSc	MBBCh	PhD. (MBBCh)
04	PhD	PhD	MSc	MSc
05	MSc	MSc	PhD	PhD

4.3.2.1 Delphi Survey Round One - EDUCATIONAL ETHICS

Round One Delphi Survey provided the second sample selection of experts with a questionnaire listing potential sub-items from the **Stage One** list that could be included on the FE-SAT relating to EDUCATIONAL ETHICS. These sub-items are presented in Table 4.11.

The information letter that accompanied the questionnaire asked the experts to rate each of the sub-items on a scale from 1 (not relevant) – 4 (very relevant). The ratings are presented in Table 4.12.

Table 4.11: Formatted themes –EDUCATIONAL ETHICS

ETHICAL PRINCIPLES OF JUSTICE	BENEFICENCE AND NON-MALEFICENCE	AUTONOMY	COMMITMENT TO FACILITATION	LEARNING ENVIRONMENT
-Justice (distributive & retributive) by distributing resources fairly and equally to all learners, and responding appropriately and accordingly to wrongdoing by learners - Fairness / consistency -Honesty / openness - Respect and equality – ethos -Engage students, don't torment them -Protect and affirm participants	-doing good for the student and avoiding harm -Take cognizance of all the students, the outspoken, smart including the quieter, weaker ones	-respecting the unconditional worth of learners as individual -individual diversity	-prepare for tutorial -commit to research -Facilitate competently, ethically and creatively	-provide emotional, physical and psychological -environment conducive to learning

Table 4.12: Round One Delphi Survey result EDUCATIONAL ETHICS (n=5)

GROUP	SUB-ITEMS EXPERT	01	02	03	04	05
1	ETHICAL PRINCIPLES OF JUSTICE	4	4	4	3	4
2	BENEFICENCE AND NON-MALEFICENCE	4	4	4	4	4
3	AUTONOMY	4	4	4	4	4
4	COMMITMENT TO FACILITATION	1	4	3	4	4
5	LEARNING ENVIRONMENT	3	4	3	4	4

Verbatim Comments made by the individual experts on items not rated -4 are as follows:

ETHICAL PRINCIPLES OF JUSTICE

Expert 04: 'Include support and care' (3). This was taken into account and dealt with in **Phase Two** of the study. The point was therefore upgraded by the expert to a rating of 4.

Whilst the experts agreed that the ethical principles of justice, beneficence and non-maleficence and autonomy were relevant factors, Feinsod and Wagner (2008:1) state that "justice is a complex ethical principle with meanings that range from fair treatment of an individual to equitable allocation of resources."

"The ethics of justice constitutes an ethical perspective in terms of which ethical decisions are made on the basis of universal principles and rules and in an impartial and veritable manner with a view to ensuring the fair and equitable treatment of all people" (Botes 2000:1071).

COMMITMENT TO FACILITATION

Expert 01: 'Commitment to facilitation forms the basis of each ethical principle' (1). The construct was excluded as a separate construct and incorporated into the remaining constructs.

Expert 03: 'Include ethical and personal boundaries' (3). This aspect was incorporated in the Principle of Justice.

LEARNING ENVIRONMENT

Expert 01: 'Include the stimulation of learning' (3). This was accepted, sub-item was upgraded to 4. Concept was incorporated in **Phase-Four.**

Expert 03: 'Knowledge of African Moral theory of Ubuntu and awareness of the law' (3). Accepted and incorporated in **Phase-Four.**

A learning environment refers to the physical location, the culture of the organisation or institution, communication skills, availability of resources, social and emotional dimensions of the group amongst others. Galbraith (2004:40) maintains that "instructors are challenged to develop an appropriate setting for learners that will allow each student to fully engage in learning and strive for significant accomplishments."

In discussion with the relevant experts if amendments are taken into account the sub-item can be upgraded to a rating of 4 = relevant.

4.3.2.2 Delphi Survey Round Two - EDUCATIONAL ETHICS

The determination of construct validity commenced. Six visual analogue scales were developed for the sub-items identified. Each unit (scale) represented two items (Table 4.13) on which a paired comparison analysis (weighting) was completed. The subjective judgement weighting of sub-items (Educational Ethics) on the visual analogue scales, together with a mathematical matrix representing the items is presented in Table 4.14. Table 4.15 presents the standard weights percentages and coefficients on sub-items (n=4) following statistical analysis. Table 4.16 presents the hierarchy of items based on the standard weights percentages on sub-items (Educational Ethics).

Table 4.13: Visual Analogue Scales EDUCATIONAL ETHICS (n=6)

	SUB-ITEM (EDUCATIONAL ETHICS)
AB	(A)Principle of Justice vs (B) Beneficence / non-Maleficence
AC	(A) Principle of Justice vs (C) Autonomy
AD	(A) Principle of Justice vs (D) Learning Environment
BC	(B) Beneficence / non-Maleficence vs (C) Autonomy
BD	(B) Beneficence / non-Maleficence vs (D) Learning Environment
CD	(C) Autonomy vs (D) Learning Environment

Table 4.14: Matrix and measurements in mm. of sub-items on visual analogue scales (n=6)

Matrix - SUB-ITEMS (EDUCATIONAL ETHICS)									
	EXPERT				01	02	03	04	05
Pair	**Item 1 (A)**	**Item 2 (B)**	**Item 3(C)**	**Item 4(D)**	VAS mm.	VAS mm	VAS mm.	VAS mm.	VAS mm.
Item (AB)	1	-1	0	0	86.5	64	45	73.5	88
Item (AC)	1	0	-1	0	90	54	53	45	90
Item (AD)	1	0	0	-1	87	64	67	32	45
Item (BC)	1	0	0	0	81.5	60	32	29	90
Item (BD)	0	1	-1	0	84.5	55	48	80.7	46
Item (CD)	0	1	0	-1	84.5	70	58	50	46

Table 4.15 Standard weights percentages and coefficients on sub-items (n=4)

Sub-Item		Coefficient	Exp. (coef.)	Std. Weight (%)
Item_1 (	Principle of Justice	0	1.0000	22.76
Item_2 (	Beneficence / non-Maleficence	-0.1192346	0.8876	20.20
Item_3 (	Autonomy	0.0808869	1.0842	24.67
Item_4 (	Learning Environment	0.3526097	1.4228	32.38
			4.3946	**100.00**

Table 4.16 Hierarchy of Standard weights percentages on sub-items (n=4)

CONSTRUCT		WEIGHTING %
1	Learning Environment	32.38
2	Autonomy	24.67
3	Principle of Justice	22.76
4	Beneficence / non-Maleficence	20.20

4.3.3.1 Delphi survey Round One MANAGEMENT

Round One Delphi Survey provided the third group of experts (vide Table 4.10) with a questionnaire listing potential sub-items transcribed from the **Stage One** list, that could be included on the FE-SAT relating to MANAGEMENT. In Table 4.3 group 1, the items from the five experts were placed into formatted themes by the researcher with each theme representing a sub-item as presented in Table 4.17.

The information letter that accompanied the questionnaire asked the experts to rate each of the sub-items on a scale from 1 (not relevant) – 4 (very relevant). The ratings are presented in Table 4.18.

Table 4.17: Sub-items – MANAGEMENT

GROUP DYNAMICS	MOTIVATION	STRESS	CONFLICT MANAGEMENT
-Discuss and encourage adherence to group norms, construct rules -Physical resources classroom/venue availability -Resources for content discussion e.g. books, - Understanding group dynamics Benefits and challenges -Evaluation of individual and group performance -Factors affecting group performance	- Motivate , support and encourage	-Identifying stress situations -Stress management -Organisational skills e.g. time management	-Conflict resolution -Dealing with group conflict -Control and assertiveness

Table 4.18: Round One Delphi survey ratings (MANAGEMENT) (n=4)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	SMALL GROUP DYNAMICS	4	4	4	4	4
2	MOTIVATION	4	4	4	4	4
3	STRESS	4	3	4	4	4
4	CONFLICT MANAGEMENT	4	4	4	4	4

Verbatim Comments made by the individual experts on items not rated -4 were as follows:

STRESS

Expert 02: 'The physiology of STRESS was not relevant and one should support stress management' (3). This was taken into account in **Phase-Two.**

Kreitner and Kinicki (2002:8) describe management as "a process of working with and through others to obtain organisational goals in an efficient and ethical manner." Daft (2008) suggests that managers need to create systems, conditions and an environment beneficial to the organisation. The concept of MANAGEMENT is very broad and has been reduced to the above four sub-items identified by the experts. These sub-items are specific to the facilitation of small group teaching and learning.

4.3.3.2 Delphi Survey Round Two MANAGEMENT

Round Two Delphi Survey provided the group of experts selected in the first round with a questionnaire listing the alteration made on the sub-item stress.

The experts were asked to rate the amended item on a scale from 1 (not relevant) – 4 (very relevant). These ratings are represented in Table 4.19. The content validity was determined since these sub-items were rated four by all the experts.

Table 4.19: Round Two Delphi Survey MANAGEMENT result (n=4)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	SMALL GROUP DYNAMICS	4	4	4	4	4
2	MOTIVATION	4	4	4	4	4
3	STRESS MANAGEMENT	4	4	4	4	4
4	CONFLICT MANAGEMENT	4	4	4	4	4

4.3.3.3 Delphi Survey Round Three MANAGEMENT

In this round Expert 02 was replaced by an academic drawn from the pool. The remaining four experts were involved in the previous two rounds.

Six visual analogue scales were developed for sub-items (MANAGEMENT). Each unit (scale) represented two items on which a paired comparison analysis (weighting) was completed (Table 4.20). A paired comparison weighting of the sub-items was carried out.

A mathematical matrix together with the VAS measurements from each individual expert is presented in Table 4.21. Standard weights percentages, coefficients and exponentiated coefficients on constructs are presented in Table 4.22. Hierarchy of Standard weights percentages on constructs is presented in Table 4.23.

Table 4.20: Visual Analogue Scales Sub-items: MANAGEMENT (n=6)

	SUB-ITEM MANAGEMENT
AB	(A) Group Dynamics vs (B) Motivation
AC	(A) Group Dynamics vs (C) Stress Management
AD	(A) Group Dynamics vs (D) Conflict Management
BC	(B) Motivation vs (C) Stress Management
BD	(B) Motivation vs (D) Conflict Management
CD	(C) Stress Management vs (D) Conflict Management

Table 4.21: Matrix and measurements in mm. of sub-items on visual analogue scales (n=6)

Matrix - SUB-ITEMS MANAGEMENT									
				EXPERT	**01**	**02**	**03**	**04**	**05**
Pair	**Item 1(A)**	**Item 2(B)**	**Item 3(C)**	**Item 4(D)**	VAS mm.	VAS mm.	VAS mm.	VAS mm.	VAS mm.
Item (AB)	1	-1	0	0	88	86.5	49	45	46
Item (AC)	1	0	-1	0	52	65	55	30	58
Item (AD)	1	0	0	-1	52	73.5	44	48	55
Item (BC)	1	0	0	0	52	55	53	45	60
Item (BD)	0	1	-1	0	52	72.5	62	48	55
Item (CD)	0	1	0	-1	88	72.5	36	72	45

Table 4.22 Standard weights percentages and coefficients on sub-items (n=4)

Sub-Item		Coefficient	Exp.(coef.)	Std. Weight (%)
Item_1 (A)	Group Dynamics	-0.4061681	0.6662	19.43
Item_2 (B)	Motivation	-03943125	0.6741	19.66
Item_3 (C)	Stress Management	0.0849723	1.0887	31.75
Item_4 (D)	Conflict Management	0	1.0000	29.16
			3.4290	**100.00**

Table 4.23 Hierarchy of standard weights percentages on sub-items MANAGEMENT (n=4)

CONSTRUCT		WEIGHTING %
1	Stress Management	31.75
2	Conflict Management	29.16
3	Motivation	19.66
4	Group Dynamics	19.43

4.3.4.1 Delphi Survey Round One - INTERPERSONAL SKILLS

Round One Delphi Survey provided the fourth group of experts, who remained through all of three rounds (vide Table 4.10) with a questionnaire, listing potential sub-items transcribed from the **Stage One** list. In Table 4.3 group 2 and group 3 items from the five experts were placed into formatted themes by the researcher with each theme representing a sub-item as presented in Table 4.24. The themes all concentrated on communication skills, in **Stage One** Communication skills were incorporated into Interpersonal skills.

The information letter that accompanied the questionnaire asked the experts to rate each of the sub-items on a scale from 1 (not relevant) – 4 (very relevant). The ratings are presented in Table 4.25

Table 4.24: Formatted themes –INTERPERSONAL SKILLS

COMMUNICATION VERBAL - SKILLS	COMMUNICATION NON-VERBAL SKILLS	BARRIERS TO COMMUNICATION	CROSS-CULTURAL COMMUNICATION
-Interpersonal communication model -Use of language -Use of professional language - Concrete and emotional communication -Encourage participation, clarification, creativity -Don't be overwhelming in discussion -Develop rapport with student	- Proxemics -Gestures -Active listener -Observant -Appearance -Guidance / nurturing -Role model	-Personal barriers -Never lecture or teach	-Acknowledge cultural diversity -Ethnocentrism

Table 4.25: Round One Delphi survey ratings (INTERPERSONAL SKILLS) (N=4)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	COMMUNICATION VERBAL - SKILLS	4	4	4	4	4
2	COMMUNICATION NON-VERBAL SKILLS	4	4	4	4	4
3	BARRIERS TO COMMUNICATION	3	4	4	4	4
4	CROSS-CULTURAL COMMUNICATION	3	4	4	4	4

Verbatim comments made by the individual experts on items not rated -4 were as follows:

BARRIERS TO COMMUNICATION

Expert 01: Sub-item –Barriers to Communication was rated a (3) = relevant but needing some change. 'The concept was too broad and should be more specific e.g. Personal barriers.' This suggestion was tested in the next round.

At any point in the communication process a breakdown can occur. It is therefore important for a facilitator to understand the concept of process barriers, personal barriers, physical barriers and defensive barriers to communication and with this knowledge able to become instrumental in overcoming the barriers. Botha, Cunningham and Musingi (2007:241) assert that if verbal communication is to be effective it should be based on listening, enquiry, giving and receiving feedback. For communication to function well, the need for good interpersonal skills is necessary.

C**ROSS-CULTURAL COMMUNICATION**

Expert 01: 'The concept was too broad' (3). This was tested in the next round.

According to Spinks and Wells (1997:290) "cross cultural communication can be improved if cultural differences can be accepted and if communicators and receivers try and view the situation from each other's perspective."

4.3.4.2 Delphi Survey Round Two - INTERPERSONAL SKILLS

The Round Two questionnaire dealt with the following sub-items: BARRIERS TO COMMUNICATION and CROSS CULTURAL COMMUNICATION. It was suggested that both the sub-items were too broad and should be defined in a more specific manner.

A questionnaire was sent to the expert group to rate the amended sub-items. BARRERS TO COMMUNICATION specified process, personal and situational barriers. CROSS CULTURAL COMMUNICATION specified ethnic, gender and organisational barriers. The rating result is presented in Table 4.26. Content validity was determined since the sub-items in Round Two were rated four by all the experts.

Table 4.26: Round Two Delphi Survey ratings INTERPERSONAL SKILLS (n=4)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	COMMUNICATION VERBAL - SKILLS	4	4	4	4	4
2	COMMUNICATION NON-VERBAL SKILLS	4	4	4	4	4
3	BARRIERS TO COMMUNICATION	4	4	4	4	4
4	CROSS-CULTURAL COMMUNICATION	4	4	4	4	4

4.3.4.3 Delphi Survey Round Three - INTERPERSONAL SKILLS

Six visual analogue scales were developed for sub-items INTERPERSONAL SKILLS. Each unit (scale) represented two items (Table 4.27) on which a paired comparison analysis (weighting) was completed. Each visual analogue scale was accurately measured in millimetres from the 0mm to the expert's mark and the measurement was entered on a computer-based spreadsheet. Data were sent to the statistician for statistical analysis and were developed into ratio scales represented as percentages. Measurements obtained from the VAS, together with the mathematical matrix representing the sub-items is presented in Table 4.28. Table 4.29 illustrates the standard weights percentages and coefficients on sub-items related to interpersonal skills. Table 4.30 sets out the hierarchy of sub-items based on the standard weights percentages on each item.

Table 4.27: Visual Analogue Scales INTERPERSONAL SKILLS (n=6)

	SUB-ITEM (INTERPERSONAL SKILLS)
AB	(A) Verbal communication vs (B) non-verbal communication
AC	**(**A) Verbal communication vs (C) Barriers to communication
AD	(A) Verbal communication vs (D) Cross cultural communication
BC	(B) Non-verbal communication vs (C) Barriers to communication
BD	(B) Non-verbal communication vs (D) Cross cultural communication
CD	(C) Barriers to communication vs (D) Cross cultural communication

Table 4.28: Matrix and measurements in mm. of sub-items on visual analogue scales (n=6)

Matrix - SUB-ITEMS INTERPERSONAL SKILLS									
			EXPERT		**01**	**02**	**03**	**04**	**05**
Pair	**Item 1 (A)**	**Item 2(B)**	**Item 3 (C)**	**Item 4(D)**	VAS mm.	VAS mm.	VAS mm.	VAS mm.	VAS mm.
Item (AB)	1	-1	0	0	44	80	88	65	50
Item (AC)	1	0	-1	0	44	80	88	63	67
Item (AD)	1	0	0	-1	60	80	90	50	64
Item (BC)	1	0	0	0	70.5	80	88	50	54
Item (BD)	0	1	-1	0	65	74.5	88	43	40
Item (CD)	0	1	0	-1	45	80	90	56	55

Table 4.29 Standard weights percentages and coefficients on sub-items (n=4)

Sub-Item		Coefficient	Exp. (coef.)	Std. Weight (%)
Item_1 (A)	Verbal communication	0.0893535	1.0935	26.97
Item_2 (B)	Non-verbal communication	0.0095154	1.0096	24.91
Item_3 (C)	Barriers to communication	-0.0506414	0.9506	23.45
Item_4 (D)	Cross cultural communication	0	1.0000	24.67
			4.0536	**100.00**

Table 4.30 Hierarchy of standard weights percentages on sub-items (Interpersonal Skills) (n=4)

SUB-ITEM		WEIGHTING %
1	Verbal communication	26.97
2	Non-verbal communication	24.91
3	Cross cultural communication	24.67
4	Barriers to communication	23.45

4.3.5.1 Delphi Survey Round One – PROFESSIONALISM

Round One Delphi Survey provided the second group of experts (vide Table 4.10) with a questionnaire listing potential sub-items transcribed from the **Stage One** list, that could be included on the FE-SAT relating to PROFESSIONALISM. The same group of experts selected for rating sub-items in EDUCATIONAL ETHICS were selected to participate in PROFESSIONALISM. The reason was that this group was knowledgeable in both constructs. In Table 4.3 group 5, items from the five experts

were placed into formatted themes by the researcher with each theme representing a sub-item as presented in Table 4.31.

The information letter that accompanied the questionnaire asked the experts to rate each of the sub-items on a scale from 1 (not relevant) – 4 (very relevant). The ratings are presented in Table 4.32.

Table 4.31: Formatted Themes –PROFESSIONALISM

PHILOSOPHY OF PBL	RESPONSIBILITY	ACCOUNTABILITY	ABILITY	FACILITATOR DEVELOPMENT
-student centred -self-directed learning -Be well prepared for the week`s problem in question. -small group discussion	-tolerance -How you say it / tone/ -Cultural sensitivity -Allocating and supporting role development in others -Provide education needs to student -Positive attitude – drives the feel of the session - Role model -Encourage mutual respect and politeness between the students themselves and between the students and the facilitator.	-Demonstrate professional responsibility and accountability -Be dedicated and committed to the process and ensure that the students benefit fully. - Highlight but never focus on student weakness -Self-evaluation and peer- evaluation -Accountable for own actions -Positive attitude -Motivate and support	-Passionate about one's profession and student teaching.	-Peer / self-evaluation

Table 4.32: Round One Delphi Survey result PROFESSIONALISM

NUMBER	SUB-ITEM EXPERT	01	02	03	04	05
1	PHILOSOPHY OF PBL	3	4	4	3	4
2	RESPONSIBILITY	4	4	4	3	4
3	ACCOUNTABILITY	4	4	4	4	4
4	ABILITY	2	4	2	4	4
5	FACILITATOR DEVELOPMENT	3	4	4	3	4

Verbatim Comments made by the individual experts on items not rated -4 (expert's rating in parenthesis) as follows:

PHILOSOPHY OF PBL

Expert 01: 'Learning should not always emanate from a PBL based scenario' (3)

Expert 04: 'Different forms of PBL' (3).

The above statements made by the experts were taken into account during **Phase-Two** of the study. Following a discussion with expert 01 and 04 it was agreed to upgrade the rating to four (4).

According to Baker (2000:258) "PBL is a philosophy and teaching method that structures knowledge in the clinical setting, strengthens motivation to learn, develops reasoning skills and enhances self-directed long term learning."

"PBL was introduced in 1969 at the medical school at McMaster University in Canada, within the years that followed the original model has been adapted to suit different needs. During the years much literature has described the change process, variety of models and structures to support a PBL process" (Kolmas, Holgaard, Jensen, 2008:5).

RESPONSIBILITY

Expert 04: 'Responsibility and accountability to institution, to self and to the student' (3). The above statement made by the expert was taken into account during **Phase-Two** of the study. It was agreed by expert 04 to upgrade the rating to 4.

ABILITY

Expert 01 and 03: 'Ability forms part of each construct and should not be a separate unit' (2). Following a discussion with both experts it was decided to exclude the sub-item. 'Ability' was incorporated in the practice standards (**Phase-Three**).

FACILITATOR DEVELOPMENT

Expert 01: 'Include in-service training' (3).
Expert 04: 'Knowledge of subject matter essential' (3)

The changes suggested by the experts were noted during **Phase-Two** of the study. It was therefore agreed by expert 01 and 04 to upgrade the rating to four (4). It was not necessary to conduct a Delphi round for further rating to take place and Round Two became the final round.

4.3.5.2 Delphi Survey Round Two - PROFESSIONALISM

Six visual analogue scales were developed for sub-items (PROFESSIONALISM) on which a paired comparison analysis (weighting) was completed (Table 4.33). Each visual analogue scale was accurately measured (Table 4.34). The measurements for each unit were entered on a computer-based spreadsheet and sent to the statistician for statistical analysis representing ratio scales (Table 4.35). The standard weights percentages are presented in Table 4.36.

Table 4.33: Visual Analogue Scales (PROFESSIONALISM) (n=6)

	SUB-ITEM (PROFESSIONALISM)
AB	(A) Philosophy of PBL vs (B) Responsibility
AC	(A) Philosophy of PBL vs (C) Accountability
AD	(A) Philosophy of PBL vs (D) Facilitator Development
BC	(B) Responsibility vs (C) Accountability
BD	(B) Responsibility vs (D) Facilitator Development
CD	(C) Accountability vs (D) Facilitator Development

Table 4.34: Matrix and measurements in mm. of sub-items on visual analogue scales (n=6)

Matrix - SUB-ITEMS (PROFESSIONALISM)									
				EXPERT	01	02	03	04	05
Pair	Item 1(A)	Item 2(B)	Item 3(C)	Item 4(D)	VAS mm.	VAS mm	VAS mm.	VAS mm.	VAS mm.
Item (AB)	1	-1	0	0	85	65	50	88	67
Item (AC)	1	0	-1	0	75.5	64	40	90	67
Item (AD)	1	0	0	-1	82	46	50	88	45
Item (BC)	1	0	0	0	83.5	66	47	90	67
Item (BD)	0	1	-1	0	86	44	50	86.5	39
Item (CD)	0	1	0	-1	86.5	43	56	88	39

Table 4.35 Standard weights percentages and coefficients on sub-items (n=4)

Sub-Item		Coefficient	Exp.(coef.)	Std. Weight (%)
Item_1 (A)	Philosophy of PBL	0	1.0000	21.28
Item_2 (B)	Responsibility	0.0648935	1.0670	22.71
Item_3 (C)	Accountability	0.1033031	1.1088	23.60
Item_4 (D)	Facilitator Development	0.4204725	1.5227	32.41
			4.6986	**100.00**

Table 4.36 Hierarchy of Standard weights percentages on sub-items PROFESSIONALISM (n=4)

	CONSTRUCT	WEIGHTING %
1	Facilitator Development	32.41
2	Accountability	23.60
3	Responsibility	22.71
4	Philosophy of PBL	21.28

4.3.6.1 Delphi Survey Round One - KNOWLEDGE

Round One Delphi Survey provided the fifth group of experts (vide Table 4.10) with a questionnaire listing potential sub-items transcribed from the **Stage One** list relating to KNOWLEDGE. In Table 4.3 group 4 presents the items identified by the five experts. These items were placed into formatted themes by the researcher with each theme representing a sub-item as presented in Table 4.37.

The information letter that accompanied the questionnaire asked the experts to rate each of the sub-items on a scale from 1 (not relevant) – 4 (very relevant). The ratings are presented in Table 4.38.

Table 4.37: Formatted Themes – KNOWLEDGE

ADULT LEARNING	SELF-DIRECTED LEARNING	PRINCIPLES PBL	PRE-REQUISITE KNOWLEDGE	PBL CURRICULUM
-understanding of the basic principles of adult learning	-Provide information to guide students not give them solutions -Try and avoid a lot of didactic teaching. Encourage self and group learning. -When knowledge is lacking, encourage selection of self-learning topics and preparation by all the students	-Focus of facilitation to be based on student-centeredness -Explain the PBL process if unfamiliar. -Allow the students to follow the process.	-Knowledge of subject matter -Learning outcome Learning objective	-Offer herself an opportunity for development regarding PBL facilitation -Acknowledge and incorporate technology applicable to PBL curriculum

Table 4.38: Round One Delphi Survey result KNOWLEDGE (n=5)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	ADULT LEARNING	4	4	4	4	4
2	SELF-DIRECTED LEARNING	4	4	4	4	4
3	PRINCIPLES OF PBL	4	4	4	4	4
4	PRE-REQUISITE KNOWLEDGE	4	4	4	4	3
5	PBL CURRICULUM	4	4	4	4	4

Verbatim comments made by experts were as follows:

PRE-REQUISITE KNOWLEDGE

Expert 05: 'This should be specific and include group discussion' (3). This was discussed with the expert and upgraded to a 4.

4.3.6.2 Delphi Survey Round Two - KNOWLEDGE

The Round Two questionnaire dealt with the following sub-item- PRE-REQUISITE KNOWLEDGE.

The expert group was asked to rate the amended sub-item on the questionnaire on a scale from 1 (not relevant) – 4 (very relevant). This rating is represented in Table 4.39. This was dealt with in **Phase-Two** of the study.

The content validity was determined since all sub-items were rated four by all the experts.

Table 4.39: Round Two Delphi Survey result KNOWLEDGE (n=5)

NUMBER	SUB-ITEMS EXPERT	01	02	03	04	05
1	ADULT LEARNING	4	4	4	4	4
2	SELF-DIRECTED LEARNING	4	4	4	4	4
3	PRINCIPLES OF PBL	4	4	4	4	4
4	PRE-REQUISITE KNOWLEDGE	4	4	4	4	4
5	PBL CURRICULUM	4	4	4	4	4

4.3.6.3 Delphi Survey Round Three - KNOWLEDGE

Ten visual analogue scales were developed for sub-items (KNOWLEDGE). Each unit (scale) represented two items on which a paired comparison analysis (weighting) was completed (Table 4.40). A paired comparison weighting of the sub-items was carried out.

The VAS provided data that were accurately measured in millimetres from the 0mm to the experts' mark. The measurements were entered on a computer-based spreadsheet and sent to the statistician for statistical analysis (Table 4.41). Table 4.42 illustrates a mathematical matrix and measurements in mm. of sub-items on visual analogue scales. The standard weights percentages are presented in Table 4.43.

Table 4.40: Visual Analogue Scales KNOWLEDGE (n=10)

	SUB-ITEM (KNOWLEDGE)
AB	(A) Adult Learning vs (B) Self-directed Learning
AC	(A) Adult Learning vs (C) Problem-based Learning
AD	(A) Adult Learning vs (D) Pre-requisite Knowledge
AE	(A) Adult Learning vs (E) PBL Curriculum Design
BC	(B) Self-directed Learning vs (C) Problem-based Learning
BD	(B) Self-directed Learning vs (D) Pre-requisite Knowledge
BE	(B) Self-directed Learning vs (E) PBL Curriculum Design
CD	(C) Problem-based Learning vs (D) Pre-requisite Knowledge
CE	(C) Problem-based Learning vs (E) PBL Curriculum Design
DE	(D) Pre-requisite Knowledge vs (E) PBL Curriculum Design

Table 4.41: Matrix and measurements in mm. of sub-items on visual analogue scales (n=10)

Matrix - SUB-ITEMS KNOWLEDGE										
					EXPERT	01	02	03	04	05
Pair	**Item 1(A)**	**Item 2(B)**	**Item 3(C)**	**Item 4(D)**	**Item 5(E)**	VAS mm.	VAS mm.	VAS mm.	VAS mm.	VAS mm.
Con. (AB)	1	-1	0	0	0	81.5	38	88	78	76.5
Con. (AC)	1	0	-1	0	0	86.5	32	88	75	75.5
Con. (AD)	1	0	0	-1	0	62	48	88	77	82
Con. (AE)	1	0	0	0	-1	65	50	88	54	79.5
Con. (BC)	0	1	-1	0	0	48	53	90	38	79
Con. (BD)	0	1	0	-1	0	82	45	88	38	86.5
Con. (BE)	0	1	0	0	-1	60	60	88	28	82
Con (CD)	0	0	1	-1	0	60	63	88	62	80
Con. (CE)	0	0	1	0	-1	83.5	63	90	49	86.5
Con. (DE)	0	0	0	1	-1	71.5	52	73.5	42	65

Table 4.42 Standard weights percentages and coefficients on sub-items (n=5)

Sub-Item		Coefficient	Exp. (coef.)	Std. Weight (%)
Item_1 (A)	Adult learning	0.0862444	1.09007271	22.50
Item_2 (B)	Self-directed learning	-0.1465165	0.863711481	17.83
Item_3 (C)	Principles of PBL	0.0640036	1.06609613	22.00
Item_4 (D)	Pre requisite knowledge	-0.1917659	0.825500095	17.04
Item_5 (E)	PBL curriculum	0	1	20.64
			4.845380416	**100.00**

Table 4.43 Hierarchy of Standard weights percentages on sub-items KNOWLEDGE (n=5)

CONSTRUCT		WEIGHTING %
1	Adult learning	22.50
2	Principles of PBL	22.00
3	PBL curriculum	20.64
4	Self-directed learning	17.83
5	Pre requisite knowled	17.04

The early stage of development of the Facilitators Evaluation-Self-Assessment Tool (FE-SAT) was completed. The tool is made up of five constructs with sub-items within each construct. A unique weighting represented in a percentage was given to each construct and each sub-item thereby allowing the tool to be placed in a hierarchy of constructs and sub-items. The hierarchy is represented by constructs and sub-items being placed from the highest percentage to the lowest percentage.

Table 4.44 presents the hierarchy and unique weighting on each construct and sub-item featured on the Facilitators Evaluation-Self-Assessment Tool (FE-SAT).

Table 4.44 Hierarchy of Constructs and Items on the FE-SAT

FE-SAT HIERARCHY	
	WEIGHTS %
1. EDUCATIONAL ETHICS	**23.40**
Learning Environment	32.38
Autonomy	24.67
Principle of Justice	22.76
Beneficence / non-Maleficence	20.20
2. MANAGEMENT	**22.08**
Stress	31.75
Conflict Management	29.16
Motivation	19.66
Group Dynamics	19.43
3. INTERPERSONAL SKILLS	**20.88**
Verbal communication	26.97
Non-verbal communication	24.91
Cross cultural communication	24.67
Barriers to communication	23.45
4. PROFESSIONALISM	**17.68**
Facilitator Development	32.41
Accountability	23.60
Responsibility	22.71
Philosophy of PBL	21.28
5. KNOWLEDGE	**15.98**
Adult learning	22.50
Principles of PBL	22.00
PBL curriculum	20.64
Self-directed learning	17.83
Pre requisite knowledge	17.04

4.4 CONCLUSION

This chapter presented the results to data analysis based on the conceptual framework used in the study. Following statistical analysis on the data the development of ratio scales represented in a percentage were developed. This percentage gave a unique weighting to each construct and each sub-item that is included in the FE-SAT. The **Phase-One** study results that led to the early stage of development on the Facilitators Evaluation Self-Assessment Tool (FE-SAT) are presented in Tables. The weighted FE-SAT will form the starting point to **Phase-Two** of the study.

In the next chapter **Phase-Two** of the study presents the development of models for each of the constructs.

CHAPTER FIVE

DEVELOPMENT OF MODELS – PHASE-TWO

5.1 INTRODUCTION

This chapter presents **Phase-Two** of the study with the development of a model on each of the constructs, identified in **Phase-One** (Fig.5.1) culminating in the development of a final study model, incorporating all the construct models. It further provides a description of the components of a **Generic Model** in terms of the philosophy, beliefs and values and knowledge. The generic model was used as a framework in the construction of each model within this chapter.

The diagrams referred to as figures were developed by the researcher, based on written theories and literature obtained on each of the constructs that were identified in **Phase-One** of the study.

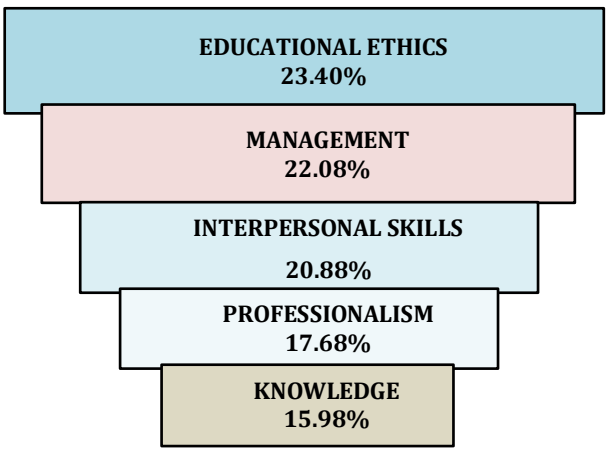


Figure 5.1 Constructs and their relative weights (n=5)

5.2 UNDERSTANDING A MODEL

A model can be defined as a representation in three dimensions of a proposed structure and a simplified description of a system (Oxford Dictionary 2012:48). In this study, models (referred to as study models) were developed on the constructs identified in **Phase-One.** In addition, the study models served in the development of

standards which allowed for further development on the FE-SAT and construction of a training program for PBL facilitator development.

5.3 BASIS OF A MODEL

Pearson and Vaughan (1995:11) refer to the generic practice model with three basic components: The beliefs and values on which the model is based (Philosophy); the goals of practice or what the practitioner aims to achieve; the knowledge and skills the practitioner needs to develop in order to gain these goals.

In this study the generic practice model was chosen as a framework on which to build the models associated with each construct and finally the final study model incorporating each construct model. The above mentioned model was adapted in that a fourth component representing a specific construct identified in **Phase-One** of the study (Fig. 5.1) was added.

Figure 5.2 represents a diagram developed by the researcher illustrating the combination, of three components of the generic practice model, together with a fourth component (construct).



Figure 5.2 Components of a modified practice model

The component representing philosophy incorporates the combination of beliefs and values, which leads to attitude and presents in the individual's behaviour. Furthermore this component incorporates the philosophy of PBL and andragogy.

Philosophical concepts are applicable to many disciplines including education amongst others. It is therefore necessary to understand the philosophy, of the discipline that forms the basis of the model that is to be developed.

"Philosophy comes from the Greek words 'phileu' meaning love and 'sophia' meaning wisdom. The love of wisdom by advancing human understanding about what is fundamentally true and good" (Mellish and Brink 2009:107).

Setting realistic goals allows for the development of objectives and standards in order to maintain direction on the right track. Knowledge and skills in both theoretical knowledge and practical skills are associated with the construct represented in the model.

5.4 PURPOSE OF A MODEL

According to Pearson and Vaughan (1995:5) an accepted model will:

- Lead to consistency
- Give rise to less conflict
- Provide a better understanding of a procedure
- Give direction to the attainment of goals
- Act as a guide in decision making
- Act as a guide against which to check decisions
- Act as a guide for which criteria of practice standards are developed.

5.5 CONSTRUCTION OF A MODEL

In the construction of a model the concepts or classification of a particular subject is viewed. According to Polit and Beck (2012:722), a concept is an "abstraction inferred from observations of behaviours, situations or characteristics." "A model is the vehicle of thought that involves images" (George1995:2). Concepts are identified using knowledgeable judgements based on previous learning experiences and need to be defined to avoid misinterpretation. Concepts are further identified in

philosophies, beliefs and values. The five constructs identified in **Phase-One** will be further explored in terms of philosophies, beliefs and values.

5.6 EDUCATIONAL ETHICS (Construct)

To understand the concept of Educational Ethics one has to understand the concept of ethics which can be defined as "the science of morals, moral principles and code" (Oxford dictionary, 2012:291).

Rainbow (2002) asserts that "ethical theory and principles form the foundation of ethical analysis from which guidance can be obtained towards the pathway of decision." The guidelines of an ethical theory, become the vehicle in the process of forming an ethically correct decision based on an ethical dilemma. However, in discussion with Dr Mathiba-Neke (2016) the latest classification of ethical theories, are presented in Fig. 5.3.

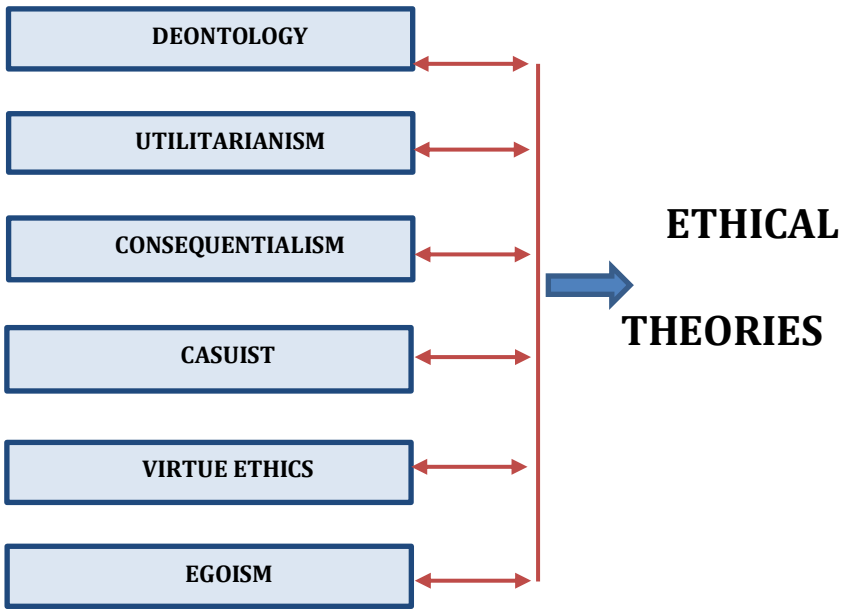


Figure 5.3 Types of ETHICAL THEORIES

DEONTOLOGY: Individuals observe their obligation towards an ethical decision
UTILITARIANISM: An ethical decision for the good of all
CONSEQUENTIALISM: Rights set by society are ethically correct
CASUIST: A comparison of one ethical dilemma against the next ethical dilemma
VIRTUE ETHICS: Judges a person by character and not by action
EGOISM: Basing morality on self-interest

UBUNTU: Opposite to Egoism

In the South African context UBUNTU is acknowledged as an African moral theory. Personal communication with Dr Mathibe-Neke, University of South Africa (UNISA) (2016.)

Rainbow, (2002) describes ethical principles as the "goals that each theory tries to achieve to be successful." Ethical principles identified in this study are set out in Fig. 5.4

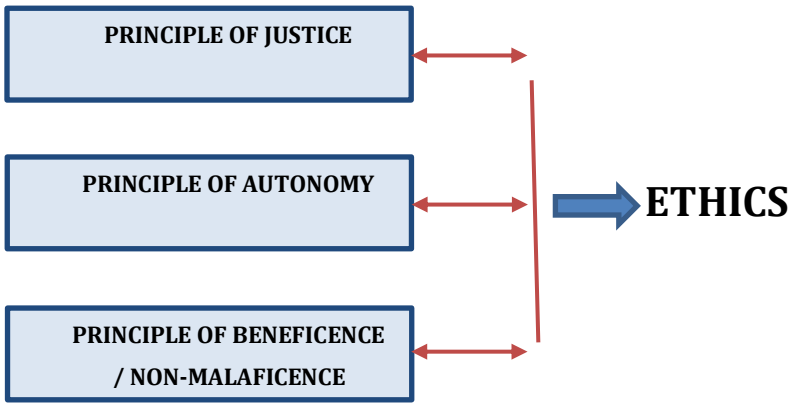


Figure 5.4 Principles of ETHICS identified in Phase-One of the study

5.6.1 Ethical Principles

The principle of justice states that ethical theories should provide actions that will provide fairness of treatment, equality and equitable treatment to all. It is a moral principle determining 'just conduct'. According to Velasquez, Andre, Shanks and Meyer (2015) "arguments about justice or fairness have a long tradition in Western civilization. From 'The Republic' written by Greek philosopher Plato to the work of philosopher John Rawls titled 'A Theory of Justice,' every major work on ethics has held that justice is part of the central core of morality and should be given due consideration in an individual's moral life." The Greek philosopher Aristotle referred to the principle, as equals should be treated equally and unequals being treated unequally. Feinsod and Wagner (2008) question that if justice is a concept about treating people fairly, then what does it mean to be 'fair'.

The principle of autonomy refers to people being allowed to control the decisions that will affect their lives. Each person understands their own emotions and life experiences and should be respected for their decisions.

The principle of beneficence promotes the action of doing good, because people benefit the most from what is good. Non-maleficence is the principle of doing no harm.

Haynes (2015) asserts that ethics are concerned with choices about inter-human relationships. "We are now situated in a multi-cultural mass-media global culture in which we cannot avoid confrontation of Western values which one learnt as unconditional truths of logic or fact. Educators need to make space for previously marginalised voices to recognise values other than their own and a rational frame of concepts should be built relating to good, honesty and justice amongst others." Haynes (2015) quotes Rawls (1989) who noted that concepts linked to daily practice are often culturally bound. "It is therefore necessary in a diverse society to talk about different conceptions by using a shared vocabulary of the concepts."

During **Phase-One** of the study EDUCATIONAL ETHICS received the heaviest weighting. Fig. 5.5 illustrates the sub-items within the construct together with the unique weight allocated to each sub-item.

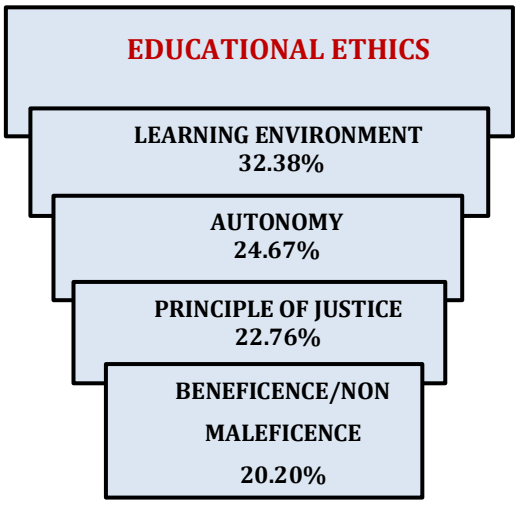


Figure 5.5 Weighting of sub-items - EDUCATIONAL ETHICS (n=4)

In discussing the concept of EDUCATIONAL ETHICS one has to apply ethical principles to educational principles and in this study, educational principles refers to the principles relating to adult learning (Andragogy). The basic assumptions of andragogy are: self-directedness of the learner; experiences become a rich source for learning; there is a readiness to learn; immediate application of knowledge and skills; internal motivation and the need to know the reason for learning something.

5.6.2 Adult Learning Principles

In the 1950's and 1960's Malcolm Knowles, a researcher on Adult Learning, determined that learning in adults was most effective when the environment included respect; safety; immediacy; relevance and engagement. Knowles (1990:45) asserted that adults remember 20% of what they hear, 40% of what they see and 80% of that they do. Fig. 5.6 presents a diagram developed by the researcher, illustrating the principles set out by Knowles associated with adult education.

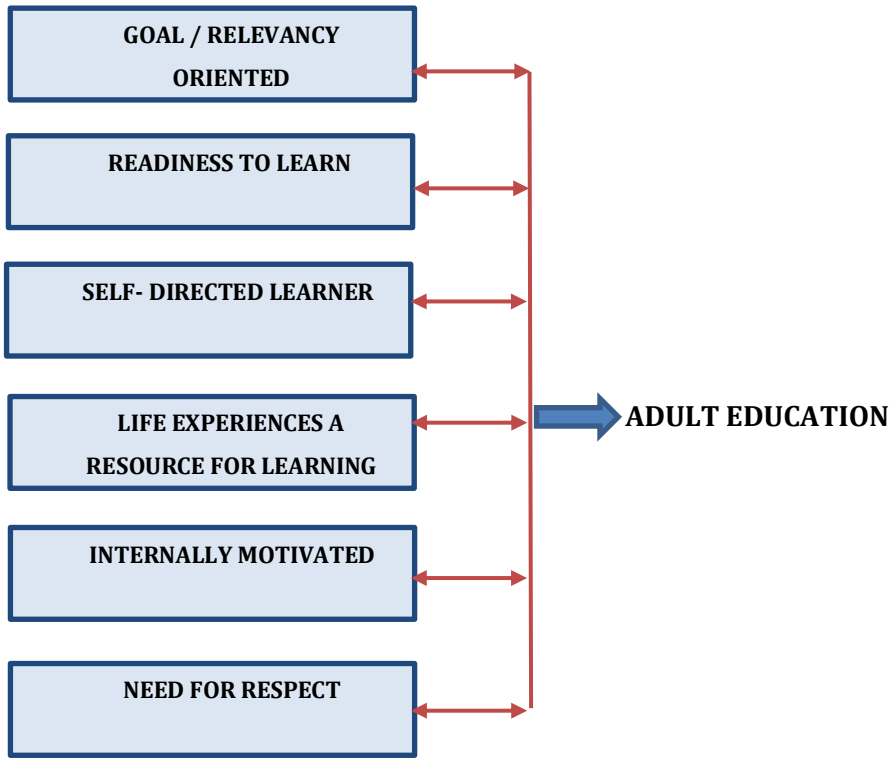


Figure 5.6 Principles of Adult Education (Knowles 1990)

The sub-items within the construct EDUCATIONAL ETHICS: learning environment; principle of autonomy; principle of justice and the principle of beneficence and non-

maleficence, refer to ethical principles. These principles have been applied to ADULT EDUCATION in relation to the components associated with ADULT EDUCATION illustrated in Fig. 5.7

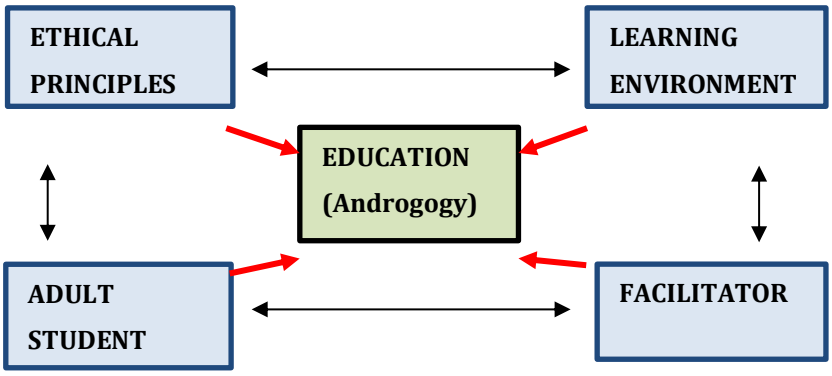


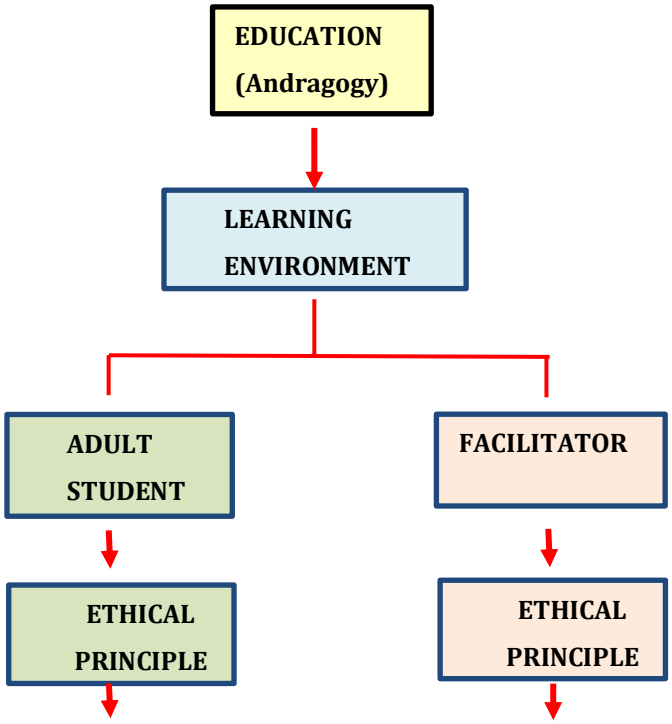
Figure 5.7 Study components associated with Education

5.6.3 Learning Environment

The learning environment encompasses the physical locations, culture, ethos, characteristics and interaction within a group of students. There is a direct and indirect influence on learning in terms of student motivation, the sense of well-being, belonging and safety. Included are "the ways in which the facilitator organises the educational setting to create a positive learning environment." (The Glossary of Education Reform, 2013).

Knowles (1990:39) maintained that to assist the andragogical process, adults need a learning environment that is not threatening to them but supports and encourages them. According to Quinn (2007:203) the standards for teaching and supporting learners (FENTO, 2002a) identify that teachers need to be effective in establishing a productive learning environment. Billington (2015) conducted a four year study, to establish what type of learning environment best suited to adults to grow and develop maturity of thought processes. The results showed that adults experience significant growth in a positive learning environment and regress in a negative learning environment. These findings support the thinking of Malcolm Knowles. According to Roth (2000:225) in creating a motivational learning environment,

certain actions a facilitator/supervisor should employ are: "care, understanding, creating intrinsically motivated assignments, set motivating goals and manage expectancies." In the positive learning environment students feel safe and their needs and values respected; their abilities and experiences recognised and where autonomy is acknowledged. Furthermore students should be self-directed learners and have an active involvement with their learning. Fig. 5.8 presents the components within this study associated with the Learning Environment.



JUSTICE	AUTONOMY	BENEFICENCE	NON-MALEFICENCE
- Fairness - Equality amongst students - Fair distribution of benefits and burdens - Equity of reason - Equity of conduct - Conform to law and organisational regulations - Accountability - Possess moral righteousness	- Freedom of choice in the learning process - Student to have control of their own life - Respect for individual choices - Student to be allowed to 'do good' for him/herself	- Moral obligation to do good in relation to the learning process - Provide a larger ratio of good over evil - Students will benefit the most from good	- Moral obligation to do no harm - Responsibility to do no harm emotionally, physically and intellectually towards a student

Figure 5.8 Study components associated with Learning Environment

5.6.4 Principles of Andragogy / Principles of ethics

The ethical principles of justice, autonomy, beneficence /non-maleficence were aligned with the principles associated with adult education:

5.6.4.1 Goal and relevancy oriented

Learning serves the need to cope with a real life situation or decision, together with knowing what to learn and what to achieve. The principle of beneficence should be applied, to provide the best learning experiences available and to ensure that what is offered, will benefit all the students within the group. Students should be allowed to set their own learning goals and assisted in the achievement, of these goals.

5.6.4.2 Readiness to learn

Adults needs to know why they must learn something and relates their learning to what they need to know and do in a real life situation. According to Billington (2015) personal growth is synonymous with learning and many adults have a desire to promote personal growth.

The principle of autonomy can be applied where each person has control over his/her learning process. They will make their own learning decisions based on what they feel needs to be learnt. Should a facilitator feel that in the interest of the learning objective the student could be making a wrong choice, a meeting should take place between the facilitator and the student to discuss the choices available. The student should be allowed to make the final choice and this should be respected by the facilitator. In making a choice the principle of beneficence will apply in that people benefit mostly from good. The student will therefore make a choice or select a decision that will provide the greater good for him/herself. In the principle of non-maleficence the facilitator should be responsible not to inflict emotional, physical or intellectual harm on the student.

5.6.4.3 Self- directed learner

Adults have the propensity to acquire skills in problem-solving. This in turn allows them to develop as self-directed learners allowing them to take responsibility for their learning. However learning methods should be provided from which the

student can choose, to assist with obtaining their learning objectives. According to Tennant (2006:32) "a collaborative learning relationship with a group of students sharing their learning from multiple perspectives should be encouraged." The principle of beneficence will provide the student and the facilitator with a moral obligation to 'do good' towards group members. The principle of justice can be applied to a group interaction. The facilitator has to show fairness and equality by way of distributing benefits, encouragement and interaction to all group members. There should be equity of reason and of conduct. Conformity to the law and the organisational rules and regulations should be adhered to by both the students and the facilitator. The student should show accountability towards his/her learning process whilst the facilitators' show accountability for their actions within the learning environment. Autonomy should be respected in allowing the student to maintain a self-directed approach to learning.

5.6.4.4 Life experiences a resource for learning

Adults have existing life experiences and knowledge that should be valued, to which they will add new experiences offered by the learning process. They should be given respect in their choices that will afford new experiences. Respect and acknowledgment should be shown in the communication of previous experiences that are often varied and offer a valuable resource. Fairness must be shown to all students in the encouragement of ideas, reasoning and feedback. The facilitator has a moral obligation to do good towards all the students within the group.

5.6.4.5 Internally motivated

Adult learners resist learning when they feel others are imposing information, ideas and actions on them (OPTEC Q, 2015). Internal motivation is based on self-esteem security, affection and recognition amongst others. Providing security is a just and fair treatment towards students. Be responsible in understanding what motivates each student. Allow for autonomy of thought and actions. Create a positive learning environment grounded in ethical principles and learning experiences to promote personal growth. Acknowledge contributions made by the students towards the learning process.

5.6.4.6 Need for respect

Adult learners want to be respected. In applying the ethical principle of justice the student needs to be shown fairness benefits, reason and conduct. Respect for the student's autonomy in individual choices and decisions that are made. Show a responsibility to not inflict harm towards others. Acknowledge communication relating to experiences together with contributions made. Show an interest in each individual student and respect and treat them as adults and colleagues. Conform to rules and regulations of the organisation to set an example of good behaviour. Encourage the student to express ideas and reasoning without the fear of ridicule.

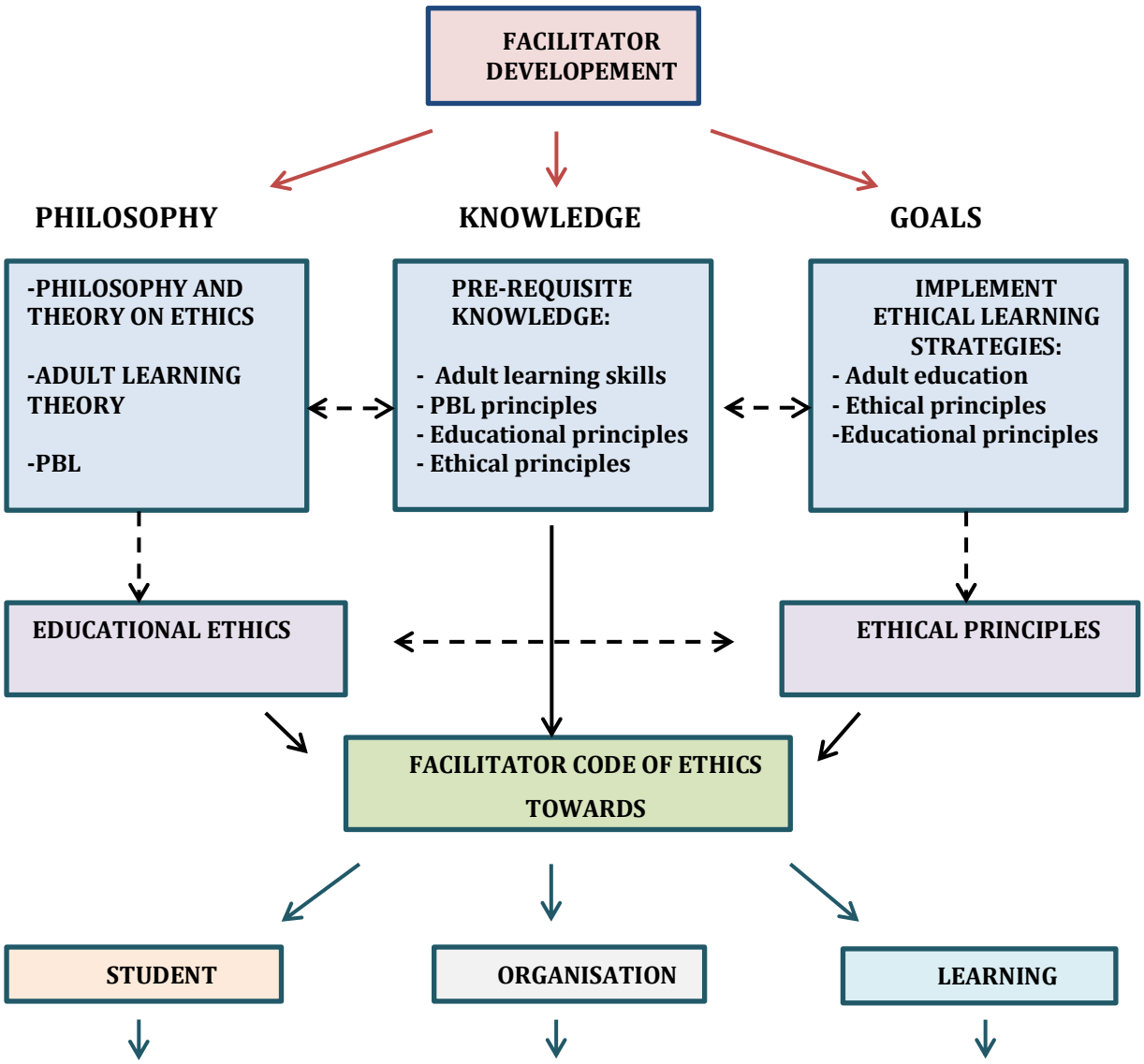
5.6.5 The Study Model (Educational Ethics)

The study model representing the construct EDUCATIONAL ETHICS is based on the framework of the components of the practice model (Fig. 5.2) where PRACTICE refers to facilitator development. CONSTRUCT refers to the construct EDUCATIONAL ETHICS; GOALS, PHILOSOPHY and KNOWLEDGE were developed in relation to the construct EDUCATIONAL ETHICS.

The model is based on the Principles of Adult-Based Education, Principles of Ethics and the Facilitators' Code of Ethics (informed by certain of the general principles of education). The latter includes the following:

- Ethical conduct towards students
- Ethical conduct towards the organisation
- Ethical conduct towards the learning process

Fig. 5.9 presents the study model on EDUCATIONAL ETHICS



- Responsible and accountable towards facilitation	- Conform to the law, rules and regulations and policies	-Create a learning environment to fulfil potential of all students
- Accept a position for the greater good of all	- Conform to the moral code set out by the organisation	- Provide adequate and relevant learning experiences for students
- Deal fairly and justly with each student	- To maintain the highest ethical standards possible	-Provide fair assessment and feedback to students
- Provides support and care, a positive and safe learning environment, physically, emotionally and intellectually.	- Responsibility to not violate a colleague's professional integrity and freedom of choice	-Equity of reason and control and the respect for each student to decide their own learning goals - Stimulation of learning
- Equal treatment for all students	- Not to reveal confidential information	- Encourage communication and debate
- Work within ethical principles	- Keep abreast with research	- Allow for peer instruction
-Protect students from harm	- Constantly improve knowledge	- Maintain ethical standards

Figure 5.9 Study model on EDUCATIONAL ETHICS

The study model on the construct EDUCATIONAL ETHICS (Fig. 5.2) was developed using the three components of the generic model together with the fourth component CONSTRUCT indicated by arrow (- - - >). The 'construct' informed the content of the study model. The purpose of the model was to provide a framework on which to develop a training program related to EDUCATIONAL ETHICS for facilitator development.

The set goals were based on the philosophy and knowledge required to perform effectively within the construct EDUCATIONAL ETHICS. The three concepts: philosophy, knowledge and goals are all interlinked and lead to the principles of ethics and education ethics. This in turn formed the base to create a FACILITATORS CODE OF ETHICS relating to the student; the organisation; the learning process.

5.7 MANAGEMENT (Construct)

Management can be defined as "a process of working with and through others" (Kreitner and Kinicki, 2002:8). It involves planning, organising, controlling activities and problem solving with persons within a team. In this study management relates to education. The literature is mainly related to management within the workplace however the principles can be applied to the learning environment. Fig. 5.10 illustrates the hierarchical structure of sub-items with related weights within the construct MANAGEMENT.

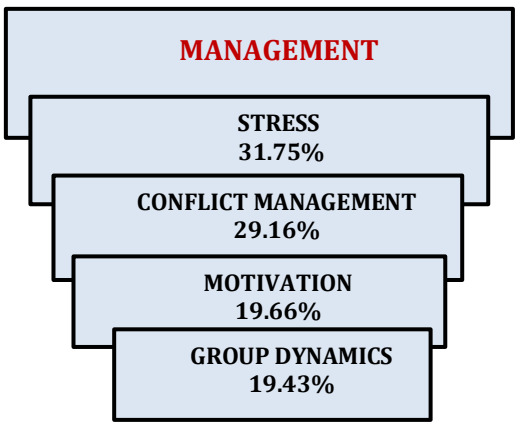


Figure 5.10 Weighting of sub-items – MANAGEMENT (n=4)

5.7.1 Stress (sub-item)

Stress is the body's reaction to a stressor (stressful event) that requires physical, mental and emotional adaptation. Oosthuizen and Burnt (2008:90-105) refer to pressure at work and poor time management amongst others as being stressors. However, it is not the stressors that cause the stress but the individual's response to dealing with the stressor that, creates a stressful situation. Stressors occur when there is an imbalance between demands and resources affecting, one's perceived ability to cope. Lazarus and Folkman(1984) refer to the Transactional model that asserts that stress focuses on two people and their external environment. The model contends that the person could perceive the stressor as positive and challenging and not always as a negative.

According to Riolli, Savicki and Richards (2012:2) the psychological and physical well-being of students is often compromised by academic stressors. Stress leads to illness and this is prevalent amongst students who are prone to stress. "Psychological stress amongst university students was found to be greater than in the general population." These stressors can occur as a result of academic coursework to issues in interpersonal relationships. Furthermore the pressure of exams, assignments and the student's perception of the extensive knowledge base required contribute to the cause of academic stress. Riolli et al. quote Bowler (2009) who maintains that "thirty percent of students enrolled in universities drop out in their first year of study, the cause being linked to academic stress." Students exposed to stressors report adverse physical health and psychological issues. Walter, Soh, Jaconelli, Lampe, Malhi and Hunt (2012:1) conclude that despite widespread awareness of appropriate support services "many students feel the need to conceal mental and emotional problems." Universities need to identify and manage the stressors identified by students.

In the South African context environmental conditions such as crime, personal safety, financial problems, safety of family members and HIV and AIDS are contributors of stress. Potgieter and Pieterse-Landman (2011:243) refer to "the national psyche being under pressure, leaving people feeling stressed, insecure and depressed." Vise (2012:2) adds that stress factors of university students, is on the increase. With reference to stress in the workplace Sieberhagen, Rothman and Pienaar (2009:9)

state that "in South Africa the ten most general claims accepted by medical aids are for treatment of stress-related symptoms and 79% of visits to primary health care facilities and 75% - 90% of visits to doctors are for stress-related conditions."

Schreuder & Coetzee (2009) maintain that under-stimulation as well as over-stimulation could both cause a stressful situation. When performance is at its peak, one will experience eustress (good stress). When the individual becomes demotivated, bored and disinterested and demonstrates poor performance in tasks, depression occurs and distress (bad stress) is experienced.

Wentzel, Buys and Mostert (2011) indicated how being an educator in the South African context has become a stressful occupation. Certain factors such as lack of discipline amongst students, unmotivated learners and negative attitudes towards themselves create the stress.

Potgieter and Pieterse-Landman (2011:243) identify aggression and burnout as a consequence of stress in the workplace, with serious implications for the individual. Furthermore different personality types handle stressors in positive and negative ways.

In 1976 psychiatrists Thomas Holmes and Richard Rahe developed the Holmes and Rahe Stress Scale consisting of 43 life events (life change unit or LCU) with each unit being assigned a different 'weight'. The total of each given numerical weight for each LCU selected provides a score that corresponds with a category of mild, medium or severe stress. A similar stress scale was developed by Holmes and Rahe for college students with items such as: repeating a course; increased workload; first year of studies; decreased grades; altered sleep patterns -all of which were allocated a high weighting (Potgieter and Pieterse-Landman 2011:243).

Bridger (2009:2) describes the work of Hans Selye a Hungarian endocrinologist who conducted a great deal of research on biological stress and in 1956 introduced as the body's automatic defence system the model of general adaptation syndrome (GAS). The model is an automatic defence system consisting of three stages:

Stage One: The immediate reaction to a stressor referred to as the flight and fight response preparing the body for physical activity.

Stage Two: The body adapts to the stressors it is exposed to. Biological and psychological mechanisms are activated to increase the body's coping ability.

Stage Three: The body's resistance to the stressor is reduced and the immune system becomes compromised reducing the body's ability to combat disease.

The first stage an alarm situation is registered and the body prepares itself for fight or flight. This is followed by the resistance stage and finally the stage of exhaustion. An extended period within any stage creates episodes of distress (bad stress) which will ultimately lead to illness and disease. Selye describes eustress (good stress) leading to motivation and action. Selye maintained that the response to stress is individualised. Fig. 5.11 represents the relationship of eustress to distress.

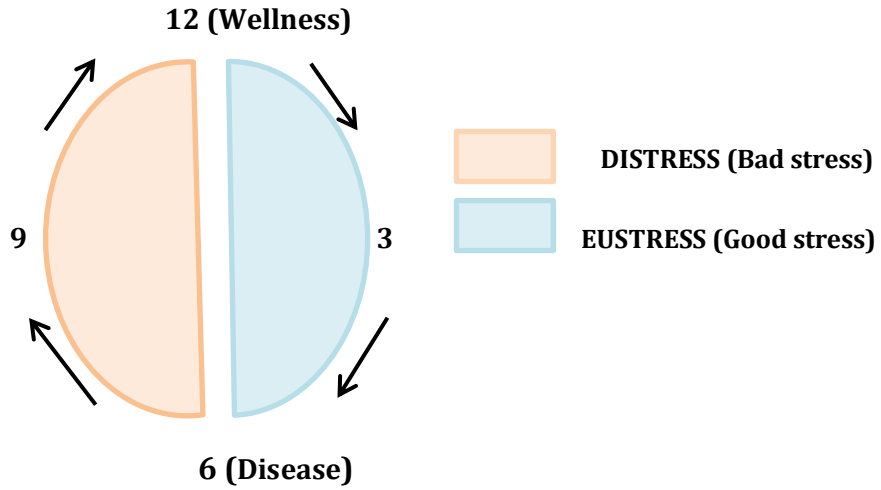


Figure 5.11 Relationship between eustress and distress (Hans Selye 1956)

Fig. 5.12 illustrates the three stages of the GAS

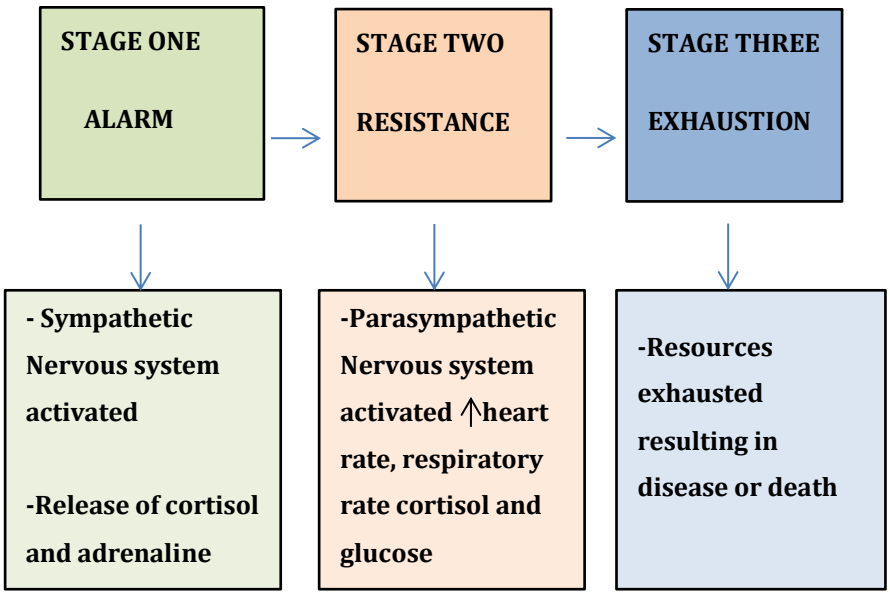


Figure 5.12 Stages of the General Adaptation Syndrome (Bridger 2009)

Potgieter and Pieterse-Landman (2011:237) argue that whilst a good performer will experience optimum stress that can be equated to eustress a stressful situation could occur. Such an individual can easily take on added responsibilities, the demands of which will create fatigue and stress leading to exhaustion and burnout.

According to Schreuder and Coetzee (2009:15) distress can be managed at three levels: "primary level by eliminating the stressor; secondary level by modifying the lifestyle; tertiary level through counselling and support."

Fig. 5.13 illustrates the relationship of under-workload and over-workload.

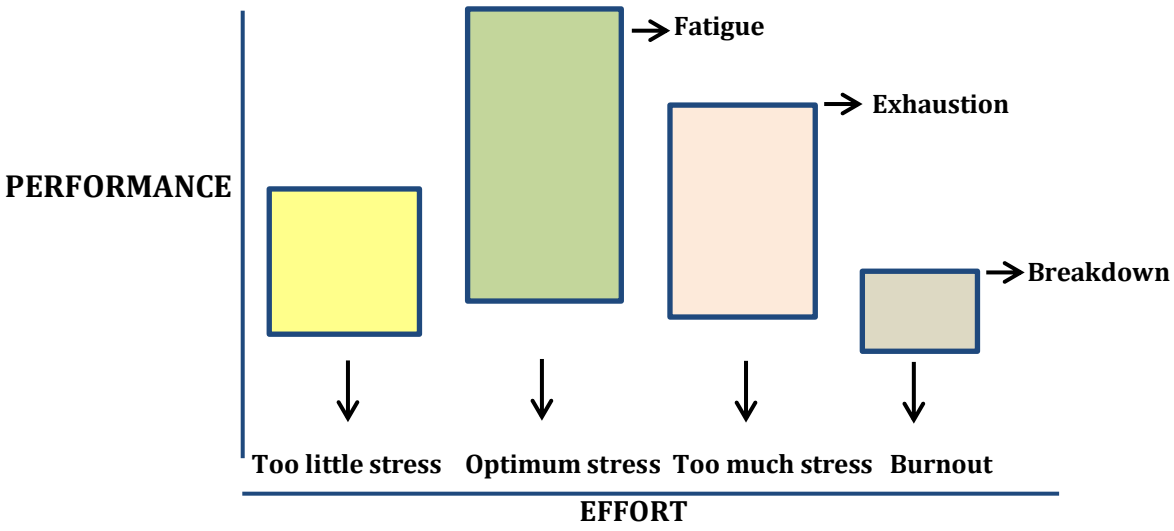


Figure 5.13 Work overload and work underload (adapted from Schafer 2000 / Selye 1956)

5.7.2 Conflict Management (sub-item)

Conflict can be defined as "a situation where differences in power, values and attitudes give rise to disagreement, opposition or animosity between two or more parties" (Werner 2011:296).Werner quotes Pieterse (2011) who referred to conflict as being functional or dysfunctional. When conflict, presents beneficial results through "open discussion, creative ideas and commitment, functional conflict has taken place." Nelson and Quick (2006:420) refer to emotional intelligence in relation to conflict management and maintain that the higher the level of emotional intelligence the greater the outcome will be in managing conflict. Werner (2011:297) states that dysfunctional conflict is usually focused on emotions such as stress resulting in interpersonal clashes which are often destructive. When a conflict situation presents it is necessary to identify the type of conflict. Specific to the student, one would establish if the conflict is intrapersonal resulting from personal issues; interpersonal resulting from issues between two individuals or team conflict resulting from disagreements amongst members of a team.

Conflict resolution is the reduction, elimination and termination of conflict. This is achieved using conflict management as identified by the Thomas and Killmann Model that illustrates five conflict resolution techniques ranging from assertion to cooperation:

AVOIDING: Demonstrating an unassertive and uncooperative behaviour. Withdraws from the situation and remains neutral to avoid conflict.

COLLABORATE: Expand the range of possible options to achieve a win / win situation that satisfies both parties demonstrating strong assertive and cooperative behaviours. Opinions and feelings are openly shared. Conflict is perceived as natural and constructive.

ACCOMODATING: Accede to the other party to maintain harmony displaying weak cooperation.

COMPROMISE: Minimally acceptable to all as each party had to give something up. The relationship is being left undamaged. Fig. 5.14 illustrates the Thomas-Killmann model.

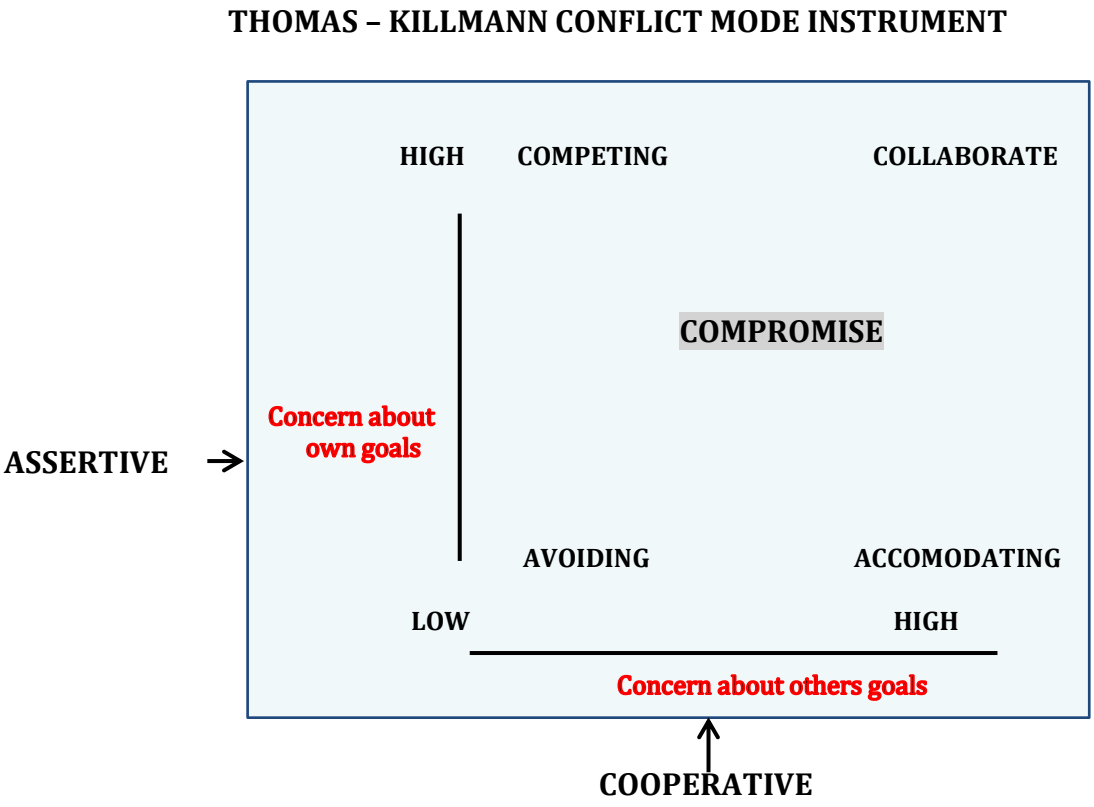


Figure 5.14 Inter-relationship between assertive and cooperative behaviours (Killmann 2007)

Runde and Flanagan (2007:50) maintain, that the chief parameters of defining conflict management strategies are whether these strategies are active or passive, constructive or destructive (vide Fig 5.15).

RUNDE-FLANAGAN MODEL

	CONSTRUCTIVE	DESTRUCTIVE
ACTIVE	-perspective taking -create solutions -expand emotions -reach out	-win at all costs -show anger -demean others -retaliate
PASSIVE	-reflective thinking -delay responding -adapting	-avoiding -yielding -hiding emotionally -self-criticizing

Figure 5.15 Chief parameters of conflict management strategy (adapted from Runde-Flanagan 2007)

As a facilitator it is necessary to understand the source and nature of the conflict, to familiarise oneself with the techniques to manage conflict and to be equipped with the skills to manage and resolve conflict effectively.

5.7.3 Motivation (sub-item)

Bagraim (2011:81) defines motivation as "a force within one that arouses, directs and sustains one's behaviour. The arousal is the energy that drives the behaviour, followed by the direction in the choices that one makes to attain goals and finally the amount of time spent to sustain the behaviour."

Motivation can be described as a theoretical construct used to explain behaviour. Theories on Motivation can be classified as:

- Natural vs Rational Theory –human cognition is based on natural forces e.g. drives, needs, desires or rationality such as self-identity.

- Content vs Process Theory – content being 'what' motivates one and process being 'how' one is motivated.

One of the factors responsible for students' ability to succeed or fail in the academic field is the ability or lack thereof in self-motivation. With a sound understanding of motivational theories one would be able to apply such theories towards an educational advantage. In this way one would be able to encourage a high performance amongst the students.

According to Kroth (2007), teachers and leaders lack the knowledge and preparation and training to be effective in motivating students. There motivational effectiveness can be impaired due to, their own competing motivations.

Kroth (2007) states that although there are many theoretical motivational models in existence not much has been done to turn existing research into practical tools for teachers and leaders. Kroth refers to the heuristical motivation model for leaders in career and technical education that attempts to link research with a practical tool for teachers. A main consideration of the model was to create a motivating educational environment with practical motivational actions that teachers can use to motivate students. These practice actions are: care; understanding; design intrinsically motivating assignments; craft extrinsically motivated work; set motivating goals; support goal pursuit and manage expectancies. The model emphasises the need for caring and the need for understanding, both of which are not just feelings but behaviours as well. Together, with identifying stressors resulting in stress which can impede an individual's ability, to become motivated.

Kroth (2007) refers to the Hawthorne study results as becoming the focus of interest among researchers. Kroth (2007) quotes Lindner (1998) in mentioning the five main motivational theories: Maslow's hierarchy of needs; Herzberg's two-factor theory; Vroom's expectancy theory; Adam's equity theory and Skinner's reinforcement theory. Whilst these theories have stood the test of time the field of motivation research is expanding. A diagrammatic representation of motivational theories is presented in Fig. 5.16 and Fig.5.17 Information obtained from Bagraim (2011).

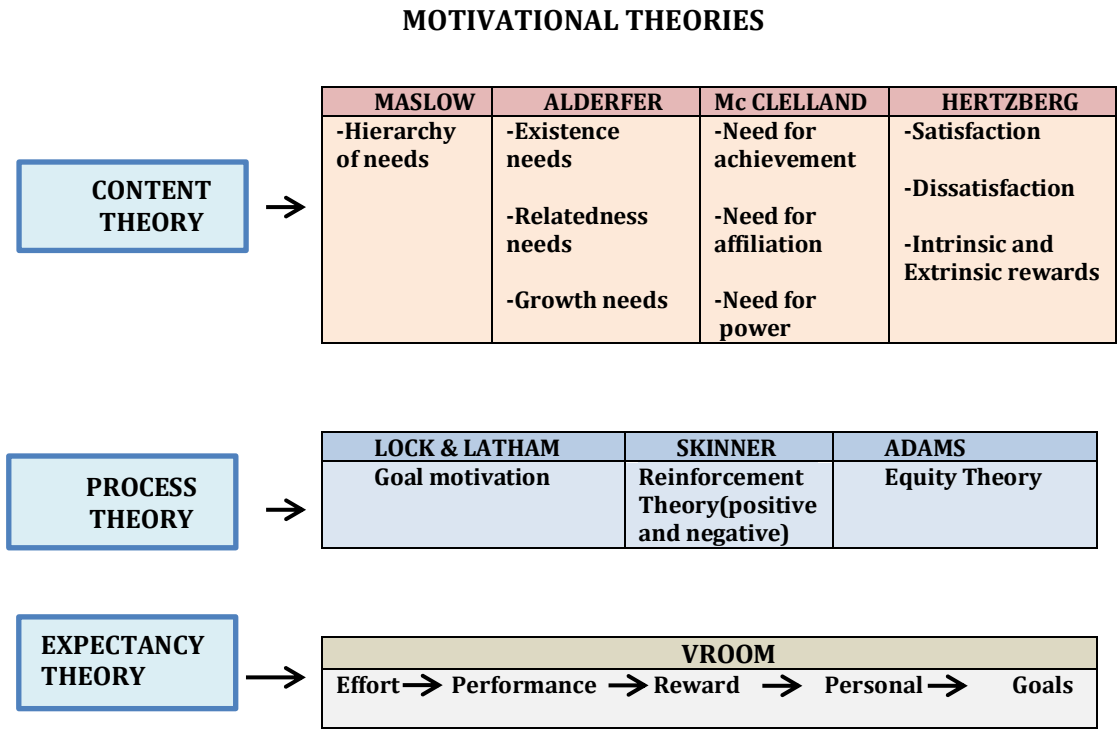


Figure 5.16 Diagrammatic representation of motivational theories

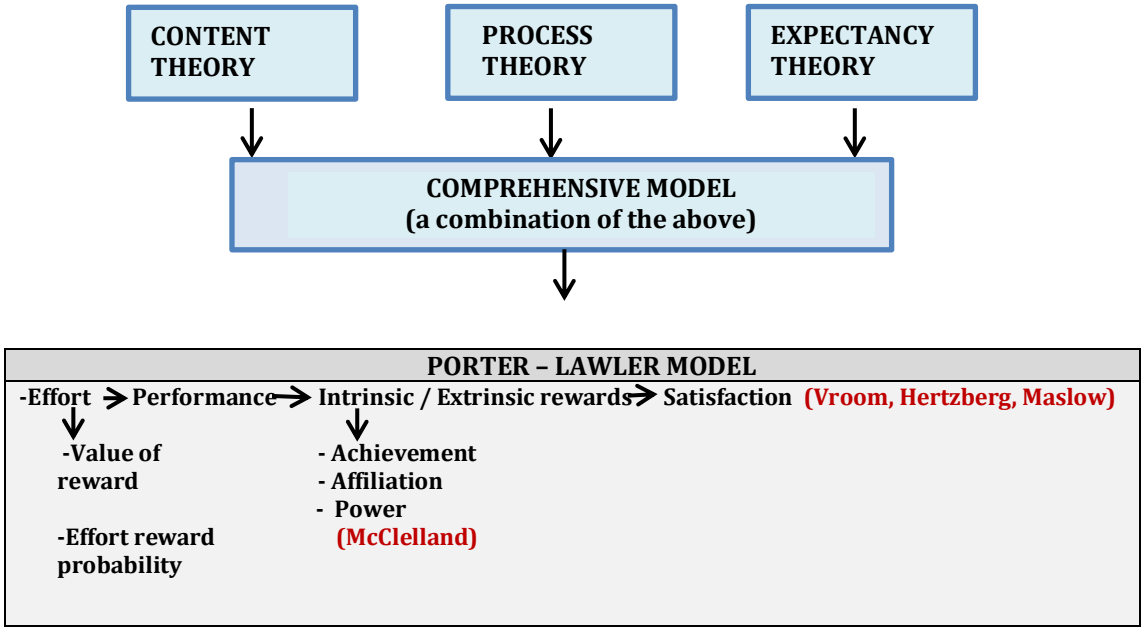


Figure 5.17 Diagrammatic representation of the Porter Lawler Model (1968)

The Content, Process and Expectancy theories are integrated into the Porter-Lawler Model (Fig. 5.17) that proposes that the effort exerted in performance is determined by the perceived reward such as obtaining good grades. Performance is often based

on the perceptions of equity and fairness comparing oneself to others when attaining the rewards, thus leading to a state of satisfaction or dissatisfaction. Herzberg describes rewards as being intrinsic or extrinsic. Intrinsic factors lead to a state of satisfaction as described by McClelland's theory on the need for achievement, affiliation and power. Extrinsic factors lead to a state of dissatisfaction with Maslow distinguishing, between higher and lower order needs.

The Porter-Lawler Model highlights the principles from other motivational theories that can be applied to assist with motivating students such as valuing the students' input and effort; providing a safe learning environment; designing assignments and tasks that are understandable and measurable; giving encouragement to improve performance to achieve rewards.

Bagraim (2011:108) maintains that performance is based on four aspects: one's inherent ability, developed competencies, opportunity and motivation as represented in Fig. 5.18

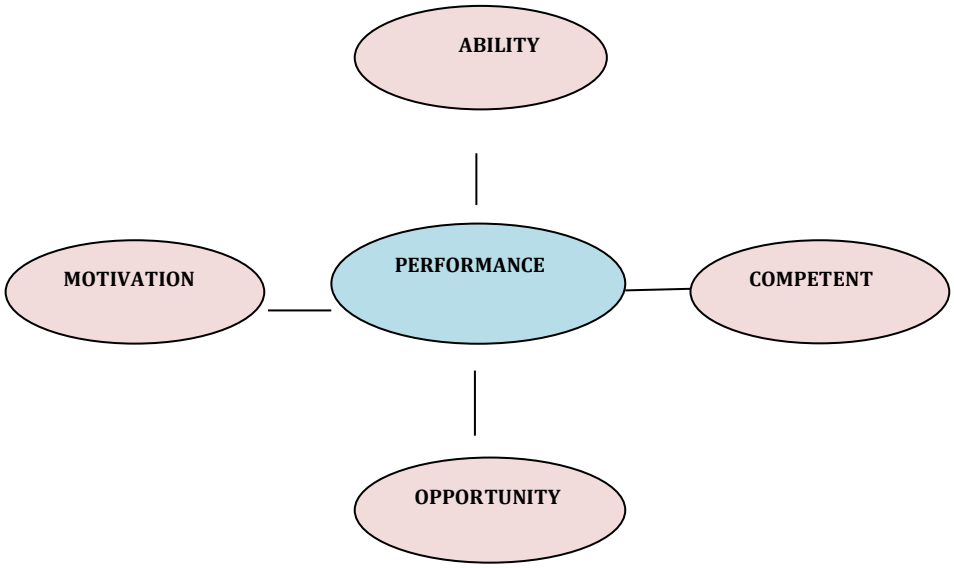


Figure 5.18 Motivation and performance (Bagraim:2011)

Pew (2007:15) asserts that the approach educators should have towards student motivation should be based on the philosophical underpinnings of andragogy or pedagogy. Difficulties arise when pedagogic principles are applied to an andragogic

situation. A misapplication of the motivational models could undermine the entire process of student motivation.

Pew (2007:18) further states that the responsibility for motivation depends on who is being motivated. In the case of andragogy in higher education one assumes that the adult learner has a primary responsibility for their own motivation. In the andragogic model there are three assertions: letting learners know why something is important to learn; showing learners how to direct themselves through information and relating the topic to life experiences. People will not learn until they are motivated to learn; helped to overcome inhibitions and emotional behaviours e.g stress and beliefs about learning. Educators in higher education should apply the 'platinum rule' to motivate students in a way that the student wishes to be motivated and not the way that the educator wishes to motivate.

Bagraim (2011:109) maintains that each motivational theory makes a contribution. The content theories concentrate on the individual and their needs. The process theories look at how an individual is motivated, with each process theory having a different focus. The Porter Lawler Model integrates ideas from several models.

By understanding the motivational theories one is provided with a framework to help motivate people; to identify and deal with the issues that cause demotivation in students.

5.7.4 Group Dynamics

According to Potgieter (2011:148) a group can be defined as "a cluster of two or more individuals who have come together for a specific purpose." With reference to PBL this is a group who will strive towards solving a 'real life problem.'

Forsyth (2010:2) describes group dynamics as "the study of actions, processes and changes that occur within and between groups."

The psychology of group working is explained in the theory of psychoanalyst, Bion (1955:440-477) who maintains that the behaviour of one member of the group is influenced by all other members of the group. Rational working of the group is affected by emotions, such as stress and irrational feelings of its members, thus

affecting the full potential of the group. Often problems are both personal and interpersonal. The group develops when it learns by experience in gaining contact with reality.

Bion's theory further describes that a group functioning normally to pursue sensible and reliable goals is referred to as a *work group* where individuals co-operate to achieve the set goals and allow for growth, development and results. A group with perceived fears and anxieties can function as a *basic assumption group.* This group may present aspects of dependency on one member of the group or use the flight or fight mechanism where the members either fight a situation or flee from the situation. Energy may be used to defend itself from anxieties and fear.

In the 1940's Kurt Lewin a social psychologist found that when group cohesiveness is high, members express "solidarity, mutual liking and positive feelings" associated with group tasks. Brown (1988:28-32) states that Lewin had a profound impact on researchers concerned with group dynamics where two key ideas emerged:

- Interdependence of fate where groups come into being in a psychological sense and not because their members are similar to each other.
- Interdependence of task when group members are dependent on each other, a powerful dynamic will result.

Bellman and Ryan (2009:18), following extensive research concluded that there are characteristics associated with an extraordinary dynamic group:

- A compelling purpose that inspires members
- Shared leadership and mutual responsibility in what needs to be done
- All members are involved with passion and enthusiasm
- Embracing differences where diversity is valued and applied as a strength
- Unexpected learning that translates into growth
- Strengthened relationships of trust
- Great results both tangible and intangible.

In contrast Patrick Lencioni's (2002) model sets out the five dysfunctions of a group:

- Absence of trust – a member's fear of being vulnerable regarding mistakes and weaknesses
- Fear of conflict – discussions are guarded due to lack of trust
- Lack of commitment – not able to become involved with the debate they go along with the decisions made by other members
- Avoidance of accountability- decisions are made by others, therefore accountability is shouldered by others
- Inattention to results – failure to hold each member accountable for actions that go against the group.

Lencioni (2002) maintains that one needs to understand the dynamics related to the dysfunctions in order to overcome them.

In understanding why some groups are successful and others unsuccessful the term 'Groupthink' has been developed. According to pioneer Irving Janis (1982), "Groupthink refers to the mode of thinking that people engage in, together with a deterioration of mental efficiency, reality testing and moral judgements due to in-group pressures."

According to Mehay (2009) an understanding of group dynamics is essential for the group to function effectively. A model of group dynamics developed by Bruce Tuckman (1965) illustrates how groups develop. The Tuckman model is linear and the four stages – Forming, Storming, Norming and Performing are said to be clear cut and often the stages will overlap with no definite time limit placed on each stage. Ten years later Tuckman with Mary Ann Jensen added a fifth stage- Adjourning sometimes referred to as the Mourning stage where the task is completed and the group's life span comes to an end. During the **Forming** stage little is known about the purpose of the group and this is a critical period for the group members. The purpose needs to be explained. During the **Storming** stage ideas are challenged and careful facilitation is required to prevent the process from becoming destructive. Individuals will start working with each other in the light of acceptance, tolerance and respect. The **Norming** stage allows individuals to express an opinion showing trust in one another. Care should be taken that the members not adopt the 'group way of

thinking' which will inhibit creativity. The **Performing** stage allows the group to facilitate itself. Fig. 5.19 represents Tuckman's Model.

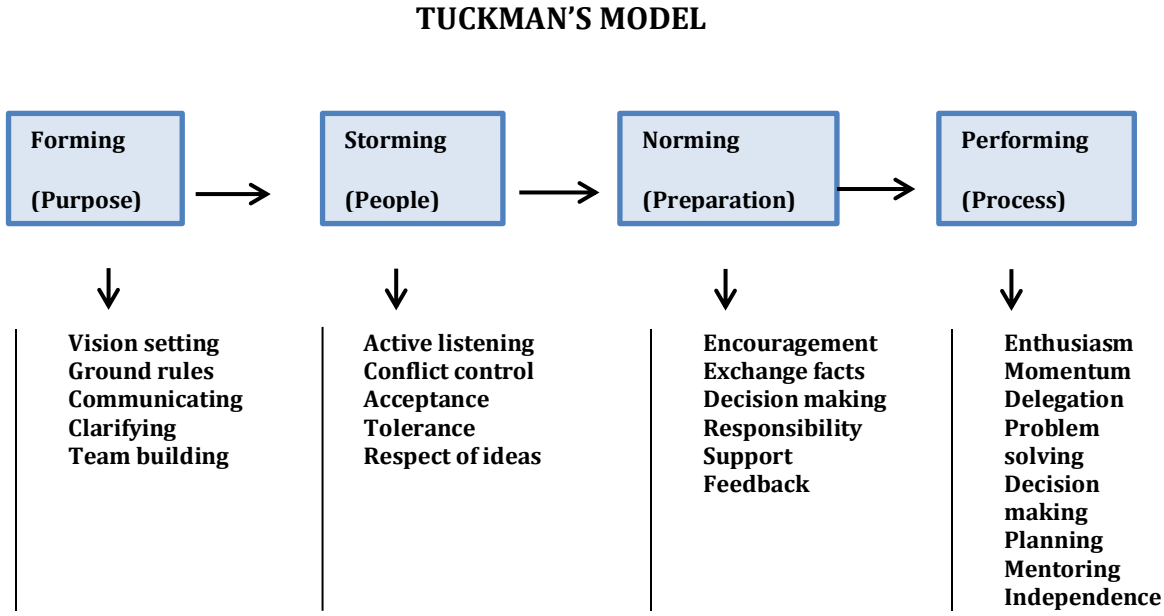


Figure 5.19 Tuckman's Model (Mehay 2009)

5.7.5 The Study Model

The study model representing the construct MANAGEMENT is based on the framework of the components of the practice model (Fig. 5.1) where PRACTICE refers to Facilitator Development; CONSTRUCT refers to the construct Management; GOALS, PHILOSOPHY and KNOWLEDGE were developed in relation to the construct Management. The following theoretical models used in relation to the sub-items within the construct Management are:

- Hans Selye: General Adaptation Syndrome on stress
- Thomas Kilman Model and Runde Flanagan Model on conflict management
- Porter Lawler Model on motivation
- Bruce Tuckman's Model on group dynamics.

Fig. 5.20 presents the study model relating to the construct MANAGEMENT

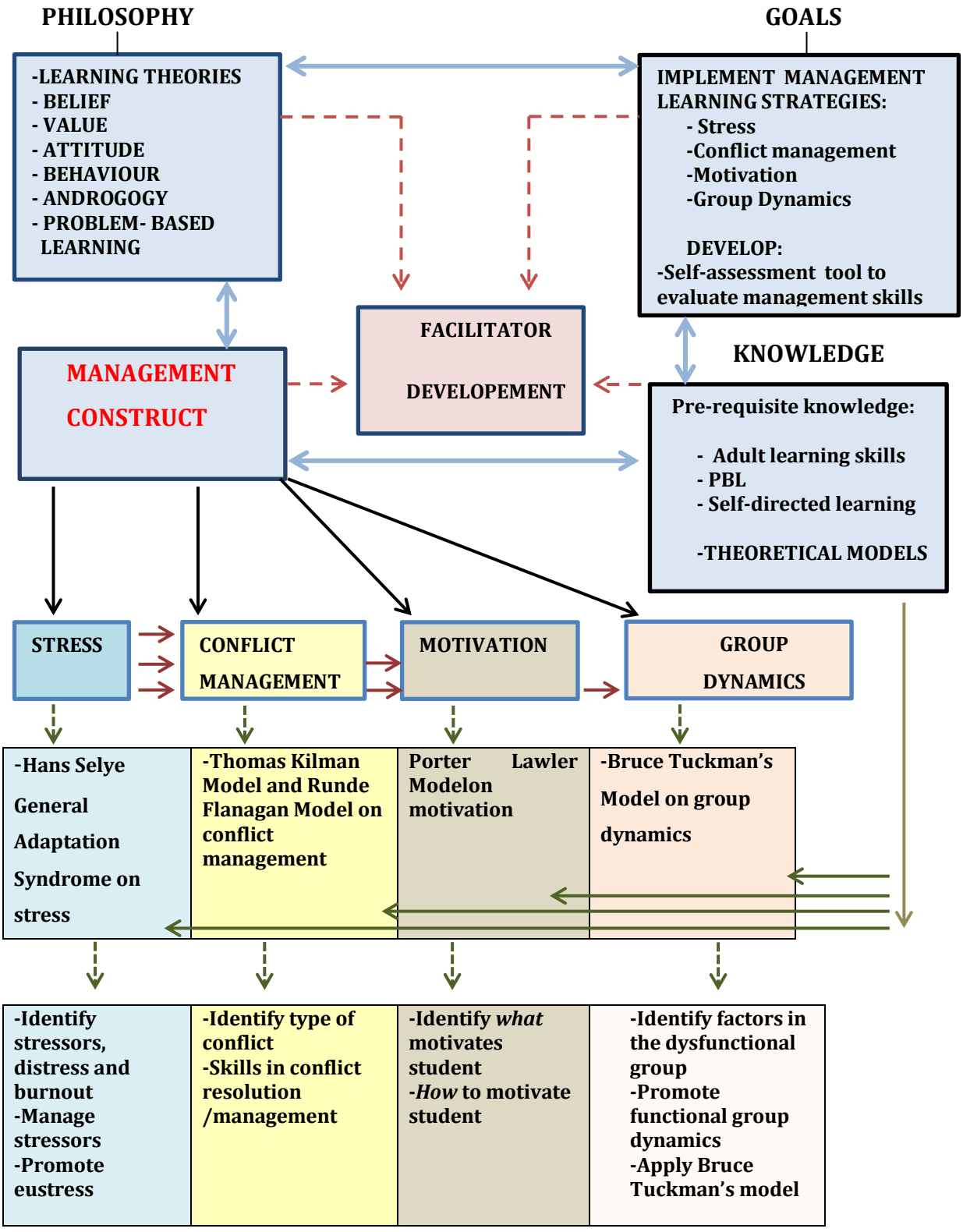


Figure 5.20 Study Model relating to the construct MANAGEMENT

The study model on the construct MANAGEMENT was developed using the three components of the generic model to which an additional component being the

'construct' was included. The components are indicated by arrow (↔). The 'construct' informed the content of the study model. In this study the 'practice' as set out in the generic model became 'facilitator development' and is influenced by the three generic components together with the construct –management indicated by arrow (- - >). The purpose of the model was to provide a framework on which to develop a training program related to MANAGEMENT for facilitator development.
Within the construct MANAGEMENT there are four sub-items: Stress; Conflict management; Motivation and Group dynamics. The expert panel was asked for a subjective judgement to assign a relative weight to each sub-item. This done Stress was given the strongest weighting and the significance of this occurrence is that stress according to the literature has a negative impact on each of the remaining three sub-items indicated by the red arrows. Furthermore there is an inter-relationship between each of the four sub-items, a dysfunction within any of the sub-items impacts negatively on the remainder of the sub-items. In providing learning resources for a facilitator, information from each of the existing models will be built into the training program in the form of positive constructive application. Whilst the facilitator should possess knowledge, to identify negative aspects the training program will concentrate on the positive influences of the models.

5.8 INTERPERSONAL SKILLS (Construct)

Interpersonal skills incorporate communication skills and relationship building skills the latter, includes social skills and soft skills (emotional intelligence). Communication skills play a major role in the execution of interpersonal skills, soft skills and social skills play a major role in the execution of communication skills. Relationship building skills include: co-operation, trust, a positive attitude, enthusiasm, ability to empathise, ability to negotiate, amongst others. Whilst in this study, most of the attention has been placed on communication skills the construct remained as INTERPERSONAL SKILLS as a result of the relationship between communication skills and relationship building skills.

In **Phase-One** of the study the experts were requested to give their subjective judgement on the items related to the construct INTERPERSONAL SKILLS. The sub-items selected together with the weighting of each sub-item are set out in Fig.5.21.

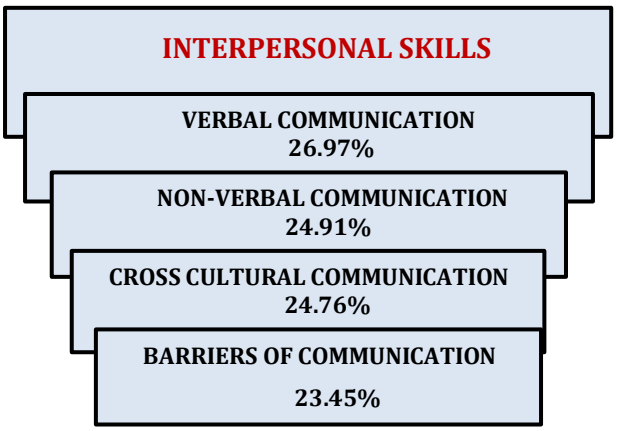


Figure 5.21 Weighting of sub-items - INTERPERSONAL SKILLS (n=4)

5.8.1 Communication

Kelly (2000:92) defines communication as "a process by which information is exchanged and understood by two or more people with the intent to motivate or influence behaviour." Intent of communication needs to be stressed. It is the intent of the sender wishing to influence the receiver.

According to Cunningham (2011:191) for many years researchers have been investigating the communication process amongst people. This has resulted in the development of many different conceptual models used to explain the human communication process. Wood (2009:17) states, that in 300BC the Greek philosopher Aristotle, developed the first communication model. This model consisted of five basic elements and was suited more for public speaking than interpersonal skills and suggests that the speaker plays the most important role. (Fig. 5.22).

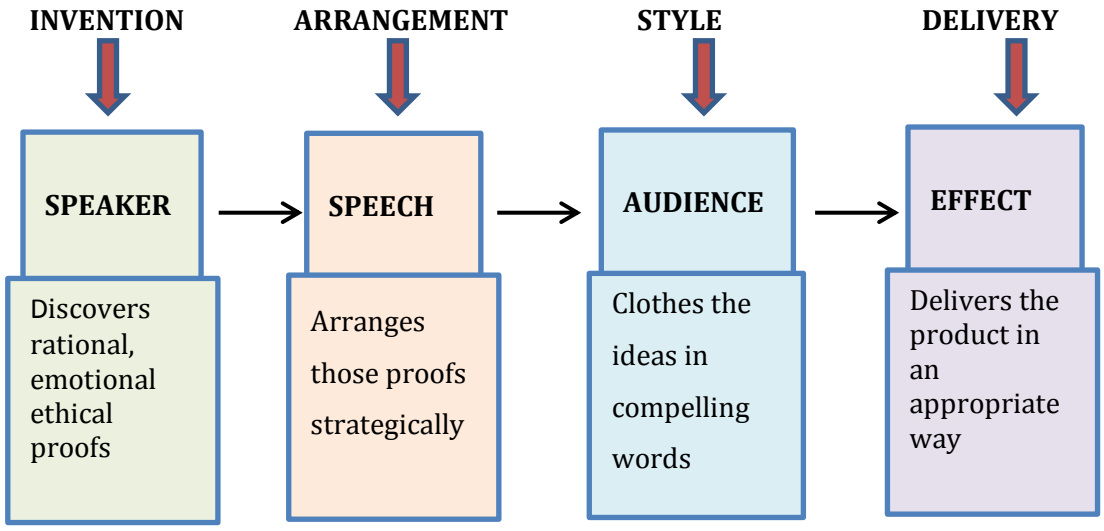


Figure 5.22 Aristotle model of communication (Management Study Guide 2015)

The simplest model of communication as described by Wood (2009) is the *linear model* viewing communication as a one-way linear process in which the speaker speaks and the listener listens and never speaks or sends messages. Shannon and Weaver (1949) developed the mathematical model on communication that is widely applied especially in interpersonal communication. The model is based on the Shannon Theory and presents a linear model combined with the *interactive model* where the listener and the sender are able to give feedback to each other verbally and/or non-verbally (Fig.5.23). The third group of communication models is the *transactional model* where communication is ongoing and is a constantly changing process in terms of people and the environment.

Cunningham (2011:194) asserts that the Shannon and Weaver model when compared with the Aristotle model shows that the speaker and receiver have an equally important role; provide feedback; is related to interpersonal communication rather than public speaking where the audience remains passive. The Shannon and Weaver model refers to the occurrence of 'noise' such as:

Physical noise – environmental distractions

Physiological noise – anxiety, stress, illness

Psychological noise – preconceived bias, assumptions

Semantic noise – word choices

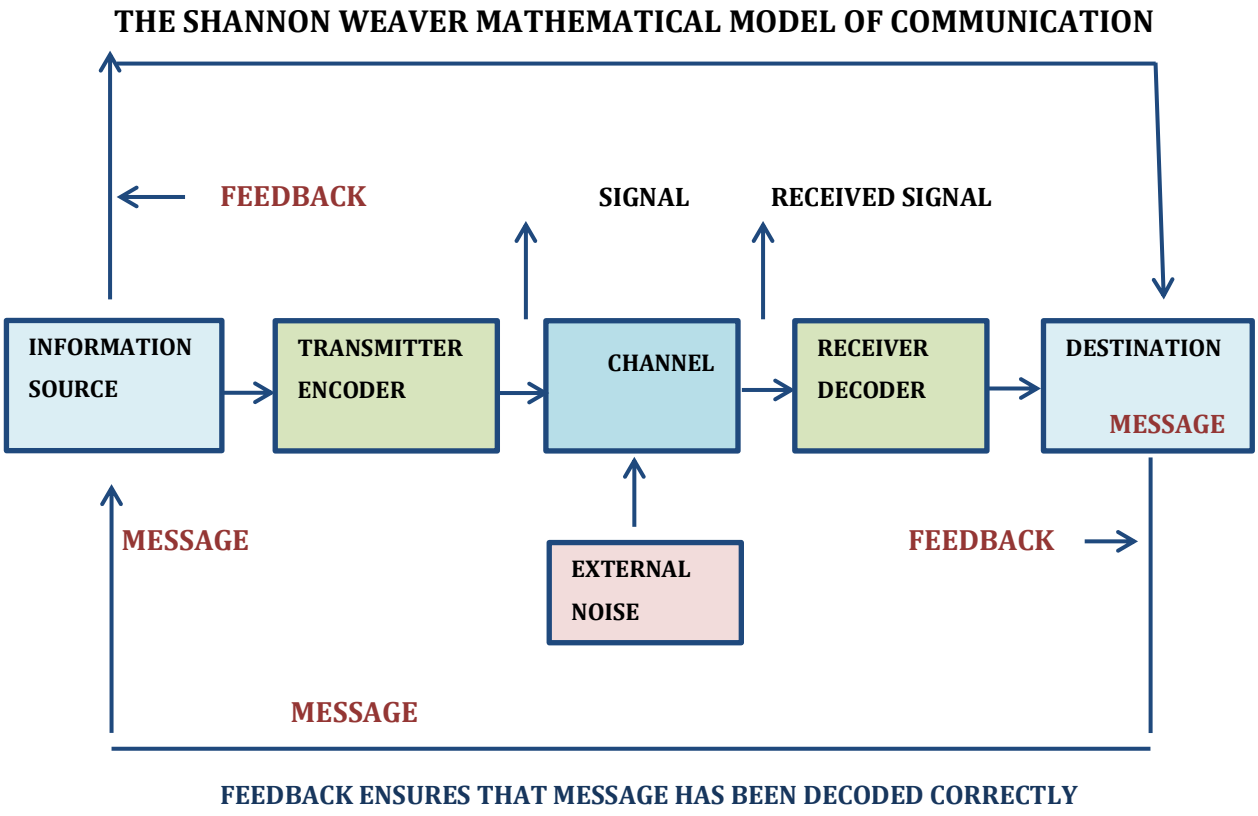
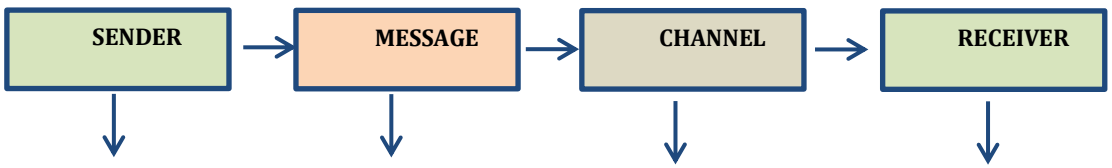


Figure 5.23 Shannon-Weaver model of communication (1949) (Wood 2009)

David Berlo expanded on the Shannon and Weaver model and created the SMCR model of communication that focuses on four elements: Sender; Message; Channel; Receiver. The SMCR model lists the skills required to communicate effectively on the four elements (Fig. 5.24).



Communication skills	Context - content	Hearing	Communication skills
Attitude- student/teacher	Elements-language, gestures	Seeing	Attitude
Knowledge of subject	Treatment- relay of message	Touching	Knowledge
Social systems- values, beliefs, culture, religion	Structure-how message is arranged	Tasting	Social systems
Culture	Codes- how was message sent	Feeling	Culture

Figure 5.24 Berlo model of communication (Management Study Guide 2015)

Fiore (2011:39) describes social skills, social competencies, soft skills, social self-efficacy within emotional intelligence as being important in presenting good interpersonal skills. Ramasar et al. (2009:39) state that emotional intelligence refers to "competencies within the individual related to emotional awareness of self and others, emotional control and empathy with balanced thoughts and emotions."

In this study interpersonal skills was based on communication in terms of verbal-communication; non-verbal communication; cross-cultural communication (organisational, ethnic and gender diversity) together with barriers to communication.

5.8.1.1 Verbal communication

Verbal communication can be formal or informal forms of address. It refers to language that is presented as professional, social or emotional amongst others. According to Krauss (2002:101) "verbal communication in terms of messages is fundamentally levelled at conveying meanings the speaker has encoded into words, the listener understands what the speaker has intended." For this to happen, communication becomes a collaborative activity. Language is versatile and serves as a medium for communication with flexibility and precision.

With reference to the history of psychology of verbal communication, O'Connell and Kowel (2011:29-47) state that in the mid twentieth century under the guidance of Miller and Chompsky a substantial amount of research has been conducted in modern mainstream psycholinguistics. "Language showed a dramatic shift from behaviourist principles shown as a written language bias to mentalistic principles based on transformational linguistics where language and language use play a far more important role in the communication process."

Krauss (2002) maintains that, a communication system either simple or complicated relies, on the same principle: Signals transmit messages from a source to a destination by using signs (signals) and symbols (social conventions) (Fig. 5.25).

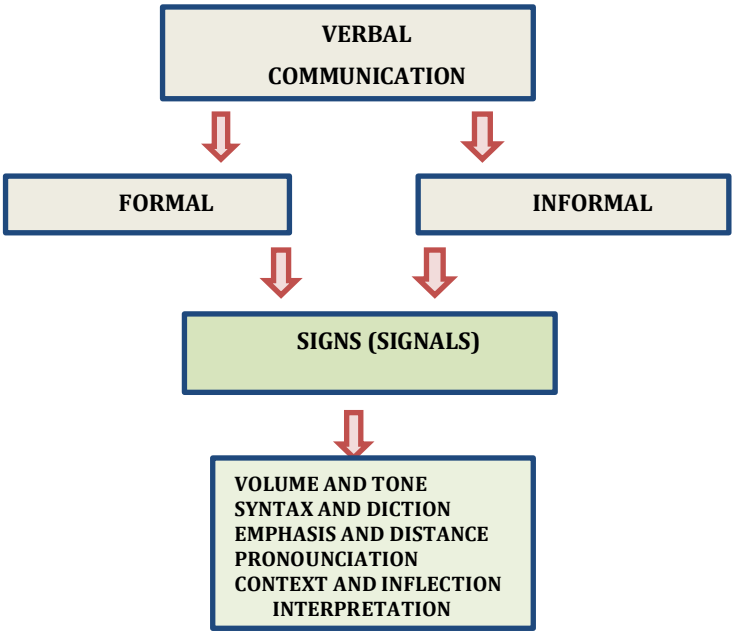


Figure 5.25 Signals associated with verbal communication (Krauss 2002)

There are three properties associated with the language of human communication: "Semantics being the meanings of words; Generativity in that language is capable of generating an infinite number of messages from a finite number of linguistic signals; Displacement, language makes it possible to communicate about things that are remote in space or time" (Krauss, 2002).

In communication it is not always easy to understand another person's intention because, people do not view the world in the same way. It is therefore necessary, to take the other person's point of view into account which at times is not obvious. Glucksberg and Krauss (1977:102) quote Piaget (1956) who maintained that "young children were unable to detach themselves from their own point of view however, when they are able to observe another's point of view an important milestone has been reached." Although adults may observe another's viewpoint, they are still affected by their own opinions. A breakdown in the communication process occurs, when the perspectives of others are not taken into account. "Verbal communication is facilitated through active and empathetic listening, enquiry and giving and receiving feedback" (Cunningham 2011:214). Emotional maturity is a strong force in facilitating good communication.

5.8.1.2 Non-verbal communication

Non-verbal communication is communication without the use of words. It is portrayed through a display of sign language, body language and behaviour representing feelings and attitudes. Fig. 5.26 illustrates the signals associated with non-verbal communication.

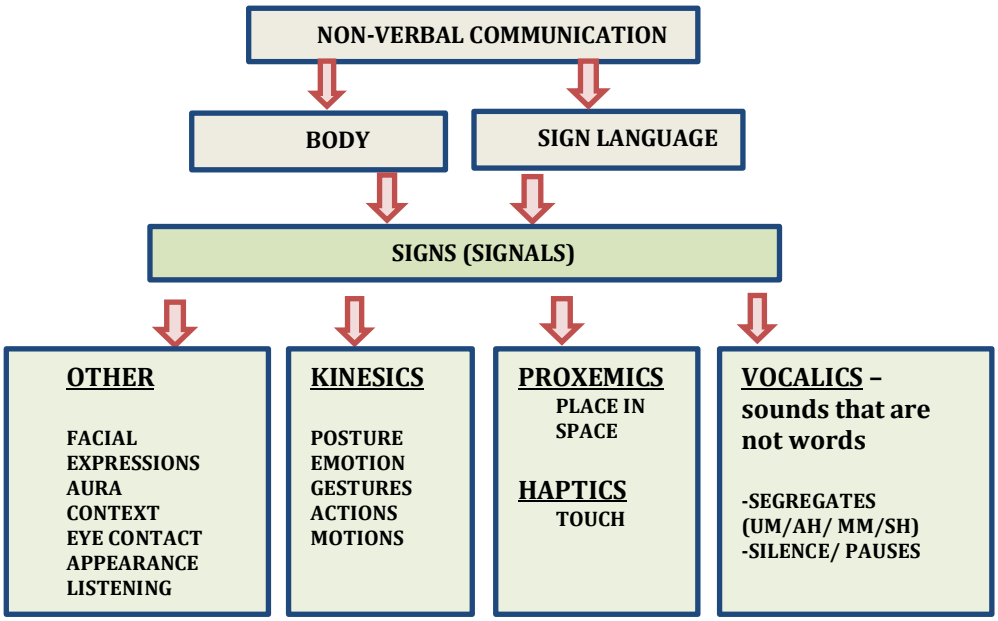


Figure 5.26 Signals associated with non- verbal communication (Creducation 2015)

Four main functions of non-verbal communication were identified by Seinfeld (2012):

- Identification function
- Relationship function
- Delivery function
- Emotional function

Fig. 5.27 illustrates the Seinfeld Primary (Universal) function of non-verbal communication (Creducation 2015).

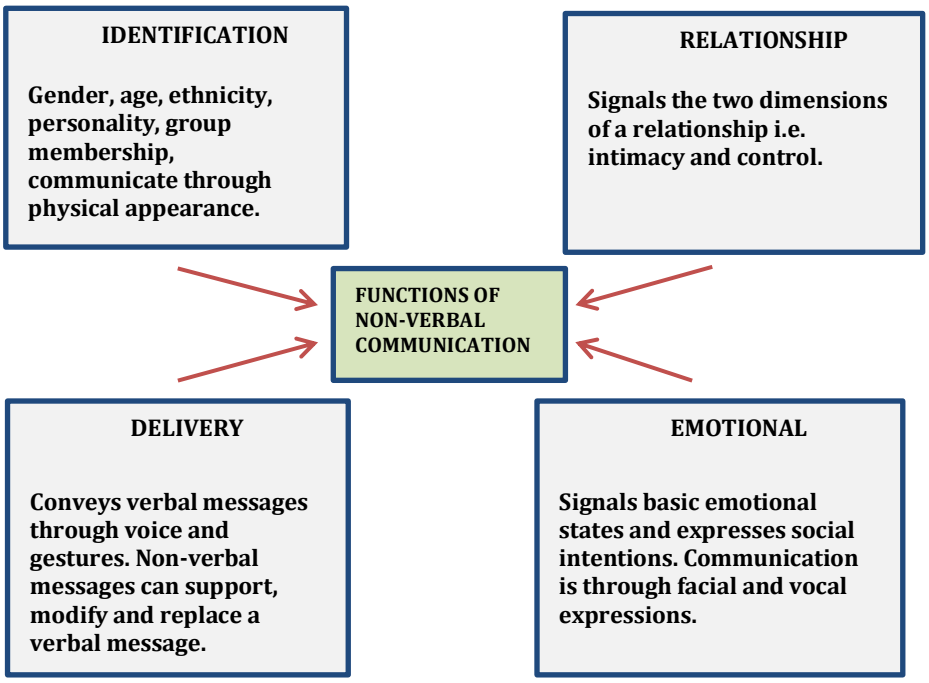


Fig. 5.27 Seinfeld Primary (Universal) function of non-verbal communication (Creducation 2015)

Mitchell (2009) describes the Mehrabian equation developed by Albert Mehrabian a professor in social psychology, who stated that in all communication between individuals, there were three elements that influenced the process: words, tone of voice and body language. Mehrabian maintained that there was an impact on the channels of communication, relative to the feelings and attitudes of individuals. Research conducted in two studies in 1967, led to the development of the Mehrabian formula. The formula shows that "in the meaning of a message 7% is related to the spoken word, 38% is related to the tone of the voice and 55% is related to body language. Researchers argued, that there were many limitations to both the studies and maintained that the 7%, 38%, 55% rule was not all that accurate. However, the Mehrabian study highlighted the impact of the three components (words, tone, body language) in communication.

The researcher Allan Pease (2007) an expert in body language, maintained that 83% of all communication was von-verbal. A study was conducted amongst university students, where four groups were selected with each group attending the same lecture presented, by a group tutor. The students within each group were requested,

to write a group report, on the presentation given by the group tutor. The presentations were deliberately manipulated. In two of the groups a tutor was instructed, to display poor and ineffective non-verbal communication skills: monotonous in tone (verbal), stood behind podium with hands at the side, expressionless face and never making eye contact. The remaining two groups the tutor was instructed, to display good non-verbal communication skills: making eye contact, moved hands, appeared enthusiastic, walked about and changed the tone in the voice (verbal). The result showed, that the students reported boredom and a lack of concentration and disinterest in the groups with the ineffective tutor. Furthermore, the students felt that the tutor presented with a knowledge deficit.

The importance of non-verbal communication should not be underestimated since it plays a major role in the communication process.

5.8.1.3 Cross-cultural communication

According to Cunningham (2011:213) culture determines the "way in which populations, societies and groups organise their lives in terms of language, religious beliefs, social values and physical characteristics amongst others." Cross-cultural communication occurs when a message is sent from a person of one culture to a person of another culture. LeBaron (2003) states, that all communication is cultural in terms of verbal and non-verbal messages. The effectiveness of active communication between individuals depends on the relationship one individual has with another: are both parties listening and understanding what is being said and is there trust between the parties. Even with good intentions miscommunication is likely to occur when there are cultural differences which could lead to conflict or aggravate conflict. Doerr(2004) quotes Hiebert an anthropologist who concludes that "in normal communication with the same culture, people understand 70% of what is being said and in cross-cultural communication the level of understanding is never greater than 50%."

In an effort to prevent miscommunication one, should improve communication and listening skills, familiarise oneself with the barriers of communication thereby, avoiding damaging non-verbal messages. Feedback from the receiver of a message should, be encouraged to ascertain whether the message has been understood. The

sender or receiver should, be given the right to express themselves without being judged even if the point of view is not agreeable to either party. Listening skills are essential, give the speaker full attention and listen to what is being said.

The Bridge Management Development Company (2014) has listed points that can be used to improve communication. See Fig. 5.28.

BE HONEST
BE FLEXIBLE
LISTEN ACTIVELY
RESPECT DIFFERENCES
ASK QUESTIONS
BUILD SELF-AWARENESS
AVOID STEREOTYPING
DISTINGUISH PERSPECTIVES
THINK TWICE
RECOGNISE COMPLEXITY

Figure 5.28 Ten tips for effective cross-cultural communication (Bridge Management 2014)

Cross-cultural communication is not limited to ethnic culture and communication. In this study the researcher selected three sections of cross-cultural communication as follows:

- Ethnic culture and communication
- Gender culture and communication
- Organisational culture and communication

Fig. 5.29 represents a comparison of culture and communication with reference to ethnic, gender and organisational culture.

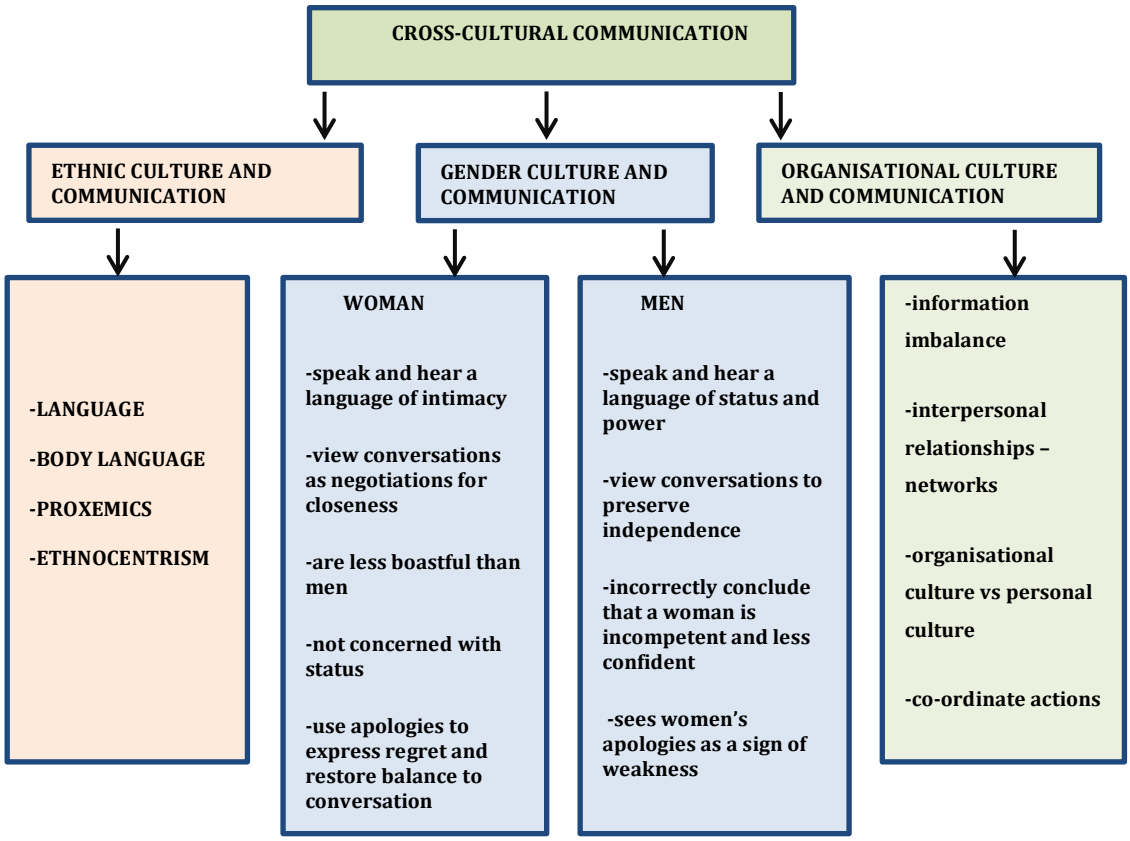


Figure 5.29 Ethnic, Gender and Organisational culture and communication (Cunningham 2011)

Cunningham (2011:213) quotes Hellriegel, Gordon and Grundling (1999) who discuss the challenges in ethnic cross-cultural communication, where meaning is often lost in translation. There are no universal standards related to non-verbal communication. Different ethnic groups use, non-verbal communication in different ways, all of which is considered correct, polite and respectful. In comparing east and west cultures more weight, is placed on non-verbal communication by eastern cultures. An individual's personal, social and public space is viewed differently from one culture to the next. Values and attitudes differ between cultures with no one culture able to claim the 'right values' that another culture should conform to.

In an effective communication process, there is acceptance that there will be differences, based on the different cultures. Individuals should try to understand each other's point of view, based on different cultural norms.

There are certain gender differences within verbal and non-verbal communication between men and women. Kreitner and Kinicki (2001:423) refer to the concept of 'genderflex' where both men and women are able to understand the communication behaviour of each other. Figure 5.29 sets out certain differences as described by Cunningham (2011:217).

Werner (2011:30) defines organisational culture as a system of "attitudes, feelings, customs and language amongst others that determine the standards by which the members of the organisation co-exist to create a corporate identity." Communication within that organisation is based on the objectives and standards set by the organisation to achieve organisational goals and personal goals set out by the employees. It is therefore important to prevent misinformation and to maintain good interpersonal relationships to provide a functional networking system. Uzzi and Dunlap(2005:53-60) express the importance of networks in that they "provide valuable information from one person to another and it allows persons to access diverse skills such as creativity and unbiased views on a subject." Organisational communication further allow individual to co-ordinate actions and satisfy social needs (Cunningham 2011:190).

5.8.1.4 Barriers to communication

A barrier to communication, is described by Kelly (2000:92-101) as "a situation where the sender and the receiver fail to influence each other in ways that are intended." The sender may assume that the receiver has interpreted the message, as it was intended and vice versa. When barriers to communication are not dealt with in a mature way a conflict situation will result.

Barriers are interruptions in the communication process referred to as 'noise' and grouped into three categories: process barriers, personal barriers and situational barriers.

Barriers can occur throughout the communication process as illustrated in Fig. 5.30. Obstacles associated with process barriers are illustrated in Fig. 5.31

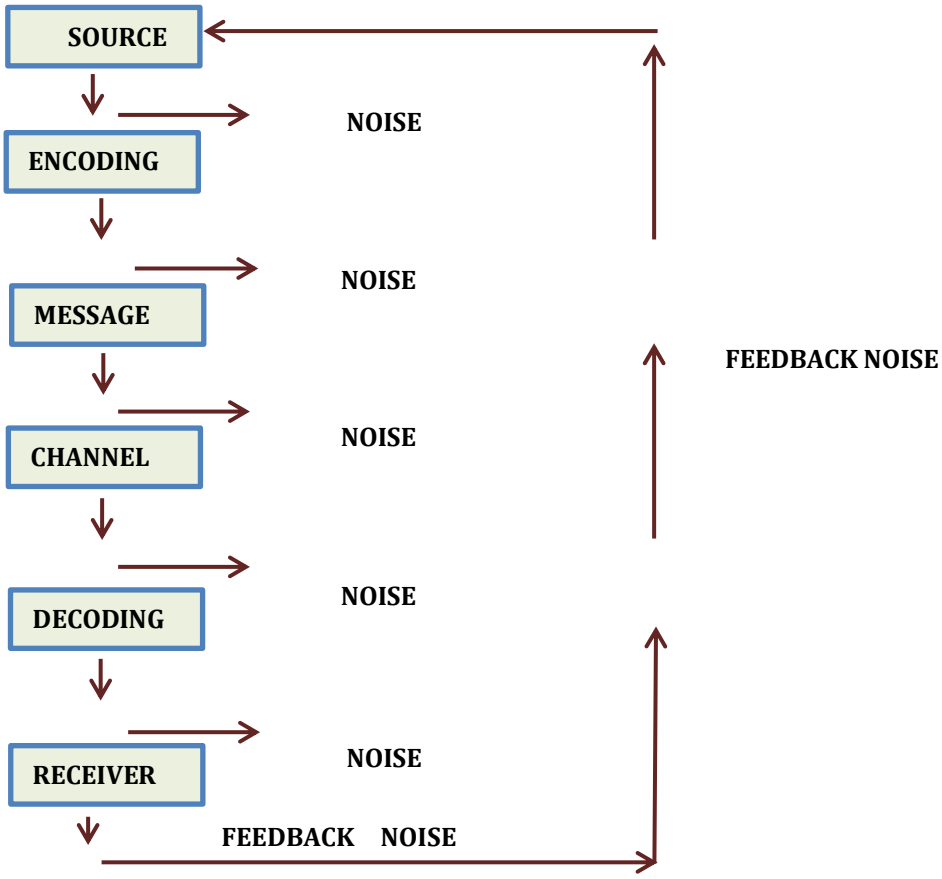


Figure 5.30 Noise in the communication process (process barriers) (Cunningham 2011)

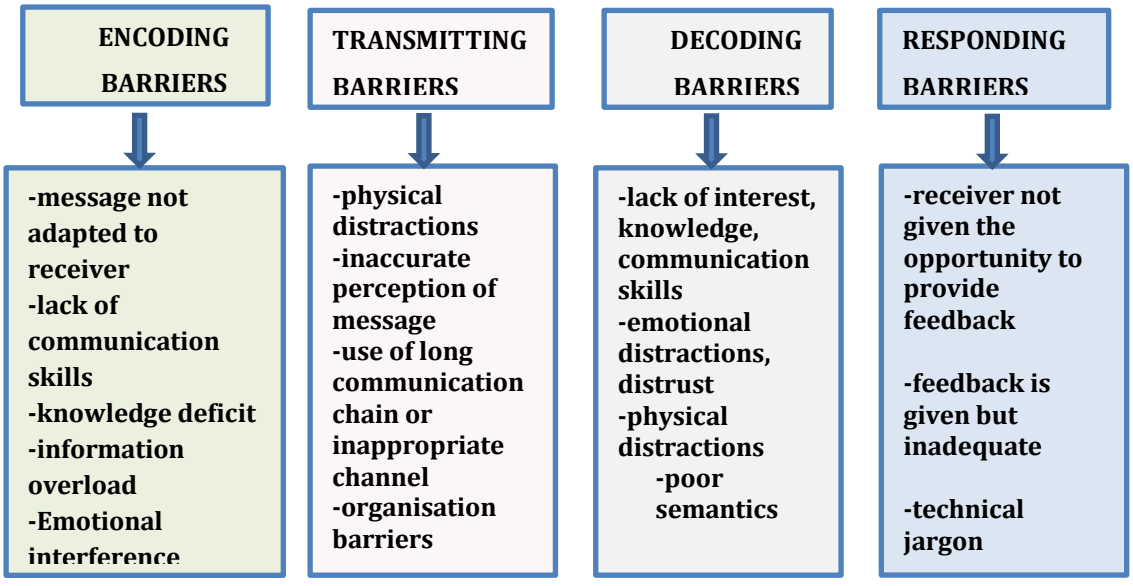


Figure 5.31 Obstacles in the communication process (process barriers) (Cunningham 2011)

Cunningham (2011:206) explains that there are "many personal barriers to communication and whilst communication is a complex process the ability to communicate is dictated by the sender's communication skills."

A representation of personal barriers as described by Cunningham (2011) is illustrated in Table 5.1

Table 5.1 Personal barriers in communication

PERSONAL BARRIERS	
CULTURAL CHALLENGES	**ORGANISATIONAL CULTURE v PERSONAL CULTURE INTERPERSONAL CULTURE DIFFERENCES**
POWER STATUS	**HIERARCHY IN AN ORGANISATION**
POOR LISTENING SKILLS	**SELECTIVE HEARING, DISTRACTIONS, HEARS MESSAGE INCORRECTLY**
SEMANTICS	**INTERPRETATION OF MEANING OF WORDS**
DISTRUST	**RECEIVER DOES NOT TRUST SENDER**
FILTERING	**ONLY HALF OF MESSAGE RELAYED**
LANGUAGE	**POOR COMMAND OR UNDERSTANDING OF LANGUAGE**
GENDER	**DIFFERENCES IN LANGUAGE AND UNDERSTANDING**
AGGRESSION	**STRESS, ANGER, VERBAL ABUSE, LOW EMOTIONAL INTELLIGENCE**
INAPPROPRIATE	**NO SENSITIVITY ON SUBJECT OR TO RECEIVER**

Situational barriers can occur from a number of sources e.g. loud noise making it difficult to hear what is being said, geographical distances between the sender and the receiver such as in different departments within an organisation and organisational barriers. Fig. 5.32 represents organisational barriers.

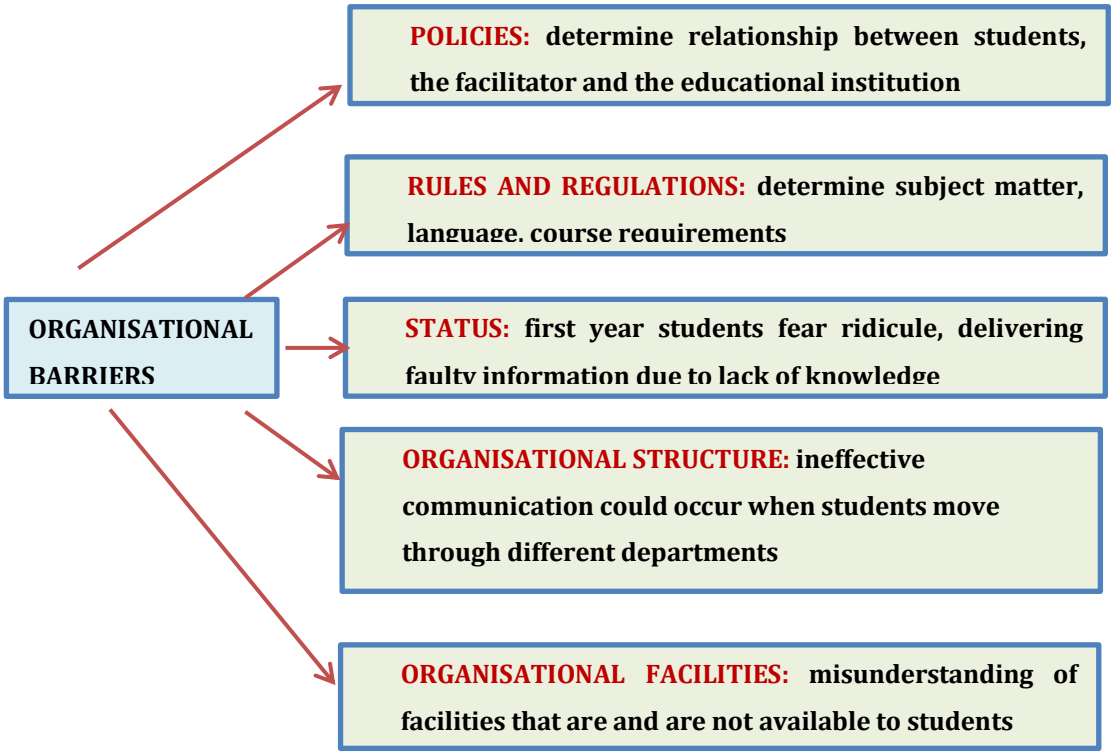


Figure 5.32 Organisational barriers in communication (Researcher's diagram)

5.8.2 The Study Model (Interpersonal Skills)

The study model on the construct INTERPERSONAL SKILLS was developed using the generic model (Fig. 5.2). The 'construct' informed the content of the study model.

Following the subjective judgement of the expert group, communication skills formed the content of INTERPERSONAL SKILLS. The communication skills were divided into four sub-items: verbal communication, non-verbal communication, cross-cultural communication and barriers to communication.

The study model is based on the four sub-items within the construct INTERPERSONAL SKILLS.

Fig. 5.33 presents the study model on INTERPERSONAL SKILLS.

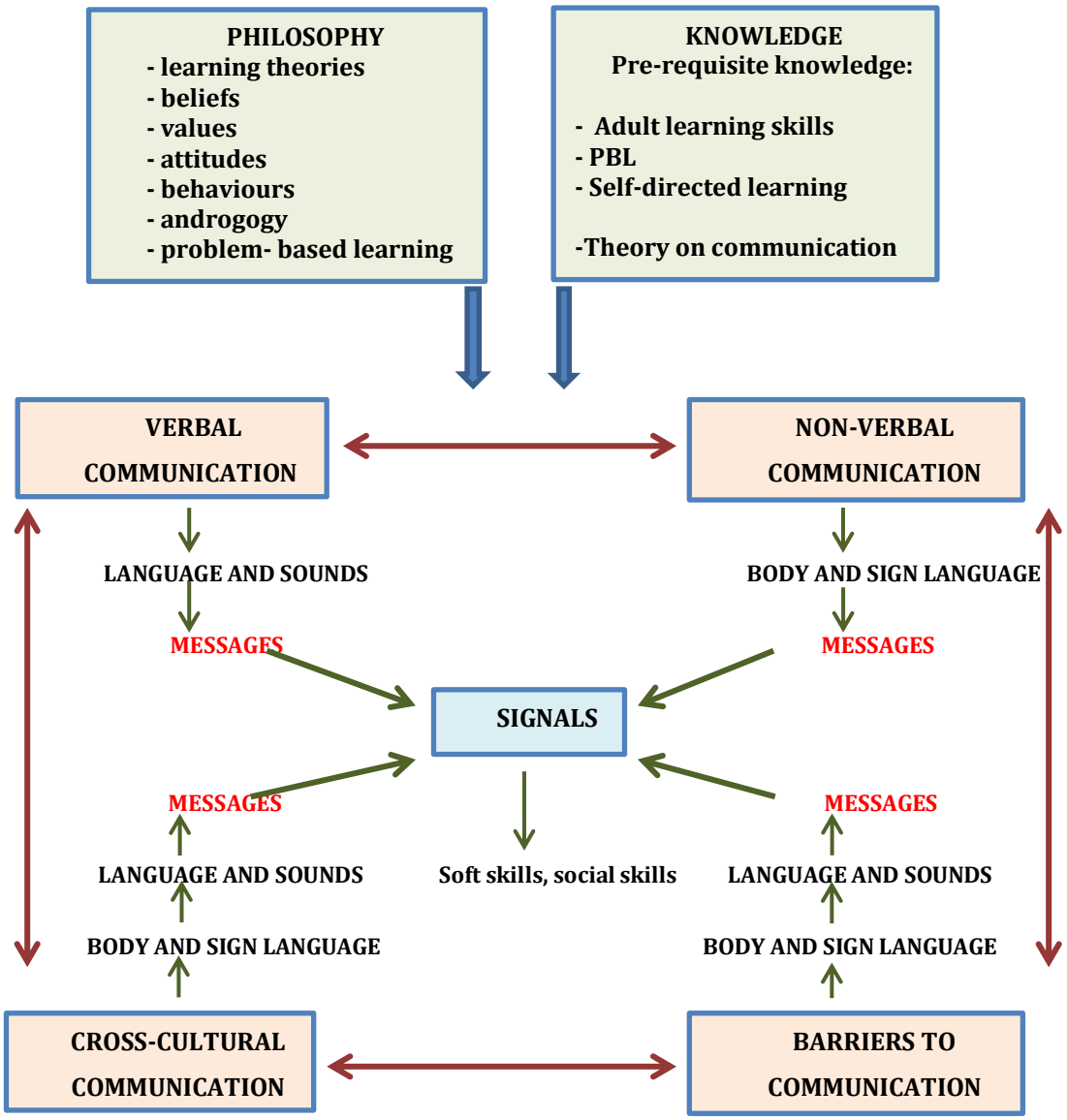


Figure 5.33 Study model on INTERPERSONAL SKILLS

The study model shows the inter-relationship between verbal communication, non-verbal communication, cross-cultural communication and the barriers to communication. The significant feature is that in each of the four sub-items the common denominator is SIGNALS. The signals are a result of messages representing language and sounds, body and sign language or both such as in cross-cultural communication and barriers to communication.

The model is based on the philosophy and knowledge required relative to facilitator development in problem-based learning.

5.9 SUMMARY

There were significant findings in the development of the models on ETHICS, MANAGEMENT and INTERPERSONAL SKILLS. These are:

- Each model was based on the generic model (Fig.5.2). This model is made up if four components: construct, philosophy, goals and knowledge all related to a centre point being FACILITATOR DEVELOPMENT.
- Two of the five main constructs developed in **Phase-One** of the study being PROFESSIONALISM and KNOWLEDGE, by default became a part of the models developed on ETHICS, MANAGEMENT and INTERPERSONAL SKILLS. The four sub-items within the construct PROFESSIONALISM: philosophy of PBL; responsibility; accountability became a part of the PHILOSOPHY component of the study model whist the fourth sub-item: facilitator development became the centre point FACILITATOR DEVELOPMENT against which the model was developed. Whilst there was a construct KNOWLEDGE there was a KNOWLEDGE component within each model. Within the construct KNOWLEDGE there were five sub-items: adult learning, self-directed learning, pre-requisite knowledge and problem-based learning all of which formed part of the PHILOSOPHY component and part of the KNOWLEDGE component of the study model. Furthermore the KNOWLEDGE component included theoretical models pertaining to the construct of Ethics, Management and Interpersonal skills. Whilst five main constructs were identified in **Phase-One** of the study it was necessary to only develop models on the three constructs ETHICS, MANAGEMENT and INTERPERSONAL SKILLS since the remaining two constructs of PROFESSIONALISM and KNOWLEDGE were incorporated within these three models. The weighting allocated to PROFESSIONALISM and KNOWLEDGE was equally distributed to the constructs ETHICS, MANAGEMENT and INTERPERSONAL SKILLS.

  Fig. 5.34 presents the weighting of the three constructs

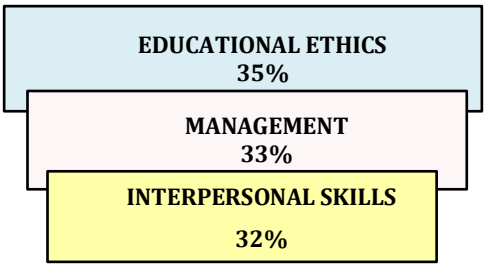


Figure 5.34 Constructs and their relative weights

- The Philosophy component of the three models was identical and included the philosophy associated with Andragogy; Problem-based Learning; Theories on adult learning and self-directed learning. In terms of 'behaviours' that formed part of the philosophy component, the aspect of Professionalism in accountability and responsibility towards the organisation, the student and the facilitator was taken into account. Professionalism included the responsibility of the facilitator to acquire the skills and knowledge to provide effective facilitation.
- The set goals for each model were based on the philosophy and knowledge required to perform effectively within the construct EDUCATIONAL ETHICS, MANAGEMENT and INTERPERSONAL SKILLS

At this point in the study a significant finding was that facilitator development was dependent on acquiring skills and knowledge pertaining to the three constructs of EDUCATIONAL ETHICS, MANAGEMENT and INTERPERSONAL SKILLS leading to the development of the IPSEM TRIANGLE (Inter Personal Skills Ethics Management).

Fig. 5.35 represents the IPSEM TRIANGLE.

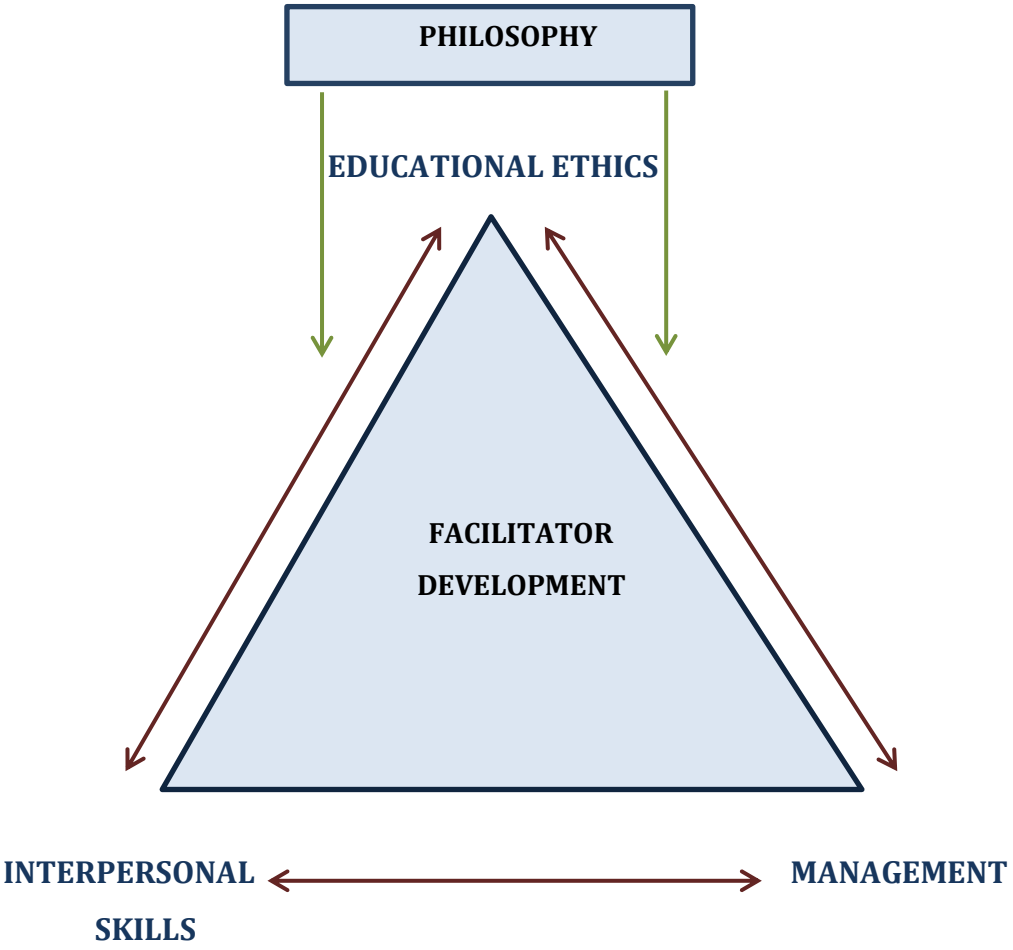


Figure 5.35 Representing the IPSEM TRIANGLE

The information gathered from each of the three constructs from which a model was developed was analysed and synthesized. The significant aspects were extracted and presented in the FINAL STUDY MODEL (Fig. 5.37).

LEGEND (FINAL STUDY MODEL)

- Relationship between Philosophy, Knowledge and Goals
- Relationship between Ethics, Management and IPS
- IPS: Positive signals of communication
- IPS: Negative signals of communication
- ETHICS: Relationship between learning environment, learning process, student and organisation
- ETHICS: Facilitator ethics in relationship learning environment, learning process, student and Organisation
- MANAGEMENT: Impact of stress on motivation, group dynamics and conflict
- MANAGEMENT: Impact of conflict on motivation, group dynamics and stress
- MANAGEMENT: Impact of motivation on conflict, group dynamics and stress

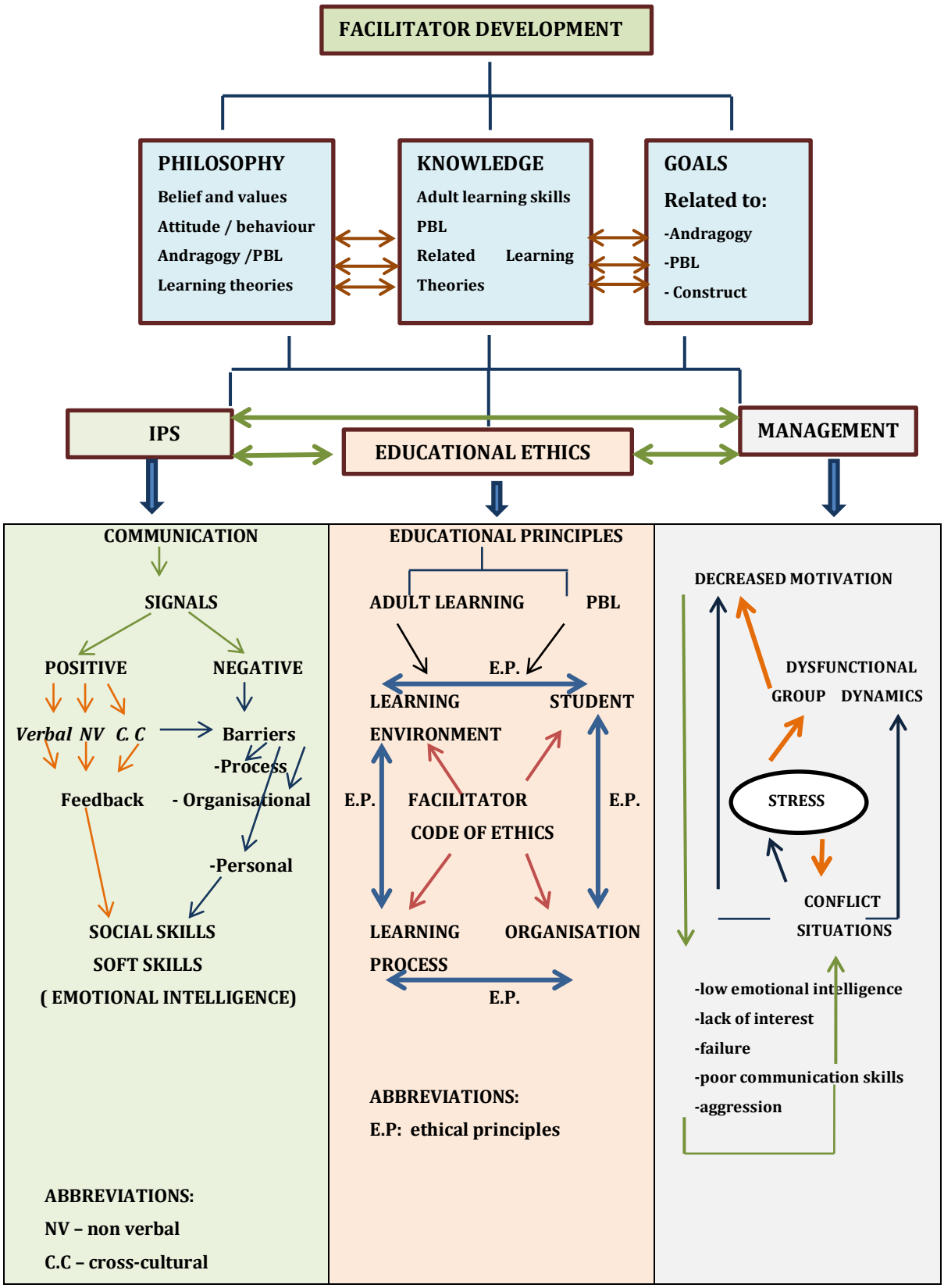


Figure 5.36 Representing the FINAL STUDY MODEL

5.10 DISCUSSION OF FINAL STUDY MODEL

Effective facilitator development is dependent on the three components of the generic model namely: Philosophy, Knowledge and Goals together, with the three constructs identified in this study namely: Educational Ethics, Management and Interpersonal skills. There is a strong inter-relationship between philosophy, knowledge and goals. The chief goal is to provide the facilitator with knowledge related to learning theories and literature, on andragogy, problem-based learning and each construct. The goals will dictate the objectives and standards of practice, required for effective facilitator development. Furthermore, an insight into the philosophy associated with one's beliefs and values is needed. The latter will produce a specific attitude that will lead to a specific behaviour that will impact on the student in the learning environment. It is not feasible to set a goal without having the knowledge and acceptable behaviour needed, to meet that goal. In the study model the red double arrows shows the connection between the concepts of philosophy, knowledge and goals.

The double-sided green arrows show the inter-relationship between the three main constructs: Interpersonal skills; Educational Ethics and Management. The behaviour attached to either of these constructs, will have a positive or negative impact on the remaining constructs. The development of each of the three constructs, are led by the philosophical viewpoint of the study, together with the knowledge required for effective facilitation and the goals that have been set.

Interpersonal skills: For the purpose of this study interpersonal skills deals with the concept of communication. Whilst there is a great deal of information on the communication process the most significant fact is the importance of SIGNALS, both the positive and negative signals in communication. Credit will be given to the positive signals (orange arrows) associated with verbal, non-verbal and cross-cultural communication and the importance of feedback. Furthermore cross cultural communication will be dealt with relative to process, organisational and personal barriers to communication (represented by the blue arrows). The concept of developing emotional intelligence is significant in promoting effective

communication and preventing ineffective communication. To control emotions and remain composed in difficult situations is the desired course of action.

Educational Ethics: Educational principles impact both adult learning and problem-based learning that in turn will apply ethical principles to the student, the learning process, the learning environment and the organisation. There is an inter-relationship between the student, the learning process, the learning environment and the organisation indicated by the double-sided blue arrows. Failure to apply ethical principles to one aspect will impact negatively on the remaining aspects. In reverse the application of ethical principles will have a positive impact on the student, the learning process, the learning environment and the organisation. Furthermore the ethical principles incorporated in the facilitator's code of ethics will impact the student, the learning process, the learning environment and the organisation in a positive manner (red arrows).

Management: The most significant aspect is the inter-relationship of the four sub-items: Stress; Motivation; Conflict Management and Group Dynamics indicated by the orange arrows. Stress received the highest weight following statistical analysis and the negative impact on the remaining three sub-items, has a knock-on effect. When stress causes a decrease in motivation the latter can produce conflict situations together with a dysfunctional group dynamic. However, a decrease in motivation or a conflict situation can create stress leading to poor group functioning.

5.11 CONCLUSION

This chapter presented the development of models on the different constructs identified in **Phase-One** of the study. It further presented a literature survey on each of the constructs. In **Phase-One** certain items were rated a three by an expert with recommendations that have been included in the relevant construct models. Based on the individual models a combined FINAL STUDY MODEL was constructed. The latter formed the basis for the development of standards of practice presented in the next chapter.

CHAPTER SIX

DEVELOPMENT OF STANDARDS – PHASE-THREE

6.1 INTRODUCTION

This chapter presents **Phase-Thee** of the study with the development of performance standards based on the Final Study Model (Fig.5.36). Standards measure the level of competence in terms of the knowledge and skills a facilitator should possess and serve as guidelines to maintain a high level of performance. Standards were developed on each of the constructs: EDUCATIONAL ETHICS, MANAGEMENT and INTERPERSONAL SKILLS. Furthermore the standards will be used to complete the development of the Facilitator Evaluation-Self Assessment Tool (FE-SAT).

6.2 STANDARDS

A standard is a written description of a desired level of performance, containing the characteristics associated with excellence, for measuring and evaluating actual performance. It is an approved statement of something against which measurement can be made and serves as a basis for comparison (Booyens, 2008:606). Standards imply that a level of performance is maintained through staff development; provides competency by defining what constitutes competency and provides facilitators with direction and confidence.

6.2.1 Formulation of Standards

Standard formulation involves setting the standard presented as a standard statement and establishing the criteria which will apply to ascertain whether or not a standard has been met (Booyens 2008:606).

Muller (1990:49-55) states that the formulation of standards is a systematic process which may be approached from different angles and includes amongst other things, the involvement of experts in a participative process. The experts could be involved either in the formulation or the verification of the standards. The latter applies to this

study. Standards are formulated as general (generic) and specific statements, the latter being developed for the specific purpose of evaluating facilitators on a self-assessment tool.

The requirement standard directs the threshold level, in this instance that optimal level standards be developed that will represent a degree of excellence obtained in evaluating a facilitator using a self-assessment tool.

The methodological steps used in the formulation of the standards based on the Final Study Model (Fig. 5.37) called for a structured approach. A review of the literature was conducted to establish if existing standards on facilitator self-assessment were available. The literature review assisted in the formulation of draft standards based on research. The researcher was able to make an informed decision on what is regarded as good practice in terms of knowledge and skills required for effective facilitation.

Draft standards and criteria indicators were developed by the researcher specific to the main constructs: EDUCATIONAL ETHICS, MANAGEMENT and INTERPERSONAL SKILLS together with the component on PHILOSOPHY. The draft standards were formulated ensuring that they were realistic, understandable, manageable and achievable. The criteria indicators serve as a value free description of a variable believed to be a relevant indicator of the particular standard statement. For each standard statement there can be any number of criteria indicators. The criteria indicators developed will serve to evaluate attainment of the relevant standard. On the FE-SAT optimum level standards were developed with a threshold level of 100% competency, based on a 'yes /no' scale on each of the criteria indicators. Each criteria indicator will require a 'yes' for that standard to be achieved.

The draft standards were tested by a group of 'experts' (n=3) on each of the constructs' for judgement and refinement. The experts were selected from the **Phase-One** selection pool and their inclusion was based on their ability, experience, qualifications and knowledge in the methods of formulating standards.

In testing the draft standards the following methodology was used.

6.2.1.1 Methodology

A Delphi survey incorporating the Content Validity Index (CVI) and a 4 point rating scale: 1=not relevant; 2= relevant but needing major change; 3=relevant but needing minor change; 4= relevant was conducted.

6.3 DELPHI SURVEY ROUND ONE

The standards questionnaire and information letter was sent to each expert within the group **(Annexure AA)**. They were asked to rate each standard statement together with the criteria indicators applicable to each statement on a scale of 1-4.
The experts were asked to return the completed questionnaire within 14 days.

STANDARDS QUESTIONNAIRE

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

PHILOSOPHY	1	2	3	4
STANDARD STATEMENT: UNDERSTANDS THE CONSTRUCTIVIST THEORY				
▪ Knowledge of constructivist principles				
▪ Able to identify types of constructivism				
▪ Able to identify key concepts of constructivism				
▪ Knowledge of the social development theory				
▪ Can apply constructivist theory to education				
COMMENTS:				
STANDARD STATEMENT: UNDERSTANDS THE ADULT LEARNING THEORY (ANDROGOGY)				
▪ Identifies characteristics of adult learning				
▪ Identifies the principles of adult learning				
▪ Identifies the principles of adult teaching				
▪ Can describe the challenges of adult learning and teaching				
COMMENTS:				
STANDARD STATEMENT: UNDERSTANDS THE PHILOSOPHY OF PROBLEM-BASED LEARNING				
▪ Can identify the characteristics of PBL				
▪ Applies constructivist theory to PBL				
▪ Takes on the role of facilitator effectively				
▪ Knowledgeable regarding the role of the student				
▪ Can identify the challenges of PBL in relation to facilitator/ student /organisation /learning process				
▪ Can implement a PBL curriculum				
COMMENTS:				

EDUCATIONAL ETHICS	1	2	3	4
STANDARD STATEMENT: **APPLIES ETHICAL PRINCIPLES TO EDUCATIONAL PRINCIPLES RELATED TO ADULT LEARNING AND PBL**				
▪ Knowledge of ethical principles				
▪ Knowledge of educational principles				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING ENVIRONMENT**				
▪ Provides physical and emotional safety to the student				
▪ Provides intellectual safety to the student				
▪ Able to utilize resources with responsibility and accountability				
▪ Fulfils the potential of all students				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE STUDENT**				
▪ Uses accurate and relevant information without bias or prejudice				
▪ Assists student with academic problems /sound decisions				
▪ Responsible and accountable to maintain knowledge and skills to demonstrate competence				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING PROCESS**				
▪ Gives student a freedom of choice				
▪ Allows student to control the learning process				
▪ Keeps abreast with research and uses most recent data				
▪ Maintains good facilitator /student relationships				
▪ Learning in accordance with organisational policy				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE ORGANISATION**				
▪ Consistent with organisational policy and standards				
▪ Has a commitment to the organisation and places personal opinions aside				
▪ Responsible and accountable in performing duties				
▪ Ethical principles in maintaining high staff morale				
▪ Falls within budget guidelines				
▪ Achieves organisational goals				
▪ Communicates clearly at all levels				
COMMENTS:				

MANAGEMENT	1	2	3	4
STANDARD STATEMENT: **POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS**				
▪ Understands the response to stress				
▪ Can identify stress in a student				
▪ Uses the correct procedure to manage stress in the student				
▪ Understands the negative impact associated with stress				
▪ Understands the process associated with stress				
COMMENTS:				
STANDARD STATEMENT: **EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS**				
▪ Familiar with conflict management theory				
▪ Understands conflict resolution techniques				
▪ Identifies causes of conflict situations				
▪ Implements a successful strategy to resolve the conflict				
COMMENTS:				
STANDARD STATEMENT: **SHOWS COMPETETENCE IN MOTIVATIONAL SKILLS**				
▪ Knowledge on the theories of Motivation				
▪ Knows what motivates students				
▪ Knows how to motivate students				
COMMENTS:				
STANDARD STATEMENT: **SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS**				
▪ Knowledge on the theories of group dynamics				
▪ Characteristics of a functional and working group				
▪ Identifies issues causing a dysfunctional group				
▪ Provides strategies to restore the function of the group				
▪ Manages the group effectively to achieve goals				
COMMENTS				

INTERPERSONAL SKILLS	1	2	3	4
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS**				
▪ Knowledge of communication models and theory				
▪ Displays effective listening skills, social and soft skills				
▪ Provides effective feedback in the communication process				
COMMENTS:				
STANDARD STATEMENT: **IDENTIFIES BARRIERS TO COMMUNICATION**				
▪ Able to describe Personal barriers				
▪ Able to describe Process barriers				
▪ Able to describe Organisational barriers				
COMMENTS:				
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION**				
▪ Able to describe Ethnic communication				
▪ Able to describe Gender communication				
▪ Able to describe Organisational communication				
▪ Understands the challenges in cross-cultural communication				
COMMENTS:				

6.3.1 Delphi Survey Round One – results

The Round One survey provided the following results:

The standard statements on the questionnaire were rated 4 by each of the experts thus implying that each statement was relevant. There were no comments made to include other standard statements. Certain of the criteria indicators were rated 3 by the experts implying that certain minor alterations were required. These alterations were mainly grammatical and the corrections were made.

There were no ratings of a 1 or 2 made by the experts.

See Table 6.1-6.4 for the Round One ratings on the standard statements and criteria indicators in each of the four domains:

- Philosophy
- Educational Ethics
- Management
- Interpersonal Skills

Table 6.1 Delphi Survey Round One – ratings (Philosophy)

PHILOSOPHY			
EXPERT	**01**	**02**	**03**
STANDARD STATEMENT: UNDERSTANDS THE CONSTRUCTIVIST THEORY	**4**	**4**	**4**
▪ **Knowledge of constructivist principles**	**4**	**4**	**3**
▪ **Able to identify types of constructivism**	**4**	**4**	**4**
▪ **Able to identify key concepts of constructivism**	**4**	**4**	**4**
▪ **Knowledge of the social development theory**	**4**	**3**	**4**
▪ **Can apply constructivist theory to education**	**4**	**4**	**4**
STANDARD STATEMENT: UNDERSTANDS THE ADULT LEARNING THEORY (ANDROGOGY)	**4**	**4**	**4**
▪ **Identifies characteristics of adult learning**	**4**	**4**	**4**
▪ **Identifies the principles of adult learning**	**4**	**4**	**4**
▪ **Identifies the principles of adult teaching**	**4**	**4**	**4**
▪ **Can describe the challenges of adult learning and teaching**	**4**	**4**	**4**
STANDARD STATEMENT: UNDERSTANDS THE PHILOSOPHY OF PROBLEM-BASED LEARNING	**4**	**4**	**4**
▪ **Can identify the characteristics of PBL**	**4**	**4**	**4**
▪ **Apply constructivist theory to PBL**	**4**	**3**	**4**
▪ **Takes on the role of facilitator effectively**	**4**	**4**	**4**
▪ **Knowledgeable regarding the role of the student**	**4**	**4**	**4**
▪ **Can identify the challenges of PBL in relation to facilitator/ student /organisation /learning process**	**4**	**4**	**4**
▪ **Can implement a PBL curriculum**	**4**	**4**	**3**

Table 6.2 Delphi Survey Round One – ratings (Educational Ethics)

EDUCATIONAL ETHICS			
EXPERT	01	02	03
STANDARD STATEMENT: APPLIES ETHICAL PRINCIPLES TO EDUCATIONAL PRINCIPLES RELATED TO ADULT LEARNING AND PBL	4	4	4
▪ Knowledge of ethical principles	4	4	3
▪ Knowledge of educational principles	4	4	3
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING ENVIRONMENT	4	4	4
▪ Provides physical and emotional safety to the student	4	3	4
▪ Provides intellectual safety to the student	4	3	4
▪ utilizes resources with responsibility and accountability	4	4	4
▪ Fulfils the potential of all students	4	3	4
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE STUDENT	4	4	4
▪ Uses accurate and relevant information without bias or prejudice	4	4	4
▪ Assists student with academic problems /sound decisions	4	4	4
▪ Responsible and accountable to maintain knowledge and skills to demonstrate competence	4	4	4
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING PROCESS	4	4	4
▪ Give student a freedom of choice	4	4	4
▪ Allow student to control the learning process	4	4	4
▪ Keeps abreast with research and uses most recent data	4	4	4
▪ Maintains good facilitator /student relationships	4	4	4
▪ Learning in accordance with organisational policy	4	3	4
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE ORGANISATION	4	4	4
▪ Consistent with organisational policy and standards	4	4	4
▪ Has a commitment to the organisation and places personal opinions' aside	4	4	4
▪ Responsible and accountable in performing duties	4	4	4
▪ Ethical principles in maintaining high staff morale	4	4	4
▪ Falls within budget guidelines	4	4	4
▪ Achieves organisational goals	4	4	4
▪ Communicates clearly at all levels	4	4	4

Table 6.3 Delphi Survey Round One – ratings (Management)

MANAGEMENT			
EXPERT	01	02	03
STANDARD STATEMENT: POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS	4	4	4
▪ Understands the response to stress	4	4	4
▪ Can identify stress in a student	4	4	4
▪ Uses the correct procedure to manage stress in the student	4	4	4
▪ Understands the negative impact associated with stress	4	4	4
▪ Understands the process associated with stress	4	4	4
STANDARD STATEMENT: EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS	4	4	4
▪ Familiar with conflict management theory	4	4	4
▪ Understands conflict resolution techniques	4	4	4
▪ Identifies causes of conflict situations	4	4	4
▪ Implements a successful strategy to resolve the conflict	4	4	4
STANDARD STATEMENT: SHOWS COMPETENCE IN MOTIVATIONAL SKILLS	4	4	4
▪ Knowledge of theories on motivation	4	4	4
▪ Knows what motivates students	4	4	4
▪ Knows how to motivate students	4	4	4
STANDARD STATEMENT: SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS	4	4	4
▪ Knowledge on the theories of group dynamics	4	4	3
▪ Characteristics of a functional and working group	4	4	3
▪ Identifies issues causing a dysfunctional group	4	4	4
▪ Provides strategies to restore the function of the group	4	4	4
▪ Manages the group effectively to achieve goals	4	4	4

Table 6.4 Delphi Survey Round One – ratings (Interpersonal skills)

INTERPERSONAL SKILLS			
EXPERT	01	02	03
STANDARD STATEMENT: DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS	4	4	4
▪ Knowledge of communication models and theory	4	4	4
▪ Displays effective listening skills, social and soft skills	4	4	4
▪ Provides effective feedback in the communication process	4	4	4
STANDARD STATEMENT: IDENTIFIES BARRIERS TO COMMUNICATION	4	4	4
▪ Able to describe Personal barriers	4	4	4
▪ Able to describe Process barriers	4	4	4
▪ Able to describe Organisational barriers	4	4	4
STANDARD STATEMENT: DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION	4	4	4
▪ Able to describe Ethnic communication	4	4	3
▪ Able to describe Gender communication	4	4	3
▪ Able to describe Organisational communication	4	4	3
▪ Understands the challenges in cross-cultural communication	4	4	4

Refinement and confirmation of the standards were based on the expertise of the group and once the grammatical errors were corrected the standards were deemed realistic and valid. It was therefore not necessary to continue with further rounds of the Delphi survey.

Once they were approved the standards and criteria indicators served to finalise the development of the FE-SAT. The grammatical corrections feature on the FE-SAT.

The FE-SAT has been divided into four sections with each section representing a construct:

- PHILOSOPHY
- EDUCATIONAL ETHICS
- MANAGEMENT
- INTERPERSONAL SKILLS.

The testing and revising of these standards will occur once the FE-SAT has been used for a period of time e.g. after 12 months.

Table 6.5 to Table. 6.8 represents the four sections of the completed FE-SAT

Table 6.5 FE-SAT (PHILOSOPHY)

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

PHILOSOPHY	YES	NO
STANDARD STATEMENT: UNDERSTANDS THE CONSTRUCTIVIST THEORY		
▪ Displays knowledge of constructivist principles		
▪ Able to identify different types of constructivism		
▪ Able to identify key concepts of constructivism		
▪ Displays knowledge of the social development theory		
▪ Applies constructivist theory to education		
STANDARD STATEMENT: UNDERSTANDS THE ADULT LEARNING THEORY (ANDROGOGY)		
▪ Identifies characteristics of adult learning		
▪ Identifies the principles of adult learning		
▪ Identifies the principles of adult teaching		
▪ Can describe the challenges of adult learning and teaching		
STANDARD STATEMENT: UNDERSTANDS THE PHILOSOPHY OF PROBLEM-BASED LEARNING		
▪ Can identify the characteristics of PBL		
▪ Applies constructivist theory to PBL		
▪ Takes on the role of facilitator effectively		
▪ Knowledgeable regarding the role of the student		
▪ Can identify the challenges of PBL in relation to facilitator; Student; organisation; learning process		
▪ Can design and implement a PBL curriculum		

Table 6.6 FE-SAT (EDUCATIONAL ETHICS)

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

EDUCATIONAL ETHICS	YES	NO
STANDARD STATEMENT: APPLIES ETHICAL PRINCIPLES TO EDUCATIONAL PRINCIPLES RELATED TO ADULT LEARNING AND PBL		
▪ Displays knowledge of ethical principles		
▪ Displays knowledge of educational principles		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING ENVIRONMENT		
▪ Provides physical and emotional safety for the student		
▪ Provides intellectual safety for the student		
▪ Utilizes resources with responsibility and accountability		
▪ Strives to fulfil the potential of all students		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE STUDENT		
▪ Uses accurate and relevant information without bias or prejudic		
▪ Assists student with academic problems /sound decisions		
▪ Responsible and accountable to maintain knowledge and skills to demonstrate competence		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING PROCESS		
▪ Gives student a freedom of choice		
▪ Allows student to control the learning process		
▪ Keeps abreast with research and uses most recent data		
▪ Maintains good facilitator /student relationships		
▪ Learning in accordance with organisational learning policy		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) AND WORKPLACE ETHICS TOTHE ORGANISATION		
▪ Consistent with organisational policy and standards		
▪ Has a commitment to the organisation and places personal opinion's aside		
▪ Responsible and accountable in performing duties		
▪ Displays ethical principles in maintaining high staff morale		
▪ Falls within budget guidelines		
▪ Able to achieve organisational goals		
▪ Communicates clearly at all levels		

Table 6.7 FE-SAT (MANAGEMENT)

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

MANAGEMENT	YES	NO
STANDARD STATEMENT: POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS		
▪ Understands the response to stress		
▪ Can identify stress in a student		
▪ Uses the correct procedure to manage stress in the student		
▪ Understands the negative impact associated with stress		
▪ Understands the process associated with stress		
STANDARD STATEMENT: EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS		
▪ Familiar with conflict management theory		
▪ Understands conflict resolution techniques		
▪ Identifies causes of conflict situations		
▪ Implements a successful strategy to resolve the conflict		
STANDARD STATEMENT: SHOWS COMPETETENCE IN MOTIVATIONAL SKILLS		
▪ Knowledge on the theories of Motivation		
▪ Knows what motivates students		
▪ Knows how to motivate students		
STANDARD STATEMENT: SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS		
▪ Displays knowledge on the theories of group dynamics		
▪ Identifies characteristics of a functional and working group		
▪ Identifies issues causing a dysfunctional group		
▪ Provides strategies to restore the function of the group		
▪ Manages the group effectively to achieve goals		

Table 6.8 FE-SAT (INTERPERSONAL SKILLS)

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

INTERPERSONAL SKILLS	YES	NO
STANDARD STATEMENT: DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS		
▪ Applies knowledge of communication models and theory		
▪ Displays effective listening skills, social and soft skills		
▪ Provides effective feedback in the communication process		
STANDARD STATEMENT: IDENTIFIES BARRIERS TO COMMUNICATION		
▪ Able to describe personal barriers		
▪ Able to describe process barriers		
▪ Able to describe organisational barriers		
STANDARD STATEMENT: DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION		
▪ Able to describe and apply principles of ethnic communication		
▪ Able to describe and apply principles of gender communication		
▪ Able to describe and apply principles of organisational communication		
▪ Understands the challenges in cross-cultural communication		

6.4 CONCLUSION

This chapter presented **Phase-Three** of the study with the development of performance standards and criteria indicators. The final study model (Fig. 5.36), served as the base from which the standards were developed. The standards and criteria indicators were rated by a group of experts and the alterations required by the experts were made. The final stage in the development of the FE-SAT was completed. The next chapter will provide the facilitator development training program. This program will be based on the content of the FE-SAT.

CHAPTER SEVEN

CURRICULUM FOR A FACILITATOR DEVELOPMENT PROGRAM PHASE-FOUR

7.1 INTRODUCTION

Phase-Four of the study describes the development of a curriculum. The chapter further provides an overview of staff development together with an explanation of a curriculum, the principles of which provide a direction for the facilitator development program. The purpose of the program together with objectives to guide the researcher in its development, have been included. The program can be implemented as a self-directed learning opportunity based on the result of a self-assessment carried out on the FE-SAT.

7.2 FACULTY DEVELOPMENT IN PBL FACILITATION

Wang, et al. (2008:610-615) commented on the multidisciplinary PBL curriculum, that was introduced in the School of Stomatology at Wuhan University in China in 2006. The entire staff complement within the faculty, was assigned as facilitators and most did not have experience in PBL facilitation. The facilitators were expected to "encourage students to comment on the scenarios, sharpen their awareness of interests and skills and use insight in problem-solving." Two faculty members with experience in PBL were assigned to set up a workshop to train PBL facilitators. A PBL manual, containing the steps of the PBL process was provided to those attending the workshop. Groups were formed and the participants were asked to formulate, a two-part problem that was evaluated by the group and trainer. The goal of the workshop was to "learn about PBL, understand the facilitators' role and acquire facilitator skills in relation to PBL." Following the initial training program facilitators were required to attend a workshop each year.

According to Zaidi et al. (2010) before the introduction of the PBL curriculum in a Pakistani Medical College five two-day workshops were held in the first year to train

180 faculty members. Each member was provided with a pocket sized guidebook, which covered the "philosophy of PBL, literature on PBL and the methodology for case designs and evaluation in PBL." On day one of the workshop the PBL approach was discussed together with information on group dynamics and the role of the facilitator. The group were given the opportunity to work through, a case facilitated by the trainer. The day ended, with an evaluation of the session. On day two of the workshop, the group were given the opportunity, to design a case study and discuss how assessments in PBL were carried out.

Zaidi et al. (2010:6) concluded that "faculty development refers to a broad range of activities to improve an individual's skills and that adequate staff development programs are central, to improving facilitator skills." Increasing emphasis on faculty training has emerged, with the growing recognition that teaching is a skill that is not determined by scientific knowledge or clinical expertise.

The Aga Khan University in Pakistan revised the curriculum of the 5-year MBBS program by introducing PBL as the main instructional strategy, for the undergraduate medical curriculum. A large number of faculty members were selected to participate as PBL facilitators. To meet the requirements for training facilitators, a half-day "PBL Tutorial Facilitation Skills Workshop" was held three times during an academic year. The aim of the workshops was to introduce the facilitators to the "key concepts of human learning and memory; the philosophical basis of PBL and the process of PBL." By the end of the workshop participants were expected to be able to discuss the "underlying principles of PBL; identify tutors' and students' roles within PBL; the process of facilitating a PBL tutorial and discuss the processes of assessment and feedback following the tutorial" (Sadaf, Ali, Zuberi. 2009).

Facilitator development programs rely on training workshops that are provided by faculty in higher education institutions. The content covered within the facilitator development workshops to improve 'facilitator skills' pertains mainly to the PBL process. This study provides an expansion on what is considered 'facilitator skills.' It further provides a facilitator development program employing self-assessment and self-directed learning to meet the performance standards featured on the facilitator evaluation self-assessment tool FE-SAT. The set standards developed in **Phase-Three**

of the study led to developing the self-directed learning program, based on the principles of curriculum development. The program provides 'triggers' to direct student-facilitators towards the required reading matter needed to improve their knowledge on a particular subject. Workshops planned by faculty could incorporate the content of the curriculum and the student-facilitator would still be required to carry out the suggested reading.

7.3 CURRICULUM MODEL

7.3.1 Introduction

In the planning of a curriculum one of the guiding principles refers to a program that has been jointly prepared by a group of people as this will reduce the likelihood of error. The components of the program should be well defined and comprehensive. The researcher took this into account together with the knowledge that any curriculum would be subject to continuous revision. The curriculum was not developed on general and abstract considerations as the structure was based on three phases of the study. The process through the phases involved a series of progressive stages providing systematic logical information required for the development of the curriculum. The sequence was unconventional since **Phase-One** commenced with the early development of an evaluation tool (FE-SAT) the content of which provided a baseline on which to build the **Phase-Two** models. The models provided a baseline to develop **Phase-Three** standards leading to the completion of the FE-SAT which created a framework on which to build the curriculum for a facilitator development program. This program was indirectly developed by a group of content experts providing their subjective judgement and comments through each phase of the study. Fig. 7.1 represents an overview of the facilitator development process illustrating the four phases of the study.

A process model curriculum was selected since the key concepts of this model suit the philosophy of PBL, adult education and andragogy where the emphasis is on learning experiences and SDL. The teacher provides the content but cannot know in advance what the student will do with the content. Evaluation includes self-assessment.

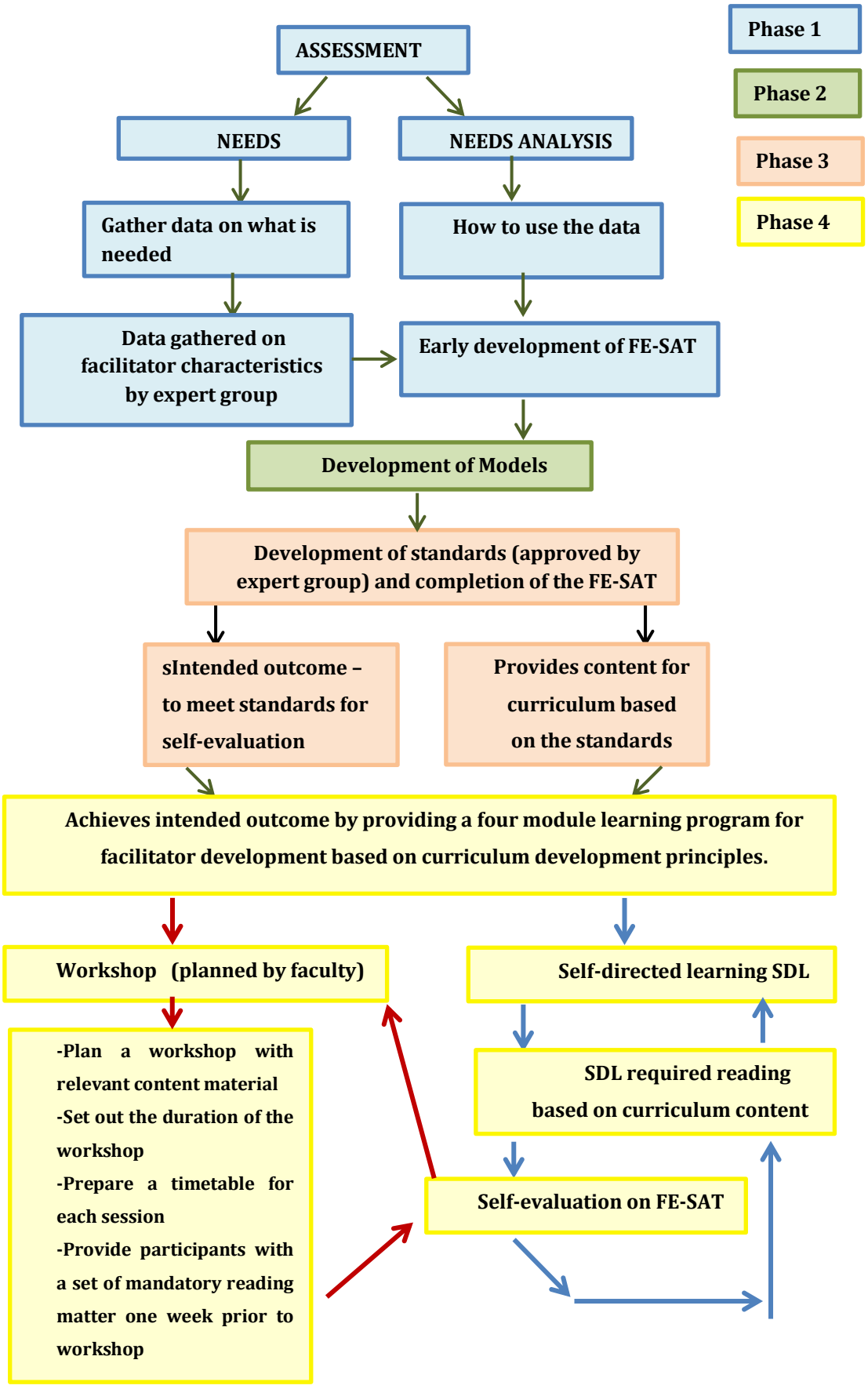


Figure 7.1 Overview of the four phases of the Facilitator Development Program

7.3.2 Philosophy and Educational Framework

The PBL learning approach focuses on amongst others, learner participation, critical thinking, communication skills and values the prior experiences brought by the learners. The philosophy of andragogy underpins PBL.

The educational framework is based on the philosophy of PBL, Constructivism, Andragogy and Adult Learning Theory in relation to the constructs: Educational Ethics; Management; Interpersonal skills.

7.3.3 Educational aim of the Curriculum

The curriculum is aimed at providing a short course learning program to assist in the development of academic facilitators. The course will provide a learning opportunity for the participants in both SDL and workshops.

7.3.4 Goals for the Development of the Curriculum

To assist the facilitator in maintaining and improving the knowledge and skills required for effective PBL facilitation by meeting the required standards set out on the FE-SAT.

7.3.5 Curriculum Development Principles

- Provision of a curriculum to assist the facilitator with self-directed learning in maintaining and evaluating facilitation knowledge and skills
- Provision of a curriculum to assist faculty in applying the relevant content in the preparation of facilitator development workshops
- Maintenance of educational strategies in the development of the curriculum
- Maintenance of management strategies in the development of the curriculum

7.3.6 Policy Guidelines

Policies of the specific institution should be considered together with national legislation. Accreditation of the course is based on the quality assurance system set up by the South African Qualifications Authority in terms of the Act (No. 58 of 1995)

The value assigned by SAQA: 1 credit = 10 notational hours of learning (notational hours refers to the total amount of time it would take an average person to meet the learning requirements).

Workshop = 24hrs. (2 days per week for 2 weeks)
SDL with suggested reading = 38 hrs. in total.
The course = 6.2 credits in total.

7.3.7 Target Group

University lecturers involved with the facilitation of students. Each lecturer on the course will be referred to as a student-facilitator.

7.3.8 Structure of Curriculum

A process curriculum model is used with emphasis on learning experiences, SDL with the student-facilitators setting their own learning objectives. Evaluation will be carried out as a self-assessment using the FE-SAT.

The curriculum is structured in a modular framework providing four modules:

MODULE 1 …PHILOSOPHY
MODULE 2 …EDUCATIONAL ETHICS
MODULE 3 …MANAGEMENT
MODULE 4 …INTERPERSONAL SKILLS

Three main constructs identified by the expert group: educational ethics; management; interpersonal skills are set out in modules 2, 3 and 4. It was deemed fit to allocate a module to philosophy (module 1) which forms an integral part of the three main constructs. For further interpretation Fig.7.2 illustrates the modular framework of the curriculum.

7.3.9 Short Course

A short course will offer the student-facilitator the chance to enhance skills, knowledge and attitudes in the area of facilitation. In some instances this course may be attended by those who have no experience in the facilitation of students. In others it can be an extension on the knowledge and skills already gained in facilitation.
The course will have two components:

- A self-directed learning component using the curriculum as a guide providing the required reading to be carried out by the student-facilitator.

- A workshop organised by faculty providing an opportunity for role play and group discussion based on the content of the curriculum.

Length of the course is set over a two week period with a workshop comprising two days of 6 hours each in week 1 and two days of 6 hours each in week 2 = 24 hours. Self-directed learning with pre requisite reading = 38 hours.

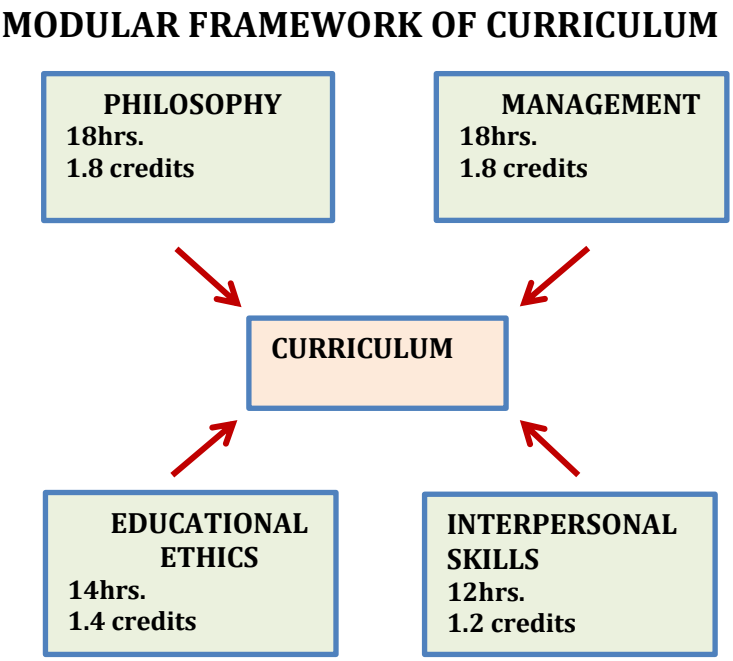


Figure 7.2 Modular Framework of the Curriculum

7.3.10 Teaching and Learning Methods

Teaching and learning within the curriculum framework is designed to support facilitator development. A blended learning approach will be used. Workshops will provide group participation and discussion as learning through practice and acquisition of knowledge is central to the success of the curriculum model. Furthermore a person centred learning approach through a self-directed learning process, where each person will identify their needs and develop their individual learning objectives and outcomes within the framework of the curriculum will be applied. Self-directed learning can be facilitated through E-learning on a learning management system allowing the student-facilitator autonomy on what needs to be learnt, how that learning should take place and when the learning should occur. Pre-

requisite reading is essential. Self-assessment will take place using the FE-SAT. Workshops will be organised by faculty.

7.3.11 Educational Strategies in Development of the Curriculum

Certain principles associated with PBL and adult education were adhered to such as: self-directed learning; prior experience; motivation to learn; self-evaluation. These principles call for the use of the process model of a curriculum. A key concept of this model emphasises that the learning experience of the student-facilitator will be carried out by the student-facilitator from the subject content provided. The student-facilitator will decide on how to use that content. Evaluation is done through self-assessment.

7.3.12 Organisational strategies in Development of the Curriculum

The self-directed learning program comprising both the curriculum and FE-SAT will be computer based thereby alleviating the cost of providing hard copies to student-facilitators. Use of such a computer program provides the most economic and efficient way in terms of time, money and resources. Furthermore a learning management system will be made available to the student-facilitator.

Faculty will provide the opportunity for the student-facilitator to attend workshops.

7.3.13 Course Content

The content of the program relating to each of the modules is determined by the set standard and criteria indicators within that set standard featured on the FE-SAT. For reference purposes the FE-SAT relating to each module is included.

Each module provides a self-directed learning option through further reading in journal articles, studies and textbooks to acquire knowledge.

Fig. 7.3 illustrates the Curriculum Development process

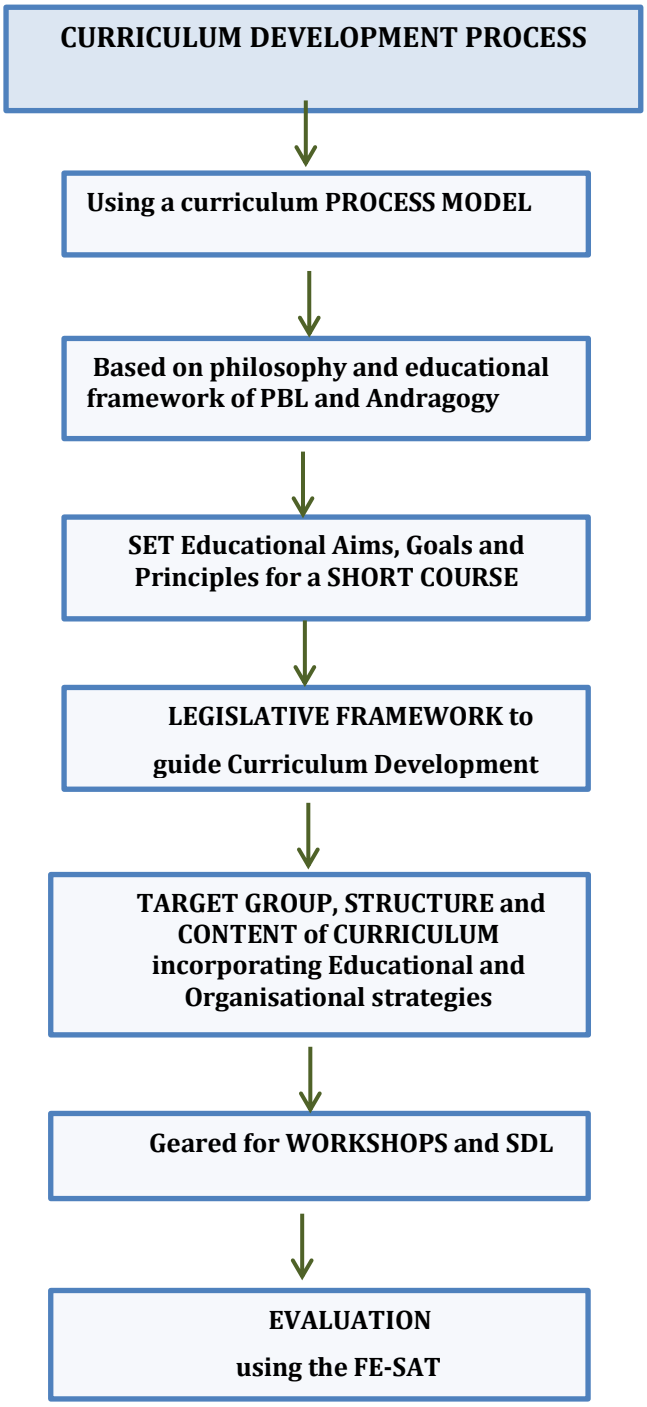


Figure 7.3 Curriculum Development Process

7.4 CURRICULUM MODULES

The curriculum modules (1-4) are each accompanied by the FE-SAT specific to that module. This has been done for logistical reasons to allow for easy reference between the module content and the evaluation tool. The modules are to be used in SDL to guide the student-facilitator in accessing the required reading that will improve knowledge related to the subject. The reading matter will form the pre-requisite reading required prior to participation in a workshop.

7.4.1 FE-SAT and Module 1: Philosophy

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

PHILOSOPHY	YES	NO
STANDARD STATEMENT: UNDERSTANDS THE CONSTRUCTIVIST THEORY		
▪ Knowledge and understanding of constructivist principles		
▪ Able to identify types of constructivism		
▪ Able to identify key concepts of constructivism		
▪ Knowledge of the social development theory		
▪ Can apply constructivist theory to education		
STANDARD STATEMENT: UNDERSTANDS THE ADULT LEARNING THEORY (ANDROGOGY)		
▪ Identifies characteristics of adult learning		
▪ Identifies the principles of adult learning		
▪ Identifies the principles of adult teaching		
▪ Can describe the challenges of adult learning and teaching		
STANDARD STATEMENT: UNDERSTANDS THE PHILOSOPHY OF PROBLEM-BASED LEARNING		
▪ Can identify the characteristics of PBL		
▪ Apply constructivist theory to PBL		
▪ Takes on the role of facilitator effectively		
▪ Knowledgeable regarding the role of the student		
▪ Can identify the challenges of PBL in relation to facilitator; students; organisation and learning process		
▪ Can design and implement a PBL curriculum		

MODULE 1 – PHILOSOPHY

Contact hours: 6hrs

Study and Reading hours: 12hrs

SAQA credits: 1.8

OVERVIEW OF MODULE

This module aims to develop the understanding and knowledge of the theories and principles of constructivism, andragogy and problem-based learning. The philosophy associated with these concepts underpins the characteristics and ability of the facilitator to become skilled in the facilitation of students.

PRINCIPLES

- Understands the relationship between constructivism, andragogy and problem-based learning
- Evaluates the importance of andragogy in problem-based learning
- Outline the advantages associated with knowledge of constructivist theory
- Critically discuss the concept of adult education
- Maintain up to date knowledge on the concept of adult education

REQUIRED COMPETENCIES

On completion of the module on Philosophy the student-facilitator is able to:

- Demonstrate the ability to integrate and apply the theories of constructivism and andragogy to problem-based learning
- Make appropriate use of knowledge to inform students in the use of the above theories

DOMAIN 1: CONSTRUCTIVISM	
CORE COMPETENCY: **DEMONSTRATES AN UNDERSTANDING OF THE CONSTRUCTIVIST THEORY**	
SPECIFIC COMPETENCY	**FURTHER READING**
1.1 Knowledge of constructivist principles The constructivist theory challenges objectivism where the student will make sense of what they already know based on life experiences. It further asserts that knowledge is a subjective process and acquired through discourse. Students remain active throughout the process and build new knowledge on existing knowledge with socio-cultural values influencing the process.	▪ On theorists: Dewey; Lewin; Vygotsky; Piaget; von Glasersfeld; Bruner ▪ Constructivist principles with reference to: -Active mental process; knowledge is constructed cognitively by the learner -Constructs meaning; learning is contextual -Involves language, social activity and prior experience -Requires knowledge and motivation -Knowledge is acquired through questioning, facilitation and feedback -Students are guided through the process of critical thinking, problem-solving and decision-making to arrive at conclusions -The facilitator assumes a supportive role and guides the student in acquiring knowledge
1.2 Able to identify types of constructivism	▪ **Cultural constructivism**- knowledge and reality are based on a cultural context. Two independent cultures will form different opinions in the construct of knowledge ▪ **Radical constructivism** – Von Glasersfeld asserted that knowledge is the individual's experiences and ideas that forms the reference on which to construct knowledge ▪ **Critical constructivism** - truth and reality together with evidence, based on empirical research constitutes knowledge. Kincheloe's notion has emerged as central to this concept (Kincheloe, 2008:48) ▪ **Personal constructivism** - knowledge is actively constructed by the learner not passively received from the environment (Dougiamas, 1998:4) ▪ **Social constructivism** - individuals participate in the learning of the collective more than in the mind of any one individual (Dougiamas, 1998:4)
1.3 Able to identify key concepts of constructivism	▪ Knowledge is based on constructed reality ▪ One must already have reality in mind and know what it consists of
1.4 Knowledge of the social development theory (Vygotsky)	▪ Social interaction plays a major role in cognitive development ▪ The more knowledgeable other (MKO)- someone with more knowledge than the learner on a particular subject ▪ The zone of proximal development (ZPD)- distance between the learners ability to perform under guidance and the ability to perform independently

	▪ Learning is a collaborative and reciprocal process between facilitator and student
1.5 Can apply constructivist theory to education	▪ Constructivist teaching is mediation and interface between student and curriculum to create a meaningful experience for the student. Construction implies a foundation of prior knowledge (Coburn, 2000:51) ▪ Learning experiences are designed to be active where students can build on previous experiences (Peters, 2000:167) ▪ New knowledge is built on existing knowledge and this sets a template for the teacher's role in practice. Teaching cannot take centre stage within the constructivist framework but guides a process for students to test their own knowledge and comprehension (Peters, 2000:167)

DOMAIN 2: ADULT LEARNING THEORY (ANDRAGOGY)	
CORE COMPETENCY: **DEMONSTRATES AN UNDERSTANDING OF THE ADULT LEARNING THEORY**	
SPECIFIC COMPETENCY	**FURTHER READING**
2.1 Identifies characteristics of adult learning The adult learning theory (Andragogy) is based on humanistic psychology that is concerned with human growth, individual fulfilment and self-actualisation. The humanistic approach emphasises learner autonomy, self-direction, empowerment and self-governing. According to Knowles (1980:48) it is the art and science of helping adults learn with assumptions that adults are ready and motivated to learn. Adults have moved from dependency to self-directedness although at different rates for different people. Adults see education as a process of developing increased competence to achieve the full potential in life.	Theorists -Knowles; Rogers; Maslow; Kolb ▪ To facilitate self-directed learning ▪ Learning based on experience, mature individual possesses life experiences providing a rich source for learning ▪ Readiness to learn ▪ Problem centred learning ▪ Internal motivation ▪ Orientation to learning is problem based
2.2 Identifies the principles of adult learning	▪ Learn when internally motivated ▪ Learn what they need to learn based on experience

	▪ Learning is active and problem based ▪ Learning is informal ▪ Require information ▪ Goal and relevancy oriented
2.3 Identifies the principles of adult teaching	▪ To encourage independence of learning and philosophy of andragogy ▪ Provide respect, know why adults want to learn ▪ Acknowledge experience ▪ Encourage expression of ideas ▪ Provide feedback ▪ Develop rapport ▪ Acknowledge learning style of the student ▪ Adults take responsibility for their learning ▪ Adults learn according to their needs ▪ Know how to motivate adults (Fenwick, Nesbit and Spencer 2006:17)
2.4 Can describe the challenges of adult learning and teaching	▪ SITUATIONAL: Finance, transportation, time constraints ▪ INSTITUTIONAL: Lack of information, entrance requirements; language amongst others ▪ PERSONAL: Family demands, fear; career v. learning; confidence amongst others (Phipps, Prieto and Ndinguri 2013:13-25)

DOMAIN 3: PROBLEM BASED LEARNING (PBL)	
CORE COMPETENCY: UNDERSTANDS THE PHILOSOPHY PBL	
SPECIFIC COMPETENCY	**FURTHER READING**
3.1 Can identify characteristics of PBL This approach to teaching and learning is based on the philosophy of Constructivism and Andragogy. Barrett (2010:170) stated that PBL enhances content knowledge; develops communication skills together with improving problem-solving and critical thinking skills. Furthermore with collaboration self-directed learning skills are	Relevant literature on PBL ▪ Student centred learning ▪ Small group tutorials 6-10 students ▪ Facilitators guide students ▪ Problem oriented and basis for stimulation of learning ▪ Knowledge obtained through self-directed learning

enhanced. According to Schmidt, Rotgans and Yew (2011:793) PBL addresses the need to promote life-long learning through the process of inquiry and constructivist learning.	
3.2 Apply constructivist theory to PBL	▪ PBL emphasises collaborative SDL through inquiry and constructivist learning where students construct their own knowledge based on previous experiences ▪ Facilitator guides the process and Group Dynamics is an essential component of PBL ▪ PBL can be considered a constructivist approach to instruction, emphasizing collaborative and self-directed learning and being supported by flexible teacher scaffolding (Yew and Schmidt 2012:379)
3.3 Takes on the role of facilitator effectively	▪ Facilitator assumes a supportive role providing direction and feedback. The role of the instructor is to guide and challenge the learning process rather than provide knowledge (Hmelo-Silver and Barrows 2006:24)
3.4 Knowledgeable regarding the role of the student	▪ Students are active agents in their quest for knowledge based on experience
3.5 Can identify the challenges of PBL in relation to facilitator; student; organisation; learning process	▪ Resource intensive thus requires planning and organisation (Azur 2011:810) ▪ Development of a PBL curriculum ▪ Students to accept the program ▪ Facilitator selection and training is vital to the success of PBL, students respond to a motivated enthusiastic facilitator (McLean and van Wyk 2006:678) ▪ Guiding students learning entails a great deal of time than simply giving students answers (Hung 2011:533)
3.6 Can design and implement a PBL curriculum	▪ **Assessment:** Resource availability, instructional and organisational goals, availability of trained facilitators ▪ **Planning:** Logistical planning related to groups and student ability within groups ▪ **Implementation:** Development of problems ▪ **Evaluation:** Assessment at the end of each course should match the content and the intention of what was presented in the course. Continuous feedback

7.4.2 FE-SAT and Module 2: Educational Ethics

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

EDUCATIONAL ETHICS	YES	NO
STANDARD STATEMENT: APPLIES ETHICAL PRINCIPLES TO EDUCATIONAL PRINCIPLES RELATED TO ADULT LEARNING AND PBL		
▪ Displays knowledge of ethical principles		
▪ Displays knowledge of educational principles		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING ENVIRONMENT		
▪ Provides physical and emotional safety for the student		
▪ Provides intellectual safety for the student		
▪ Utilizes resources with responsibility and accountability		
▪ Strives to fulfil the potential of all students		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE STUDENT		
▪ Uses accurate and relevant information without bias or prejudice		
▪ Assists student with academic problems /sound decisions		
▪ Responsible and accountable to maintain knowledge and skills to demonstrate competence		
STANDARD STATEMENT: APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING PROCESS		
▪ Gives student a freedom of choice		
▪ Allows student to control the learning process		
▪ Keeps abreast with research and uses most recent data		
▪ Maintains good facilitator /student relationships		
▪ Learning in accordance with organisational learning policy		
STANDARD STATEMENT: APPLIES ETHICAL PRINCIPLES WITHIN THE ORGANISATION		
▪ Consistent with organisational policy and standards		
▪ Has a commitment to the organisation and places personal opinions aside		
▪ Responsible and accountable in performing duties		
▪ Displays ethical principles in maintaining high staff morale		
▪ Falls within budget guidelines		
▪ Able to achieve organisational goals		
▪ Communicates clearly at all levels		

MODULE 2 – EDUCATIONAL ETHICS

Contact hours: 6hrs

Study and Reading hours: 8hrs

SAQA credits: 1.4

OVERVIEW OF MODULE:

This module aims to develop an understanding and knowledge of ethical principles related to adult education. Furthermore it relates the facilitators' code of ethics to the learning environment, the student, the learning process and the organisation (workplace).

PRINCIPLES

- Understands the relationship between ethical principles and the principles of adult education
- Evaluates the importance of moral and ethical principles within the realms of student facilitation
- Applies ethical principles to the facilitation of students
- Applies ethical principles within the learning environment
- Applies ethical principles within the organisation

REQUIRED COMPETENCIES

On completion of the module on Educational Ethics the student-facilitator is able to:

- Apply the highest standard of ethical principles, respect for human rights and professionalism in his/her relationship with others
- Demonstrate the ability to integrate and interact with adult students and colleagues in a professional and ethical manner
- Demonstrate the ability to function as a facilitator in an ethical manner
- Shows responsibility and accountability and ethical considerations within the organisation
- Acknowledge the importance of continuing professional growth to acquire well-grounded knowledge central to their teaching

DOMAIN 1: ETHICAL PRINCIPLES	
CORE COMPETENCY: APPLIES ETHICAL PRINCIPLES TO ADULT LEARNING EDUCATIONAL PRINCIPLES	
SPECIFIC COMPETENCY	**FURTHER READING**
1.1 Knowledge of ethical theories and principles	▪ **Ethical Theories** - Deontology - Utilitarianism / Consequentialism -Rights - Case based ethics (Casuist) -Virtue ▪ **Ethical Principles / Principlism** - **Justice** relative to the central core of morality and dignity, the fundamental principle of justice, distributive justice, retributive justice and compensatory justice -**Autonomy:** different viewpoints -**Beneficence** in relation to the utilitarian theory **-Non-maleficence** inactive or avoidance principle ▪ **Ubuntu (African Philosophy)**
1.2 Knowledge of adult educational principles	Principles and basic assumptions related to Andragogy Theorist – Malcolm Knowles

DOMAIN 2: FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES)	
CORE COMPETENCY: FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO LEARNING ENVIRONMENT; STUDENT; LEARNING PROCESS; ORGANISATION	
SPECIFIC COMPETENCY	**FURTHER READING**
2.1 Physical, emotional and Intellectual safety for student The facilitator code of ethics serves to direct ethical principles towards the facilitator in terms of responsibility, reliability and accountability. This involves personal academic development, ethical considerations in the learning process and environment regarding the student and maintenance of the highest ethical standards possible in respect of the organisation.	▪ **Learning Environment** - Related to Adults - Ethical principles in relation to Andragogy -Creating a positive and motivating learning environment - Ethical principles in relation to learning environment -Direct and indirect influences - Policies related to occupational health and safety, to protect students from conditions detrimental to learning -Governance and institutional policies -Provision of learning experiences -Behaviours that provide opportunities to motivate student ▪ **Emotional safety** -The greater good of all - Fair and just treatment, assessments and feedback - Equal treatment and respect for all -Relationships facilitator/student

	- Assisting student academically (available resources) - Establish the concept of inclusion ▪ **Intellectual safety** -Encourage discourse, communication and debate using ethical principles - Policy on confidentiality - Value opinions from others - Provide intellectual challenges
2.2 Maintains knowledge and competence: keeps abreast with research. Use of accurate relevant Information	▪ Assimilate new knowledge through research, articles amongst others ▪ Self-assess and improve knowledge ▪ Characteristics of a creative leader (Knowles et al. 2005:45)
2.3 Allows student to control learning process	▪ Principle of autonomy ▪ Moral principle determining just conduct ▪ Personal relevance of learning to the student ▪ Personal choice by student in the learning process to find significance in meaning
2.4 Adheres to organisational policies and standards	▪ Organisational culture, policies, rules, regulations ▪ Moral code of the organisation ▪ Teaching and Learning policies ▪ Policies related to utilization of resources and equipment
2.5 Shows a commitment to the organisation to achieve organisational goals and works within the budget	▪ Keep abreast with research ▪ Financial or related policies ▪ Performance requirements ▪ Organisational mission statement and goals
2.6 Maintains high staff morale	▪ Policies on interaction with colleagues ▪ Respects values and traditions and rights of colleagues ▪ Confidentiality policies
2.7 Clear communication at all levels	▪ Communication skills ▪ Organisational policies on communication and organogram

7.4.3 FE-SAT and Module: 3

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

MANAGEMENT	YES	NO
STANDARD STATEMENT: POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS		
▪ Understands the response to stress		
▪ Can identify stress in a student		
▪ Uses the correct procedure to manage stress in the student		
▪ Understands the negative impact associated with stress		
▪ Understands the process associated with stress		
STANDARD STATEMENT: EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS		
▪ Familiar with conflict management theory		
▪ Understands conflict resolution techniques		
▪ Identifies causes of conflict situations		
▪ Implements a successful strategy to resolve the conflict		
STANDARD STATEMENT: SHOWS COMPETETENCE IN MOTIVATIONAL SKILLS		
▪ Knowledge on the theories of Motivation		
▪ Knows what motivates students		
▪ Knows how to motivate students		
STANDARD STATEMENT: SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS		
▪ Displays knowledge on the theories of group dynamics		
▪ Identifies characteristics of a functional and working group		
▪ Identifies issues causing a dysfunctional group		
▪ Provides strategies to restore the function of the group		
▪ Manages the group effectively to achieve goals		

MODULE 3 – MANAGEMENT

Contact hours: 6hrs

Study and Reading hours: 12hrs

SAQA credits: 1.8

OVERVIEW OF MODULE:

This module aims to develop an understanding and knowledge on four aspects of organisational behaviour: STRESS MANAGEMENT; CONFLICT MANAGEMENT; MOTIVATION and GROUP DYNAMICS. Each of the four aspects previously referred to as sub-items within the construct MANAGEMENT is set out as core competencies within the module.

PRINCIPLES

- Possesses knowledge of relevant theories
- Evaluates the importance of applying the theories to practice
- Identifies and applies principles within the theories to practice
- Applies skills related to the core competencies within the learning environment
- Applies the above related skills within the organisations

REQUIRED COMPETENCIES

On completion of the module on Management the student-facilitator is able to:

- Apply the highest standard of knowledge required for effective facilitation within the four core competencies
- Demonstrate the ability to integrate practice with related theories
- Shows responsibility and accountability in providing a positive learning environment
- Acknowledge the importance for continuing professional growth to acquire well-grounded knowledge central to their teaching

DOMAIN 1: STRESS MANAGEMENT	
CORE COMPETENCY: POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS	
SPECIFIC COMPETENCY	**FURTHER READING**
1.1 Explain the response to stress	▪ Theorist Hans Selye–General Adaptation Syndrome (GAS) ▪ Physiology of the stress response ▪ Transactional Model ▪ Riolli, Savicki and Richards (2012)- Academic Stress ▪ Potgieter and Pieterse- Landman (2011) – Stress in S. Africa ▪ Psychological stress in university students
1.2 Can identify stress in the student	▪ Holmes and Rahe stress scale for college students ▪ Signs of aggression and burnout ▪ Illnesses associated with stress ▪ Distress /eustress ▪ Mental health problems in university students ▪ Work related v. non-work related stressors ▪ Pathogenic, salutogenic and fortigenic paradigms
1.3 Can manage stress in the student	▪ Available support systems and policies ▪ Primary, secondary and tertiary level of stress management (distress) ▪ Identify causes of stress ▪ Stress management techniques ▪ Organisational stress management procedures
1.4 Understands the negative impact associated with stress	▪ Stress related to over-stimulation and under-stimulation ▪ Poor academic results related to stress ▪ Demotivation in students ▪ Physical, mental and emotional effects of stress
1.5 Understands the process associated with stress	▪ Personality types v. stress ▪ Individuals response to stressors ▪ Imbalance between demands and resources

DOMAIN 2: CONFLICT MANAGEMENT	
CORE COMPETENCY: EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS	
SPECIFIC COMPETENCY	**FURTHER READING**
2.1Familiar with conflict management theory	▪ Thomas- Kilman Model ▪ Runde-Flanigan Model ▪ Functional v. dysfunctional conflict ▪ Cross-cultural conflict ▪ Organisational policies on conflict situations
2.2 Understands conflict resolution techniques	▪ Types of conflict ▪ Styles of conflict resolution ▪ Conflict resolution within groups ▪ Five styles of conflict resolution
	▪ Identify consequences of conflict

2.3 Identifies causes of conflict situations	▪ Positive and negative conflict ▪ Structural, communication and personal ▪ Intergroup conflict ▪ Relationship between stress and conflict
2.4 Implements a successful strategy to resolve the conflict	▪ Stimulate positive conflict ▪ Latent conflict and manifest conflict ▪ Develop conflict frames (perceptual filters) ▪ Selection in conflict resolution techniques

DOMAIN 3: MOTIVATION	
CORE COMPETENCY: DEMONSTRATES COMPETENCE IN MOTIVATIONAL SKILLS	
SPECIFIC COMPETENCY	**FURTHER READING**
3.1 Knowledge of the theories of Motivation	▪ Theorists: Maslow, Alderfer, McClelland, Hertzberg, Lock and Latham, Skinner, Adams and Vroom ▪ Content Theory; Process Theory; Expectancy Theory ▪ Porter-Lawler model (comprehensive model)
3.2 Knows what motivates students	▪ Hawthorne study ▪ Heuristical motivational model ▪ Relationship between inherent ability- developed competencies-opportunity – motivation (Bagraim 2011)
3.3 Knows how to motivate students	▪ Philosophical underpinnings of andragogy ▪ Motivational models ▪ Relationship between stress and motivation ▪ Relationship between motivation and performance

DOMAIN 4: GROUP DYNAMICS	
CORE COMPETENCY: SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS	
SPECIFIC COMPETENCY	**FURTHER READING**
4.1 Displays knowledge of the theories of group dynamics	▪ Theorists: Bion, Lewin, Janis, Tuckman, Gersick ▪ Stages of the group development model ▪ Tuckman-Jensen model ▪ Punctuated equilibrium model ▪ Team development model ▪ Bion and Rickman theory
4.2 Identifies characteristics of a functional and working group	▪ Psychological processes related to groups ▪ Work group / Basic assumption group ▪ Extraordinary group
4.3 Identifies issues causing a dysfunctional group	▪ Lencioni's model ▪ Dynamics affecting performance ▪ Group dynamics v. stress ▪ Group dynamics v. conflict ▪ Group dynamics v. motivation ▪ Performance/people v. intergroup problems

4.4 Provides strategies to restore the function of the group	▪ Dysfunctions of a group (Lencioni) ▪ Steps in team building
4.5 Manages the group effectively to achieve goals	▪ Communication skills ▪ Group diversity ▪ Organisational support

7.4.4 FE-SAT and Module 4 :

FACILITATOR EVALUATION – SELF-ASSESSMENT TOOL

(FE-SAT)

To achieve the standard each criteria indicator requires a 'yes' response

INTERPERSONAL SKILLS	YES	NO
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS**		
▪ **Applies knowledge of communication models and theory**		
▪ **Displays effective listening skills, social and soft skills**		
▪ **Provides effective feedback in the communication process**		
STANDARD STATEMENT: **IDENTIFIES BARRIERS TO COMMUNICATION**		
▪ **Able to describe personal barriers**		
▪ **Able to describe process barriers**		
▪ **Able to describe organisational barriers**		
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION**		
▪ **Able to describe and apply principles of ethnic communication**		
▪ **Able to describe and apply principles of gender communication**		
▪ **Able to describe and apply principles of organisational communication**		
▪ **Understands the challenges in cross-cultural communication**		

MODULE 4 – INTERPERSONAL SKILLS

Contact hours: 6hrs.

Study and Reading hours: 6hrs.

SAQA credits: 1.2

OVERVIEW OF MODULE

This module aims to develop an understanding and knowledge on interpersonal skills in relation to communication skills. Furthermore it serves to assist student facilitators' to improve communication skills within the learning environment and the organisation. This is done by understanding the barriers associated with communication together with cross-cultural communication and the concept of emotional intelligence.

PRINCIPLES

- Understands the relationship between communication theories and practice
- Evaluates the importance of positive communication within the learning environment
- Evaluates the importance of positive communication within the organisation
- Applies the principles of the communication theories within the learning environment
- Applies principles of the communication theories within the organisation

REQUIRED COMPETENCIES

On completion of the module on Interpersonal Skills (Communication) the student-facilitator is able to:

- Demonstrate the ability to integrate theory with practice
- Demonstrate the ability to communicate effectively within the learning environment
- Demonstrate the ability to communicate effectively within the organisation
- Acknowledge the importance for continuing professional growth to acquire well-grounded knowledge central to their teaching

DOMAIN 1: INTERPERSONAL SKILLS (COMMUNICATION)	
CORE COMPETENCY: DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS	
SPECIFIC COMPETENCY	**FURTHER READING**
1.1 Applies knowledge of communication models and theory	▪ **Theorist:** Shannon ▪ Aristotle model 300BC ▪ Interactive model / Transactional model ▪ Interpersonal model /Perceptual model ▪ Shannon and Weaver model ▪ Berlo model ▪ Mehrabian equation / formula ▪ Hiebert (anthropologist)
1.2 Displays effective listening skills, social and soft skills	▪ Understanding what speaker intended ▪ Active and empathetic listening skills ▪ Understanding of social skills ▪ Understanding of emotional intelligence
1.3 Provides effective feedback in the communication process	▪ Verbal communication related to language, messages, signals, feedback ▪ Non-verbal communication related to sign language, body language (signals) ▪ Functions of non-verbal communication: identification, relationship, delivery and emotional (Seinfeld Universal function) ▪ Feedback noise

DOMAIN 2: BARRIERS TO COMMUNICATION	
CORE COMPETENCY: IDENTIFIES BARRIERS TO COMMUNICATION	
SPECIFIC COMPETENCY	**FURTHER READING**
2.1 Able to describe personal barriers	▪ Culture; power; listening skills; gender; language; semantics; distrust; aggression; filtering
2.2 Able to describe process barriers	▪ Encoding barriers – transmitting barriers – decoding barriers – responding barriers
2.3 Able to describe organisational barriers	▪ Organisational culture and climate ▪ Organisational structure ▪ Organisational facilities ▪ Policies ▪ Rules and regulations ▪ Individual status ▪ Communication v. ethics

DOMAIN 3: CROSS CULTURAL COMMUNICATION	
CORE COMPETENCY: DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION	
SPECIFIC COMPETENCY	**FURTHER READING**
3.1 Able to describe and apply principles of ethnic communication	▪ Reference to ethical considerations, respect diversity miscommunication, listening skills, language, non-verbal communication, feedback and ethnocentrism
3.2 Able to describe and apply principles of gender communication	**Refers to men v. woman in relation to:** ▪ Language interpretation – intimacy-status- power ▪ personal attitude – competence- confidence ▪ weakness v. strength ▪ Genderflex
3.3 Able to describe and apply principles of organisational communication	**Reference to:** ▪ Organisational culture v. personal culture ▪ Organisational goals and standards ▪ Personal goals ▪ Information balance ▪ Information sharing ▪ Interpersonal relationships ▪ Promote functional networking ▪ Co-ordinate actions, satisfy social needs
3.4 Understands the challenges in cross-cultural communication	▪ Emotional Intelligence ▪ Related to ethnic, gender and organisation communication

7.4.5 Experts' Opinion

A panel of experts (n=3) experienced in curriculum development and knowledgeable in the constructs of Philosophy, Ethics, Management and Interpersonal skills were selected from the expert pool. The experts were asked for their opinion and comments on the above four modules. Each expert was provided with the four modules and given 14 days to respond. The general opinion was that the modules were relevant and the content was achievable. Furthermore, the experts were satisfied that core competencies were provided with each module together, with the required accreditation. There were certain grammatical errors that were corrected and the concept of Ubuntu (African Philosophy) was included within the construct 'Philosophy'. The above modules 1-4 are presented in the amended form.

7.4.6 Assessment

Assessment will be carried out by the individual facilitator on the standards based FE-SAT. A self-assessment can be done at a time and interval decided upon by the facilitator or as a requirement by faculty.

7.4.7 Workshop

Workshops are provided and organised by faculty however, the accreditation set out within each model refers to 'contact time' presented in hours (24hrs) which in effect is time spent attending a workshop.

7.5 CONCLUSION

This chapter presented **Phase-Four** of the study with the development of a curriculum set out in four modules. The content on the standards based FE-SAT informed the content of the curriculum. The four modules of the curriculum were reviewed by a group of experts for their opinion and comments. The suggestions were taken into account and the modules were accordingly amended. The next chapter presents the discussion of results, the main findings of the study, recommendations and finally the conclusion.

CHAPTER EIGHT

MAIN FINDINGS, DISCUSSION, RECOMMENDATIONS, LIMITATIONS AND CONCLUSIONS

8.1 INTRODUCTION

In the final chapter a summary of the study together with the main findings and a discussion of results in each of the four phases are presented. Limitations to the study and recommendations for education and further research are presented. The chapter closes with the conclusion of the study. There are figures and tables in this chapter that have been repeated purely for logistic reasons. These are cross referenced to their position in the previous chapters.

8.2 SUMMARY OF THE STUDY

The study was conducted in four phases with the purpose of constructing a curriculum to assist with the development of facilitator performance in PBL tutorials. **Phase-One** involved the identification of constructs (n=8) and sub-items within each construct representing the characteristics required by a facilitator in PBL tutorials. The constructs and sub-items were rated by an expert panel and those deemed relevant (n=5) were included in the early development of an evaluation tool. An analytic hierarchy process using paired comparisons allowed for the weighting of constructs and sub-items from highest to lowest weighting. The evaluation tool will ultimately be used as a facilitator evaluation self-assessment tool and referred to as the FE-SAT (facilitator evaluation self-assessment tool). The identification of the relevant constructs formed the starting point of the next phase. **Phase-Two** commenced with the development by the researcher of teaching models. Whilst there were five constructs only three teaching models were constructed since the constructs on knowledge and professionalism could not be isolated and were incorporated in the remaining three constructs. The three constructs are referred to as the IPSEM TRIANGLE – IPS-interpersonal skills; E-ethics; M-management. The three teaching models were combined into one final study model illustrating the

relationship that one model had with the next. The final study model formed the basis for **Phase-Three** of the study where performance standards relating to each construct was determined. The standards and indicators within each standard were again rated by an expert panel. The approved standards were included in the FE-SAT thereby concluding the development of this standards based evaluation tool. **Phase-Four** commenced with the development of a curriculum that would serve to improve the skills and knowledge of the facilitator either as a self-directed learning exercise or a workshop presentation. The performance standards on the FE-SAT dictated the content of the curriculum.

8.3 MAIN FINDINGS

The list of items generated by the expert group in **Phase One**, were placed into groups depicting a theme (n=8):

- Management
- Communication
- Interpersonal skills
- Knowledge
- Professionalism
- Educational ethics
- Adult Learning skills
- Facilitation skills

During consecutive Delphi rounds the expert group agreed to condense these eight groups into five groups. It was decided that communication should slot into the group on interpersonal skills. Furthermore facilitation skills and adult learning skills did not require being in separate groups since they both formed a part of the remaining groups. The remaining five groups were accepted as constructs to be placed in the FE-SAT. During the judgement quantification stage and following statistical analysis an individual weighting for each construct was determined. Table 8.1 presents the difference in percentage between the constructs.

Table 8.1: Percentage difference of Weighted Constructs (n=5)

CONSTRUCTS	%	% difference
Educational ethics	**23.40**	
Management	**22.08**	**1.32**
Interpersonal skills	**20.88**	**1.20**
Professionalism	**17.68**	**3.20**
Knowledge	**15.98**	**1.70**

The difference between the construct with the highest weighting and the construct with the lowest weighting is 7.42%. This was not a substantial difference however the top three constructs fell within the twenty percent. Educational ethics received the highest weighting illustrating the importance of working within an ethical framework. During **Phase Two** of the study in the development of the diagrammatical models on the above constructs, it was noted that professionalism and knowledge was an integral part of the top three constructs. It was therefore not feasible to separate them. These two constructs were incorporated into the remaining three constructs with the weighting for professionalism and knowledge being divided equally and added to the remaining three constructs. Table 8.2 presents the weightings of the three constructs together with the difference in percentage between the constructs. There is a 3% difference between the highest weighting and the lowest weighting. This difference is minimal and not significant. The purpose of weighting each construct was to apportion learning time to each construct in relation to the weighting of that construct. This was no longer taken into account, since the differences are relatively small and each construct was afforded an equal number of learning hours.

Table 8.2: Percentage difference of Weighted Constructs (n=3)

CONSTRUCTS	%	% difference
Educational ethics	**35.00**	
Management	**33.00**	**2.00**
Interpersonal skills	**32.00**	**1.00**

These three constructs led to the construction of the IPSEM TRIANGLE. Each point of the triangle represents the construct of Interpersonal skills, Ethics and Management. Philosophy overarches the triangle signifying that each of the three constructs, are grounded in philosophy. One's beliefs and values define one's attitude which ultimately leads to one's behaviour. The latter forms the backbone for facilitators to produce the best results for the student, the learning environment and the organisation. See Fig. 8.1

It can be concluded that PBL facilitator development is based on the IPSEM TRIANGLE. It can be argued that the IPSEM TRIANGLE should not only form the cornerstone of facilitator development, but could serve in the development of any person who has the authority to teach.

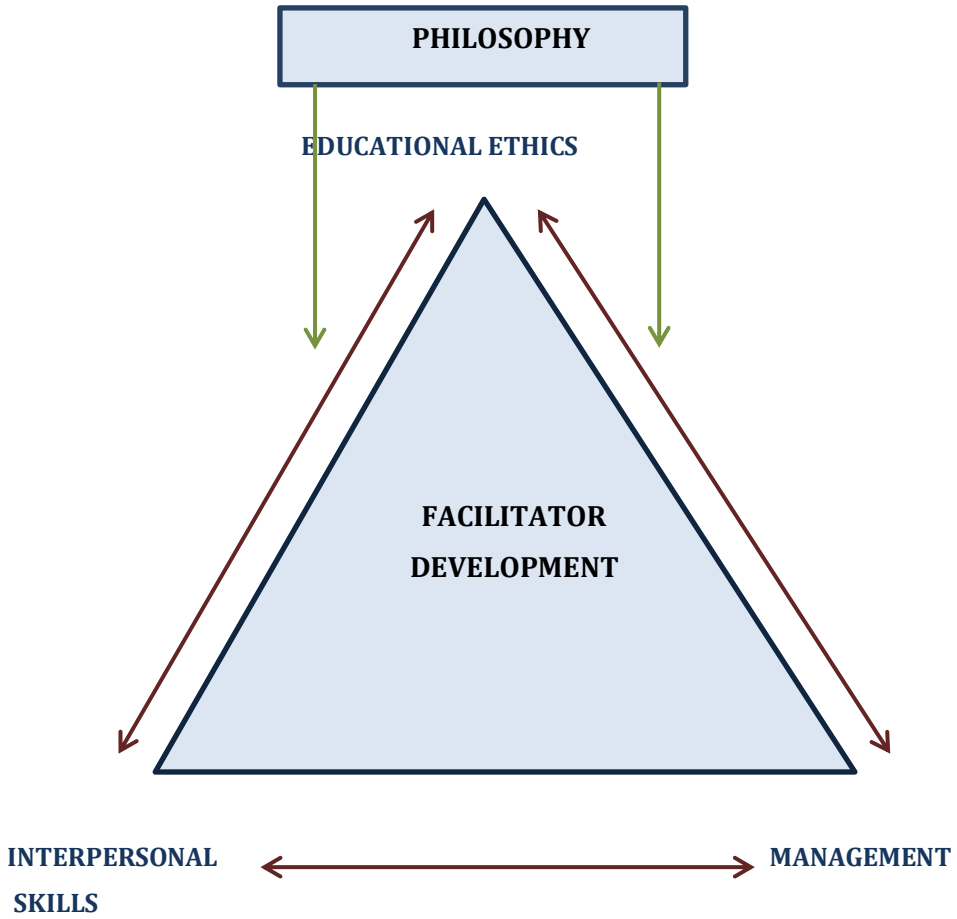


Figure 8.1 IPSEM TRIANGLE (vide Fig. 5.35)

The findings within each construct will be discussed separately

8.3.1 Educational Ethics

The sub-items within the construct were weighted as presented in Table 8.3.

Table 8.3: Percentage of Weighted Sub-items (vide Table 4.16)

SUB-ITEMS	%
Learning environment	32.38
Principle of Autonomy	24.67
Principle of Justice	22.76
Beneficence/non maleficence	20.20

The above percentages, clearly demonstrates the importance of the learning environment in applying the facilitator code of ethics towards the adult student, the learning process and the organisation. Roth (2007:5) states that the facilitator within the learning environment should employ respect, care and understanding to enable the student to become self-motivated.

8.3.2 Management

Following statistical analysis the sub-items within the construct Management, agreed upon by the expert group were weighted as shown in Table 8.4.

Table 8.4: Percentage of Weighted Sub-Items (vide Table 4.23)

SUB-ITEMS	%
Stress	31.75
Conflict Management	29.16
Motivation	19.66
Group Dynamics	19.43

The difference between the sub-item with the highest weighting and the sub-item with the lowest weighting is 12.32% showing a moderate difference. Stress received the highest weighting with conflict management 2.59% less indicating the importance of both these sub-items.

The student's ability to succeed or fail in the academic field is related to self-motivation or lack thereof. The sub-item Motivation received a weighting of 19.66% that is, 9.5% less than Conflict Management.

Group Dynamics was weighted at 19.43%. Whilst being given the lowest weighting the literature indicates that stress, conflict and lack of self-motivation can alter the functioning of a group.

In the development of the study model on Management (Fig. 5.20) the most significant finding was the heavy weighting that was allocated to stress and the impact that stress has on the sub-items Conflict Management, Motivation and Group Dynamics. There is a strong inter-relationship between these sub-items where a dysfunction in one has a knock-on effect on the others.

8.3.3 Interpersonal skills

Following statistical analysis the weighting assigned to the sub-items are presented in Table 8.5.

Table 8.5: Percentage of Weighted Sub-Items (vide Table 4.30)

CONSTRUCTS	%
Verbal communication	**26.97**
Non-verbal communication	**24.90**
Cross- cultural communication	**24.76**
Barriers of communication	**23.45**

The difference between the highest percentage and the lowest percentage is 3.52% showing that each of the sub-items present with a similar importance. The study model on interpersonal skills (Fig. 5.34), illustrates how each method of communication is represented by verbal language, body and sign language or both sending messages represented in signals. It further illustrates the inter-relationship between each of the sub-items and the impact emotional intelligence has on communication skills. Cunningham (2011:72) refers to self-awareness, self-regulation, motivation, empathy and social skills as forming the basis of emotional intelligence.

The final teaching model referred to as the final study model (Fig. 5.36), developed by the researcher in **Phase-Two** illustrated how the three main constructs were inter-related and each one could have a negative or positive impact on the other. Furthermore it illustrated how the sub-items within each construct could impact on each other.

In **Phase-Three** the draft standards and indicators were rated, amended and finally accepted by the expert group. In **Phase-Four** the curriculum was built using three modules on the three constructs and a fourth module on Philosophy that were rated, amended and finally accepted by the expert group. It was deemed necessary to include a module on Philosophy since the scope of which is the driving force behind each construct and each sub-item.

8.4 DISCUSSION OF RESULTS: PHASE- ONE

The study aimed at developing a standards' based evaluation instrument that would be used as a facilitator self-assessment tool together with the development of a curriculum for facilitator development; these aims were achieved.

The results on the judgements made by the expert group are presented with a discussion on *Stage One*- development of constructs and *Stage Two*- development of sub-items within the constructs.

8.4.1 Stage One

The research provided certain characteristics that a PBL facilitator would possess. Five comprehensive data lists containing items representing facilitator characteristics were compiled by each member of the expert group. The items generated were collated by the researcher and placed in a usable form on a single list. The items were grouped together into eight emerging themes and following further rounds in a Delphi survey five themes emerged: Management; Interpersonal skills; Knowledge; Professionalism; Educational Ethics. Facilitators are expected to possess certain skills such as: the ability to develop a problem, evaluate students in PBL tutorials, maintain group functioning. It was evident in this study that the facilitator required knowledge and skills that extended beyond the PBL tutorial. Although faculty provide facilitators with initial and ongoing support through workshops, this

study presents further information on what the content of the workshops should be. The researcher suggests that knowledge and skills on each of the characteristics identified is needed. During Round Four the five themes referred to as constructs were weighted and given an individual percentage and placed in a hierarchy from highest to lowest percentage. The purpose of assigning an individual weight to each construct was to apportion allocated learning time required for each construct relative to the weighting of that construct. Table 8.6 represents the weighting of the constructs.

Table 8.6: Weighting of Constructs (vide Table 4.9)

CONSTRUCTS	%
Educational Ethics	**23.40**
Management	**22.08**
Interpersonal skills	**20.88**
Professionalism	**17.68**
Knowledge	**15.98**

8.4.2 Stage Two

8.4.2.1 Educational Ethics

The construct is referred to as 'educational ethics' suggesting that ethical principles be maintained within the learning environment.

The sub-items within this group, weighted from highest percentage to lowest percentage were: learning environment; autonomy; justice; beneficence/non maleficence. Learning environment received the highest percentage since this is where decisions are made and interactions take place. Rainbow (2002) asserts that "ethical theory and principles form the foundation of ethical analysis and guides the pathway of decision." Haynes (2015:4) quotes Lacan who states, that any ethical decision requires consistency, consequences to self and others and care.

Within the learning environment beliefs, values and attitudes are demonstrated and actions related to the ethical principles of justice, autonomy, beneficence/non

maleficence are played out. Ethical principles have to be aligned with the educational principles relating to adult education, constructivism, PBL.

The PBL facilitator is often confronted with ethical decision making, in terms of the student, the learning process and the organisation requiring ethical guidelines. The facilitator requires the knowledge of ethical principles and should be able to apply principles to educational ethics. Furthermore to apply a purposeful mental ability in making the judgements that are required to differentiate between right and wrong. Often what is considered morally right for one person can be considered morally wrong for another. This dilemma often presents itself when e.g. personal culture clashes with the culture set out by an organisation or a moral decision clashes with a religious point of view. In the ethical decision making process the facilitator needs to take into account issues such as gender, individual culture and personal circumstances of individuals.

This study has shown not only the importance of ethics relative to education but that educational ethics received the highest weighting. The sub-item 'learning environment' received the highest weighting within the construct 'educational ethics.' The importance of a positive learning environment is supported in the literature. Dijkstra, Pols, Remmelts, Rietzschel, Cohen-Schotanus and Brand (2015:300) explored how elements of competency-based programs such as educational innovations, attention to competencies and learning environment related to preparedness for practice among new consultants. The results showed that the learning environment was the strongest predictor of preparedness for practice. Furthermore the learning environment played a key role in determining the degree to which the competency based medical program prepares trainees for independent practice. Dijkstra et al. (2015:301) added that the strength of the learning environment positively related to the preparedness of practice and the attention to competencies. Boor, Scheel, Van der Vleuten et al. (2007:97) developed an instrument to measure the learning environment and concluded that a supportive learning environment encompasses many aspects such as the quality of teaching, supervision, facilities and atmosphere. Adult learners require a positive and supportive environment that is non-threatening. Ethical principles need to be applied

to promote an environment of respect towards the student. Kamaruddin, Zainel and Jusoff (2009:1) showed that the learning environment had a positive effect on the students' learning outcomes.

8.4.2.2 Management

A hierarchy of sub-items within this group were stress management; conflict management; motivation and group dynamics. The focus was placed on stress management as this sub-item received the highest percentage. According to Barkhuizen and Rothman (2008:439) stress is one of the major causes of ill-health as this is the body's reaction to physical, mental and emotional situations. Riolli et al (2012:2) asserts that psychological stress amongst university students, was found to be greater than in the general population with stressors including academic work and interpersonal relationships. Riolli et al. (2012) maintains that academic stress was found to account for 30% of university dropout. Vise (2012:11) states that mental health problems amongst university students, are on the increase with Walter et al (2013:1) concluding that many students conceal their emotional problems.

Potgieter and Pieterse-Landman (2011:243) refer to the national psyche in South Africa being under pressure leaving people stressed, depressed and insecure, added to which are the stressors experienced by the university student. Students are faced with limited financial resources in terms of daily living costs and the cost of tuition. According to Moffat, McConnachie, Ross and Morrison (2006:482), the three main areas of stress amongst university students were academic pressures, social issues and financial problems.

Whilst stress can have a positive effect it can also have a harmful affect. Within the South African context there are substantial academic pressures experienced by students particularly those with English as the second language. The academic language in most institutions is English and together with this the students have to become acquainted with the medical genre in health sciences. The majority of students need to acquire and master knowledge in a language that is not their mother tongue. Within the PBL approach to teaching and learning a large percentage of acquiring knowledge, is through self-directed learning and personal study increasing the responsibility and pressures for the student's own learning. In a diverse society

such as that found amongst the students within a university, social issues can present that need to be identified and dealt with such as financial resources and tuition fees. This study has highlighted the major role that stress plays in the everyday lives of university students. The PBL facilitator requires the knowledge and skills to identify potential stressors and assist the student to develop active and positive coping strategies. Moffat et al. (2006:489) refer to a problem-focussed coping strategy and an emotional-focussed coping strategy. It is not always possible to alleviate the problem e.g. the inability to afford tuition fees. However, an emotional coping strategy could help with managing the problem. One of the social issues resulting from stress is the possibility of aggressive behaviour displayed by an individual thus leading to a conflict situation.

It is imperative to maintain the physical and psychological well-being of the South African university student. This will provide the student with the ability to feel motivated, enthusiastic, emotionally and mentally stimulated. The facilitator requires the knowledge to identify personal and work related stress. The need, to assess risk factors and potential causes of stress and possess the skills to deal with them effectively is an important aspect of the role of a facilitator. Apart from the physical effects of stress, there are further consequences of aggression resulting in conflict situations and burnout all of which present serious implications for the individual.

In South Africa diversity amongst university students and staff members can lead to conflict situations. It is therefore important to produce functional conflict to achieve effective teamwork. Andrade (2008:23-38) refers to emotions, relationship conflict and interpersonal conflict amongst others as being contributing factors towards dysfunctional conflict. Conflict is a natural part of relationships between individuals or groups arising from differences in values, opinions and attitudes. This conflict can lead to disagreements and anger and should be approached with a positive attitude and should be managed effectively, to resolve the conflict situation. It is necessary to identify the early signs of negative conflict. To, understand the methods available for functional conflict resolution and in particular the concept of culture and conflict resolution.

Werner (2011:311) states that managers should strive to create a culture where conflict is perceived as natural and necessary for growth. In the university environment an appreciation of diversity should be encouraged. Students need to become empowered, to question the status quo and suggest alternatives.

The facilitator needs to be provided with skills to promote functional conflict and resolve, dysfunctional conflict to achieve effective teamwork. It is therefore necessary to provide the facilitator with adequate training in recognising and managing conflict situations. Dysfunctional conflict can have negative consequences since it not only influences individuals but also affects teamwork. Werner (2011:297) states that dysfunctional conflict is usually focussed on emotions such as stress resulting in destructive interpersonal clashes. However functional conflict can be beneficial to achieve effective teamwork. In the PBL tutorial students are required to critically reflect on experiences, enter into constructive argument, to disagree with peers and present a different point of view all with the purpose of reaching a common goal e.g. being able to analyse and solve the problem within the PBL tutorial. Mezirow (2003:60) refers to critical reflection within the concept of Transformative Learning. This process describes a uniquely adult form of metacognitive reasoning to provide arguments resulting in decisions to act. The process of reasoning may involve skills and competencies which the facilitator requires to promote this type of discourse. Furthermore, to emphasise the importance, of functional conflict and its effect to drive the process forward. Nelson and Quick (2006:420) assert that there is a direct relationship between conflict management and emotional intelligence (EQ). One needs to control one's emotions and understand the emotions of others thus presenting an effective tool to establish functional conflict. Within a university environment it is imperative to allow students to express their point of view but they should be able to do so in a constructive way. This type of training starts in the classroom. One of the results of dysfunctional conflict is stress and lack of self-motivation amongst students.

The student's ability to succeed or fail in the academic field is related to self-motivation or lack thereof. Kroth (2007) describes the Heuristical motivational model that attempts to link research with a practical tool for teachers. The model

emphasises the need for caring and understanding together with being able to identify the stressors leading to stress that will impede the student's ability to become motivated. Kroth (2007) further states that teachers need the skill to be able to motivate yet many still lack the knowledge to be effective, resulting from the fact that many have no motivational training.

Motivating and encouraging the group was an opinion expressed by members of the expert group during the Delphi survey. The facilitator needs to develop knowledge based on a scientific basis by understanding motivational theories and finding ways to apply those theories to the PBL tutorial. Bagraim (2011:81) maintains that to be effective as a leader, one needs understanding on how to motivate people. This statement can easily apply to educators. Kroth (2007) argues that many tutors are not equipped with adequate motivational training and are therefore unable to motivate and engage students. Furthermore despite the availability of theoretical motivational models this has not been translated into practical tools for tutors. Within the university environment performance is achieved by self-motivation yet, there are many factors that impede the ability to be motivated such as: unresolved stressors and bad conflict situations however, it can also result, in a situation of stress and conflict. These conditions ultimately lead to group dysfunction.

PBL tutorials are usually conducted in small group sessions. It is therefore imperative to ensure that the group functions in a positive way. Bellman and Ryan (2009:18) refer to an 'extraordinary group' with the following characteristics: a compelling purpose inspiring its members; shared leadership; confidence to progress; full engagement where all members are involved with passion and enthusiasm regardless of role; diversity is valued and applied as a strength; learning translates into growth.

Potgieter (2011:160) states that the dysfunctions associated with groups and teams result mainly from the fear of conflict and stressful situations and a lack of motivation, amongst others. The facilitator requires knowledge and understanding, of the theoretical models applied to group development and performance and is able to understand dynamics that lead to group dysfunction. There are complex forces working within each group that makes it behave the way it does. There are factors

that can improve the dynamic of the group such as ethical considerations within the learning environment and towards members of the group. Good management skills in relation to stress and conflict management and good interpersonal skills in terms of communication skills will produce a positive group dynamic. Bion (1995: 440) a psychoanalyst explains that the rational working of a group is affected by emotions such as stress and irrational feelings of its members. Lencioni's Model (2002) sets out a lack of commitment and avoidance of accountability as certain dysfunctions within the group.

The sub-items selected by the expert group within the construct Management are all interconnected in that each one can be the result or cause of dysfunction of any of the other sub-items.

8.4.2.3 Interpersonal skills

Interpersonal skills refer to communication skills and relationship building skills that include social skills and soft skills. To produce positive results in the communication process one has to apply positive and effective social and soft skills. Social skills include: sensitivity to others, acceptance and respect for cultural diversity, friendliness, politeness, openness, to new ideas, trustworthiness, empathy and the ability to manage conflict or stressful situations. Soft skills are referred to as 'Emotional Intelligence' (EQ) includes a positive outlook on life, self-confidence and self-awareness, self-regulation, ability, to communicate positively and develop a rapport with others, flexibility, able to accept and give constructive criticism. Cunningham (2011:72) maintains that EQ is a crucial aspect of performance, successful leadership and effective relationships. Social and soft skills characterise one's relationship with others and in particular one's ability to possess good communication skills. In **Phase-One** of the study the expert groups were asked to list the characteristics of a facilitator. Many of the items listed can be referred to as social and soft skills. It was for this reason that this construct remained as INTERPERSONAL SKILLS and not COMMUNICATION SKILLS. It is necessary to emphasise the importance of social and soft skills in the execution of effective positive communication.

Within the construct 'interpersonal skills' the sub-items were all related to communication: verbal communication; non-verbal communication; cross-cultural communication; barriers to communication. Cunningham (2011:92) states that for many years researchers have investigated how people communicate resulting in many different communication models. These models are based on the first model developed by Aristotle in 300BC. The simplicity of this linear model moves from speaker to speech to audience to effect and is still relevant today. Each of these stages can impact on the constructs of ethics within the learning environment and management in relation to stress, motivation, conflict situations and group dynamics. Later models of communication added the dimension of interaction whereby the sender and listener are able to give feedback verbally or non-verbally. There are signals associated with formal or informal verbal communication based on the properties of semantics, generativity and displacement as described by Krauss (2002). Conflict situations can occur from the volume, tone and content of what is being said together with an element of misinterpretation. Non-verbal communication represents body language and sign language, in the display of feelings and attitudes. Pease (2007) maintained that 83% of all communication is non-verbal and should not be underestimated since it plays a major role in communication. Cross-cultural communication examined under ethnic, gender and organisational culture can present in miscommunication. Values and attitudes differ within a diverse society, between men and women and between the organisation and the individual within the organisation. Barriers to communication can be grouped into personal barriers e.g. aggression, situational barriers such as difficulty in hearing due to loud noise and organisational barriers such as the climate and culture of the organisation. Without good interpersonal skills it will be difficult to develop life skills.

This study highlights the importance of interpersonal skills since these are used every day in all aspects of life. Within an educational environment such as a university where there is interaction with colleagues and students alike it is necessary to communicate effectively in both verbal and non-verbal communication. As a facilitator working with a diverse group of students one needs to be aware of the words that are used when talking to others. The majority of the students within the university where this research was conducted are English second language students.

It is therefore easy to cause a misunderstanding or confusion of an issue. Regular feedback will ensure that the message has been understood by the receiver. In the South African context with a multicultural society, it is important to show an interest and develop a mutual trust and respect towards the person one is talking to. Students can easily feel intimidated and in the researcher's experience many are reluctant to engage in communication within a group tutorial due to the difficulty in expressing oneself in English. In 2008 in the university where this research took place the intake of undergraduate nursing students in first year was 100% L2 learners (English second language) (Lack 2009:37). Lekalakala-Mokgele (2006:64) reflects on the difficulty a facilitator experiences, when observing students who present with anxiety and feelings of inadequacy in not being able to say what they want to say. A further communication issue in South Africa is gender equality and the pattern of patriarchy in society. Kirkwood (2008:8) stated that South Africans live in a male dominated society where males make the decisions and women have little bargaining power. The researcher has experienced this situation within a PBL tutorial where the women are afraid to challenge a man. The facilitator is not only faced with students who resist verbal communication due to language issues but also with encouraging a female student to challenge a male student during argument. Intercultural sensitivity is necessary particularly with non-verbal communication such as facial expressions, perceptions of feelings and the different stances on proxemics. The facilitator should have the knowledge to understand why communication fails and be aware of the barriers to communication. This study has shown the importance of possessing relationship building skills in co-operation and co-ordination with others, to be a team player and being adaptable to other viewpoints.

8.5 DISCUSSION OF RESULTS: PHASE- TWO

The sub-items within the construct Professionalism: facilitator development; accountability; responsibility; philosophy of PBL and the construct Knowledge: adult learning; principles of PBL; PBL curriculum; self-directed learning; pre-requisite knowledge were revised. Once the models in this phase were developed it was evident that the models depicting the top three constructs on ethics, management and interpersonal skills automatically incorporated knowledge and professionalism.

It was therefore not necessary to treat Professionalism and Knowledge as separate constructs.

The information obtained from theories and the literature on the three main constructs: educational ethics; management; interpersonal skills were collated and illustrated by the researcher. This study generated a large amount of information through each of the phases. It was necessary to find a way to incorporate all the information without any of it being lost. The models were constructed by the researcher to provide a diagrammatic illustration of items related to each construct that were identified by the expert group. The separate models were combined into a single study model. The latter gave direction and guided the researcher into the next phase of the study. Within the single model the concepts and ideas were drawn together and showed the inter-relationships between the three main constructs of ethics, management and interpersonal skills. Furthermore the study model provided information on what knowledge was needed for effective practice as a facilitator. Together with this it guided the development of standards' and criteria indicators specific to each standard that were used to complete the development of the evaluation instrument (FE-SAT). The study model provided direction on the philosophies that were needed e.g. philosophy of adult learning and the importance of understanding these theories. The model further illustrated the knowledge and skills that the facilitator required to develop, in the understanding of the specific construct. Each component of the model was designed to complete the development of the FE-SAT self-assessment tool and ultimately guide the researcher in the development of a curriculum for facilitator development.

8.6 DISCUSSION OF RESULTS: PHASE- THREE

The FE-SAT in its initial development contained the relevant constructs and sub-items that were identified by the expert group. Since this tool was to be a standards based tool, draft standards and indicators within the standards were developed based on the teaching model. The draft standards were sent to the expert group for rating. Amendments were carried out and included on the FE-SAT that was now complete.

The purpose of basing the evaluation tool on specific standards was to gauge the level of performance against which the level of knowledge and skills can be assessed. The standard provides a descriptive statement with indicators that are set descriptions of what is needed to meet that standard. Should the facilitator fail to meet a particular standard, revision and further reading can be done on that particular standard and not the entire subject. Standards are usually not developed by a single individual but a task force group. The Standards for this study were developed using a systematic process with information that was gathered and set out in the study model. Available literature was studied to review existing standards developed for educational purposes. Preliminary draft standards were drawn up by the researcher and sent to a panel of experts to be reviewed and analysed for applicability and suitability to be included on the FE-SAT. Specific standards were set applicable to each of the three constructs integrated in the study model. The experts were asked to rate each standard and criteria indicator on a scale of 1-4 with a rating of 4 being an indication that the standard was relevant. The experts were informed that the standards and indicators would provide a base on which the curriculum would be planned. The value of having a standards' based evaluation instrument in higher education is the fact that these standards would serve as guidelines should a knowledge deficit be found in a facilitator self-assessment evaluation.

8.7 DISCUSSION OF RESULTS: PHASE- FOUR

The FE-SAT informed the development of the curriculum. The aim of the curriculum is to provide professional development for academic staff members who wish to improve their knowledge and skills in PBL facilitation. The facilitator will use a self-directed learning approach to improve knowledge on any aspect of the curriculum or the curriculum as a whole. Furthermore the curriculum can serve as a useful guide in the induction and orientation program for new facilitators by providing faculty with content for workshops.

Certain characteristics of PBL such as adult learning, self-directed learning and self-assessment were built into the curriculum. A modular curriculum was developed with a module representing the three main constructs and a fourth module

representing philosophy. A constructivist philosophy provided the cornerstone on which the curriculum was developed, where a facilitator is able to construct, organise, and process new knowledge on to previous learning experiences and knowledge. However the level of knowledge needs to be assessed through the facilitator's ongoing evaluation. The FE-SAT provides a standards' based tool for facilitators' to conduct a self-assessment of their knowledge.

The curriculum speaks to the FE-SAT and should any standard on the FE-SAT not be met the information required will be found in the related part of the curriculum. The literature was searched and no standards based evaluation tool to evaluate the performance of PBL facilitators was found furthermore, no curriculum was found that could serve as a self-directed learning guide. There are, a number of facilitator development programs described in the literature. Salininitri et al. (2015:73) describe a training program that employs the PBL approach to teaching and learning by facilitating facilitators. This process includes interactive technology, case-based and debriefing sessions with small groups and experienced facilitators. A PBL facilitator training model was developed, the objectives of which were to enhance the facilitators' understanding of PBL, their facilitation skills, and their ability to create an optimal learning environment. This study has provided a further option for the facilitator to conduct a self-evaluation, to have autonomy in what knowledge needs to be improved and to acquire that knowledge in a self-directed way.

8.8 RECOMMENDATIONS

8.8.1 Recommendations for Education

The facilitator development program is comprised of a blended learning method incorporating self-directed learning (SDL) and workshops. Within the SDL component the participant is expected to use the curriculum as a guide to improve knowledge through readings and e-Learning amongst others. Workshops will be organised by faculty, to provide group discussion and role play sessions based on the subject content of the curriculum. Facilitator self-assessment will be carried out on the FE-SAT. Facilitators should be given the opportunity to improve their knowledge and skills in Ethics, Management and Interpersonal skills (communication and relationship building skills). Workshops will provide opportunities for experiential

learning. It is therefore recommended that the program be used for induction and the orientation of new staff.

Faculty organised workshops, together with a self-directed learning program based on the curriculum can contribute to the PBL facilitators and others who may want to use small group learning in their teaching.

The stress associated with university students can be monitored by administering a stress test particularly to first year students, problems can be identified and managed.

8.8.2 Recommendations for Future Research

The FE-SAT needs to be validated by further research at the university where the study took place and at other institutions using the PBL approach. It should also be noted that this study's sample size was small and further studies should aim to use a larger sample size.

The curriculum that was developed should be tested across several institutions and disciplines that use a PBL approach.

A study can be carried out using a larger sample.

A study could be conducted to develop a stress scale instrument that will be suitable for the university student and is South African specific.

The importance of educational ethics and in particular the learning environment was evident in this study. Further research needs to be conducted to determine the level of ethical commitment of facilitators across disciplines. An in depth study needs to be undertaken to determine the learning environment and climate.

8.9 STUDY LIMITATIONS

There were limitations acknowledged by the researcher to the study. The findings were confined to data from one university, thus the findings cannot be generalised beyond the study population to content experts at other universities. The study used a small sample of content experts to generate data this could be a potential weakness

in the study. The academics included in the expert group were all involved with PBL which could introduce bias.

8.10 IMPLICATIONS OF THE STUDY

This study adds to the research on PBL facilitator development programs and in particular has identified certain facilitator characteristics and placed them in a hierarchy of importance based on their individual weighting. The study has expanded on what is considered to be 'facilitator skills' and clearly shows that facilitator skills should encompass and critically reflect on the ethical, social and economic dimensions of higher education. A specific standards-based evaluation instrument has been developed together with a curriculum that can be used as a guide that will benefit both the facilitator and faculty. The formation of the IPSEM TRIANGLE offers a direction in facilitator development.

The study offers faculty a curriculum in assisting with the planning of workshops to improve the knowledge and skills for existing facilitators and orientation and induction programs for new facilitators.

8.11 CONCLUSION

The objectives of the study were set out in four phases. **Phase-One** led to the identification of constructs and sub-items in the early stages of developing a self-assessment evaluation tool (FE-SAT). Content and construct validity were determined. **Phase-Two** led to the development of a model on each of the constructs that was integrated into a final teaching model referred to as the final study model. **Phase-Three** led to the development of standards and indicators against which the constructs and sub-items would be assessed and the completion of the final stage, in the development of the FE-SAT. **Phase-Four** led to the development of the curriculum for facilitator development in PBL. The research objectives set out in Chapter One have thus been met.

In this study, an evaluation self-assessment tool (FE-SAT) was formulated together with a curriculum for a PBL facilitator development program. Educational and management strategies were taken into account in the development of the program.

Facilitator competence requires knowledge and many skills that need to be assessed on a regular basis. This will provide feedback, on possible deficits in knowledge and skills which may present.

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Nursing Education

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ANNEXURE A

Mrs. M Lack
P.O Box 13025
Northmead
1511

6 August 2012

Dear Mrs. Lack

RE: DOCTORAL STUDIES

Your letter of the 27 July 2012 refers.

I support your request to be admitted to the PhD programme. Kindly attend to the necessary administration with the postgraduate office in the Faculty of Health Sciences.

Yours sincerely

Professor J.E Maree (Lize)
Head Department of Nursing Education

THERAPEUTIC Sciences

ANNEXURE B

Faculty of Health Sciences
Medical School, 7 York Rd, Parktown, 2193
Fax: (011) 717-2119
Tel: (011) 717-2075/6

Reference: Ms Mpumi Mngapu
E-mail: Mpumi.Mngapu@ wits.ac.za
19 April 2016
Person No. 9308016W
PAG

Mrs M Lack
P.O Box 13025
Northmead
1511
South Africa

Dear Mrs Lack

Doctor of Philosophy: Approval of Title

We have pleasure in advising that your proposal entitled *Formulation of an Evaluation Tool and Facilitator Development Program for PBL* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Science

ANNEXURE C



M130637 R 14/49 Ms Melanie Lack et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M130637

NAME: Ms Melanie Lack et al

(Principal Investigator)

DEPARTMENT: Nursing Education

University of the Witwatersrand

PROJECT TITLE: **FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING**

DATE CONSIDERED: 28/06/2013

DECISION: Approved unconditionally

CONDITIONS:

SUPERVISOR: Prof. P, Mc Inerney

APPROVED BY: Professor P.E Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 24/07/2013

This clearance certificate is valid for 5years from date of approval. Extensions may be applied for.

ANNEXURE D

INFORMATION FOR PARTICIPATION IN A PhD STUDY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

I am a part-time lecturer and PhD student in the Department of Nursing Education, Faculty of Health Sciences, University of the Witwatersrand. I am conducting a research study that will be carried out in four phases:

Phase-One of the study will be based on the development of an evaluation instrument with content and construct validity. This instrument will be used to evaluate the skills of facilitators in problem-based learning (PBL) tutorials.

Phase-Two will involve the development of a teaching model based on the validated evaluation instrument

Phase-Three the development of teaching standards based on the teaching model

Phase-Four the development of a curriculum that will serve towards the initial and on-going training of PBL facilitators.

You are invited to consider participating in **Phase-One** of this study to become a member of an 'expert' group whom I will select purposively to assist me in conducting a Delphi Survey.

As a participant and member of the 'expert' group:

- You will be asked to assist with the generation of constructs relevant to the building of the evaluation instrument.
- A list with all the constructs generated by the 'expert' group will be delivered to you for rating on a scale of 1-4. You may be asked to rate a list of constructs on more than one round of the Delphi survey
- On visual analogue scales you will be asked to subjectively carry out paired comparisons on all the constructs that have received a rating of 4 (4=very relevant and will become a part of the instrument)
- You will not be required to meet with other participants of the 'expert' group
- Your participation in this study is entirely voluntary and you may withdraw at any time without penalty to yourself
- You will be asked to sign a consent form should you decide to participate in the study

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

ANNEXURE D (cont.)

RESEARCH TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

RESEARCHER: MELANIE LACK

CONSENT FORM

I…….. (print name)

hereby consent to participate in the above research study as a CONTENT EXPERT. I have read the information letter and understand the content therein.

Signature ……Date …….

Dear ……

Kindly answer the following questions:

	Yes	No
1. Do you wish to be identified in the above mentioned study?	☐	☐
2. Do you wish to be credited for your intellectual input?	☐	☐
3. If you have answered 'no' in point 1, do you agree to be referred to as eg 'Expert 2'?	☐	☐
4. Do you wish to be cited as a co-author in a publication containing your input?	☐	☐

COMMENTS……

……..

Signature……Date……

ANNEXURE E

ROUND ONE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for agreeing to participate in the above study. On each round of the survey you will be provided with a detailed description of what is required together with an explanation of how to use the questionnaires developed for this purpose.

In **Round One** there will not be a questionnaire. You are required to make a list of CONSTRUCTS that you feel should be placed on the evaluation instrument that will serve to assess the skills of facilitators in problem-based learning tutorials. At this point you do not have to provide the sub-items that will feature within each construct. You may list as many constructs as you feel necessary.

Once this list is returned to me together with the lists from the remaining four content 'experts' I will make a list (excluding duplication) of the constructs featured on the 'experts' list. This list will then be used in the **Round Two** survey where each construct will be rated on a scale of 1-4. The **Round Two** survey will come with relevant instructions.

The list drawn up by you can be emailed back to me by the ……..2013

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

ANNEXURE F

ROUND TWO DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in **Round One** of the Delphi survey. Each of the content 'experts' made a list of constructs they perceived as being important to be placed on the evaluation instrument. These constructs have been transcribed onto a single list that will be returned to you for a rating to take place. In **Round Two** the content validity of these constructs will be tested.

Using your judgement rate each construct in one of the columns marked 1,2,3,4.

1 = Not relevant

2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant

3 = Relevant but needs minor alteration

4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

Should a construct receive a rating of three (3), kindly give your opinion on how the item should be revised. This you will do under 'Comments'.

If you feel that a construct has been omitted and should be included, kindly list this construct under 'Comments'.

The completed questionnaire will be collected by me on the ……..2013

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

ROUND TWO QUESTIONNAIRE

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

	1	2	3	4
Construct 1. MANAGEMENT SKILLS				
COMMENTS:				
Construct 2. INTERPERSONAL SKILLS				
COMMENTS:				
Construct 3. KNOWLEDGE				
COMMENTS:				
Construct 4. ADULT LEARNING AND TEACHING SKILLS				
COMMENTS:				
Construct 5. COMMUNICATION SKILLS				
COMMENTS:				
Construct 6. PROFESSIONALISM				
COMMENTS:				
Construct 7. ETHICS				
COMMENTS:				
Construct 8. FACILITATION SKILLS				
COMMENTS:				

ANNEXURE G

ROUND THREE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in **Round Two** of the Delphi survey. The **Round Two** questionnaire has been rated by the experts using a rating scale of 1, 2, 3 or 4. All constructs receiving a rating of 1 or 2 were excluded. The constructs receiving a rating of 3 were modified according to the comments made by the experts. The constructs that received a rating of 4 have remained on the questionnaire as these items were seen as 'very relevant'. Certain items have been added to the checklist. Changes that were made as follows: Communication has been integrated with IPS. Adult Learning and Teaching skills integrated with Knowledge. Facilitator Skills incorporated with each construct.

Enclosed please find the **Round Three** questionnaire and instructions. This questionnaire has been sorted into a workable document. For further modification and refinement I again request you to allocate a rating to each of the constructs printed in blue print.

The completed questionnaire will be collected by me on the ……..2013

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

ROUND THREE QUESTIONNAIRE

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

	1	2	3	4
Construct 1. MANAGEMENT SKILLS				
COMMENTS:				
Construct 2. INTERPERSONAL SKILLS /COMMUNICATION				
COMMENTS:				
Construct 3. KNOWLEDGE/ ADULT LEARNING SKILLS				
COMMENTS:				
Construct 4. PROFESSIONALISM				
COMMENTS:				
Construct 5. EDUCATIONAL ETHICS				
COMMENTS:				

ANNEXURE H

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in the previous rounds of the Delphi survey. Following your judgement, a list of Constructs has been generated to which rigorous practices were applied during analysis. Those Constructs rated three (3) have been revised to receive a rating of four (4) = very relevant by all the content experts. Certain Constructs have been selected out.

The Content Validity Index (CVI) was applied to the Constructs that will now feature on the new evaluation instrument. These Constructs scored a 1.00. Content validity has been determined

In **Round Four** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find 10 units (VAS) of paired comparisons of Constructs displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a Construct at any given level can then be carried out.

The completed visual analogue scales will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

1. The visual analogue scale (VAS) will ultimately provide ratio-level data and percentages.

2. The VAS is 100mm in length between the right-angle anchors on either side of the line.

3. Please place a mark at some point on the line between the two anchors. This mark will indicate your subjective judgement to estimate the relative importance of one item versus a second item in a paired comparison.

4. Please be seated when using the scale

Example

Construct A vs Construct B

Constructs - AB |————————————————————/————————————|

0mm **100mm**

- The A refers to one Construct The B refers to a second Construct
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales.

VISUAL ANALOGUE SCALES – CONSTRUCTS

(A) Management vs (B) Knowledge

AB 0mm 100mm

(A) Management vs (C) Interpersonal Skills

AC 0mm 100mm

(A) Management vs (D) Educational Ethics

AD 0mm 100mm

(A) Management vs (E) Professionalism

AE 0mm 100mm

(B) Knowledge vs (C) Interpersonal Skills

BC 0mm 100mm

(B) Knowledge vs (D) Educational Ethics

BD 0mm 100mm

(B) Knowledge vs (E) Professionalism

BE 0mm 100mm

(C) Interpersonal skills vs (D) Educational Ethics

CD 0mm 100mm

(C) Interpersonal skills vs (E) Professionalism

CE 0mm 100mm

(D) Educational Ethics vs (E) Professionalism

DE 0mm 100mm

ANNEXURE I

EDUCATIONAL ETHICS– ROUND ONE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

The Delphi survey 'CONSTRUCTS' led to the development of five (5) Constructs i.e.:

1. EDUCATIONAL ETHICS
2. MANAGEMENT
3. INTERPERSONAL SKILLS
4. PROFESSIONALISM
5. KNOWLEDGE

Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with sub-items within the Construct EDUCATIONAL ETHICS.

In **Round One -**Delphi Survey, experts were asked to list items that could be used as Constructs. Each expert presented a comprehensive list of items many of which could be used as sub-items. The lists of items were grouped into making up the five Constructs and the items which could be used as sub-items appear on the questionnaire.

Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)
Please e-mail the completed list to melanielack53@gmail.com by 30 JUNE 2014

Kind regards

MELANIE LACK

EDUCATIONAL ETHICS - ROUND ONE DELPHI

1 = not relevant
2 = unable to assess relevance without item revision and such revision could no longer be relevant
3 = relevant but needs minor alteration
4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**ETHICAL PRINCIPLE OF JUSTICE**				
	Distribution of resources fairly and equally. Treat each student fairly and equally. Respond appropriately and accordingly to wrongdoing by students. Provide honesty, consistency, clarification guidance and support to student				
2	**BENEFICENCE AND NON-MALEFICENCE**				
	Do what is good for the student and avoid doing harm to the student –emotional, physical and psychological				
3	**AUTONOMY**				
	Recognise individual diversity and respect the worth of students as individuals				
4	**COMMITMENT TO FACILITATION**				
	Be prepared for the tutorial and maintain rapport with students. Commit to research				
5	**LEARNING ENVIRONMENT**				
	Emotional and physical safety. Environment conducive to learning				
	ADDITION OF SUB-ITEMS				

ANNEXURE J

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Following individual judgement, a list of sub-items has been generated to which rigorous practices were applied during analysis. Sub-items were revised to receive a rating of four (4) = very relevant by all the content experts.

The Content Validity Index (CVI) was applied to the sub-items that will now feature on the new evaluation instrument. These sub-items scored a 1.00. Content validity has been determined

In **Round Two** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find six (6) units paired comparisons of sub-items displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a sub-item at any given level can then be carried out.

The completed questionnaire will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

1. The visual analogue scale (VAS) will ultimately provide ratio-level data and percentages.

2. The VAS is 100mm in length between the right-angle anchors on either side of the line.

3. Please place a mark at some point on the line between the two anchors. This mark will indicate your subjective judgement to estimate the relative importance of one item versus a second item in a paired comparison.

4. Please be seated when using the scale

Example

Sub-item A vs sub-item B

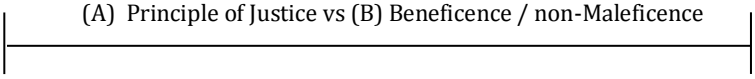
Construct |————————————————————/————————————|

0mm **100mm**

- The A refers to one sub-item and B refers to a second sub-item
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales

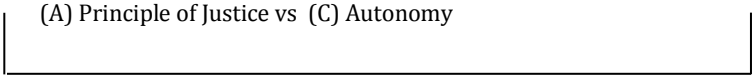
VISUAL ANALOGUE SCALES – EDUCATIONAL ETHICS

AB (A) Principle of Justice vs (B) Beneficence / non-Maleficence



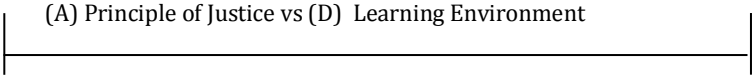
0mm 100mm

AC (A) Principle of Justice vs (C) Autonomy



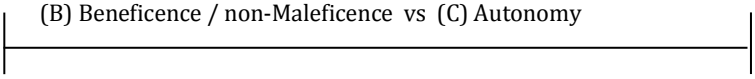
0mm 100mm

AD (A) Principle of Justice vs (D) Learning Environment



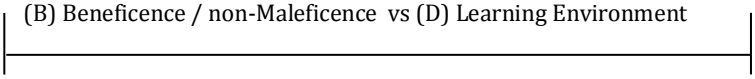
0mm 100mm

BC (B) Beneficence / non-Maleficence vs (C) Autonomy



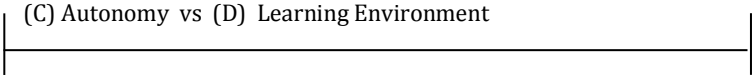
0mm 100mm

BD (B) Beneficence / non-Maleficence vs (D) Learning Environment



0mm 100mm

CD (C) Autonomy vs (D) Learning Environment



0mm 100mm

ANNEXURE K

MANAGEMENT – ROUND ONE DELPHI SURVE

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Following your judgement, a list of constructs has been generated to which rigorous practices were applied during analysis. These constructs have received a rating of four (4) = very relevant, by all the content experts. This led to the development of five (5) Constructs i.e.:

1. EDUCATIONAL ETHICS
2. MANAGEMENT
3. INTERPERSONAL SKILLS
4. PROFESSIONALISM
5. KNOWLEDGE

The Content Validity Index (CVI) was applied to the constructs that will now feature on the new evaluation instrument. These constructs scored a 1.00. Content validity has been determined. Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with sub-items within the Construct MANAGEMENT. During Round One Delphi Survey in generating Constructs many of the items provided by the expert group relating to Management were considered to be sub-items and these are now included on the **Management –Round One questionnaire**. Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)
Please e-mail the completed list to melanielack53@gmail.com by the …… 2014

Kind regards

MELANIE LACK

MANAGEMENT - ROUND ONE DELPHI

1 = not relevant

2 = unable to assess relevance without item revision and such revision could no longer be relevant

3 = relevant but needs minor alteration

4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**SMALL GROUP DYNAMICS**				
	▪ Group Process and norms ▪ Factors affecting group performance ▪ Benefits and challenges ▪ Group Leadership				
2	**MOTIVATION**				
	▪ Motivational Theories ▪ Individual Performance ▪ Individual Diversity ▪ Mental Diversity				
3	**STRESS**				
	▪ Personal Stress ▪ Work Stress ▪ Time Management ▪ Resource organisation				
4	**CONFLICT MANAGEMENT**				
	▪ Types of conflict ▪ Intergroup conflict ▪ Control ▪ Conflict resolution				
	ADDITION OF SUB-ITEMS				

ANNEXURE L

MANAGEMENT – ROUND TWO DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in the previous round of the Delphi survey.

In **Round Two** the sub-item STRESS has been changed to STRESS MANAGEMENT.
Using your judgement once again please rate the sub-item in one of the columns marked 1,2,3,4.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

The completed questionnaire will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

ANNEXURE L (Cont.)

MANAGEMENT – ROUND TWO DELPHI SURVEY

Rating scale

1 = not relevant

2 = unable to assess relevance without item revision and such revision could no longer be relevant

3 = relevant but needs minor alteration

4 = very relevant

	Sub-Items	1	2	3	4
1	**SMALL GROUP DYNAMICS**				
	▪ Group Process and norms ▪ Factors affecting group performance ▪ Benefits and challenges ▪ Group Leadership				
2	**MOTIVATION**				
	▪ Motivational Theories ▪ Individual Performance ▪ Individual Diversity ▪ Mental Diversity				
3	**STRESS MANAGEMENT**				
	▪ Personal Stress ▪ Work Stress ▪ Time Management ▪ Resource organisation				
4	**CONFLICT MANAGEMENT**				
	▪ Types of conflict ▪ Intergroup conflict ▪ Control ▪ Conflict resolution				
	ADDITION OF SUB-ITEMS				

ANNEXURE M

MANAGEMENT – ROUND THREE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in the previous round of the Delphi survey. Following your judgement, a list of sub-items within the Construct-MANAGEMENT has been generated to which rigorous practices were applied during analysis. These sub-items have been revised until they received a rating of four (4) = very relevant by all the content experts. Certain sub-items have been selected out.

The Content Validity Index (CVI) was applied to the sub-items that will now feature on the new evaluation instrument. These sub-items scored a 1.00. Content validity has been determined

In **Round Three** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find six (6) units paired comparisons of sub-item displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a sub-item at any given level can then be carried out.

The completed visual analogue scales will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

1. The visual analogue scale (VAS) will ultimately provide ratio-level data and percentages.

2. The VAS is 100mm in length between the right-angle anchors on either side of the line.

3. Please place a mark at some point on the line between the two anchors. This mark will indicate your subjective judgement to estimate the relative importance of one item versus a second item in a paired comparison.

4. Please be seated when using the scale

Example

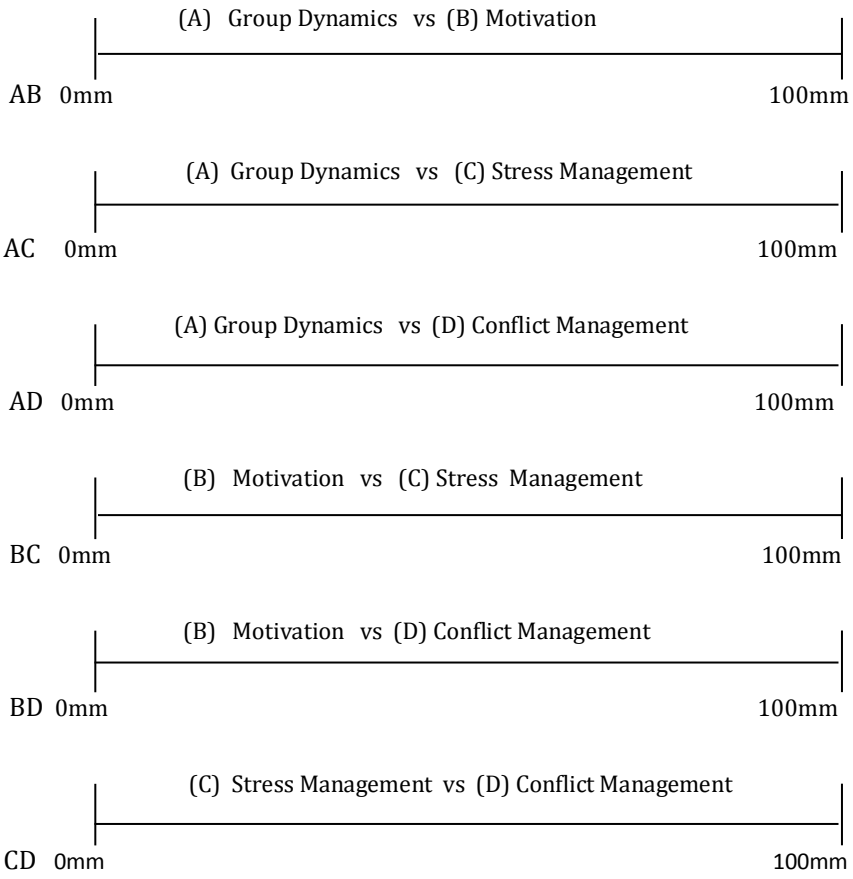
Sub-Item A vs Sub-Item B

Constructs - AB |————————————————————/————————————|

0mm **100mm**

- The A refers to one sub-item The B refers to a second sub-item
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales.

VISUAL ANALOGUE SCALES - MANAGEMENT



ANNEXURE N

INTERPERSONAL SKILLS – ROUND ONE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

The Delphi survey CONSTRUCTS led to the development of five (5) Constructs i.e.:

1. MANAGEMENT
2. INTERPERSONAL SKILLS
3. KNOWLEDGE
4. EDUCATIONAL ETHICS
5. PROFESSIONALISM

Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with the sub-items within the Construct INTERPERSONAL SKILLS.

In **Round One -**Delphi Survey, experts were asked to list items that could be used as Constructs. Each expert presented a comprehensive list of items many of which could be used as sub-items. The lists of items were grouped into making up the five Constructs and the items which could be used as sub-items appear on the questionnaire.

Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

Please e-mail the completed list to melanielack53@gmail.com by the 16 May 2014

Kind regards

MELANIE LACK

INTERPERSONAL SKILLS - ROUND ONE DELPHI

1 = not relevant
2 = unable to assess relevance without item revision and such revision could no longer be relevant
3 = relevant but needs minor alteration
4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**COMMUNICATION –Verbal Skills**				
	▪ Interpersonal communication model ▪ Use of language (concrete, creative and emotional) ▪ Use of Professional language ▪ Tone of voice				
2	**COMMUNICATION –Non-Verbal Skills**				
	▪ Proxemics. ▪ Gestures ▪ Appearance ▪ Active listener ▪ Observant				
3	**BARRIERS TO COMMUNICATION**				
	▪ Verbal barriers ▪ Non-verbal				
4	**CROSS-CULTURAL COMMUNICATION**				
	▪ Acknowledge cultural diversity ▪ Acknowledge societal diversity ▪ Body Language ▪ Personal space ▪ Ethnocentrism				
	ADDITION OF SUB-ITEMS				

ANNEXURE O

INTERPERSONAL SKILLS – ROUND TWO DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

The Delphi survey CONSTRUCTS led to the development of five (5) Constructs i.e.:

1. EDUCATIONAL ETHICS
2. MANAGEMENT
3. INTERPERSONAL SKILLS
4. PROFESSIONALISM
5. KNOWLEDGE

Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with the sub-items within the Construct INTERPERSONAL SKILLS.

In **Round One -**Delphi Survey, experts were asked to list items that could be used as Constructs. Each expert presented a comprehensive list of items many of which could be used as sub-items. The lists of items were grouped into making up the five Constructs and the items which could be used as **sub-items** appear on the questionnaire.

Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

Please e-mail the completed list to melanielack53@gmail.com by the 16 May 2014

Kind regards

MELANIE LACK

INTERPERSONAL SKILLS - ROUND TWO DELPHI

1 = not relevant
2 = unable to assess relevance without item revision and such revision could no longer be relevant
3 = relevant but needs minor alteration
4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**COMMUNICATION –Verbal Skills**				
	▪ Interpersonal communication model ▪ Use of language (concrete, creative and emotional) ▪ Use of Professional language ▪ Tone of voice				
2	**COMMUNICATION –Non-Verbal Skills**				
	▪ Proxemics. ▪ Gestures ▪ Appearance ▪ Active listener ▪ Observant				
3	**BARRIERS TO COMMUNICATION**				
	▪ Process barriers ▪ Personal barriers ▪ Situational barriers				
4	**CROSS-CULTURAL COMMUNICATION**				
	▪ Ethnic Culture and Communication ▪ Gender Culture and communication ▪ Organisational Culture and communication				
	ADDITION OF SUB-ITEMS				

ANNEXURE P

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Following individual judgement, a list of sub-items has been generated to which rigorous practices were applied during analysis. These sub-items have received a rating of four (4) = very relevant by all the content experts.

The Content Validity Index (CVI) was applied to the sub-items that will now feature on the new evaluation instrument. These sub-items scored a 1.00. Content validity has been determined

In **Round Three** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find six (6) units paired comparisons of sub-items displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a sub-item at any given level can then be carried out.

The completed questionnaire will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

1. The visual analogue scale (VAS) will ultimately provide ratio-level data and percentages.

2. The VAS is 100mm in length between the right-angle anchors on either side of the line.

3. Please place a mark at some point on the line between the two anchors. This mark will indicate your subjective judgement to estimate the relative importance of one item versus a second item in a paired comparison.

4. Please be seated when using the scale

Example

Sub-item A vs sub-item B

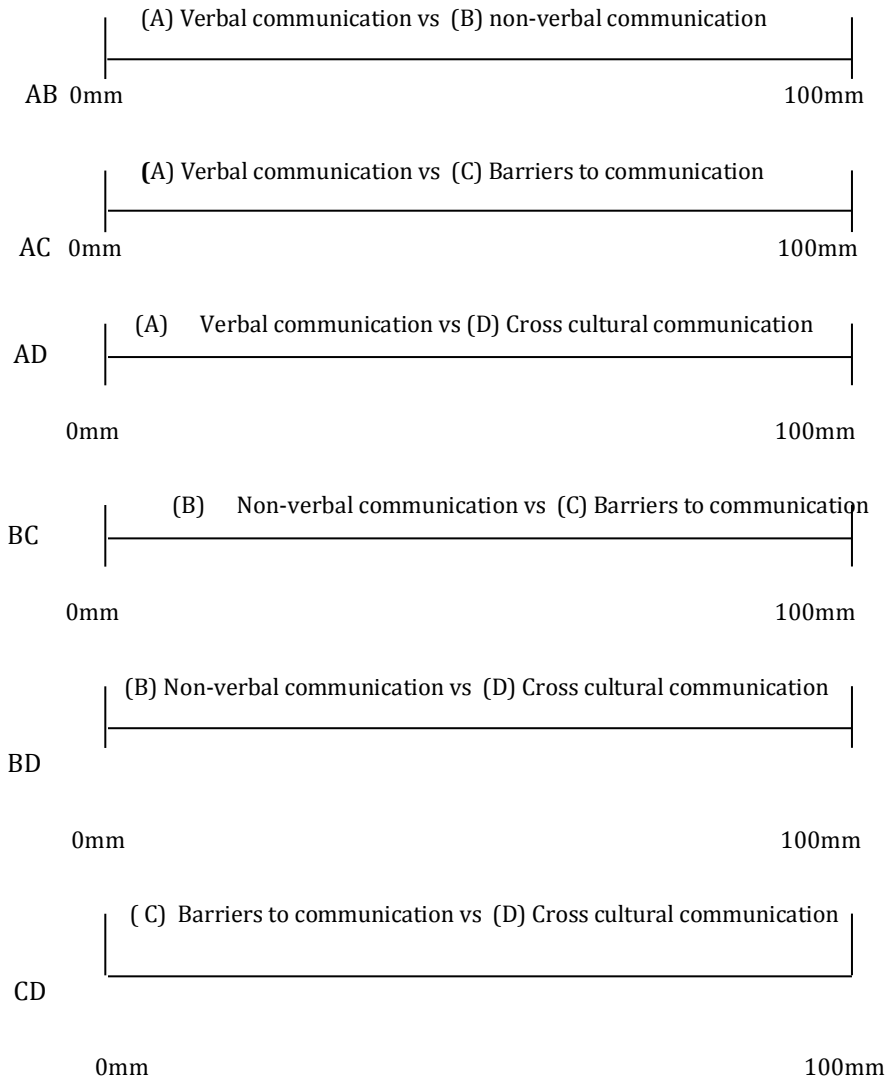
Construct |————————————————————/————————————|

0mm **100mm**

- The A refers to one sub-item and B refers to a second sub-item
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales

ANNEXURE P (cont.)

VISUAL ANALOGUE SCALES – INTERPERSONAL SKILLS



ANNEXURE Q

PROFESSIONALISM– ROUND ONE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

The Delphi survey CONSTRUCTS led to the development of five (5) Constructs i.e.:

1. EDUCATIONAL ETHICS
2. MANAGEMENT
3. INTERPERSONAL SKILLS
4. PROFESSIONALISM
5. KNOWLEDGE

Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with the sub-items within the Construct PROFESSIONALISM.

In **Round One -**Delphi Survey, experts were asked to list items that could be used as Constructs. Each expert presented a comprehensive list of items many of which could be used as sub-items. The lists of items were grouped into making up the five (5) Constructs and the items which could be used as sub-items appear on the questionnaire.

Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)
Please e-mail the completed list to melanielack53@gmail.com by the 30 June 2014

Kind regards

MELANIE LACK

PROFESSIONALISM- ROUND ONE DELPHI

1 = not relevant
2 = unable to assess relevance without item revision and such revision could no longer be relevant
3 = relevant but needs minor alteration
4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**PHILOSOPHY OF PBL**				
	Student centred self-directed learning centred around a small group discussion where learning emanates from a clinically based problem				
2	**RESPONSIBILITY**				
	Set rules within tutorials and maintain professional conduct. Understanding of being a role model. Identify and provide educational needs of student				
3	**ACCOUNTABILITY**				
	Dedicated and possess required knowledge. Committed to facilitation. Be prepared, tolerant and enthusiastic. Be willing to carry out self-evaluation / peer-evaluation				
4	**ABILITY**				
	Possess knowledge, skills and values based on the philosophy of PBL. To have a personal value system. Perform task based on educational objectives				
5	**FACILITATOR DEVELOPMENT**				
	Knowledge of evidence based practice. Knowledge of technology. Commit to research				
	ADDITION OF SUB-ITEMS				

ANNEXURE R

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Following individual judgement, a list of sub-items has been generated to which rigorous practices were applied during analysis. Certain sub-items have received a rating of four (4) = very relevant. Other sub-items were revised to receive a rating of four (4) by all the content experts.

The Content Validity Index (CVI) was applied to the sub-items that will now feature on the new evaluation instrument. These sub-items scored a 1.00. Content validity has been determined

In **Round Two** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find six (6) units paired comparisons of sub-items displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a sub-item at any given level can then be carried out.

The completed questionnaire will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

1. The visual analogue scale (VAS) will ultimately provide ratio-level data and percentages.

2. The VAS is 100mm in length between the right-angle anchors on either side of the line.

3. Please place a mark at some point on the line between the two anchors. This mark will indicate your subjective judgement to estimate the relative importance of one item versus a second item in a paired comparison.

4. Please be seated when using the scale

Example

Sub-item A vs sub-item B

Construct |————————————————————/————————————|

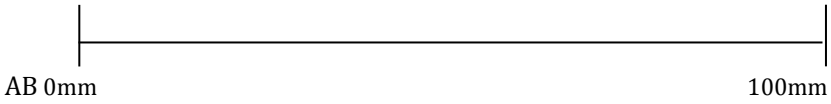
0mm **100mm**

- The A refers to one sub-item and B refers to a second sub-item
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales

ANNEXURE R (Cont.)

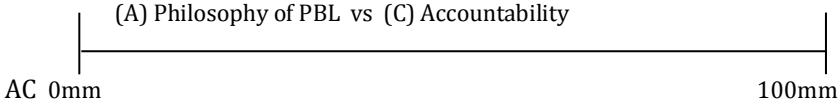
VISUAL ANALOGUE SCALES – PROFESSIONALISM

(A) Philosophy of PBL vs (B) Responsibility



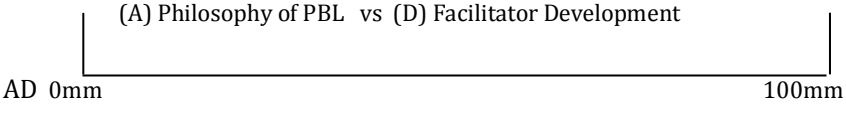
AB 0mm 100mm

(A) Philosophy of PBL vs (C) Accountability



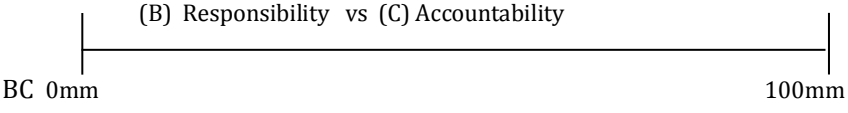
AC 0mm 100mm

(A) Philosophy of PBL vs (D) Facilitator Development



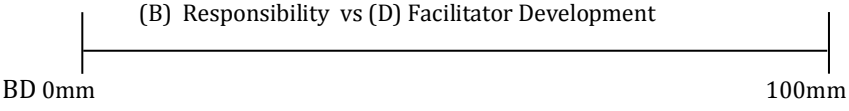
AD 0mm 100mm

(B) Responsibility vs (C) Accountability



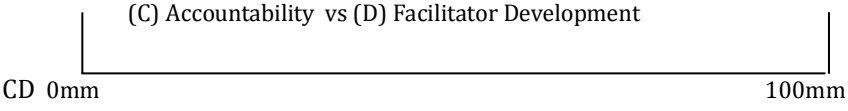
BC 0mm 100mm

(B) Responsibility vs (D) Facilitator Development



BD 0mm 100mm

(C) Accountability vs (D) Facilitator Development



CD 0mm 100mm

ANNEXURE S

KNOWLEDGE – ROUND ONE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Participation in the Delphi survey to generate Constructs led to the development of five (5) Constructs i.e.:

1. EDUCATIONAL ETHICS
2. MANAGEMENT
3. INTERPERSONAL SKILLS
4. PROFESSIONALISM
5. KNOWLEDGE

Each one of these Constructs will be dealt with separately to generate sub-items. This round will deal with sub-items within the Construct KNOWLEDGE.

In **Round One -**Delphi Survey, experts were asked to list items that could be used as Constructs. Each expert presented a comprehensive list of items many of which could be used as sub-items under the construct KNOWLEDGE. These sub-items appear on the questionnaire.

Using your judgement once again please rate each sub-item in one of the columns marked 1,2,3,4. Include sub-items if deemed necessary.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)
Please e-mail the completed list to melanielack53@gmail.com by the 16 June 2014

Kind regards

MELANIE LACK

KNOWLEDGE - ROUND ONE DELPHI SURVEY

1 = not relevant
2 = unable to assess relevance without item revision and such revision could no longer be relevant
3 = relevant but needs minor alteration
4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**ADULT LEARNING**				
	Understanding of the Adult Learning theory and its relevance in facilitation and the implications for learning. An understanding of Andragogy and Experiential Learning.				
2	**SELF DIRECTED LEARNING**				
	Skills to promote self-directed learning and self-evaluation amongst students. Assist students in the use of resources and translate and link reading material to learning objectives				
3	**PRINCIPLES OF PROBLEM-BASED LEARNING**				
	Designing a problem and understanding problem designs. Ability to develop learning activities in the PBL tutorial. Ability to carry out student evaluation and group evaluation in PBL tutorial. Knowledge of facilitation				
4	**PRE-REQUISITE KNOWLEDGE**				
	Subject knowledge relating to the PBL problem. Keep abreast on evidence based research.				
5	**PBL CURRICULUM DESIGN**				
	Understanding of the PBL curriculum				
	ADDITION OF SUB-ITEMS				

ANNEXURE T

KNOWLEDGE – ROUND TWO DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Thank you for your participation in the previous round of the Delphi survey.

In **Round Two** the sub-item PRE-REQUISITE KNOWLEDGE has been changed to PRE-REQUISITE KNOWLEDGE RELATING TO PBL. The sub-item PBL CURRICULUM DESIGN has been changed to UNDERSTANDING PBL CURRICULUM DESIGN

Using your judgement once again please rate sub-items PRE-REQUISITE KNOWLEDGE RELATING TO PBL and UNDERSTANDING PBL CURRICULUM DESIGN in one of the columns marked 1,2,3,4.

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

The completed questionnaire will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

KNOWLEDGE - ROUND ONE DELPHI SURVEY

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2 = unable to assess relevance without item revision and such revision could no longer be relevant
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4 = very relevant

Rating scale

	Sub-Items	1	2	3	4
1	**ADULT LEARNING**				
2	**SELF DIRECTED LEARNING**				
3	**PRINCIPLES OF PROBLEM-BASED LEARNING**				
4	**PRE-REQUISITE KNOWLEDGE RELATING TO PBL**				
	-PBL Philosophy -PBL Curriculum -Adult learning -Subject knowledge				
5	**UNDERSTANDING PBL CURRICULUM**				
	ADDITION OF SUB-ITEMS				

ANNEXURE U

KNOWLEDGE - ROUND THREE DELPHI SURVEY

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

Following individual judgement, a list of sub-items within the Construct-KNOWLEDGE has been generated to which rigorous practices were applied during analysis. These sub-items have been revised until they received a rating of four (4) = very relevant by all the content experts. Certain sub-items have been selected out.

The Content Validity Index (CVI) was applied to the sub-items that will now feature on the new evaluation instrument. These sub-items scored a 1.00. Content validity has been determined

In **Round Three** construct validity will be tested. This will be done using the Subjective Judgement Model. Enclosed find ten (10) units paired comparisons of sub-items displayed on visual analogue scales (VAS). A comparative pair-wise weighting will be subjectively determined by the experts on each VAS. (See - Instructions to the Experts). The measurement on each VAS will eventually convert to ratio scales and percentages. Measuring the relative importance of a sub-item at any given level can then be carried out.

The completed visual analogue scales will be collected by me on the ……..2014

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

Instructions to the experts

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4.Please be seated when using the scale

Example

Sub-Item A vs Sub-Item B

Constructs - AB |————————————————————/————————————|

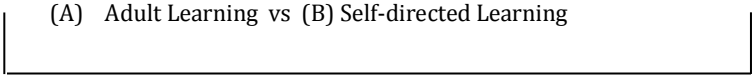
0mm **100mm**

- The A refers to one sub-item The B refers to a second sub-item
- The researcher will use a ruler to measure the distance between the left, right angle to the mark, placed by the content expert
- The accurate measurement in mm. will be sent to the statistician for conversion to ratio scales.

ANNEXURE U (Cont.)

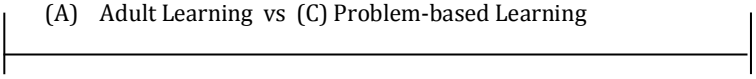
VISUAL ANALOGUE SCALES – KNOWLEDGE

(A) Adult Learning vs (B) Self-directed Learning



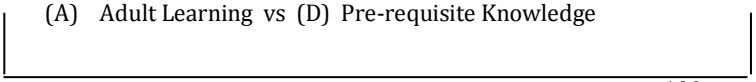
AB 0mm 100mm

(A) Adult Learning vs (C) Problem-based Learning



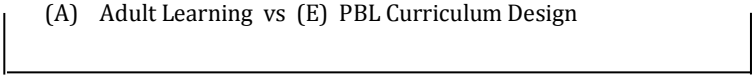
A 0mm 100mm

(A) Adult Learning vs (D) Pre-requisite Knowledge



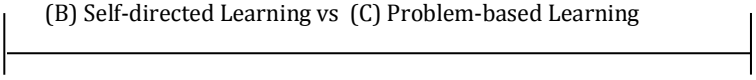
AD 0mm 100mm

(A) Adult Learning vs (E) PBL Curriculum Design



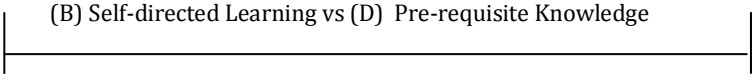
AE 0mm 100mm

(B) Self-directed Learning vs (C) Problem-based Learning



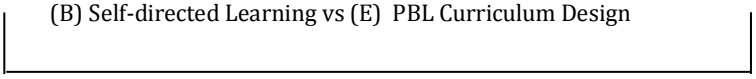
BC 0mm 100mm

(B) Self-directed Learning vs (D) Pre-requisite Knowledge



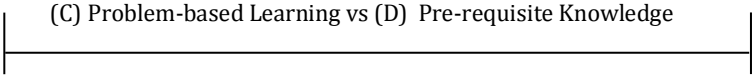
BD 0mm 100mm

(B) Self-directed Learning vs (E) PBL Curriculum Design



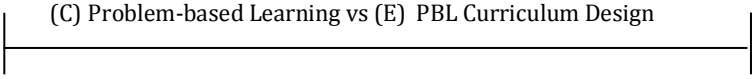
BE 0mm 100mm

(C) Problem-based Learning vs (D) Pre-requisite Knowledge



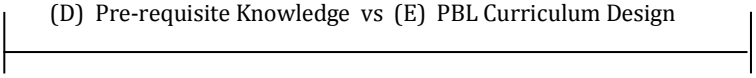
CD 0mm 100mm

(C) Problem-based Learning vs (E) PBL Curriculum Design



CE 0mm 100mm

(D) Pre-requisite Knowledge vs (E) PBL Curriculum Design



DE 0mm 100mm

ANNEXURE V

ROUND ONE LIST – EXPERT 01

CHARACTERISTICS

- Creativity
- Assertiveness
- Tolerance
- Enthusiasm / energy
- Sense of humour
- Knowledge of subject matter
- Fairness / consistency
- Flexibility
- Honesty / openness

SKILLS

- Active listening
- Observant
- Encourage participation
- Clarification
- Keep control / keep focus
- Protect and affirm participants
- Group conflict management

ANNEXURE W

ROUND ONE LIST – EXPERT 02

Teaching and learning knowledge

- What is teaching and learning in an adult learning context
- What is a pre-requisite
- Learning outcome
- Learning objective
- Responsibility for teaching and learning with adult learner
- Avoid didactics

Knowledge about PBL

- Philosophy / Principles
- Use as a teaching strategy and an approach
- Implications for curriculum design
- How problems are designed /different
- Different learning activities and how they link to the PBL tutorial
- How to teach in a PBL curriculum
- What facilitation is and how it is different from didactic teaching
- Dangers of teaching rather than facilitating in a PBL session
- How to make the most of the briefing for problems
- Understanding and reviewing the resources and how they contribute to facilitation
- How to facilitate brain storming
- How to facilitate the development of learning objectives
- How to facilitate the evaluation of learning objectives
- How to facilitate the translation of read material to learning items that link to the learning objectives
- Facilitate the students understanding of how learning objectives are met and evaluated
- Facilitate the use application of new leaning to the problem to promote understanding
- Research about benefits and challenges/short comings

Understanding of facilitation

- Define what it is
- Describe its characteristics
- How you use facilitations in PBL
- Role(s) of the facilitator
- Allocating and supporting role development in others
- Describe the different techniques you can use to facilitate;: questioning , prodding, cueing; linking; organising; directing
- Different styles of facilitation
- Current research about facilitation

Communication skills

Awareness of communications skills and how you can use them positively and negatively while facilitating

Verbal skills

- What you say/ concrete and emotional contents
- How you say it / tone/
- Language use especially professional language
- Cultural sensitivity
- Assertiveness
- Conflict resolution

Non-verbal skills

- Proxemics /gestures
- Appearance
- Professionalism
- Role modelling
- Barriers to communication
- Individual diversity
- Safety
- Value system

Knowledge about small groups and how to run them

- What is small group education
- Benefits and challenges
- Group membership
- Group roles and assignment of these
- Stages of groups and dynamic issues that arise in each stage
- Group leadership: types, taking leadership , giving leadership to students but maintaining control over the groups functioning and purpose
- Understanding and dealing with group processes
- Understanding and dealing with group dynamics
- Dealing with group conflict
- Group evaluation
- Evaluation of individual performance
- Motivating and encouraging the group
- Factors affecting group performance

Knowledge about what is being facilitated

- Understanding the level and nature of information that students need to grasp
- Controlling showing that you as a facilitator are very knowledgeable
- Know if the students have interpreted the information correctly and drawn reasonable conclusions

ANNEXURE X

ROUND ONE LIST – EXPERT 03

- Interpersonal skills
- Engage students, don't torment them
- Motivate and support (facilitator carries the student moral)
- Positive attitude –drives the feel of the session
- Identify stress -never express stress – students are sensitive to this
- Highlight but never focus on student weakness
- Practical external examples –use specimens, images, music
- Create a story line, a narrative stringing ideas together
- Never teach or lecture
- Provide information – to guide students not give them solutions
- Punctuality - important
- Respect and equality - ethos
- Don't be overwhelming in discussion (students should always be more vocal than the facilitator
- Construct rules for the session – e.g. punctuality (abide by your own rules)
- Environment conducive to learning

Share life experiences in the facilitation (students open up to you)

ROUND ONE LIST – EXPERT 04

Organisational skills

- Physical resources:
- Facilitator to ensure classroom/venue availability
- Resources for content discussion e.g. books, electronic (computer's, i-pad), also ensuring accessibility by all learners
- Availability and accessibility of herself as the facilitator

Principles of facilitation

- Provide guidance for learning and interaction in a PBL context
- Facilitate the discipline specific content competently, ethically and creatively
- Focus of facilitation to be based on student-centeredness
- Availability and accessibility of the facilitator
- Enhance effective communication amongst the learners
- Demonstrate professional responsibility and accountability
- Be responsive by showing sensitivity and awareness of cultural diversity, societal demands, life-world experiences and the expectations of the learners
- Provide personalised learning opportunities and student support
- Self-evaluation and be peer reviewed
- Offer herself an opportunity for development regarding PBL facilitation
- Initiate or participate in research on PBL for enhancing evidence-based practice
- Acknowledge and incorporate technology applicable to PBL
- Factors affecting group process

Interpersonal skills

- Acknowledge learners as human beings with diversity in learning
- Provide an environment conducive to learning (physical and psychological safety)
- Display respect and acknowledge cultural diversity
- Use an official language for communication
- Uphold basic ethical principles i.e. 1) Justice (distributive & retributive) by distributing resources fairly and equally to all learners, and responding appropriately and accordingly to wrongdoing by learners 2) Beneficence and non-maleficence by doing good and avoiding harm; 3) autonomy by respecting the unconditional worth of learners as individual
- Value systems / Ethnocentrism

ANNEXURE Z

ROUND ONE LIST – EXPERT 05

- Passionate about one's profession and student teaching.
- Encourage mutual respect and politeness between the students themselves and between the students and the facilitator.
- Discuss and encourage adherence to group norms.
- Role model punctuality (starting time).
- Be well prepared for the week`s problem in question.
- Be dedicated and committed to the process and ensure that the students benefit fully.
- Take cognizance of all the students, the outspoken, smart including the quieter, weaker ones.
- Keep to the allocated time for the session.
- Be interactive and participatory when appropriate.
- Be patient.
- Be nurturing.
- Explain the PBL process if unfamiliar.
- Understand the PBL curriculum.
- Allow the students to follow the process.
- Guide the students if they veer off track or get stuck.
- Try and avoid a lot of didactic teaching. Encourage self and group learning.
- When knowledge is lacking, encourage selection of self-learning topics and preparation by all the students
- Encourage understanding of the basic principles and then the detail will follow. (Learning topics should be reported succinctly in the students' own words and not read).
- Be attentive and acknowledge when the students report back on their learning topics
- Be observant of those students who may need a bit of extra help.
- Develop a rapport and encourage the students to contact the facilitator when the need arises.

ANNEXURE AA

STUDY TITLE: FORMULATION OF AN EVALUATION INSTRUMENT AND FACILITATOR DEVELOPMENT PROGRAM FOR PROBLEM-BASED LEARNING

Dear Colleague

The above study has progressed as follows:

Phase One – identification of Constructs (early development of evaluation tool).

Phase Two- Development of a model on each construct based on literature. Each model was drawn into a single final Study Model (enclosed with the questionnaire).

Phase-Three- Development of Standards based on the final Study Model. Draft standards and indicators have been developed.

Kindly assist me in rating each Standard and indicator on the questionnaire in one of the columns marked 1,2,3,4.

1 = Not relevant

2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant

3 = Relevant but needs minor alteration

4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

Should a standard or indicator receive a rating of three (3), kindly give your opinion on how the item should be revised. This you will do under 'Comments'.

If you feel that a standard or indicator has been omitted and should be included, kindly list this construct under 'Comments'.

Please email the completed questionnaire back to me by the 09 October 2015

Please feel free to contact me at 083 233 4137 or e-mail melanielack53@gmail.com

Kind regards

MELANIE LACK

STANDARDS QUESTIONNAIRE

1 = Not relevant
2 = Unable to assess relevance without item revision or item is in need of such revision that it will no longer be relevant
3 = Relevant but needs minor alteration
4 = Very relevant

(The above nominal scale is the work of Mary R. Lynn 1986)

PHILOSOPHY	1	2	3	4
STANDARD STATEMENT: UNDERSTANDS THE CONSTRUCTIVIST THEORY				
▪ Knowledge of constructivist principles				
▪ Able to identify types of constructivism				
▪ Able to identify key concepts of constructivism				
▪ Knowledge of the social development theory				
▪ Can apply constructivist theory to education				
COMMENTS:				
STANDARD STATEMENT: UNDERSTANDS THE ADULT LERNING THEORY (ANDROGOGY)				
▪ Identifies characteristics of adult learning				
▪ Identifies the principles of adult learning				
▪ Identifies the principles of adult teaching				
▪ Can describe the challenges of adult learning and teaching				
COMMENTS:				
STANDARD STATEMENT: UNDERSTANDS THE PHILOSOPHY OF PROBLEM-BASED LEARNING				
▪ Can identify the characteristics of PBL				
▪ Apply constructivist theory to PBL				
▪ Takes on the role of facilitator effectively				
▪ Knowledgeable regarding the role of the student				
▪ Can identify the challenges of PBL in relation to facilitator/ student /organisation /learning process				
▪ Can implement a PBL curriculum				
COMMENTS:				

ETHICS	1	2	3	4
STANDARD STATEMENT: **APPLIES ETHICAL PRINCIPLES TO EDUCATIONAL PRINCIPLES RELATED TO ADULT LEARNING AND PBL**				
▪ Knowledge of ethical principles				
▪ Knowledge of educational principles				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING ENVIRONMENT**				
▪ Provides physical and emotional safety to the student				
▪ Provides intellectual safety to the student				
▪ Able to utilize resources with responsibility and accountability				
▪ Fulfils the potential of all students				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE STUDENT**				
▪ Uses accurate and relevant information without bias or prejudice				
▪ Assists student with academic problems /sound decisions				
▪ Responsible and accountable to maintain knowledge and skills to demonstrate competence				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE LEARNING PROCESS**				
▪ Give student a freedom of choice				
▪ Allow student to control the learning process				
▪ Keeps abreast with research and uses most recent data				
▪ Maintains good facilitator /student relationships				
▪ Learning in accordance with organisational policy				
COMMENTS:				
STANDARD STATEMENT: **APPLIES THE FACILITATOR CODE OF ETHICS (ETHICAL PRINCIPLES) TO THE ORGANISATION**				
▪ Consistent with organisational policy and standards				
▪ Has a commitment to the organisation and places personal opinions aside				
▪ Responsible and accountable in performing duties				
▪ Ethical principles in maintaining high staff morale				
▪ Falls within budget guidelines				
▪ Achieves organisational goals				
▪ Communicates clearly at all levels				
COMMENTS:				

MANAGEMENT	1	2	3	4
STANDARD STATEMENT: **POSSESSES KNOWLEDGE AND SKILLS IN MANAGING STRESS**				
▪ **Understands the response to stress**				
▪ **Can identify stress in a student**				
▪ **Uses the correct procedure to manage stress in the student**				
▪ **Understands the negative impact associated with stress**				
▪ **Understands the process associated with stress**				
COMMENTS:				
STANDARD STATEMENT: **EFFECTS POSITIVE MANAGEMENT IN CONFLICT SITUATIONS**				
▪ **Familiar with conflict management theory**				
▪ **Understands conflict resolution techniques**				
▪ **Identifies causes of conflict situations**				
▪ **Implements a successful strategy to resolve the conflict**				
COMMENTS:				
STANDARD STATEMENT: **SHOWS COMPETENCE IN MOTIVATION SKILLS**				
▪ **Knowledge of theories in motivation**				
▪ **Knows what motivates students**				
▪ **Knows how to motivate students**				
COMMENTS:				
STANDARD STATEMENT: **SHOWS COMPETENCE IN MANAGING POSITIVE GROUP DYNAMICS**				
▪ **Knowledge on the theories of group dynamics**				
▪ **Characteristics of a functional and working group**				
▪ **Identifies issues causing a dysfunctional group**				
▪ **Provides strategies to restore the function of the group**				
▪ **Manages the group effectively to achieve goals**				
COMMENTS:				

INTERPERSONAL SKILLS	1	2	3	4
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF COMMUNICATION SKILLS**				
▪ **Knowledge of communication models and theory**				
▪ **Displays effective listening skills**				
▪ **Provides effective feedback in the communication process**				
COMMENTS:				
STANDARD STATEMENT: **IDENTIFIES BARRIERS TO COMMUNICATION**				
▪ **Able to describe Personal barriers**				
▪ **Able to describe Process barriers**				
▪ **Able to describe Organisational barriers**				
COMMENTS:				
STANDARD STATEMENT: **DEMONSTRATES AN UNDERSTANDING OF CROSS-CULTURAL COMMUNICATION**				
▪ **Able to describe Ethnic communication**				
▪ **Able to describe Gender communication**				
▪ **Able to describe Organisational communication**				
▪ **Understands the challenges in cross-cultural communication**				
COMMENTS:				
STANDARD STATEMENT: **PRESENTS WITH A HIGH LEVEL OF EMOTIONAL INTELLIGENCE**				
▪ **Shows emotional control**				
▪ **Manages emotions in a positive way**				
▪ **Manages the emotions of others in a positive way**				
▪ **Has good social skills**				
▪ **Is motivated**				
COMMENTS:				