TEACHER ROLE IN THE PROMOTION OF MASTERY LEARNING: PERSPECTIVES ON STRATEGY AND PERFORMANCE IN FET SCHOOLS

BY

MMATSELA ANACLETA LEPHATSOE

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Supervisor: Dr ABM Kolobe
Co-Supervisor: Dr L Segalo
Co-Supervisor: DR M A Modise

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ABSTRACT

The aim of this study was to explore the role that teachers play in the promotion of mastery learning in secondary schools in the Lejweleputswa District. Many schools in South Africa focus on the performance of learners thus neglecting to master the content, which in turn could positively contribute towards both performance and mastery goals. The study used in-depth interviews and closed-ended questionnaires to collect the data. Participants included principals and teachers who took part in interviews and completed questionnaires, respectively. The study revealed that despite teachers knowing about mastery learning and understanding the implementation thereof, a barrier remained the costs incurred when promoting mastery learning. The study also revealed that the more experienced teachers, who have been part of the education system for a significant time already, appeared to be more skilled in implementing mastery learning, as opposed to the newly appointed teachers not familiar with mastery learning. Therefore, teachers explore different methods of teaching and learning in their quest to find the one most suitable for them. Mastery learning should, however, be compulsory. Schools can successfully implement mastery learning if the Department of Education provided financial assistance, and training and workshops. This would benefit learners and the entire country, as those that achieve life-long learning become fully equipped to enter South Africa's workforce and subsequently contribute to growing the economy.

KEYWORDS

Mastery learning, mastery-learning strategies, performance, achieving mastery learning, cognitive, affective

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DEDICATION

This study is dedicated to my late dearest mother Mme Seboka Lydia Moleko-Lephatsoe. Education has always been important to you. All you ever wanted was for your children to be empowered and educated, and you definitely gave it your all to make sure that happens. I wish you could hold this degree with me. I love you Mme.

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Declaration of Authenticity

I, Mmatsela Anacleta Lephatsoe (identity number , student number), hereby declare that the dissertation for the degree of Master of Education at the Central University of Technology, Free State, in the School of Teacher Education, Faculty of Humanities, complies with the code of *Academic Integrity* of the Central University of Technology, Free State; and that it has not been previously submitted to any institution by myself or any other person in fulfilment of the requirements for the attainment of any qualification. It is my own work, in my design and execution, and all reference material contained therein have been acknowledged.

MA Lephatsoe Date

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CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

In all cultures, schooling is a future-oriented investment. Although learning and achieving good grades may be a reward to mark the end of schooling, it is also important in the achievement of highly valued educational or professional career goals in future. Therefore, highly motivated students that achieve in schools are probably also highly motivated to succeed in their future educational and professional careers (Husman & Lens, 1999:113).

Unfortunately, schools focus more on performance goals than on mastery goals, despite the future-oriented investment of schooling. Schools focus on teaching learners about the importance to pass in order to progress to the next grade and emphasise the importance of the matric pass-rate, thus focusing on performance rather than mastering what is learned.

The purpose of this study is to explore the role pertaining to teachers' mastery learning strategies and the performance of learners studying under non-mastery conditions, specifically those in the FET phase. Underlying mastery learning theory and practice is an explicit philosophy concerning learning and teaching (Anderson & Block, 1975:7), which asserts that under appropriate instructional conditions all students can learn well, and "master" most of what is taught. Furthermore, it proposes that the manner in which teachers teach can lead to all students doing well. Teaching students the power of mastery assists in increasing their chances of both short- and long-term social survival. Thus, they should be able to acquire basic intellectual competencies that will help to ensure that they can undertake the subsequent learning demanded of them by their school and eventually their vocations.

The problem, however, is teachers and schools focus more on performance than on the mastery of goals. Learners perceive the results and end-performance as more important than understanding and mastering what they learned. Receiving a reward for being the best performer is not necessarily a true reflection of understanding. The

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learner might have simply studied to pass and achieve high results. Schools repeatedly emphasise the importance of good results to ensure a 100% matric pass rate is attained, irrespective of whether the learners have truly gained knowledge and are ready to face the world or not. The only way to ensure that learners really learn is through the use of mastery learning strategies in classrooms. Learners with mastery-approach goal orientations focus on increasing their levels of competence by acquiring the knowledge or skills as the task develops. Learners with mastery-avoidance orientations engage in tasks but avoid mistakes, failures, or diminution of existing skills (Darmon, Butera & Harackiewicz, 2007:26).

1.2 IMPORTANCE OF THE STUDY

This study has reference and significance in terms of meeting the aspirations of the learner, the teacher, the parents, and the Department of Basic Education in South Africa. Mastery learning aims at total mastery of the content (Johnson, 2013:34).

1.3 BRIEF LITERATURE REVIEW

Learners with performance-approach orientations aim to demonstrate their abilities in relation to others by outperforming them and publicly displaying their task-relevant knowledge or skills (Kazu, Kazu & Ozdemir, 2005:45). Within the same context, learners with performance-avoidance orientations focus more on avoiding a public display of incompetence than on developing new knowledge and skills. Goal-theory researchers generally agree that mastery goals are more productive than performance goals, while approach goals are more productive than avoidance goals (Brophy, 2004:12).

1.4 PROBLEM STATEMENT

The researcher has always known that performing at school (e.g. passing tests and grades) is more important for learning compared to gaining lifelong knowledge. Throughout her academic life, she learned about different learning methods and strategies and developed an interest in learning methods, which was also a result of

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one of her Honours modules, Educational Psychology. The researcher, therefore, realised the importance of teachers doing more to teach learners how to gain knowledge that will assist them in the future.

1.5 RESEARCH AIM AND OBJECTIVES

The aim of this study was to investigate the teacher's role in the promotion and application of mastery learning with regards to strategies and performance in the FET phase of schools in the Lejweleputswa District. The purpose was to explore the role pertaining to teacher's mastery learning strategies and the performance of learners that learn under non-mastery strategies.

1.6 RESEARCH QUESTIONS

The research questions explored and investigated in order to achieve the overall aim of the study included the following:

- In what ways do teachers implement mastery learning at their schools?
- Do teachers implement mastery learning successfully in their schools?
- What is the impact of mastery learning on learner performance?
- Which suitable learning strategies can be promoted in mastery learning?
- Which other variables can assist the role of the teacher in enhancing effective mastery learning?

The attainment of this aim assisted the researcher to achieve the following research objectives as derived from the research questions:

- to establish ways in which teachers can implement mastery learning at their schools;
- to determine whether teachers implement mastery learning successfully in their schools.
- to establish the impact of mastery learning on learner performance;
- to discover the suitable learning strategies in the promotion of mastery learning; and
- to find out other variables that will assist the role of the teacher role in enhancing effective mastery learning.

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1.7 RESEARCH DESIGN AND METHODOLOGY

1.7.1 Research design

A research design describes the procedures for conducting the study, including when, from whom, and under what conditions the researcher collected the data. Therefore, the research design entails the general plan of how the research is set up, what happens to the subjects, and what data collection methods will be used. The purpose of the research design is to illustrate a plan for generating empirical evidence in order to answer the research questions. The intent is to use a design that will result in drawing the most valid, credible conclusions from the answers to the research questions (McMillan & Schumacher, 2014:28). Choosing the most appropriate research design is very important since each design contains certain limitations on how to interpret the results, and how to analyse the data. Sekaran and Bougie (2013:95) define a research design as “a blueprint for the collection, measurement, and analysis of data, based on the research questions of the study”. Therefore, a researcher can choose and use the most appropriate a research design that links closely to the research questions and objectives of the study (McMillan & Schumacher, 2014:28).

For purposes of this study, the researcher used mixed methods research. A mixed methods research design encompasses the use of both the quantitative and qualitative methods simultaneously, resulting in a more complete investigation. With mixed method research designs, the researchers are not limited to only use techniques associated with traditional designs, whether quantitative or qualitative. An important advantage of using mixed method designs is that it illustrates the results of the study quantitatively and explains the reasons for obtaining it, qualitatively (McMillan & Schumacher, 2014:33).

Different types of mixed methods designs exist and the current study will make use of triangulation to explore school culture. It will entail a quantitative survey of school culture combined with focus groups consisting of students, teachers and administrators. The more the survey results match those of the focus groups, the greater the validity of concluding that a certain type of culture exists in the school (Kumar, 2012:12). The advantage of the survey is its representation of a large number

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of students, teachers and administrators, while that of focus groups is its voicing of descriptions specific to each group (McMillan & Schumacher, 2014:34).

1.7.2 Research methodology

Mckenzie and Knipe (2006:11) define research methodology as the overall approach to research that links with the paradigm or theoretical framework. According to Babbie (2016:330-344), research methodology focuses on the research process and the methods and procedures used, as well as the steps involved in the research process and the procedures employed.

Fvilan (2014:49-92) further asserts that methodology refers to the study of procedures or methods used in research in order to create new knowledge. Mckenzie and Knipe (2006:11) however, define research methods as the systematic modes, procedures or tools used in the data collection analyses. In essence, a research method not only specifies how to conduct the study practically but ultimately, it is also merely a data collection technique.

In quantitative methodologies, a researcher can use an exploratory, descriptive or causal study or utilise explanatory research. In a qualitative study, a researcher can use phenomenology, ethnography or content analysis, for example (Sakaran & Bougie, 2013:93). In the current study, the researcher employed the exploratory method and used ethnography as well as phenomenology.

1.8 POPULATION AND SAMPLING

The population refers to the collection of a particular group of participants sharing similar aspirations or characteristics that are accessible and willing to participate in the study (Howell,2017: 352). The sample refers to the researcher selecting the number and type of participants based on their variable characteristics. For example, teachers within the context of the current study.

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1.8.1 Population

The population is the larger pool from which the sample elements are drawn, and to which the researcher wants to generalise the findings of the research (DePoy & Gitlin,2011:166). It refers to a group that is similarly based on one or more characteristics as identified by the researcher (Roberson,2013:194), or a group that the researcher wants to gain information from and draws conclusions on or simply the target group for the study. When conducting research, it is essential to ensure that the results, arising from the study, are also applicable to the population. In the current study, the researcher will use the services of teachers in the FET phase of the schools in Matjhabeng Municipality of the Lejweleputswa District in order to obtain roles, perceptions and or understandings regarding the performance of learners and the strategies used in their application of mastery learning. Six hundred (600) teachers from 35 schools in the Matjhabeng Municipality will participate in the study.

1.8.2 Sampling

DePoy and Giftin (2013:166), defines sampling as the selection of research participants from the entire population, involving decisions regarding what people, events and behaviours to observe. A sample also refers to a group of people selected from the population, which, if possible, still remains representative of the population (Health, 2013: 815). A sample provides the researcher with a more manageable group for the purposes of conducting the research. The first step in sampling entails defining the population. The sample must always be representative of the population from which it is drawn as the researcher aims to draw conclusions thereof, which could evidently also apply to the population. It is necessary to draw random samples in order to achieve representativeness.

Sampling, therefore, is the process of selecting a small number of participants from a larger group (the sampling population) that will evidently form the basis for estimating or predicting the prevalence of an unknown section of information, situation or outcome regarding the larger group. A sample is, therefore, a subgroup of the population of interest (Kumar, 2012: 193). In this study, the researcher employed a probability sampling method known as simple random sampling.

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1.9 ETHICAL CONSIDERATIONS

The researcher will request permission from the Department of Basic Education to conduct the study. The researcher will also obtain permission from the school principals and the teachers themselves to ensure voluntary participation. In addition, the researcher will address the issue of non-disclosure. Furthermore, if the authorities request the results of the study, the researcher will adhere to it.

1.10 SCIENTIFIC OUTCOMES

New methodologies to master teaching and learning could emerge from the results of the study, which might create congruency in the relationship between the learner and the content. Mastery learning processes are key to teacher flexibility in the teaching and learning process. Furthermore, this new awareness and acquisition will enhance learner performance.

1.11 SOCIAL IMPACT

The impact of the study could be four-fold. It could improve working relationships, mastery of the content, learner-teacher relationships, and overall academic achievement for both the learner and the teacher.

1.12 INNOVATIONS/PATENTS

Achieving the mastery learning philosophy could enhance teachers' abilities to create new inventions and develop self-regulated learning and direction. It could also assist with understanding and achieving the mastery learning concepts.

1.13 CONCLUSION

This chapter focused on the aim and objectives of the study and presented the research questions and objectives as well as the research design and methodology. It also included an outline of the population and sampling strategies and briefly outlined

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the data analysis methods. This chapter, therefore, provided the researcher with the direction the research will follow.

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CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter focused on introducing the structure of the project and included topics such as the aim of the study, research questions and objectives as well as the methodology of the study. This chapter will include discussions concerning the topic in terms of expert opinions and their subsequent arguments regarding the topic. Therefore, this chapter will include discussions on the role of teachers pertaining to the implementation of the concept “mastery learning” in a classroom situation.

The main purpose of the study is to explore the mastery learning strategies and the performance of learners taught under non-mastery conditions with specific reference to the FET phase. The concept of mastery learning is complex with many authors and experts defining it in various different ways and also applying it differently. The next section includes a discussion of the definitions of mastery learning in order to provide clarity on mastery learning as a teaching and learning process.

2.2 DEFINING MASTERY LEARNING

Bloom raised questions concerning the variations of grades and standards in classroom activities, which included the following (Martinez & Martinez, 2001: 278):

- How can teachers assist those learners who obtain low grades in assessment?
- How can teachers advance genuine learning in the mastery-learning situation?
- How can teachers affect a systematic progress to promote genuine learning?

Subsequently, these questions adopted Bloom’s model of teaching and learning, known as “mastery learning”. A brief explanation of this model follows next.

Mastery learning refers to how learners study towards mastering concepts and skills before embarking on the next learning level. An example includes completing an assessment until mastery is achieved (Johnson, 2013:1). Mastery learning is a

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personalised system of instruction (PSI), which emphasises relevant reading materials, creating attitudinal objectives and studying questions, including multiple sets of questions (Technology Source, 2014:1). Mastery learning, therefore, refers to group-based, individualised, teaching and learning strategies earmarked for learners in order to achieve a consistent degree of understanding, concept acquisition and application in a given domain. In addition, Guskey (2016a:16) states that mastery learning is the organising of the necessary concepts and skills learners need to acquire into their learning process. The role of teachers is, therefore, to provide and monitor a formative assessment in this regard.

Kulik, Kulik and Drowns (1990:266) describe mastery learning as organised learning that occurs through a specific order of steps, which learners need to master. Against the background of the various definitions and explanations of mastery learning, this study will focus on the approaches that teachers need in order to successfully implement the mastery learning process in a classroom. Blog (2013:1) defines mastery-based learning as students' navigation of the learning content through exercises and assignments. This definition implies that learners must fully understand and demonstrate mastery of the content or unit material before progressing to the next learning process.

2.3 MASTERY LEARNING APPROACHES TO TEACHING AND LEARNING

According to Higgins and Spitulnik (2008:512), the development of mastery learning approaches to teaching and learning institutes the process of deep learning, subsequently enhancing a deeper understanding of the content studied. Guskey (2016:2) acknowledges this by stating that mastery learning enhances and engages all learners in a high-quality, developmentally appropriate investigative-based instruction method within a classroom environment. Therefore, mastery learning provides learners and teachers with the necessary means to design lessons, assessments and experiments aimed at achieving an overall success rate in the classroom. In addition, mastery learning could add to the high level of argument formulation, critical thinking skills and logical reasoning of learners.

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2.3.1 The Learning for Mastery and Personalised System of Instruction Approaches to Mastery Learning

In mastery learning the Learning for Mastery (LFM) and the Personalised System of Instruction (PSI) approaches are important. Kulik *et al*. (1990:265) state that both the LFM and PSI approach to mastery learning, divide materials into short and simplified units and learners and teachers follow the formative assessment on each unit in the study material. Furthermore, lessons in LFM courses are teacher-presented and learners go through those courses at a systematic uniform and teacher-guided pace. Lessons in PSI courses, on the other hand, are mainly through written content materials and learners embark on these lessons at their own pace until they master each unit successfully.

2.3.2 Approaching instruction in a mastery learning classroom

Against the background of the mastery learning approaches (LFM and PSI), mastery learning can be described as an instructional approach to teaching and learning based on the notion that all learners are able to learn a set of achievable goals through appropriate instruction and with adequate time specifications. Therefore, mastery learning could be seen as a system that enhances the success of all learners in a given group. Within this context, Kazu, Kazu and Ozdemir (2005:234) present various components of the variables relating to mastery learning based on the following features:

- A clue to every lesson being studied.
- Re-enforcement of every lesson being studied and completed.
- Learner's participation and inclusive responsibility in the learning process.
- Feedback must be provided regularly.
- Correction of the subject matter that needed mastery.

These variables will reflect in the quality of teaching activities and must be prepared by both the learner and the teacher at the onset of the teaching and learning process. Figure 2.1 illustrates the variables of mastery learning.

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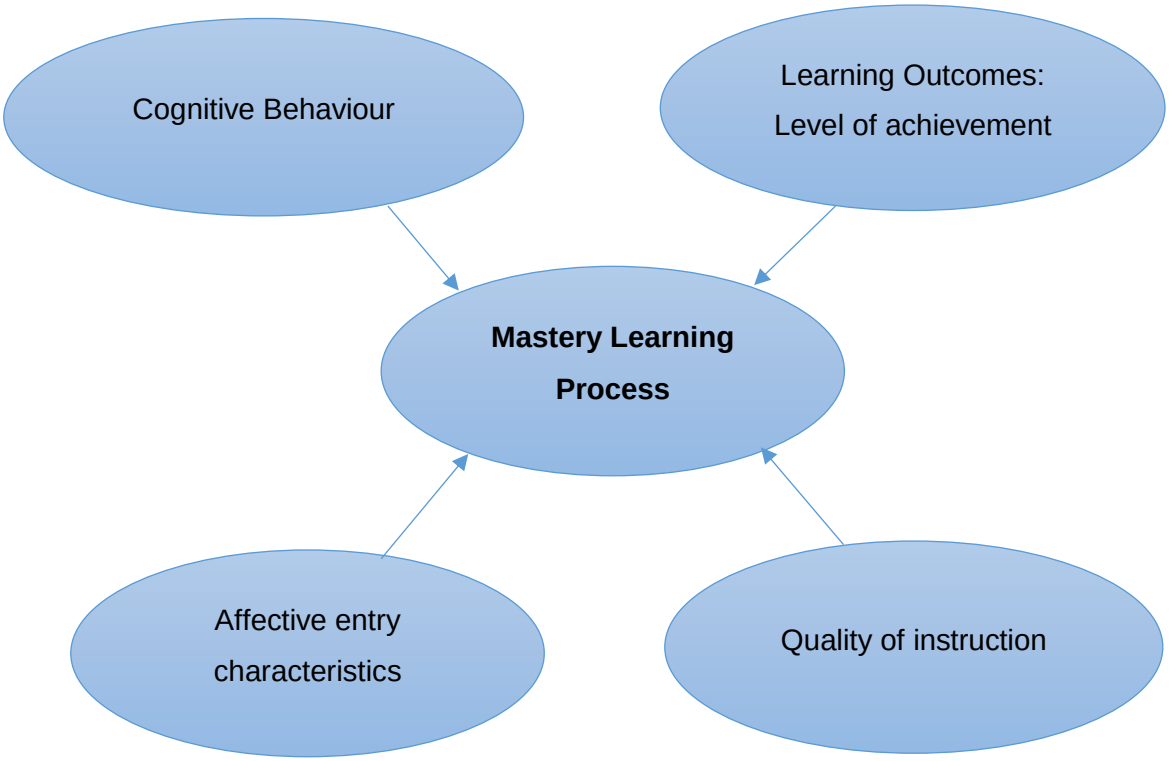

Figure 2.1: Mastery Learning Model
Kazu,Kazu & Ozdemir (2005:234)

Figure 2.1 presents the learner activities as a dependent variable influenced by a number of independent variables, which includes cognitive behaviour, learning outcomes, quality of instruction and affective entry characteristics. These variables are key to achieving the target learning activity. Teachers should, therefore, master the application of these variables and include it in their daily planning activities.

2.3.2.1 Cognitive behaviours

Cognitive behaviours refer to the present, yet essential, learning activities needed for mastering every learning unit and which consist of the following characteristic components:

- Emotional instruction characteristic component: This component not only masters the level of motivation to learn but the unit content as well; and
- The quality of the teaching process: This is the foundation drivers of the mastery learning process throughput.

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2.3.2.2 Learning outcomes

The learning outcomes characteristic component consists of the level and type of achievement attained in terms of the following:

- The expected rate and pace at which learners should be able to master the content and;
- The affective goals needed to achieve.

2.3.2.3 Quality of instruction

The quality of instruction characteristic component centres on the ability of teachers to provide all the necessary means needed for the solution of a problem and information. Variables in this component include:

- Re-enforcement
- Learner's participation
- Prompt feedback
- Correction

2.3.2.4 Affective entry characteristics

The affective entry characteristics component includes activities developed by the teacher at the initial stage of preparation in order to enable mastery learning. This component relates to the act of influencing learners to love, attach and contribute to the mastery of the content being learned (Kazu, Kazu & Ozdemir, 2005:234). The implications of these four independent variables on the dependent variable create a positive learning atmosphere when teachers introduce it in accordance with the teaching activities.

2.4 A MASTERY LEARNING ENVIRONMENT

In a mastery learning environment, the teacher guides, directs, and monitors a variety of division-based instructional approaches to the learning process (Dyer, 2009:2). This approach implies that teachers provide prompt and specific feedback using diagnostic assessment and formative assessment as well as instituting the continuous correcting

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of learners' mistakes made along their learning path. In addition, Martinez and Martinez (2001:281) add that the role of the teacher in a mastery learning environment is to guide and monitor learners' activities in terms of pretesting, repeatable mastery testing, and experimenting with learners' success rate in groups.

2.4.1 Corrective activities

Corrective activities entail that learners receive detailed feedback regarding the type, scope, and difficulty of the content, unit or sub-unit. If learners, for example, do not perform well in an assessment the corrective measure would be to allow them to redo the assessment in order to assist them to better master the content thereof (Martinez & Martinez, 2001:281).

2.4.2 Enrichment exercises

Enrichment exercises consist of study exercises such as adding assignments, discussions, and games to projects in order to enhance cognitive and deep learning in learners. After completion of enrichment exercises, learners receive, for example, a quiz similar to the content of the initial one. In order for learners to qualify to move onto the next unit, a prerequisite could be set that all learners need to achieve 60% average on all evaluated work in any one unit. However, Kulik *et al.* (1990:266) opine that in a mastery learning environment 90% of the learners must achieve at the level previously obtained by the top 10%. Thus, the majority of learners in a mastery classroom should perform at or above the 90th percentile on all criterion-referenced evaluation or assessments.

2.4.3 Enrichment: Broadening learning experience

It is imperative that mastery learning facilitators and teachers offer enrichment activities that are challenging, valuable, and rewarding for learners who already mastered the materials and not in need of corrective instruction (Guskey, 2016b:3). The following section includes a discussion of the proposed activities that could assist teachers in their planning and developing of enriching materials, which will evidently broaden learners' experiences.

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2.4.3.1 Challenging academic games and exercises

Academic games and exercises should be interesting and attractive to learners. These games and exercises should occur within a challenging situation in order to enhance and stimulate critical thinking in a mastery learning climate.

2.4.3.2 Various multimedia projects

Learners have different learning styles relevant to certain teaching and learning tools. Teachers should provide various media means or projects to enhance and accommodate different learners in achieving success within any mastery learning situation. For example, sometimes learners understand concepts and content better when participating in group discussions. Peer tutoring, for example, can advance the learning process as part of a differentiated approach for investigating projects or as part of a discussion in a mastery learning classroom.

2.4.3.3 Providing opportunities to pursue an interest

Learners should always feel part of a participative mastery learning classroom. Teachers implementing opportunities to pursue interest must ensure that the activities engage learners in a truly valuable experience. Opportunities must enrich learners in terms of understanding, pursuing an interest and broadening their learning experiences.

2.4.4 Supporting deeper understanding of mastery learning through inquiry-based approaches

An enquiry-based approach as mastery learning instruction becomes imperative to teachers in the 21st century since it supports deep learning whilst eroding surface learning. Mastery learning builds upon learners' existing ideas, identifies problems, designs projects for gathering evidence, and assists in the formulation of arguments needed for critical thinking skills (Higgins & Spitulnik, 2008:512). Therefore, learners acquire skills related to a deep learning approach and thus become critical thinkers and rational decision makers.

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2.4.5 Mastery learning instructional approach

Mastery learning is an instructional approach to teaching and learning based on the principle that all learners can succeed when given a reasonable set of objectives with an appropriate instruction and with adequate time allocated to learn (see Section 2.4). Kazu *et al*. (2005:235) provide useful direction on the manner for implementing mastery learning in a classroom, which is briefly explained below.

2.4.5.1 Mastery learning approach: curriculum development

The key focus in the mastery learning classroom is to set up techniques for teaching and individualised instruction within a group-oriented learning situation in order to facilitate step-by-step progress of promotion for genuine learning (See Section 2.1). Kazu *et al.* (2005:235) indicate that:

- The objectives representing the purpose of the course should be clear.
- Divide the curriculum into smaller, manageable units, each with its own objectives and means of evaluation.
- Learning materials and instructional strategies should be identifiable in terms of:
    - Teaching
    - Modelling
    - Practice
    - Formative evaluation
    - Re-teaching
    - Re-enforcement
    - Summative evaluations

Each unit studied must be preceded by a short diagnostic assessment or formative assessment and the results of each assessment should be used to supplement instruction or corrective activities (Martinez & Martinez, 2001:223). This approach would help the learner to overcome any problems encountered during the learning process.

It is clear that the mastery learning approach mostly focuses on the process of mastering the content and not on the content itself. As a process, mastery learning

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forces teachers to first find out what learners already know and thereafter assist them to learn things they will need to know for the purpose of demonstrating mastery.

Mastery-based learning has advantages and disadvantages as a learning model. In order to analyse the pros and cons of this learning philosophy, this study very briefly outlines the advantages and disadvantages of mastery-based learning.

2.4.5.2 Advantages and disadvantages of mastery-based learning

Almost all concepts, models and strategies have pros and cons. According to Kazu *et al.* (2008:235-236), the mastery-based learning situation consists of the following advantages and disadvantages:

- Advantages:
  - Learners develop prerequisite skills to progress to the next unit.
  - Mastery-based learning requires teachers to do a task analysis, thus being better equipped to present each unit.
  - Mastery-based learning enforces teachers to state the key outcomes before designating activities.
  - Mastery-based learning teachers can avoid the cycle of failure.
- Disadvantages:
  - Not all learners will advance progressively at the same pace.
  - Teachers must develop a variety of materials for remediation.
  - Teachers must develop various means of assessment means for each unit.
  - If only objective assessments are designed, mastery-based learning can lead to surface learning.

The next section focuses on the assessment of learners in the mastery-based learning classroom. A brief discussion on the deeper meaning and application of the assessment process follows.

2.5 ASSESSMENT IN A MASTERY-BASED LEARNING CLASSROOM

The researcher describes assessment as the act of estimating the degree, measure, or extent of something. The word *assessment* derives from the Latin verb "*ässidere",* which means to sit beside, watch closely and help along (Guskey, 2016b:3).

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Therefore, in order to assess, the assessor (or teacher) is bound to sit beside or be very close to what is being assessed. The term *evaluation* is contrasting to assessment and refers to ascribing value, stepping back and or passing judgement (Jacobs, Vakalisa & Gawe, 2012:275-276). These definitions provide clarity on the difference between assessment and evaluation, which is necessary for feedback and also in terms of understanding.

Jacobs *et al.* (2012:280) provide a cyclical operation on the assessment system. Figure 2.2 illustrates a presentation of this system and indicates the important connection that assessment has on the mastery-based learning process.

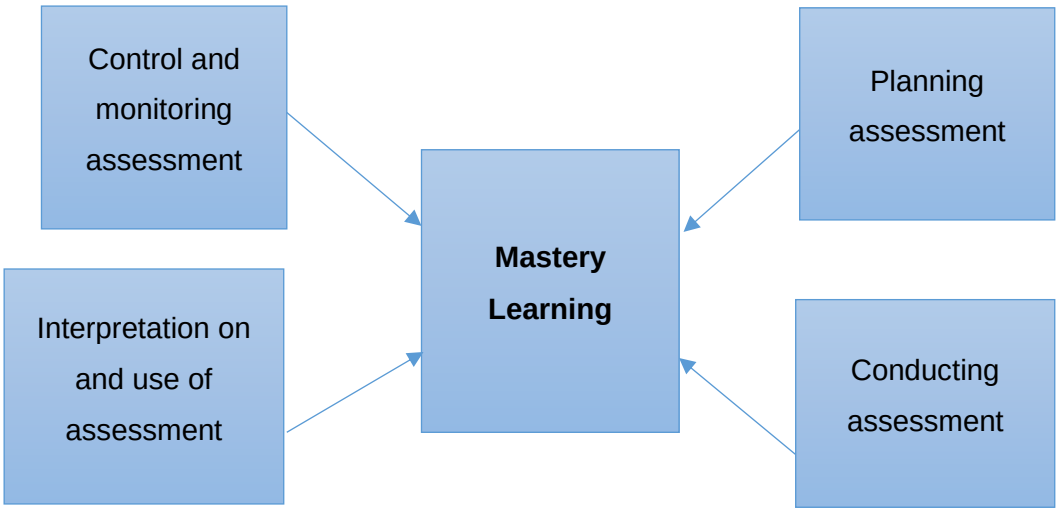

Figure 2.2: The assessment process
Source: Jacobs *et al*. (2012:121).

Figure 2.2 emphasises the necessity and active relationship that assessment has on mastery-based learning. Key activities within this relationship consist of planning assessment, conducting assessment, interpreting and use of assessment, and control and monitoring of assessment. The next section encompasses a summary of the four assessment processes as presented by Jacobs *et al*. (2012:280).

2.5.1 Planning of assessment in mastery-based learning

In the planning stage, the teacher should carefully reflect on the purpose and aim of the assessment task before determining the relevant assessment type, method and

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instrument needed to enhance learner achievement in mastery-based learning. The planning process clearly indicates what type of assessment mastery learning requires, and whether it will be a summative, formative, diagnostic or baseline or evaluative assessment. Furthermore, the planning process should indicate who the assessor will be (e.g. teacher, learners themselves, peers, group or parents) as well as the type of instrument to be employed (e.g. memorandum, checklist, rubric or observation sheet).

2.5.2 Conducting assessments in mastery-based learning

In a mastery-based learning assessment, teachers must develop various assessment tasks for learners to complete in class, as a test, as homework or as projects. The purpose of these tasks is to assess the learners' level of performance in each unit of study. This activity indicates that as the learner progress through the various assessment tasks, evidence of academic performance is collected by means of assessment instruments, approaches and types. These tasks provide the learner with opportunities to demonstrate his or her competence in the unit being earmarked for mastery.

2.5.3 Control and monitoring of assessment in mastery-based learning

The role of the assessor (or teacher) in the implementation of mastery-based learning is to control and monitor the assessment process. The teacher's role is to preserve and maintain high assessment standards, enforcing both academic and ethical adherence to the principles of assessment. The teacher must ascribe to the following assessment control measures (Martinez & Martinez, 2001:281-282):

- Fair assessment.
- Valid assessment.
- Reliable assessment.
- Meaningful assessment.
- Identify learners who have learnt and who have not.
- Ensure a balanced assessment.
- Design a formative assessment.
- Embark on timely assessment.
- Resort to efficient and manageable assessments.

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The above-mentioned assessment measures, therefore, compel teachers as the key role players in assessing learners, to efficiently and effectively master the implementation of all these measures for the benefit of effecting the mastery-based learning successfully.

2.5.4 Interpretation and use of assessment information

The last stage in the mastery-based learning assessment is the interpretation and use of assessment information or results gathered by teachers, learners themselves, and parents. The researcher proposes that these results can provide the following purposes (Jacobs *et al.,* 2012:281-284):

- Identification of successful and effective mastery-based learning strategies.
- Modification of the teaching approaches in order to enhance learning.
- Gauging of the learners' specific learning attributes.
- Giving feedback to learners with regard to their academic performance.
- Correcting misconceptions and mistakes.
- Group learners according to their capabilities.
- Recognising accomplishment.
- Reporting back to school management, learners, and parents.
- Getting a holistic view of the full picture in terms of learners' knowledge, skills and values pertaining to specific tasks, units or subjects.

The purpose of the above elements requires teachers to design mastery-based learning tasks that provide learners with various opportunities in which to demonstrate their competence. This practice should assist teachers in mastery-based learning to make informed decisions about the progress of learners. Guskey (2016a:2) asserts that in mastery-based learning, assessments are not a one-time, do-or-die experience but rather part of an ongoing effort to assist learners with their learning. According to Dyer (2009:2), teachers should assess learners with criterion-referenced tests rather than norm-referenced tests in a mastery-based learning classroom. The implications are thus that learners are given a second opportunity to determine the effectiveness of their corrective attempt. There should also be a frequent assessment of learners' progress to determine the effectiveness of the intervention strategies.

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This study not only focuses on the procedures relating to assessment in the mastery-based learning classroom but also on the curriculum in the mastery-based learning classroom.

2.6 THE CURRICULUM IN THE MASTERY-BASED LEARNING CLASSROOM

Keller and his colleagues (in Kulik *et al.,* 1990:266-267) developed instructional methods of mastery learning in which learning strategies were based on the following notions (which also include teaching philosophies that teachers should adhere to in their mastery-based learning preparations):

- Re-enforcement: Mainly used in operant conditioning theories. The purpose of developing the Personalised System of Instruction (PSI) and Learning for Mastery (LFM) approaches was for advancing learner performance in a mastery-based learning environment (see Section 2.3). In the LFM approach the aim is on fulfilling the following conditions (Soderstrom & Bjork, 2005:9):
    - Approaching instruction sensitively and systematically.
    - Helping learners when and where they experience learning difficulties.
    - Providing sufficient time for learners to achieve and master the learning activity.
    - Providing a clear criterion of what constitutes mastery.

According to Blog (2013:2), in mastery-based learning, all courses are divided into 20 units of study, which are equal in duration. On completion of each learning guide, learners need to demonstrate mastery of the main concepts by engaging in an evaluative activity. Five guidelines for learners to start using mastery learning techniques include (Blog, 2013:2):

- Teachers need to choose the topic or module that they expect to be mastered in the course material.
- Teachers must write down explicit learning objectives.
- Teachers must develop mastery-learning quizzes that ensure practice and practice problems.
- Assess whether the learners mastered the learning content and whether they are ready to progress to the next level of learning.

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- Ensure that the learners build a solid foundation before progressing to the next topic of study.

In addition, Harrell (2010:1-2) highlights the importance of aptitude during the implementation of mastery-based learning. Aptitude refers to the amount of time needed by the learner to attain mastery of a learning task, which is generally measured by standard aptitude tests. Many studies, such as, Zimmerman and Dibenedetto, 2008:214, Guskey, 2007:4 found that the majority of learners can achieve mastery in a specific learning unit if consideration is given to the following issues:

- The amount of time needed to spend on a subject differs.
- Between 1% and 5% of learners have a special talent to learn a subject.
- About 5% of learners have a special disability for learning a subject.
- Ninety per cent (90%) of learners' aptitude is merely an ideation of the rate of learning.
- Attitude towards a learning task is not constant or fixed and can be adjusted by environmental conditions or learning experiences at school or home.

In a mastery learning classroom, teachers should divide their curriculum into a series of skills or instructional units (Learning Board LLC, 2016:1). Therefore, after conducting a lesson, the teacher evaluates each learner in order to determine whether the learner understands and are able to conceptualise the content of the unit. Thereafter, those learners that already mastered the unit may progress to more enriching activities, while those who could not achieve the set goals receive additional opportunities to practice their skills (see Subsection 2.4.2). According to Weimer (2009:3-5), instructional leaders (teachers) should break down the mastery learning course materials into smaller, more manageable units. This will create formative assessment opportunities in each unit that learners can complete.

The structure of outcome goals in a mastery learning curriculum differs from learning mastery goals since it focuses mainly on competently achieving the assessment criteria compared to learning in itself. Teachers must consider that goals could differ in terms of learners' views on validation and suitability value (Brophy, 2005:168). Furthermore, Kulik *et al.* (1990:268) stated that in the mastery-based learning programme, each learner is entitled to receive the amount and kind of instruction

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individually needed. Instruction might vary according to their needs, resulting in a uniformity of high-level performance. Darnon, Butera and Harackiewicz (2007:67) emphasise that in mastery-based learning, course content could exhibit the following features:

- Deep processing.
- Thoughtful integration of materials.
- Sustained effort.
- Sustained involvement.
- Enhanced learning.
- Uncertain task and deep examination of the content.

Therefore, mastery goals enhance a deep learning approach and hinder a surface learning approach. The researcher thus assumes that mastery learning systematically increases learner achievement, retention of studied content, learner participation and involvement as well as learner affect.

A study on motivation and achievement conducted by Elliot and Dweck (1988:5) found that children displaying helplessness attributed their failures to low ability, displayed negative affect, and showed a noticeable decline in performance. However, those with a mastery-oriented response did not focus on failure or attributions but exhibited solution-oriented self-instructions, as well as sustained or increased positive affect, which all lead to improved and sustained performance.

The study, therefore, revealed that helpless learners and those performing within the mastery learning environment, pursue different goals in achieving academic excellence. Helpless learners seek to document their ability but fail to do so, while mastery-based learning learners attempt to improve their ability by seeking and receiving information on how to do so. Therefore, learners that pursue their learning goals are concerned with developing their ability over time and yield the question on how best one can acquire the needed skills to master the task. When learners complete their allocated tasks, courses, and subjects, it is a true representation of the completion rate and they are, therefore, ready for any career challenges (Mchoes & Flynn, 2014: 110)

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Against the background of the curriculum in mastery-based learning, this study focuses on the difference between mastery learning and traditional instruction learning. The purpose of emphasising the disposition of the differences provides clarity on the advantages of mastery-based learning to teachers, learners, and parents.

2.7 THE DIFFERENCE BETWEEN MASTERY LEARNING AND TRADITIONAL INSTRUCTION LEARNING

Motamedi (2008:5) conducted research in Tehran and found that mastery learning provides successful learning experiences for nearly 80% of the learners that participated in their study programme. Furthermore, deep and surface-oriented learners perpetually differ in both performance and attitude. Surface learners performed better than deep learners, as they progressed from unit to unit. It appeared surface learners were influenced by the rare success they obtained (Motamedi, 2008:6). Concerning learners' pace of learning, Kulik *et al.* (1990:268) state that learners in the mastery-based learning environment proceeded through a course at their own-paced progress as a group until they achieved mastery.

In addition, Weimer (2009:3) states that mastery-based learning enhances control over learning and interest in the subject content. Furthermore, mastery learning adds relevant learning tasks to the learner's level of understanding and avoids the temptation to impose standards that treat learners as if they were all similar. Therefore, contrary to the traditional way of instruction, mastery-based learning (Learning Board LLC, 2016:1) provides helpless and struggling learners with the opportunity to master critical elements of the content before introducing new ones. At the same time, it allows gifted learners to proceed to the next programme of study or unit. It also allows learners to move to the next level of study or engage in the extension of programmes in order to broaden their understanding of the subject. However, traditionally the emphasis was mainly on the following aspects (Dyer, 2009:33):

- The intelligence of a learner.
- Aptitude score of the learner.
- Learner encouragement.
- Teacher-learner relationship.

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However, the mastery-based learning classroom does not consider these aspects. The potential exists that low achievers increase in the mastery-based learning situation. According to Guskey, Benninga and Clark (1994:91), the results of the study on mastery learning conducted by Morrison, Ross, Kalman & Kemp (2012: 267) found that mastery learning learners achieve higher levels of achievement and internal attributions than learners taught through traditional means. This could imply that teachers in the mastery-based learning classroom freely consider the conditions under which learners' attributions can be altered when and where necessary.

2.7.1 Quality of learning in mastery-based learning compared to the quality of learning in traditional teaching

The quality of instruction refers to the extent to which teaching, explanation, and sequencing of content elements have to be assessed according to its effect on individual learners rather than on random groups of learners (Martinez & Martinez, 2001:279). Reflecting on the explanation of quality instruction this study provides expectations that learners in mastery learning would aim at as compared to those in the traditional way of teaching.

In traditional teaching learners follow set performance goals by targeting winning, looking smart and being assessed or in achieving good marks. Learners in mastery learning, however, seek goals that enhance improvement in the process of learning, irrespective of the status of the learner. These learners usually search for challenges and deep learning when faced with obstacles (Woolfolk, 2008:1). Therefore, it appears that traditional learners become satisfied with knowing as much as possible compared to learners in mastery-based learning who put more emphasis on the level and amount studied or learned than on the grade obtained.

2.7.2 Performance learning in mastery learning versus performance learning in traditional learning

Elliot and Dweck (1988:5) argued that learners in mastery-based learning pursue different goals in conducive achievement conditions and thus seek to increase their ability by investigating the means to do so. However, learners in the traditional teaching environment often display helplessness and associate their helplessness by

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lacking the ability or inefficiency to grasp the subject content. Therefore, it is clear that learners taught through traditional means focus their attention on their level of ability in order to reach a certain grade level.

The most notable difference between performance learning and traditional learning as proposed by Guskey *et al.* (1994:2) is that mastery learning relates to the learning and teaching process while traditional ways of teaching reject the majority of learners at various points in the educational system. This is evident when institutions of learning predict and select talent as opposed to developing such a talent. Therefore, in a mastery-based learning environment, attainment of academic success occurs only during successful completion of the course content material.

2.7.3 Mastery-based learning versus traditional learning: Perseverance

According to Guskey *et al.* (1994:6), the difference in perseverance between mastery-based learning and traditional learning lies mostly in the time learners are prepared to spend on completing a particular task. Anderson and Block (1975:4) however, assert that the extent of any school learning a provided or presented subject depends on the learner's perseverance or his/her determination to learn, including an aptitude for the subject, the quality of instruction and ability to comprehend instruction. Guskey (2016a:5) further added that implementation of mastery learning in the learning environment enhances a positive attitude towards learning and assists learners in achieving self-learning and self-confidence. Traditional teaching, however, takes away confidence since learners pass only a portion of the unit and then proceed to the next level. The process of mastery learning yields improvements in learners' confidence in the learning situation, class attendance, positive actions and class activities as well as a good attitude towards learning and various other affective domains.

2.7.4 Comparing mastery-based learning with traditional learning: Myths about mastery learning

In the mastery-based learning environment, teachers first define which learners are expected to learn by developing a set of course materials. Secondly, teachers design the appropriate summative assessments based on the set goals, determining the level of course mastery performance standards all learners are expected to attain in their

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examination (Anderson & Block, 1975:7). It is important to compare the features inherent in the traditional learning to those of mastery learning. In traditional learning, teaching and learning focused on the individual learner and not on groups of learners. The traditional teaching and learning features also ignored the personal and social element of an inclusive classroom (Treffinger, Davis & Ripple, 1976:9). Yu (2011:4) highlighted the key differences between the two teaching philosophies of the myths regarding mastery learning, which will be discussed below.

2.7.4.1 Mastery-based learning is difficult to implement

While mastery-based learning received widespread attention, the absence of technology to assist with the implementation thereof, delayed all efforts of promoting it. However, this changed with the dawn of technology, which made mastery-based learning a flexible reality.

2.7.4.2 Mastery-based learning is expensive

Mastery-based learning encouraged teachers, learners and parents to justify or attract increased funding, increased testing requirements, and invest a lot of energy and time. However, this does not imply that mastery learning is expensive. For example, if implemented through online adaptive technology, mastery-based learning can be cost-effective.

2.7.4.3 Mastery-based learning makes grading and reporting more difficult

It is suggested that mastery learning requires learners to be judged on their mastery of materials in totality as opposed to their performance in relation to others. Proper reporting requires attention to a whole set of goals. In traditional learning, learners usually received an “A” or “B” as a grading system that outlined their academic achievement relative to those of others (with an “A” representing the learner’s performance compared to the rest of the class). If mastery-based learning is implemented in teaching and learning, a situation arises where the learner will show mastery of the content through the use of adaptive technology.

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2.7.4.4 Mastery-based learning: too many learners will fail compared to learners in traditional learning

The belief also exists that in mastery-based learning too many learners will fail due to the standards being too high. However, mastery-based learning is consistent since no single learner is allowed to fail and all learners, irrespective of gender, race, religion, or social-economic status, will eventually perform well if given the proper conditions. Teachers should remember that in mastery-based learning the emphasis is on mastery or proficiency and not merely effort and seat time. Although mastery-based learning sets the same high standards for learners, the teaching methods allow for enrichment making it possible for learners to meet those set standards.

2.7.4.5 In mastery-based learning standards are too low and advanced learners are not challenged

In mastery-based learning, advanced and experienced learners can proceed through the material at their own pace and be engaged with the learning material at all times by completing other challenging tasks. Therefore, the more condensed the content material within the mastery-based learning system, the greater the amount of content material the learner can master if he/she progresses at a faster pace than the others in the cohort. Therefore, the standards for these learners allows them to reach their maximum potential.

2.8 MASTERY LEARNING PERFORMANCE AND ENRICHMENT

In a mastery-learning environment, learners have the time and support they need to complete the course in a timely and paced fashion (Mihafa.com, 2012:1). Higgins and Spitulnik (2008:512) acknowledge this by stating that mastery-based learning provides learners with the necessary means to be able to identify problems, which will assist them to acquire critical thinking and logical skills, for example.

Kazu *et al.* (2005:233-235) found that mastery-based learning is a model that effectively enhances the academic performance of learners as set out below:

- Learners attain prerequisite skills to progress to the next learning unit.
- Teachers prepare task analysis and are thus better equipped to teach each unit.

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- Teachers state objectives before designating activities.
- The cycle of failure is broken, especially for the disadvantaged learners.

According to Yu (2011:3), mastery-based learning is flexible, as it breaks up course materials into smaller, more manageable units of learning objectives. The mastery-based learning system subsequently develops into a self-paced course of study that fits well in even the most rigid work schedules. Furthermore, mastery-based learning allows for an individual learning pace where the learner receives adequate time and a conducive learning situation (Learning Board LLC, 2016:2).

Guskey *et al.* (1994:491) found that mastery-based learning results in higher performance, achievement and internal attributions of the learner. In addition, Dyer (2009:2) asserts that in mastery-based learning, teaching and learning are directed at a variety of group-based instructional techniques, which provides frequent and specific feedback through the use of diagnostic and formative assessments as well as regular correction of learners' mistakes. The implementation of this approach increases the chances of learners performing well. Soderstrom and Bjork (2005:12) also found that 80% of learners may obtain the same high level of performance compared to only 20% of learners taught in a more traditional learning system. Therefore, mastery-based learning assists learners to understand and master critical concepts, resulting in learners performing very well. Furthermore, Guskey (2016a:2) states that mastery-based learning engages all learners in high-quality, developmentally relevant, and research-based enquiry in a general education classroom. Instruction is thus multifaceted, adaptable and differentiated in terms of variables such as knowledge, skills, dispositions and background, and characteristics.

These variables should provide teachers with the ability to immediately identify learners who are at risk of failing and who are likely to require close monitoring and assistance during the instructional process. Once these variables are under control and or mastered by the teacher, learners will be able to reach their highest level of performance. Harrel (2010:1), however, cautions that performance goals by their nature are rather low. For example, if a learner does not reach his/her goal, he/she becomes discouraged and demotivated. It is, therefore, imperative that in mastery-based learning, set goals are more productive and focused on achieving the required outcomes compared to merely working towards performance goals (Brophy,

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2005:165). In addition, Woolfolk (2008:1-2) states that “people who set performance goals are often focused on winning, looking good or smart, and being evaluated well and attaining good grades while in mastery-based learning goals, learners seek to improve and learn, no matter how awkward the situation might look to be.” Learners who focus on mastery goals usually seek out challenges and persist in the face of difficulties, which results in learners achieving high levels of performance.

2.9 CONCLUSION

This chapter included a discussion on the role of teachers in the implementation of mastery-based learning and provided brief definitions of the concept based on expert opinions found in the literature on the topic of the study. The chapter also presented mastery-based learning approaches, strategies, strengths and weaknesses. The two core mastery-based learning approaches and strategies discussed included the Learning for Mastery (LFM) and the Personalised System of Instruction (PSI) approaches.

The mastery-based learning model was introduced together with the mastery-based learning environment, assessment design and differences between mastery-based learning and the traditional method of instruction. The chapter concluded with a discussion on the myths regarding mastery-based learning and the counter-arguments thereof. In Chapter 3 the research design and methodology will be discussed. It will also highlight the data collection tools, population, sampling, and data analysis methods.

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CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The preceding chapter reviewed literature relevant to this study. The aim of this chapter is to provide a structured framework for the overall research design together with the methods used to attain the objectives of the study. The chapter will also describe the methodology used, including the data collection methods and instrumentation, population identification, sampling procedures, and data analysis.

3.2 THE DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE RESEARCH

In any given research project, it is imperative to start by identifying the key research problems and research questions, followed by seeking the most appropriate research methods to assist with answering the research questions such as experimental, correlational, ethnographic, and grounded theory, for example. Researchers, therefore, explore the methods of data collection, as well as the capturing, storing, and analysis thereof, which also include tests, questionnaires, interviews, focus groups, observations, secondary, or existing data. Often researchers use both quantitative and qualitative approaches, known as mixed methods research. Therefore, mixed methods research involves the mixing of quantitative and qualitative research methods, approaches or other paradigm features common in research philosophies. The following section highlights the epistemological and ontological aspects related to these approaches, as derived from Johnson and Christensen (2008) and Cohen, Manion, and Morrison (2002).

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3.2.1 The difference between the epistemological and ontological research paradigm

Epistemology and ontology are two different ways of viewing a research philosophy. Epistemology refers to the theory of knowledge and ontology to the nature of reality.

Table 3.1: Mixed methods research: epistemology and ontology

Dimensions of comparison: Philosophical basis	Quantitative research	Mixed Methods Research	Qualitative research
Scientific method	Confirmatory or top-down: Researcher tests hypotheses and theory with data	Confirmatory and exploratory	Exploratory or bottom-up: Researcher generates new hypotheses and grounded theory from data collected during fieldwork
View of human behaviour	Behaviour is regular and predictable	Behaviour is somewhat predictable	Behaviour is fluid, dynamic, situational, social contextual and personal
Role of social science	Discovering universal laws of society and social contact with it	Behaviour studied in more than one context	Discovering how different people interpret the world in which they live
Focus	Narrow, angle lens testing specific hypotheses	Multi-lens focus	Wide-angled and deep-angled lens examining breadth and depth of phenomenon
Interest	General laws	Connect the local and general	Local, particular groups and people

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Dimensions of comparison: Philosophical basis	Quantitative research	Mixed Methods Research	Qualitative research
Form of data collected	Collect quantitative data	Multiple forms	Collect qualitative data
Nature of data	Variables	Mixture of variables, words and images	Words, images, categories
Results	Generalisable findings providing a representation of objective outsider viewpoint	Provision of insider and outsider viewpoints	Particularistic findings providing a representation of insider viewpoints
Form of final report	Statistical report – correlations, comparisons of means and reporting of statistical significance of findings	Mixture of numbers and narratives	Narrative report with contextual description and direct quotations from research participants

Source: Johnson and Christensen (2008), and Cohen *et al.* (2002)

Table 3.1 illustrates the comparison between quantitative, qualitative and mixed methods research.

The purpose of using both approaches in this study is to employ the benefits of synergy for coordinated action and thus measuring the strengths of both methods in accessing a deeper understanding of the role of teachers in mastery learning, especially in the FET phase of education. The argument is thus that the researcher interpreted the above comparison between the two research approaches as one being objective and the other subjective, while the neutralising method (mixed methods research) seems the more appropriate and realistic approach to the current research study. Table 3.2 illustrates it as follows:

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Table 3.2: The subjective versus the objective approaches to social science

Subjective approach to social science	Scope of difference	Objective approach to social science
Nominalism	← Ontology →	Realism
Anti-positivism	← Epistemology →	Positivism
Voluntarism	← Human nature →	Determinism
Idiographic	← Methodology →	Nomothetic

Source: Cohen and Manion (1995)

The importance of both the quantitative and qualitative approaches to educational research is put into perspective for a classroom situation as it relates to the role of teachers in a mastery learning situation. For example, the quantitative approach is governed by abstraction of reality through mathematical models and quantitative representation of reality for purposes of comparison analysis, while qualitative research is governed by the representation of reality for purposes of comparison, analysis of language and meaning (Cohen & Manion, 1995:10). The researcher thus agrees that the quantitative approach is objective and the qualitative approach subjective.

3.3 QUANTITATIVE RESEARCH

Quantitative research quantifies or expresses the research problem as a quantity by generating numerical data or data that can be transformed into usable statistics (Johnson & Christensen, 2008:34). Furthermore, quantitative research quantifies variables such as attitudes, opinions, behaviours, perceptions and other defined variables and generalise results from a larger part of a sample using data collection tools such as a questionnaire (Heck as cited in Conrad & Serlin, 2006:395). Quantitative data collection methods are more structured compared to qualitative data collection methods. Therefore, quantitative data methods include different kinds of surveys such as online surveys, paper surveys, mobile surveys, website interceptors,

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online polls and systematic observations. Conducting an internet search containing sub-categories includes (Zikmund, 2000:3):

- Categorical research: presents types of menus to select various websites.
- String search: enables access to documents, websites, and passwords.
- Intranet: These are company or organisational private data networks that employ internal standards and procedures and thus providing its employees access to data such as graphical data, statistics, video and voice recordings.

3.3.1 Questionnaire structure

Greeff (2005::171) defines a questionnaire as a "set of questions on a form which is completed by the respondents in respect of a research project". Questionnaires may be structured, semi-structured and unstructured with an option to respond either with "yes" or "no" (Greeff, 2005:172). This study followed various forms of the Likert scale representing options that included strongly disagree, disagree, agree and strongly agree.

3.3.1.1 Questionnaire administration

The participants in this research study, namely the FET phase teachers, received a structured 70-point item questionnaire. The researcher distributed the questionnaires in person in an attempt to supervise the action but also made use of the services of four fieldworkers who directly visited the sampled schools. An initial discussion took place between the selected fieldworkers and the researcher in order to familiarise them with the questionnaire. All fieldworkers matriculated in 2015, unemployed, not attending school anymore, and familiar with the areas under study. The purpose of using fieldworkers was to close the gap in terms of time needed to complete this project. The researcher collected the completed questionnaires within a period of seven days. This allowed the participants (teachers) adequate time to reflect on the questionnaire statements and gave the researcher ample time to complete the data collecting exercise. The researcher structured the questionnaire into two major subsections in order to make it easier for respondents to see the purpose of the items set out in each subsection.

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3.4 QUALITATIVE RESEARCH

Qualitative research is exploratory (Cohen, Manion & Morrison, 2002:7) and ontologically nominalist in nature. Qualitative research provides an understanding of the underlying reasons, opinions, perceptions and motivations behind certain actions. Therefore, qualitative research is subjective since it tries to uncover trends in thoughts and opinions. According to Mertens (1997:159), qualitative research investigates phenomena in their natural settings or outsets. It also attempts to explain the meaning behind the phenomena or predicts it in terms of meaning that people ascribe to it. Qualitative research centres on themes of complexity, context, exploration, discovery, and inductive reasoning or logic.

Because of the nature of the qualitative research method, the data collection techniques include focus groups, individualised interviews, and participation or observations as well as a documentary approach in order to collect secondary data (Okeke as cited in Okeke & Van Wyk, 2016:212-213). Qualitative research, therefore, includes a sample size (typically a small number of respondents representative of the larger population) where individualised numbers range between five and 25 and focus group interviews range between six and 12 members (Dakwa as cited in Okeke & Van Wyk, 2016:12).

3.4.1 Types of qualitative interviews

According to Dakwa (as cited in Okeke & Van Wyk, 2016:298), there are 10 types of qualitative interviews (each with various benefits):

3.4.1.1 Qualitative interview

As part of ethnographic research, qualitative interviewing refers to a systematic study of a particular ethnic group with regards to their unique culture. The interviewer needs to understand and be sensitive to the variables related to those cultures.

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3.4.1.2 Informal conversational interviews

In an informal conversational interview, the interviewer conducts an interview orally in an attempt to collect the data. There are no predetermined questions in this form of interview and during the interview the interviewer remains as open and adaptive as possible towards the interviewees.

3.4.1.3 Standardised open-ended interview

Herein the interviewer asks the same types of questions to all interviewees in order to facilitate faster completion and standardisation of the interview process. This approach makes it more manageable to collect, capture, store and identify relevant and usable data for analysis.

3.4.1.4 General interview guide approach

The general interview guide approach covers the same general areas of data from each interviewee. This would yield more focus compared to both informal conversational interviews and standardised open-ended interviews. This method also allows the same measurement of freedom and adaptability in obtaining information from the respondent interviewees.

3.4.1.5 Closed fixed-response interview

In a closed fixed-response interview, all the participants answer the same questions and select their answers from the same set of given alternatives. This type of interview is suitable for researchers not experienced in conducting interviews.

3.4.1.6 Cultural interview

A cultural interview refers to the situation where questions are more complex and it covers aspects relating to company or institutional interviews. This type of interview is more appropriate for job interviews and thus not employed in this study.

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3.4.1.7 Personal/structured interviews

Personal or structured interviewing refers to a face-to-face, two-way discussion between the interviewer and the interviewee, and is conducted in a planned or structured manner (Allen, 2017:801). These interviews require great effort in preparation, rapport building and sensitive probing. Respondents answer questions freely, completely and pertinently. The researcher captures, records and stores responses, transcribing it at the end of the interview process. The structured interview format is a closed human encounter compared to the questionnaires used in quantitative research where questions are from an unknown researcher. This study employed an interview schedule to collect the qualitative data.801

3.4.1.8 Unstructured interviews

An unstructured interview does not have an established format, although the interviewer may develop sets of questions in advance. The unstructured interview process can provide very rich and informative responses, if conducted by an experienced research interviewer.

3.4.1.9 Focus group interviews

Focus group interviews are another form of unstructured interviews and involve the guidance of a moderator leading a discussion between small groups (six to 12 respondents) on a specific topic. The purpose of a focus group is to triangulate data from different sources. The triangulation process emerges from the process involving group communication and group discussions.

3.4.1.10 In-depth interviews

An in-depth interview is also known as an “unstructured interview.” Researchers utilise this form of interviewing to elicit information in order to achieve a holistic view of the participants’ stance on various issues and situations. The ideal conditions to conduct in-depth interviews include the following:

- Exploring interesting areas to research further.
- Engaging in a form of conversation with an individual, although conducted by a trained interviewer.

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- When an agency or researcher does not know much about a population and wants to obtain primary ideas from the participants.
- Can be used together with focus groups or replace focus group interviews.
- Can be used to probe deeper into participants' feelings and attitudes.

It is clear that in qualitative research, the key instrument remains the researcher. The researcher observes, takes notes, and converse with people through acquired and learned skills. Dakwa (as cited in Okeke & Van Wyk, 2016:302), highlights that researchers need to acquire interview skills such as:

- Technical competence.
- Interactive competence.
- Attentive and steering competence.
- Competence in communication theories.
- Knowing how to deal with previous knowledge and personal bias.
- Understanding people's perceptions about aspects of the research topic.
- Understand culturally sensitive issues.

These variables link with the definition of Creswell (2012:183) regarding the influence of interaction competence, which refers to paying attention to your interview parameter, and guiding and directing the interview into the desired end result. Interactive competency exists when the influence of one independent variable depends on or co-varies with the other independent variable in an experiment (Creswell, 2012:623).

3.5 CONDUCTING INTERVIEWS

In addition to the researcher's interactive and competent interview role, Creswell (2012:220-221) also adds the following key areas that a researcher should follow when conducting interviews:

- The researcher can use one of the participants as a point of departure: The researcher can use one of the purposeful sample techniques suitable for this purpose.

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- Determine the type of interview to use and choose the one that will be suitable to study the participants' views and answers.
- Determine the interview, and record the questions and responses. This will provide the researcher with the correct record of the discussion.
- Take brief notes during the interview: This is merely precautionary in case the recording mechanism malfunctions or if an interruption occurs during the interview process.
- Conduct the interview in a quiet, suitable venue: Ensure that the venue is free from noise, distractions, and interferences.
- Obtain consent from the interviewees to participate in the study.
- Be flexible in your plan of action: During the interview, follow the planned set of questions but be flexible to notice any change in the conversation.
- Use probes to obtain additional information: Probes refer to sub-questions used to elicit more information.
- Be courteous and professional when the interview is over: Complete the interview by thanking the participant, assuring him or her of the confidentiality of their responses, and ask if he or she would need a summary of the results of the study.

The researcher should also show competence in aspects such as (Creswell, 2009:165):

- Ensure the interviewee feels comfortable to talk.
- Clarify the roles of the interviewer and the interviewee such as asking questions but also listening while the interviewee talks.
- Become an active listener that shows interest and encourage discussion.
- Progress to the next set of questions at the right time in order to find the right way and form in asking it and to keep the discussion going.
- The interviewer should be self-reflective at all times, in control of his/her reactions, and act at the right level of empathy.

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3.6 QUESTIONNAIRE DEVELOPMENT

3.6.1 Sub-category A: General information

The first sub-category of this study's questionnaire obtained general information from the participants regarding their gender, ethnic groups, age, and their highest qualification completed. The general information encompasses the participants' biographical details and can include other categories as well depending on whether it is of relevance to the topic under study.

3.6.2 Sub-category B: The role of teachers in the promotion of mastery learning

This sub-category pertains to the teachers' knowledge, interpretation, conceptions, perceptions and implementation of mastery learning based on strategies and concepts of the phenomenon being studied. Therefore, this sub-category, with the use of a four-point Likert scale, will significantly reflect on the impact that mastery learning has on the learner, the teaching methods, strategies and assessment concepts. The four-point Likert scale is direct and easy to follow and less time-consuming. It is, therefore, a suitable measurement scale for participants in the research project to complete. Participants had to indicate the degree to which they either strongly disagree, disagree, agree or strongly agree with the questionnaire statement on the implementation of mastery learning in their schools.

3.6.3 Questionnaire administration

Before administering the questionnaires, a pilot study was conducted to determine the suitability and stableness of the questionnaire in terms of language usage, structure, understanding, and overall user-friendly status. The researcher sent the questionnaires to the statistician in the Department of Statistics at the Central University of Technology to check the structure and to advise on the data analysis methods. The purpose was, therefore, to validate and achieve reliability as well as triangulation within the study. The researcher circulated the questionnaires among the staff members of the Central University of Technology in the School of Teacher Education to ascertain the credibility of the research instruments.

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3.6.3.1 Pilot study

A pilot study is a process of ensuring that both the validity and reliability of the data collection tools are maintained. It is a small sample study done prior to full-scale empirical research in order to determine whether the methodology, sampling, instruments, and analysis are adequate and appropriate for the research project (Biddix, 2018:87). Therefore, a pilot study tests the procedures and techniques to determine whether it is satisfactory and up to standard. In the pilot study pertaining to the current research project, a sample of eight FET phase teachers (n = 8) received the questionnaires to be used in the larger empirical study. One teacher in each sampled school in the city of Welkom participated in the study. The sampled figure represented approximately 1.5% of the targeted participants of 600 teachers (see Section 1.8.1), which is a sample from the total population of 1225 teachers in the area.

3.6.3.2 Sampling procedure

The research sample refers to the representativeness of a wider population (in this study, 1225 teachers). Furthermore, the sample must have the main characteristics of the accessible population, as asserted by De Vaus (2002:148). In this study, the targeted group included teachers in the FET phase in the Matjhabeng region of the Lejweleputswa Educational District in the Free State province.

3.6.3.3 Simple random sampling technique

The researcher utilised the simple random sampling technique to select the sample of participants. This form of sampling not only saved time and effort but also provided consistent and unbiased estimates of the targeted population status (Johnson & Christensen, 2008:225). In simple random sampling, all participants deserve an equal opportunity to participate in the study. This approach reduces the possibility of being bias. The concept of equal probability selection method (EPSEM) applies to this and assists in controlling the potential biases, which might threaten the validity and reliability of the results (Gill & Johnson, 2002:55; Motseke, 2000:105).

In this study, the selection of all accessible FET schools in the Matjhabeng Local Municipal District of the Lejweleputswa District was according to the Free State

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Department of Basic Education's list of FET schools. All these schools were placed in alphabetical order. The only requirement for selection was that the applicable schools should be in the FET phase. Every second teacher was selected in each school from each of the 35 participating schools until 600 was attained.

There are 120 FET schools in the area under study and the FET teachers in the urban, semi-urban and farm schools all received the questionnaires. In order to obtain qualitative data, interviews were conducted with randomly selected principals until reaching a theoretical saturation point.

The next subsection includes a discussion of the procedures designed to analyse and interpret the data.

3.7 DATA ANALYSIS AND INTERPRETATION

This section encompasses a discussion of the steps and procedural attempts that followed the data analysis process. Data analysis in quantitative studies can contain descriptive, correlational and inferential statistics. According to Mertens (1997330), descriptive statistics describe the characteristics of the participating section of the population and correlational statistics describe the strength and direction of relationships, while inferential statistics allow the researcher to make group comparisons. In addition, Leedy and Ormrod (2014:290) state that statistics are estimates of the population parameters, referring to the concept of a constant characteristic of the sample of the larger population.

This study used descriptive data analysis (quantitative) and methods such as themes, patterns and behaviours (qualitative) in order to ascribe to the principles of mixed methods research as well as enhancing the concepts of validity, reliability and triangulation. According to Leedy and Ormrod (2014:289), computers made the process of collecting, storing and interpreting quantitative data easy. In this study, the researcher administered research tools, scored the collected data and facilitated the correct analysis by following an accurate and consistent process.

The Statistical Package for the Social Sciences (SPSS) programme package assisted with the statistical processing of the quantitative data in this study. The functionality, speed, accuracy, and accessibility of computers makes it ideal for statistical data

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analysis (Wiersma, 2000:337). The statistician at the Central University of Technology assisted with the reduction, interpretation, and meaning of the data.

The following information provided by the Statistical Computer Centre at the Central University of Technology forms part of the study:

- Frequency distribution tables highlighting the frequency distribution responses of the participating teachers in the research.
- Cross-tabulation is one of a number of ways which indicate whether two or more variables link with each other (De Vaus, 2002:237). It can provide a significant amount of details about a relationship between the dependent and independent variables. However, this approach could not be used in this study.

3.7.1 Analysis and interpretation of qualitative data

After collecting the interview data, the data analysis involved the use of coding or scoring (Cohen *et al.,* 2002:282). Using several stages in the analysis and keeping a list of codes and categories (Savin-Baden & Major, 2013:48) highlighted the following:

- Generating natural units of meaning.
- Classifying, categorising and ordering these units of meaning.
- Structuring narratives to describe the interview contents.
- Interpreting the interview data.
- Counting frequencies of occurrence in terms of ideas, themes, pieces of data, and words.
- Noting patterns and themes (Gestalts).
- Seeing plausibility – making sense of the data.
- Clustering – group items into categories.
- Splitting variables to elaborate, differentiate, and unpack ideas.
- Factoring – bringing a large number of variables under a smaller number of unobserved hypothetical variables.
- Identifying and observing relations between variables.
- Building a logical chain of evidence – recording causality and making inferences, including conceptual and theoretical coherence from metaphors as well as constructing theories to explain the phenomena.

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In this study, the procedures for analysing and interpreting qualitative data conformed to the three phases of data analysis (Enders, 2012: 217). Therefore, data derived from the qualitative method were collected, summarised, coded, and grouped into themes using a matrix table. The final stage involved interpreting and providing meaning based on the opinions of the participants.

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3.8 CONCLUSION

This chapter included a discussion on the literature, which formed the basis for the methods used in this study. Mixed methods research is an effective method of triangulating the study. Despite the qualitative approach being most suitable, meaningful, and appropriate for this study (Johnson & Christensen, 2008:201), the mixed methods research design was used at various levels in this chapter including data collection, data analysis, and data presentation. The overall aim remained to enhance validity, reliability, and triangulation of the study. The next chapter entails a discussion on the presentation of the data, including a discussion, analysis, and interpretation thereof.

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CHAPTER 4

DATA PRESENTATION, DISCUSSION AND ANALYSIS

4.1 INTRODUCTION

The foregoing chapter focused on the various methods used in collecting data and the sampling of the population from which data were derived as well as the presentation of the data analysis methods. Chapter 4 encompasses a discussion on data presentation, discussion and analysis, and presenting the results of the quantitative and qualitative research utilised to investigate the role of teachers in the promotion of mastery learning.

4.2 QUANTITATIVE DATA RESULTS

This section includes a discussion of the analyses, interpretation, and presentation of the quantitative data obtained through the questionnaires. The presentation of these descriptive quantitative data is illustrated in table format.

Responses by teachers

4.2.1 General (biographical) information: Section A

Section A illustrates the gender of the participants and is presented in Table 4.1. A discussion follows thereafter.

A1. What is your gender?

Table 4.1: Frequency distribution in terms of gender (N = 94)

Gender	N	%
Male	48	51.1%
Female	46	48.9%
Total	94	100%

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Table 4.1 indicates that 51.1% of the respondents were male, while 48.9% were female.

Table 4.2: Frequency distribution in terms of ethnic group (N = 94)

Ethnic group	N	%
African/Black	90	95.7%
White	3	3.2%
Coloured	1	1.1%
Indian/Asian	0	0%
Total	94	100%

Table 4.2 illustrates the ethnic grouping of the respondents with 97.7% of the respondents being African/Black, 3.2% White and 1.1% Coloured. Table 4.3 illustrates a presentation of the responses to the question: “What is your age?”

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Table 4.3: Frequency distribution in terms of age (N = 94)

Age group	N	%
17-21	17	18.1%
22-26	13	13.8%
27-31	11	11.7%
32-36	7	7.4%
37-41	6	6.4%
42-46	13	13.8%
47-51	8	8.5%
52-56	5	5.3%
57-61	6	6.4%
62-66	3	3.2%
67+	5	5.3%
Total	94	100%

Table 4.3 illustrates the age cohorts of teachers with 31 years being the most representative at 43.6% of the teaching fraternity in the area of study. The age cohorts of 57 to 67+ constitute 14.9% of the sample.

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Table 4.4: Highest educational qualification completed (N = 94)

	N	%
Primary Teachers certificate	8	8.5%
National Teachers diploma	15	16.0%
Degree – e.g. B.Ed	37	39.4%
Postgraduate certificate/Postgraduate diploma	14	14.9%
B.Ed Hons	11	11.7%
M.Ed	9	9.6%
PhD	0	0%
Total	94	100%

In Table 4.4 it is clear that the majority of teachers (39.4%) holds a B.Ed degree, while those with an M.Ed degree represent 9.6% of the sample population. There were no participants with PhD qualifications.

4.2.2 Descriptive data analysis

The results in Section B pertains to the responses of the teachers regarding the implementation of mastery learning at schools. The Likert scale as a measurement tool gauged the extent of the respondents' use of mastery learning.

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Table 4.5: Extent of promotion of mastery learning by teachers (N = 94)

B1. In my school, all teachers understand the meaning of mastery learning.											
Strongly Disagree		Disagree		Neither Disagree nor Agree		Agree		Strongly Agree		Total	
N	%	N	%	N	%	N	%	N	%	N	%
10	10.5%	21	22.1%	27	28.4%	28	29.5%	9	9.5%	95	100%
B4. Mastery-based learning must be introduced in my school.											
2	2.1%	10	10.6%	18	19.1%	40	42.6%	24	25.5%	94	100%
B11. My school uses mastery-based learning approaches to enhance deep learning.											
5	5.3%	25	26.6%	30	31.9%	29	30.9%	5	5.3%	94	100%
B13. In my school, all teachers understand the approach to teaching and learning called "Learning for Mastery (LFM).											
4	4.2%	23	24.2%	30	31.6%	28	29.5%	10	10.5%	95	100%
B32. In my school, all teachers understand the meaning of the surface learning approach to teaching and learning.											
4	4.3%	21	22.6%	36	38.7%	28	30.1%	4	4.3%	93	100%
B14. In my school, all teachers understand the approach to teaching and learning called "Personalised System of Instruction (PSI).											
7	8.0%	24	27.6%	18	20.7%	14	16.1%	24	27.6%	87	100%
B55. In my school, teachers make sure that learners have built a solid foundation before progressing to the next level.											
13	14.3%	13	14.3%	22	24.2%	25	27.5%	18	19.8%	91	100%

The aim of the questions in Table 4.5 was to determine the extent of promotion of mastery learning by teachers in schools. Also, the purpose was on identifying teacher perceptions, implementation and mastery of the learning process. The researcher summarised the results per question statement as follows:

B1. In my school, all teachers understand the meaning of mastery learning.

This statement determined the degree to which all teachers at the schools understand the meaning of the concept of "mastery learning". The majority of the respondents (39%) either agree or strongly agree that all teachers understand the meaning, while

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only 32.6% strongly disagree or disagree with the statement. A sizable number (28.4%) neither agree nor disagree with the statement.

B4. My school must introduce mastery-based learning.

This statement explored the extent to which schools introduced mastery learning. The majority of the respondents (68.1%) strongly agree and agree that mastery-based learning must be introduced in schools, while 12.7% strongly disagree and disagree with the statement. However, 19.1% remained neutral.

B11. My school uses a mastery-based learning approach to enhance deep learning.

This statement investigates whether schools use mastery-based learning approaches to enhance deep learning. The majority of the respondents (36.2%) strongly agree and agree to this statement while 31.9% of them strongly disagree and disagree. A total of 31.9% of them neither agree nor disagree with the statement.

B13. In my school, all teachers understand the approach to teaching and learning called "Learning for Mastery (LFM)."

This statement aimed to determine whether all teachers understand the approach to teaching and learning called "Learning for Mastery (LFM)." The majority of the respondents (40%) strongly agree and agree with the statement and 38.7% of them neither agree nor disagree. However, 26.9% strongly disagree and disagree with the statement.

B32. In my school, all teachers understand the meaning of a surface learning approach to teaching and learning.

This statement probed the extent to which all teachers understand the meaning of a surface learning approach to teaching and learning. The majority of the respondents (38.7%) neither agree nor disagree with the statement and 34.4% of them strongly agree and agree with the statement. A total of 26.9% of the respondents strongly disagree and disagree with the statement.

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B14. In my school, all teachers understand the approach to teaching and learning called "Personalised System of Instruction (PSI)".

This statement aimed to investigate the extent to which all teachers understand the approach to teaching and learning called "Personalised System of Instruction (PSI)". The majority of the respondents responded to the personalised response rate scheduled in terms of daily, weekly, quarterly, and monthly. The majority of the respondents (43.7%) strongly agree and agree to the statement and 35.6% of them strongly disagree and disagree with the statement. Only 20.7% of them neither agree nor disagree.

B55. In my school, teachers make sure that learners have built a solid foundation before progressing to the next level.

This statement explored whether teachers ensured that learners have built a solid 12012foundation before progressing to the next level. The majority of the respondents (47.3%) strongly agree and agree with the statement and 28.6% of them strongly disagree and disagree. Only 24.2% of them neither agree nor disagree with the statement.

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Table 4.6: Introducing mastery-based learning for the past couple of years

B2. My school introduced mastery learning for the past number of years.											
Strongly Disagree		Disagree		Neither Disagree nor Agree		Agree		Strongly Agree		Total	
N	%	N	%	N	%	N	%	N	%	N	%
19	20.0%	14	14.7%	30	31.6%	26	27.4%	6	6.3%	95	100%
B3. In my school, teachers can clearly differentiate between mastery-based learning and traditional teaching and learning.											
8	8.4%	27	28.4%	27	28.4%	26	27.4%	7	7.4%	95	100%
B5. My school is ready and well equipped to introduce mastery-based learning.											
7	7.5%	27	29.0%	19	20.4%	30	32.3%	10	10.8%	93	100%
B6. In my school, teachers are well trained to implement mastery-based learning.											
8	8.5%	28	29.8%	25	26.6%	22	23.4%	11	11.7%	94	100%
B18. In my school re-enforcement of every lesson being studied is done.											
6	6.3%	14	14.7%	27	28.4%	38	40.0%	10	10.5%	95	100%
B19. In my school, correction of the subject matter that needed mastery is regularly done.											
8	8.5%	21	22.3%	19	20.2%	30	31.9%	16	17.0%	94	100%
B21. The teachers' role in mastery-based learning is to influence learners to love, be attached and contribute to mastery-based learning.											
4	4.2%	16	16.8%	24	25.3%	40	42.1%	11	11.6%	95	100%
B22. In a mastery-based learning environment, the teacher guides, directs, and monitors a variety of division-based instructional approaches to teaching and learning.											
4	4.2%	13	13.7%	28	29.5%	39	41.1%	11	11.6%	95	100%
B23. In mastery-based learning, the role of the teacher is to pre-test and repeat mastery testing to achieve an overall success rate.											
7	7.4%	15	15.8%	18	18.9%	39	41.1%	16	16.8%	95	100%
B24. In mastery-based learning, learners are given detailed feedback on the type, scope, and difficulty of the unit content.											
3	3.2%	16	17.0%	17	18.1%	45	47.9%	13	13.8%	94	100%
B51. In my school, all teachers can select effective mastery-based learning strategies.											
4	4.3%	15	16.1%	23	24.7%	47	50.5%	4	4.3%	93	100%
B52. In my school, teachers can modify teaching approaches to enhance mastery-based learning.											
3	3.2%	16	17.0%	30	31.9%	37	39.4%	8	8.5%	94	100%
B54. In my school, all teachers regularly practice the variable of re-enforcement.											
8	8.5%	14	14.9%	28	29.8%	36	38.3%	8	8.5%	94	100%
B59. Intelligence and aptitude scores are not a big issue in mastery-based learning.											
7	7.5%	6	6.5%	42	45.2%	35	37.6%	3	3.2%	93	100%
B62. Mastery-based learning is difficult to implement.											
6	6.4%	24	25.5%	33	35.1%	27	28.7%	4	4.3%	94	100%
B63. Mastery-based learning is expensive to implement.											
6	6.6%	21	23.1%	32	35.2%	23	25.3%	9	9.9%	91	100%
B64. Mastery-based learning makes grading and reporting more difficult.											
4	4.4%	19	20.9%	37	40.7%	24	26.4%	7	7.7%	91	100%

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B66. In mastery-based learning, standards are too low and advanced learners are not challenged.											
6	6.6%	25	27.5%	38	41.8%	17	18.7%	5	5.5%	91	100%
B68. Mastery-based learning instruction is multifaceted, adaptable, and differentiated in terms of knowledge and skills variables.											
3	3.2%	13	13.8%	36	38.3%	38	40.4%	4	4.3%	94	100%

B2. Mastery learning has been in my school for the past number of years.

This statement aimed to determine if mastery-based learning existed in schools for the past couple of years. The majority of the respondents (34.7%) strongly disagree and disagree with the statement, while 33.4% agree and strongly agree with the statement and 31.6% neither agree nor disagree.

B3. In my school, a teacher can clearly differentiate between mastery-based learning and traditional teaching and learning.

This statement explored whether a teacher is able to differentiate between mastery-based learning and traditional teaching and learning. The majority of the respondents (36.8%) strongly disagree and disagree, 34.8 % agree and strongly agree, while 28.4% of them neither agree nor disagree with the statement.

B5. My school is ready and well equipped to introduce mastery-based learning

The majority of the respondents (43.1%) agree and strongly agree that their schools are ready and well equipped to introduce mastery-based learning. However, 36.4% strongly disagree and disagree, and 20.4% neither agree nor disagree with this statement.

B6. My school trained teachers well to implement mastery-based learning.

This statement seeks to determine whether schools trained their teachers well to implement mastery-based learning. The majority of the respondents (38%) strongly disagree and disagree, 35.1% agree and disagree with 26.6% that neither agree nor disagree with the statement.

B18. My school re-enforced every lesson for study.

This statement demonstrated whether schools re-enforced every lesson studied. The majority of the respondents (50.5%) agree and strongly agree with the statement,

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although 21.0% strongly disagree and disagree. However, 28.4% neither agree nor disagree with the statement.

B19. In my school, correction of the subject matter is regular.

This statement explored whether correction of the subject matter that needed mastery-based learning existed. The majority of the respondents (48.9%) agree and strongly agree with the statement, while 30.8% strongly disagree and disagree with this. Only 20.2% neither agree nor disagree with the statement.

B21. The teachers' role in mastery-based learning is to influence learners to love, attach meaning to learning, and contribute to mastery-based learning.

Questionnaire statement B21 aimed to establish whether the teacher's role in mastery-based learning was to influence learners to love, be attached, and contribute to mastery-based learning. The majority of the respondents (53.7%) agree and strongly agree with the statement. However, 25.3% of them neither agree nor disagree and 21.0% of them strongly disagree and disagree with the statement.

B22. In a mastery-based learning environment, the teacher guides, directs, and monitors a variety of division-based instructional approaches to teaching and learning.

This statement investigated whether a teacher in a mastery-based learning environment guides, directs, and monitors a variety of division-based instructional approaches to teaching and learning. The majority of the respondents (52.7%) agree and strongly agree, 29.5% neither agree nor disagree, and 17.5% strongly disagree and disagree with the statement.

B23. In mastery-based learning, the role of the teacher is to pre-test and repeat mastery testing to achieve an overall success rate.

Questionnaire B23 aimed to establish if in mastery-based learning the teachers pre-tested and repeated mastery testing in order to achieve an overall success rate. The majority of the respondents (57.9%) agree and strongly agree, 23.2% strongly disagree and disagree, and 18.9% neither agree nor disagree with the statement.

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B24. In mastery-based learning, teachers provide learners with detailed feedback on the type, scope, and difficulty of the unit content.

This statement explored whether in mastery-based learning, teachers provided learners with detailed feedback on the type, scope, and difficulty of the unit content. The majority of the respondents (61.7%) agree and strongly agree, 20.2% strongly disagree and disagree, and 18.1% neither agree nor disagree with the statement.

B51. In my school, all teachers can select effective mastery-based learning strategies.

Questionnaire statement B51 investigated whether all teachers in schools selected effective mastery-based learning strategies. The majority of the respondents (54.8%) agree and strongly agree with the statement, while 24.7% neither agree nor disagree. However, 20.4% strongly disagree and disagree with this statement.

B52. In my school, teachers can modify teaching approaches to enhance mastery-based learning.

Questionnaire statement B52 explored whether teachers modify teaching approaches in order to enhance mastery-based learning in schools. The majority of the respondents (47.9%) agree and strongly agree with the statement. A total of 31.9% strongly disagree and disagree with the statement, while 29.8% neither agree nor disagree.

B54. In my school, all teachers regularly practice the variable of re-enforcement.

This statement seeks to discover whether all teachers regularly practice the variable of re-enforcement in schools. The majority of the respondents (46.8%) agree and strongly agree with the statement, although 29.8% neither agree nor disagree, and 23.4% strongly disagree and disagree with the statement.

B59. Intelligence and aptitude scores are not a major issue in mastery-based learning.

The aim of this statement was to establish whether intelligence and aptitude scores were not such a major issue in mastery-based learning. The majority of the

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respondents (42.5%) neither agree nor disagree with the statement but 40.8% agree and strongly agree. Only 14% strongly disagree and disagree with the statement.

B62. Mastery-based learning is difficult to implement.

This statement explored whether mastery-based learning was difficult to implement. The majority of the respondents (35.1%) neither agree nor disagree with the statement and 33.0% agree and strongly agree. A total of 31.9% strongly disagree and disagree with the statement.

B63. Mastery-based learning is expensive to implement.

Questionnaire statement B63 investigated whether mastery-based learning was expensive to implement. The majority of the respondents (35.2%) neither agree nor disagree with the statement, although 33% agree and strongly agree. A total of 29.7% strongly disagree and disagree with the statement.

B64. Mastery-based learning makes grading and reporting more difficult.

The aim of this statement was to establish whether mastery-based learning makes grading and reporting more difficult. The majority of the respondents (40.7%) neither agree nor disagree with the statement, although 34.1% agree and strongly agree. However, 25.3% strongly disagree and disagree with the statement.

B66. In mastery-based learning, standards are too low and advanced learners have no challenge.

Questionnaire statement B66 seek to determine whether mastery-based learning standards were too low and advanced learners had no challenge. The majority of the respondents (41.8%) neither agree nor disagree with the statement, 34.1% strongly disagree and disagree, and 24.2% agree and strongly agree with the statement.

B68. Mastery-based learning instruction is multifaceted, adaptable, and differentiated in terms of knowledge and skills variables.

This statement investigated whether a mastery-based learning instruction was multifaceted, adaptable, and differentiated in terms of knowledge and skills variables.

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The majority of the respondents (44.7%) agree and strongly agree with the statement and 38.3% neither agree nor disagree. However, only 17.0% strongly disagree and disagree with the statement.

Table 4.7: Impact of mastery learning on performance (N = 91-95)

B7. In my school, teachers know which learning strategies can be used to promote mastery learning.											
Strongly Disagree		Disagree		Neither Disagree nor Agree		Agree		Strongly Agree		Total	
N	%	N	%	N	%	N	%	N	%	N	%
10	10.6%	22	23.4%	29	30.9%	22	23.4%	11	11.7%	94	100%
B9. In my school, teachers know how to assist learners who obtain low marks in assessment in a mastery-based learning environment.											
9	9.6%	18	19.1%	27	28.7%	30	31.9%	10	10.6%	94	100%
B15. In mastery-based learning, all learners can learn a set of achievable goals.											
3	3.2%	13	13.7%	29	30.5%	37	38.9%	13	13.7%	95	100%
B16. In mastery-based learning all learners will pass.											
6	6.3%	11	11.6%	34	35.8%	31	32.6%	13	13.7%	95	100%
B17. In my school all learners are exposed to the clue to every lesson being studied.											
7	7.4%	23	24.2%	19	20.0%	31	32.6%	15	15.8%	95	100%
B33. In mastery-based learning, all learners can succeed given a reasonable set of objectives.											
2	2.2%	12	12.9%	24	25.8%	37	39.8%	18	19.4%	93	100%
B38. In mastery-based learning, learners develop prerequisite skills to progress to the next unit.											
5	5.4%	8	8.6%	27	29.0%	38	40.9%	15	16.1%	93	100%
B41. In my school, teachers work to avoid the cycle of learner failure.											
5	5.3%	11	11.7%	27	28.7%	38	40.4%	13	13.8%	94	100%
B49. In my school, teachers easily identify learners who have learned and who have not.											
4	4.2%	11	11.6%	24	25.3%	38	40.0%	18	18.9%	95	100%
B60. In mastery-based learning, learners persevere and are determined not only to learn the content but to master it.											
5	5.3%	10	10.6%	23	24.5%	49	52.1%	7	7.4%	94	100%

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B65. In mastery-based learning, too many learners will fail compared to learners in the traditional teaching environment.											
7	7.7%	17	18.7%	36	39.6%	22	24.2%	9	9.9%	91	100%
B67. In mastery-based learning, learners seek to improve and learn no matter how awkward the conditions might be.											
6	6.5%	7	7.5%	30	32.3%	37	39.8%	13	14.0%	93	100%
B69. In mastery-based learning 80% of learners may obtain the same high level of performance attained by only 20% in a traditional learning system.											
4	4.3%	12	12.8%	44	46.8%	30	31.9%	4	4.3%	94	100%

B7. In my school, teachers know which learning strategies promote mastery learning.

This statement illustrates that the majority of the respondents, (35.1%) agree and strongly agree with the statement. However, 34% strongly disagree and disagree, while 30.9% neither agree nor disagree with the statement.

B9. In my school, teachers know how to assist learners who obtain low marks in assessment in a mastery-based learning environment.

This statement presents that the majority of the respondents (42.5%) agree and strongly agree with the statement. A total of 28.7% of the respondents strongly disagree and disagree and an equal number (28.7%) of them neither agree nor disagree with the statement.

B15. In mastery-based learning, all learners can learn a set of achievable goals.

This statement demonstrates that the majority of the respondents (52.6%) agree and strongly agree with the statement, while 30.5% neither agree nor disagree. Only 16.9% strongly disagree and disagree with the statement.

B16. In mastery-based learning, all learners will pass.

The majority of the respondents (46.3%) agree and strongly agree with the statement. However, 35.8% neither agree nor disagree with the statement, and only 17.9% did not agree with the statement at all.

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B17. In my school, all learners have a clue to every lesson studied.

This statement indicates that the majority of the respondents (48.4%) agree and strongly agree that all learners in their school have a clue to every lesson studied. However, 35.2% strongly disagree and disagree, while 20% neither agree nor disagree with the statement.

B33. In mastery-based learning, all learners can succeed given a reasonable set of objectives.

Questionnaire statement B33 demonstrates that the majority of the respondents (59.2%) agree and strongly agree with the statement. Only 25.9% neither agree nor disagree, and 15.1% did not agree with the statement at all.

B38. In mastery-based learning, learners develop prerequisite skills to progress to the next unit.

This statement presents that the majority of the respondents (57%) agree and strongly agree that learners develop prerequisite skills in mastery-based learning allowing them to progress to the next unit. However, 29% neither agree nor disagree with the statement, while 14% did not agree at all.

B41. In my school, teachers work to avoid the cycle of learner failure.

Questionnaire statement B41 found that the majority of the respondents (54.2%) agree and strongly agree with this statement, 28.7% of them neither agree nor disagree, and 17% did not agree with it at all.

B49. In my school, teachers easily identify learners who have learned and who have not.

The majority of the respondents (58.9%) agree and strongly agree with this statement and 25.3% of them neither agree nor disagree. Only 15.8% did not agree with the statement.

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B60. In mastery-based learning, learners persevere and are determined not only to learn the content but to master it.

The majority of the respondents (59.5%) agree and strongly agree with this statement and 24.5% neither agree nor disagree. Only 15.9% disagree with the statement.

B65. In mastery-based learning, too many learners will fail compared to learners in the traditional teaching environment.

The majority of the respondents (39.6%) neither agree nor disagree with the above statement. Thirty-four per cent (34%) of them agree and strongly agree with the statement and 26.4% disagree.

B67. In mastery-based learning, learners seek to improve and learn no matter how awkward the conditions might be.

The majority of the respondents (53.8%) agree and strongly agree with the statement. However, 32.3% neither agree nor disagree, while 14% of them disagree with the statement.

B69. In mastery-based learning, 80% of learners may obtain the same high level of performance attained by only 20% in a traditional learning system.

The majority of the respondents (46.8%) neither agree nor disagree with the statement while 36.2% agree and strongly agree. Only 17.1% disagree with the statement.

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Table 4.8: Learning strategies that promote mastery learning (N = 89-95)

B28. In my school, learners are always engaged in participative mastery-based learning activities.											
Strongly Disagree		Disagree		Neither Disagree nor Agree		Agree		Strongly Agree		Total	
N	%	N	%	N	%	N	%	N	%	N	%
5	5.3%	17	17.9%	32	33.7%	37	38.9%	4	4.2%	95	100%
B31. In my school, teaching approaches are linked to deep learning.											
5	5.3%	17	18.1%	31	33.0%	32	34.0%	9	9.6%	94	100%
B34. In my school, a group-oriented learning situation is often maintained.											
5	5.4%	7	7.6%	34	37.0%	41	44.6%	5	5.4%	92	100%
B37. In my school, learning approaches emphasise less on content but mostly on mastering the content.											
7	7.4%	17	18.1%	31	33.0%	31	33.0%	8	8.5%	94	100%
B42. In mastery-based learning, teachers must develop a variety of materials for remediation.											
5	5.3%	8	8.4%	25	26.3%	41	43.2%	16	16.8%	95	100%
B43. In my school, teachers determine the relevant assessment type, method, and instrument.											
8	8.5%	12	12.8%	17	18.1%	44	46.8%	13	13.8%	94	100%
B57. In mastery-based learning, learners proceed through a course at their own pace but progress as a group.											
5	5.3%	11	11.7%	38	40.4%	36	38.3%	4	4.3%	94	100%
B70. In mastery-based learning, learning is directed at a variety of group-based instruction.											
4	4.3%	12	12.8%	38	40.4%	36	38.3%	4	4.3%	94	100%

B20. Cognitive behaviour, learning outcomes, quality of instruction, and affective entry characteristics are the core variables in mastery-based learning.											
Daily		Weekly		Quarterly		Monthly		Other specify		Total	
N	%	N	%	N	%	N	%	N	%	N	%
11	12.4%	19	21.3%	29	32.6%	18	20.2%	12	13.5%	89	100%
B26. In my school, teachers offer learners enrichment activities that are challenging, valuable, and rewarding.											

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9	9.7%	19	20.4%	19	20.4%	33	35.5%	13	14.0%	93	100%

B28. In my school, learners are always engaged in participative mastery-based learning activities.

This statement provides that the majority of the respondents (43.1%) agree and strongly agree with the statement and 33.7% of them neither agree nor disagree. However, 23.2% disagree with the statement.

B31. In my school, teaching approaches link to deep learning.

The majority of the respondents (43.6%) agree and strongly agree with this statement. However, 33.0% neither agree nor disagree, while 23.4% completely disagree with the statement.

B34. My school often maintains a group-oriented learning situation.

The majority of the respondents (50.0%) agree and strongly agree with the statement. However, 37.0% neither agree nor disagree, and 13.0% disagree with this statement.

B37. In my school, learning approaches emphasise less on content but mostly on mastering the content.

The majority of the respondents (41.5%) agree and strongly agree with this statement and 33% neither agree nor disagree. However, 25.5% totally disagree with the statement.

B42. In mastery-based learning, teachers must develop a variety of materials for remediation.

The majority of the respondents (59.4%) agree and strongly agree with the statement. However, 26.3% neither agree nor disagree, while 13.7% disagree with the statement.

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B43. In my school, teachers determine the relevant assessment type, method, and instrument.

Questionnaire statement B43 shows that the majority of the respondents (60.6%) agree and strongly agree with the statement. Yet only 21.3% disagree, while 18.1% neither agree nor disagree with this statement.

B57. In mastery-based learning, learners proceed through a course at their own pace but progress as a group.

The majority of the respondents (42.6%) agree and strongly agree with the statement, while 40.4% neither agree nor disagree. Only 17% disagree with this statement.

B70. In mastery-based learning, learning is directed at a variety of group-based instructions.

The majority of the respondents (42.6%) agree and strongly agree with this statement and 40.4% neither agree nor disagree. Yet, 17.1% disagree with the statement.

B20. Cognitive behaviour, learning outcomes, quality of instruction, and affective entry characteristics are the core variables in mastery-based learning.

Questionnaire statement B20 provides that the majority of the respondents (33.7%) agree and strongly agree with the statement and an equal number (33.7%) disagree. A total of 32.6% neither agree nor disagree with the statement.

B26. In my school, teachers offer learners enrichment activities that are challenging, valuable, and rewarding.

The majority of the respondents (49.5%) agree and strongly agree with this statement. However, 30.1% disagree, while 20.4% neither agree nor disagree with this statement.

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Table 4.9: Teacher's role in enhancing effective mastery learning (N = 88-95)

B27. In my school, teachers design various media means or projects to enhance mastery-based learning											
Strongly Disagree		Disagree		Neither Disagree nor Agree		Agree		Strongly Agree		Total	
N	%	N	%	N	%	N	%	N	%	N	%
6	6.3%	23	24.2%	26	27.4%	33	34.7%	7	7.4%	95	100%
B29. In my school, learners are given activities that provide opportunities for enrichment.											
3	3.2%	15	15.8%	21	22.1%	47	49.5%	9	9.5%	95	100%
B30. In my school, teachers develop lessons that pursue and broaden learners' experiences.											
3	3.2%	12	12.6%	21	22.1%	41	43.2%	18	18.9%	95	100%
B35. In my school, the curriculum is divided into smaller, manageable units.											
5	5.3%	14	14.9%	20	21.3%	44	46.8%	11	11.7%	94	100%
B36. In my school, each unit studied is preceded by a short diagnostic or formative assessment.											
8	8.4%	17	17.9%	26	27.4%	31	32.6%	13	13.7%	95	100%
B39. In my school, teachers state key outcomes before designating activities.											
5	5.3%	15	15.8%	31	32.6%	36	37.9%	8	8.4%	95	100%
B40. In my school, teachers do task-analysis to present each unit.											
7	7.4%	13	13.7%	21	22.1%	38	40.0%	16	16.8%	95	100%
B44. In my school, all teachers preserve and maintain high standards of assessment.											
3	3.2%	11	11.6%	23	24.2%	39	41.1%	19	20.0%	95	100%
B45. In my school, teachers ascribe to fair assessments.											
7	7.4%	10	10.5%	18	18.9%	46	48.4%	14	14.7%	95	100%
B46. In my school, teachers believe in valid assessments.											
2	2.1%	14	14.7%	17	17.9%	48	50.5%	14	14.7%	95	100%
B50. In my school, teachers ensure that a balanced assessment is designed.											
8	8.5%	11	11.7%	22	23.4%	43	45.7%	10	10.6%	94	100%
B53. In my school, all teachers can determine learners' specific learning attributes in a mastery-based learning environment.											
4	4.3%	18	19.4%	30	32.3%	37	39.8%	4	4.3%	93	100%

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B8. In my school, teachers are aware of the other variables that assist in the promotion of mastery-based learning.											
Daily		Weekly		Quarterly		Monthly		Other specify		Total	
N	%	N	%	N	%	N	%	N	%	N	%
7	8.0%	24	27.3%	15	17.0%	25	28.4%	17	19.3%	88	100%
B47. In my school, teachers conduct reliable assessments.											
6	6.5%	12	13.0%	30	32.6%	35	38.0%	9	9.8%	92	100%
B48. In my school, teachers design meaningful assessments.											
10	11.0%	17	18.7%	20	22.0%	39	42.9%	5	5.5%	91	100%
B56. In my school, the system of assessment systematically increases learner achievement and retention of studied content.											
9	9.9%	15	16.5%	31	34.1%	29	31.9%	7	7.7%	91	100%

B27. In my school, teachers design various media means or projects to enhance mastery-based learning

The majority of the respondents (42.1%) agree and strongly agree with this statement. A total of 30.5% disagree, while 27.4% neither agree nor disagree with the statement.

B29. My school provides learners with activities that provide opportunities for enrichment.

The majority of the respondents (59.0%) agree and strongly agree with the statement, while 22.1% neither agree nor disagree. Only 19.0% disagree with this statement.

B30. In my school, teachers develop lessons that pursue and broaden learners' experiences.

The majority of the respondents (62.1%) agree and strongly agree with the statement, although 22.1% neither agree nor disagree. Only 15.8% disagree with the statement.

B35. In my school, the curriculum management is divided into smaller, manageable units.

The majority of the respondents (58.5%) agree and strongly agree with the statement. However, 21.3% neither agree nor disagree and 20.2% disagree with the statement.

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B36. In my school, each unit studied has a short diagnostic or formative assessment.

The majority of the respondents (46.3%) agree and strongly agree with the statement. However, 27.4% neither agree nor disagree, while a sizable number (26.3%) disagree with the statement.

B39. In my school, teachers state key outcomes before designating activities.

The majority of the respondents (46.3%) agree and strongly agree with the statement and 32.6% neither agree nor disagree. Only 21.1% disagree with the statement.

B40. In my school, teachers do task-analysis to present each unit.

The majority of the respondents (56.8%) agree and strongly agree with the statement. Yet, 22.1% neither agree nor disagree and 21.1% totally disagree with the statement.

B44. In my school, all teachers preserve and maintain high standards of assessment.

The majority of the respondents (61.1%) agree and strongly agree with the statement and 24.2% neither agree nor disagree. Only 14.8% disagree with the statement.

B45. In my school, teachers ascribe to fair assessments.

The majority of the respondents (63.1%) agree and strongly agree with the statement. However, only 18.9% neither agree nor disagree, and 17.9% disagree with the statement.

B46. In my school, teachers believe in valid assessments.

The majority of the respondents (65.2%) agree and strongly agree with the statement. Only 17.9% neither agree nor disagree, while 16.8% disagree with the statement.

B50. In my school, teachers design a balanced assessment procedure for learners.

The majority of the respondents (56.3%) agree and strongly agree with the statement and 23.4% neither agree nor disagree. A total of 20.2% disagree with the statement.

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B53. In my school, all teachers can determine learners' specific learning attributes in a mastery-based learning environment.

The majority of the respondents (44.1%) agree and strongly agree with the statement and 32.2% neither agree nor disagree. A total of 23.7% disagree with the statement.

B8. In my school, teachers are aware of the other variables that assist in the promotion of mastery-based learning.

Questionnaire statement B8 shows that the majority of the respondents (47.7%) agree and strongly agree with this statement and 35.3% disagree. Only 17.0% neither agree nor disagree with the statement.

B47. In my school, teachers conduct reliable assessments.

The majority of the respondents (47.8%) agree and strongly agree with the statement and 32.6% neither agree nor disagree. Only 19.5% disagree with this statement.

B56. In my school, the system of assessment systematically increases learner achievement and retention of studied content.

The majority of the respondents (39.6%) agree and strongly agree with the statement and 34.1% neither agree nor disagree. A total of 26.4% disagree with the statement.

4.3 QUALITATIVE DATA ANALYSIS

4.3.1 Responses by school principals

The aim of this section is to analyse, interpret and report the data collected using interviews as a research instrument. The main aim was to supplement data obtained through the questionnaires in order to check the validity and consistency of the results. The researcher formulated themes and coded it from the transcriptions of the principals' interviews.

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INTERVIEW QUESTIONS FOR MASTERY LEARNING AT SCHOOLS IN THE MATJHABENG MUNICIPAL DISTRICT IN THE LEJWELEPUTSWA REGION.

Respondent A

Interview questions concerning the concept of mastery learning at school level in the Matjhabeng District.

Introduction

Colleagues, I am a Master of Education student at the Central University of Technology, Free State. I am a teacher at Harmony High School and wish to ask you to answer the following interview questions. The duration of these questions will not last more than 20 minutes. These interview questions supplemented the section dealing with the questionnaire in obtaining the validity and reliability of the research.

MAIN QUESTIONS

1. To what extent do teachers promote mastery learning at your school?

Mastery learning is a very difficult concept or teaching word to explain. I think many teachers are not able to explain it. That is why I think they will not be able to implement it per rule or as it says. I do not know if I have answered this question correctly.

2. What impact does mastery learning have on learner performance?

Well, it influences in various ways. For instance, schools that implemented mastery learning are able to achieve set or targeted results. This means that they even are able to perform beyond these set performance targets. With regards to learner work, it becomes perfect in the way that no learner advances to the next level until he/she mastered the work. I think this is the good thing about mastery learning compared to schools that just promote learners without making sure that they understand the work or simply put, mastered the work. Mastery learning, however, has put much responsibility on the teacher because such teacher must make sure that all students mastered the work before promotion to the next class, but in the end, the knowledge and skills mastered from this process equip students for post-school studies.

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3. How would you promote mastery learning in your school?

Teachers promote mastery learning through class discussion, games and simulations, which demonstrate visually all corners of learning and by word of mouth. Remember that these two senses of learning are the best for the types of learners we have. These learners learn better when they see and manipulate and laugh when studying. In our schools, this trend or method of teaching is not common because our teachers lacked training in this respect. Again, make sure that your learners are familiar with the electronic and media teaching methods, which are both, adequate for mastery of the learning content.

4. How can teachers enhance mastery learning in the classroom?

In a sense, encouraging teachers to do mastery learning in a classroom would show the Department of Education that there are identifiable differences between students who mastered their learning and those who get promoted to the next class with a 30% pass rate. In mastery learning, the pass rate expected is 100%. That is why teachers need training in this approach. Therefore, no single learner gets promoted to the next class if he/she did not master the content taught.

5. What other things will promote mastery learning?

Staff needs to take part in the planning and implementation of the process at every step of it. Staff needs to be well prepared through training and workshops, but above all, must accept to teach in the mastery learning process. Parents should also be involved through the decision of the School Governing Body (SGB). I am sure that they will be pleased with this kind of approach or strategy for teaching. Teachers inform learners at the beginning of their registration or enrolment that mastery learning at this particular school is the norm and practice. In this way, learners will be motivated to achieve the 100% pass mark. Additionally, the material for mastery learning must be readily available.

Respondent B

Interview questions concerning the concept of mastery learning at school level in the Matjhabeng District.

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Introduction

Colleagues, I am a Master of Education student at the Central University of Technology, Free State. I am a teacher at Harmony Primary school and wish to ask you to answer the following interview questions. The duration of these questions will not last more than 20 minutes. These interview questions are meant to supplement the section dealing with the questionnaire for the purpose of obtaining validity and reliability of the research.

MAIN QUESTIONS

1. To what extent do teachers promote mastery learning at your school?

In my school teachers apply the strategy of the group, individualised teaching and learning approaches which are typical of the concept of mastery learning. This they demonstrate by making sure that all students achieve on a highly set margin of the mastery learning concept. That is why we are able to achieve a 100% pass rate at our school. In my school, teachers are not just teaching to master the concept but they live it. It must be noted that in order to master the philosophy behind the concept, teachers need to be trained thoroughly.

2. What impact does mastery learning have on learner performance?

The experience I reaped as a teacher is that mastery learning creates more positive interest and attitude towards the subject learned if compared to the traditional ways of teaching and listening methods in the classroom. In mastery learning, the teaching and learning environment allows the majority of learners and probably all of them to achieve success and be rewarded for learning. So, mastery learning impacts on the learner, the teacher and the school. Above all, it impacts positively on the community because learners are the community.

3. How would you promote mastery learning in your school?

Teachers should learn to reduce achievement gaps and lags for learners in an average school setting by giving such learners uniform instructions in terms of quality and learning time. This is one way of promoting mastery learning in a classroom. In a mastery learning classroom, teachers should work and or aim to achieve beyond a

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90% success rate. This is a universal norm for schools and teachers ascribing to the mastery learning process. If teachers can adopt varied instructions as they perform mastery learning, there would be a lot of variation in the way learners respond to their work.

4. How can teachers enhance mastery learning in the classroom?

Teachers can enhance mastery learning in various important ways. For example, they can instil commitment, positive attitude to the learning process and discipline at school. Improved attitude has a relation to academic performance and achievement at all levels. Teachers should also build good teacher-learner relationships to affect set goals by which both the teacher and the learner benefit.

5. What other things will promote mastery learning?

I think other things that promote mastery learning at school level would include among others, changing learner behaviour, quality of teaching instruction, conceptualisation of the content, and time allocated for learners to learn and many other things but I am sticking to these because I experienced their impact. In addition, one may consider the positive impact that textbooks, workbooks, audio-visual methods, games and simulations have on mastery learning. These are important elements that assist in the demonstration and application of the mastery learning. However, the problem is exposing teachers to these sets of tools (that is, training them). Resources for mastery learning must be made available to teachers at all times.

Respondent C

Interview questions concerning the concept of mastery learning at school level in the Matjhabeng District.

Introduction

Colleagues, I am a Master of Education student at the Central University of Technology, Free State. I am a teacher at Harmony Primary school and wish to ask you to answer the following interview questions. The duration of these questions will not last more than 20 minutes. These interview questions are meant to supplement

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the section dealing with the questionnaire for the purpose of obtaining validity and reliability of the research.

MAIN QUESTIONS

1. To what extent do teachers promote mastery learning at your school?

Results obtained in my school indicates that teachers use mastery learning as a strategy of teaching that promotes improved learner performance. Furthermore, teachers believe that mastery learning promotes a positive attitude and a disciplined learner behaviour. Yes, with a disciplined teaching and learning environment, set performance goals will be achieved.

2. What impact does mastery learning have on learner performance?

Mastery learning improves learner academic performance in a sense that the content is mastered before promotion to the next level. Learners achieve high marks and that motivates them to achieve mastery learning. Mastery learning also assists weaker learners to be part of the succeeding process. Mastery learning contributes to learner self-efficacy and confidence.

3. How would you promote mastery learning in your school?

The most important aspect of mastery learning promotion is to go at your pace teaching and learning strategy as well as to let the student go to the next content only once the current learning has been mastered. Well, this is what I understand and would recommend to teachers in their endeavour to promote mastery learning. Remember that in a mastery learning environment, teachers must direct group-based teaching so that learners also learn from one another.

4. How can teachers enhance mastery learning in the classroom?

Teachers are expected to master the diagnostic assessment with specifically intended feedback and formative assessment as a means to measure the evidence to guide future progress of learners. Therefore, teachers are obliged to work towards achieving at least 90% pass rates in content and subject done by learning. The achievement of

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a 90% pass rate at your school will attract learners and make your school a prestigious one.

5. What other things will promote mastery learning?

As a teacher in a mastery learning situation, make sure that all your learners achieve a level of mastery in a consent or knowledge assessment. Learners must be given support, encouragement and direction so that their commitment to mastery of their work can be achieved. Teachers must provide adequate time, means and materials for learners so that mastering instructional strategies can be easily understood by learners.

A matrix table tabulated and facilitated the analysis and interpretation of the interview data and thus reported using the following themes:

PML	=	Promotion of Mastery Learning
ILP	=	Impact on Learner Performance
PMLS	=	Promoting Mastery Learning in Schools
EMLC	=	Enhancing Mastery Learning in Classroom
OTPML	=	Other Things Promoting Mastery Learning

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Table 4.10: Matrix table

THEME	PARTICIPANT A	PARTICIPANT B	PARTICIPANT C
Teachers promote mastery learning: PML	Many unable to define and implement it	Teachers apply to group, individual and attain 100% pass rate and live it	Results improve, positive attitude and disciplined behaviour
Impact of mastery learning on learner performance: ILP	Set goals are achieved, perfected learner performance, much teacher responsibility, life-long learning	Promote positive interest in subject, leads to rewarding learning, impact on stakeholders	Improve learner performance, content mastered before promotion to next class, high marks, assist weaker learners, improve self-efficacy
Promoting mastery learning in school: PMLS	Class discussions, games, simulations, manipulate objects and laugh, electronic and social media teaching	Reduce achievement gaps and lags, aim beyond 90% pass rate, varied instructions	At own pace, use and direct group-based teaching, learners must learn from each other
Enhancing mastery learning in the **classroom: EMLC**	Discourage 30% pass rate, go for 100% pass rate, no automatic promotion	Instil commitment, positive attitude, discipline, good teacher-learner relationship	Use diagnostic assessment, prompt feedback, formative assessments and at least 90% pass rate
Promoting mastery learning: other things: OTPML	Participative planning, accept mastery teaching, attend workshops, involve parents, SGB, motivate learners to achieve 100% pass rate	Change learner behaviour, quality teaching, and conceptualisation of content, attractive material and equipment, training	Mastery of knowledge assessment, support, encourage and direct learners, adequate time, means and material to learners

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THEME	PARTICIPANT A	PARTICIPANT B	PARTICIPANT C
		teachers in using resources	

All three interviewees agreed that mastery learning is important for the learner to conceptualise and understand the content taught. The responses of all three participants indicate the extent to which mastery learning could assist in aiming for a 100% pass rate and for learners to commit themselves in their learning. The impact of mastery learning on all stakeholders are in the themes as indicated above and in the summary of the opinions as presented below.

4.3.2 Opinions about promotion of mastery learning

Respondent A: Although many teachers are not able to define or describe mastery learning, they ascribe to it practically in their classrooms or have the desire to have it done. Every teacher would like to see his/her class attain a 100% pass rate.

Respondent B: Insists that group and individualised approach to the teaching of mastery learning should be the key to teachers' classroom activities if the aim is to achieve a 100% pass rate.

Respondent C: Is of the opinion that in a mastery-learning environment, results improve, learners develop a positive learner attitude, exhibit a level of discipline, and show good behaviour.

4.3.3 Opinions about the impact on learner performance

Respondent A: In a mastery-learning situation, not only does the school perform well, but learners perfect their learning processes and the responsibility of teachers regarding mastery learning enhances lifelong learning.

Respondent B: In a school that practises mastery learning, positive interest in the subjects is guaranteed, which in turn leads to learning that also impacts positively on all stakeholders (e.g. learners, teachers, parents, community, and government).

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Respondent C: Mastery learning improves learner performance and helps in the mastery of the content before a learner progresses to the next level. It also assists the weaker learners to attain self-efficacy.

4.3.4 Opinions about promoting mastery learning in school

Respondent A: Teachers can promote mastery learning at their schools by using class discussions, games and simulations, and manipulating objects as well as electronic and social media teaching tools.

4.3.5 Opinions about enhancing mastery learning in classrooms

Respondent A: In a mastery-learning environment, teachers must reduce the level of achievement gaps and lags and work towards achieving above a 90% pass rate. A 100% pass rate is obtainable using varied teaching approaches.

Respondent B: Mastery learning instils commitment in learners in their learning endeavour and thus creates a positive attitude, discipline, and good teacher-learner relationship.

Respondent C: In a mastery-learning classroom, teachers must use diagnostic assessment methods, formative and summative assessments, and provide prompt feedback. The aim should be to score above 90% for every learner.

4.3.6 Opinions about other things promoting mastery learning

Respondent A: Learners must be part of the initial planning of all teaching and assessment methods as well as the time allocated in completing the lesson programmes. Teachers must attend training and workshops that advance mastery learning. All stakeholders should also be involved in the process of mastery learning to ensure all learners achieve 100%.

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4.4 CONCLUSION

The data used for qualitative analysis were analysed, interpreted, presented, and discussed. The descriptive frequency distribution data analysis and the interview data analysis provided opinions and conceptualisations regarding the implications and strategies for using mastery learning in schools.

The next chapter will present the findings of this research and conclusions will be drawn based on these findings.

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CHAPTER 5

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The penultimate chapter provided discussions on the analysis and interpretation of quantitative and qualitative data. This chapter aimed at drawing conclusions and findings based on the role that teachers play in promoting mastery learning. The teacher is at the centre of teaching and learning and, therefore, the success of mastery learning lies in the activities done by the teacher in the classroom.

5.2 OVERVIEW OF THE STUDY

Many teachers and schools focus on performance goals without realising that mastery learning can assist with achieving both the goal of performance and mastery of the content. The purpose of this study was to change the perspectives of teachers and schools regarding learning goals. The study can equip teachers with teaching strategies that are more productive and useful if implemented correctly and continuously. This will allow schools to produce brilliant, competent, future-ready learners.

5.3 THE RESEARCH PROBLEM

Previously, teaching meant reciting and memorising content without conceptualising the knowledge. This form of learning is a traditional way of teaching and learning. However, in a global progressive and technological education system, this approach to teaching and learning does not fit. Despite the researcher previously viewing performance (i.e. passing tests and grades) as the most important goal in learning, mastery learning soon became the preferred method in developing a learner for future challenges and encouraging lifelong learning. This study embarked on outlining the importance of mastery learning.

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5.4 THE RESEARCH QUESTIONS OF THE STUDY

The researcher aimed to achieve the objective of this project by introducing the research problem from which research questions arose. The key question asked was: “To what extent, if any, do teachers practice mastery learning in their schools?” This question was asked to generalise strategies, theories, and methods employed in teaching mastery learning. Other research questions included:

- What are the ways teachers implement mastery learning at their schools?
- Do teachers implement mastery learning successfully in their schools?
- What is the impact of mastery learning on learner performance?
- Which suitable learning strategies can be promoted in mastery learning?
- Which other variables can assist the role of teachers in enhancing effective mastery learning?

5.5 RESEARCH AIMS AND OBJECTIVES

The aim of this study was to investigate the teachers’ role in their promotion and application of mastery learning with regard to strategies and performance in the FET phase of schools in the Lejweleputswa District. The purpose was to explore the role pertaining to the teachers’ mastery learning strategies and the performance of learners that learn under non-mastery strategies.

The attainment of this aim assisted the researcher in achieving the following research objectives as derived from the research questions:

- to establish ways in which teachers can implement mastery learning at their schools;
- to determine whether teachers implement mastery learning successfully in their schools;
- to establish the impact of mastery learning on learner performance;
- to discover the suitable learning strategies in the promotion of mastery learning; and
- to find out other variables that will assist the role of teachers in enhancing effective mastery learning.

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5.6 FINDINGS OF THE STUDY

This study used a literature review, quantitative and qualitative research as the main data collection methods. From these methods the findings, conclusions, and recommendations emerged, which formed the basis of the scientific results presented in this study.

5.6.1 Findings from the literature review

The literature studied in this research revealed that very little has been written about mastery learning and its implementation, including the understanding and benefits thereof in South African schools. The literature indicated that most teachers are still using traditional methods of teaching, namely surface teaching and learning.

In Chapter 2, the literature showed that teachers believe that mastery learning is difficult to implement. Mastery-based learning is also expensive to implement and it makes grading and reporting difficult. The perception is that in mastery-based learning many learners would fail compared to learners in the traditional learning environment. It is further stated that mastery-based learning standards are low and advanced learners are not challenged.

All these perceptions are contrary to the findings that stipulate that technology is readily available for teachers and learners to implement mastery-based learning. Additionally, contemporary learners aim to master all the content and not just a portion of it compared to traditional teaching and learning. Furthermore, mastery-based learning cannot be regarded as expensive due to the use of technology, online teaching, social media, and other related telecommunication teaching and e-learning approaches. All these tools are suitable for today's type of learner. These learners are technologically able, attracted, and inclined to master the tools used in mastery-based learning.

In traditional learning, learners generally received symbols such as an "A" and "B" as a grading system, reflecting the learner's academic ability in comparison to other learners. Comparing learners are not conducive to the performance of all learners, resulting in some learners dropping out of school. In mastery-based learning, no single learner fails and all learners achieve at least beyond 80%. The researcher found that teaching strategies, approaches, and learning methods are the most important

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aspects in promoting mastery learning. The strategy employed can determine whether learners can master the content or not. The application of the Learning for Mastery (LFM) and Personalised System of Instruction (PSI) support these aspects (see Section 2.3.1).

The literature further maintains that cognitive behaviour, learning outcomes, quality of instruction and affective practices are key variables that teachers can use to improve mastery learning (see Figure 2.1). Furthermore, teachers must be in charge of the planning process and master the type of assessment instruction in order to evaluate the learning process (see Figure 2.2).

5.6.2 Findings from the empirical study

This section focused on the data analysis and findings derived from both quantitative and qualitative approaches. A presentation of the findings from these two approaches follows.

5.6.2.1 Findings from the questionnaire

Findings derived from the questionnaire data indicate that the majority of the respondents 51.1% of the respondents were male, while 48.9% were females. The ethnical grouping resembled Africans at 95.7%, Whites at 3.2%, and Coloured at 1.1%, and no Asian participants (see Table 4.1 and Table 4.2). The age cohorts of teachers indicated that participants in the 17-21 years group, represented 18.1%, followed by 13.8% between 22 years and 26 years and an equal number ranging between 42-46 years. The lowest cohort is between 62-66 years (3.2%) and 5.3% represented by those aged 67 and older.

The evaluation and representation of these numbers are important since it represents the practical experience, knowledge, and skills of teachers as obtained over a significant period of time. Currently, the majority of teachers are young and lack experience, especially in the implementation of mastery learning.

Table 4.4 illustrates the highest educational qualifications. The majority (39.4%) holds a B.Ed degree, followed by 16% with a teacher's diploma, and 14.9% with a

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postgraduate certificate/diploma. Only 11.7% holds a B.Ed Honours degree, while 9.6% has an M.Ed degree. No participant had a doctoral degree.

Findings from the questionnaire statements

The majority of teachers (39%) understood the concept of mastery learning, while 32.6% claimed not to be familiar with the method. A total of 28.4% were neutral on the concept. However, if the negative is added to the neutral percentage, it becomes the majority (61.0%), which indicates that a significant number of teachers did not understand the concept.

The majority of the respondents (68.1%) agreed that the schools should introduce mastery-based learning. However, 12.7% disagreed and 19.1% remained neutral. Despite the majority agreeing that mastery-based learning should be introduced, those not in favour added to those that are neutral (e.g. 12.7% + 19.1% = 31.8%) produced a high percentage, which means that a significant number of teachers did not understand the concept.

The majority of teachers (38.7%) remained neutral on whether all teachers understood the surface learning approach to teaching and learning. However, 34.4% agreed with the statement and 26.9% disagreed completely. Furthermore, the majority of teachers (43.7%) agreed with the statement regarding the Personalised System of Instruction (PSI), while 35.6% disagreed. A total of 27% of teachers remained neutral. If those disagreeing with the statement are added to those that remained neutral, the implication is that the majority of teachers did not understand PSI (see Table 4.5).

The majority of the respondents (34.7%) agreed that mastery learning has been in schools for the past number of years, although 33.4% disagreed. However, 31.6% remained neutral. This indicates that teachers are not even that mastery-based learning exists at their schools (see Table 4.6). The majority of teachers (36.8%) disagreed that educators can differentiate between mastery-based learning and traditional teaching but 34.8% actually agreed with the statement. A total of 28.4% remained neutral. It is evident that teachers still have mixed feelings regarding mastery-based learning (see Table 5.6). Concerning the impact of mastery-based learning, the majority of the respondents (35.1%) agreed with the statement and 34% disagreed. A total of 39% of the respondents remained neutral. The majority of the

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respondents (43.1%) agreed that learners are always engaged in participative mastery-based learning activities, while 33.7% disagreed. The neutral portion was 23.2%. These results indicate that many teachers are uncertain whether their learners engage in participative mastery-based learning activities or not (see Table 4.7).

The majority of the respondents (42.1%) agreed that teachers design various media means or projects in order to enhance mastery-based learning. However, 30.5% disagree, while 27.4% remained neutral. Furthermore, the majority (56.3%) agreed that teachers design balanced assessment procedures for learners, but 23.4% remained neutral and 20.2% disagreed.

The majority of the respondents (47.8%) agreed that teachers conduct reliable assessments, 32.6% remained neutral, and 19.5% disagreed (see Table 4.8). Therefore, if those that disagree are added to those that remained neutral, the majority of the respondents did not conduct reliable assessments.

5.6.2.2 Findings from interview questions

Two out of three respondents agreed that teachers promote mastery learning (PML), while one out of three disagreed. Therefore, this finding concludes that teachers promote mastery learning.

All the teachers (three out of three) agreed on the impact of mastery learning on learner performance (ILP). Therefore, teachers see mastery-based learning as having a positive impact on learner performance. The same applies to teachers that agree on the promotion of mastery learning in schools (PMLS). Three out of three agreed that this is done through the following:

- Class discussions.
- Games and simulations.
- Electronic and social media.

The majority of teachers (three out of three) agreed that teachers enhance mastery learning in classrooms (EMLS) by discouraging a 30% pass rate and automatic promotion as well as instilling commitment, positive attitude, and good learner-teacher relationships. Teachers use diagnostic assessments, provide prompt feedback, and apply both formative and summative assessments (see Table 4.9). Furthermore, the

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majority of teachers (three out of three) agreed that mastery-based learning can be achieved by using others. These include parent involvement, workshops, training teachers, direct learners and support them, the proper material, and equipment (OTPML).

5.7 CONCLUSION

The most significant finding in this chapter concerns that a significant number of teachers do not understand mastery-based learning. However, the more experienced teachers are familiar with mastery learning, which in essence indicate that experience underlies the promotion of mastery learning. Furthermore, the high costs of promoting mastery-based learning remain one of the major stumbling blocks for schools, despite the benefit of implementing mastery-based learning. The findings also indicated a need for training among teachers in mastery-based learning, especially for those lacking experience in the implementation of mastery-based learning.

5.8 SUGGESTIONS FOR FURTHER STUDY

This study suggests that procedures for implementation of the mastery-based learning in schools should be established and provided to all schools interested in implementing this system. Furthermore, experimental tests comparing mastery learning and performance-oriented schools could be conducted to highlight the significance of each system. This might encourage hesitant teachers to start using mastery-based learning strategies in their classroom. This study will also provide teachers with evidence that learners taught under mastery-based strategies perform far better than those taught under performance-based strategies.

5.9 RECOMMENDATIONS

This study recommends that the Department of Basic Education invests in mastery-based learning rather than merely encouraging extra classes and other forms of additional learning activities. These entail more costs and resources, while mastery-based learning is less expensive than these activities combined. Furthermore, The

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Department of Basic Education should provide adequate training for teachers in the field of mastery-based learning, especially to the new teachers.

Workshops regarding mastery learning should also be conducted to equip teachers with the knowledge and skills needed for the successful implementation of mastery-based learning. Principals must supervise teachers in order to make sure they use a variety of teaching strategies that accommodate all the different learners. This aspect remains key to implementing the concept of mastery-based learning and its associated teaching and learning strategies.

5.10 PROBLEMS EXPERIENCED DURING THE EMPIRICAL STUDY

A few problems pertaining to the methodology were encountered, especially with regard to the initial planning surrounding the data analysis. The data analysis only included a descriptive method and not also an inferential analysis. This change prevented the researcher from triangulating the study, although the researcher relied on the use of validity, reliability and the pilot study to attain triangulation.

The researcher sent out 600 questionnaires and received 320 back. Unfortunately, only 94 were correctly completed and 226 questionnaires were either not completed or incorrectly completed. The researcher ascribes this to the questionnaire being too long, as it consisted of 70 questionnaire statements.

5.11 CONCLUDING REMARKS

This study successfully achieved the intended research aim, research questions, and research objectives. The findings derived from this study suggest that there is a need for the Department of Education to embark on an overhaul strategy to introduce mastery-based learning as compulsory in South African schools.

Since many learners are currently exposed to performance-oriented strategies, the Department of Basic Education may not receive immediate results. It may take a year or more to see the success of mastery learning.

Institutions of higher learning, especially universities, should include mastery-based learning strategies in the training programmes presented to Education students, especially during their teaching practice. For example, students from the Central

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University of Technology, Free State are able to design and develop material as well as promote mastery-based learning.

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ANNEXURE A: TEACHER QUESTIONNAIRE

TOPIC: Teacher role in the promotion of mastery learning: Perspectives on strategy and performance in the FET phase

PART ONE-A: Research questions and objectives of the study

Research question

Major research question: What is the role of teachers in promoting mastery learning in the FET phase?

Subsidiary research questions

- To what extent do teachers promote mastery learning in the FET phase?
- Do teachers implement mastery learning successfully?
- What impact does mastery learning have on learner performance?
- Which learning strategies best promote mastery learning?
- What other variables will assist in the teachers' role in enhancing effective mastery learning?

Research objectives

- To establish ways in which teachers can promote mastery learning in the FET phase;
- To determine whether teachers implement mastery learning successfully;
- To establish the impact of mastery learning on learner performance; and
- To investigate learning strategies that best promote mastery learning; and
- To find out other variables that will assist in the teachers' role in enhancing effective mastery learning.

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PART ONE-B: Letter to the teacher/colleague

Dear FET teacher.

I am a masters student (MEd) enrolled at the Central University of Technology (CUT), Free State and I am involved in a research that tries to answer some questions relating to the role of teachers in the promotion of mastery leaning.

I am a female teacher employed by the Free State Department of Education at Harmony High School. I am attracted to the on-going debate world-wide about the role of teachers in the promotion of mastery learning. As a result of this debate, various ideas, opinions, perceptions and arguments erupted with regard to the topic of the study.

Attached please find a questionnaire designed for teachers in the Educational District of Lejweleputswa in the Free State province. In order to complete the study successfully, some information is needed about yourself, **WITHOUT** giving your name. The questionnaire is thus completed anonymously and all information will treated confidentially.

After completing the questionnaire, please hand it over to your Head of Department (HoD) who will then give it to the principal.

Thank you for your cooperation.

Mrs M.A Lephatsoe

_____

Cell: 0788115409

Email: anacleta.lephatsoe@yahoo.com

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PART TWO: Questionnaire statements for teachers

(A) Demographic details

Please use a cross (**x**) to indicate your particulars:

1. What is your gender?

Male	
Female	

2. Ethnic group

African/Black		White		Coloured		Indian/Asian	

3. What is your age?

17-21		22-26		27-31		32-36		37-41		42-46		47-51	
52-56		57-61		62-66		67+							

6. Highest educational qualification completed

Primary Teachers Certificate	National Teachers Diploma	Degree – e.g. BEd	Postgraduate Certificate/Postgraduate diploma	BedHons	MEd	Doctoral degree

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Section B

Part two: The role of teachers in the promotion of mastery learning in the FET phase

In the shaded areas below, indicate the degree to which you agree or disagree with the statement. Please respond by making a cross (**X**) over the number in the appropriate shaded block.

1. In my school all teachers understand the meaning of mastery learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

2. Mastery learning has been introduced in my school for the past number of years.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

3. In my school, teacher can differentiate clearly between mastery-based learning and traditional teaching and learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

4. Mastery-based learning must be introduced in my school.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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5. My school is ready and well equipped to introduce mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

6. In my school, teachers are well trained to implement mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

7. In my school, teachers know which learning strategies can be used to promote mastery learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

.8. In my school teachers are aware of the other variables that assist in the promotion of mastery-based learning.

Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

9. In my school, teachers know how learners who get low marks in assessment can be assisted in a mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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10. In my school, teachers know how genuine learning can be advanced in the mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

11. My school uses mastery-based learning approach to enhance deep learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

12. Mastery-based learning engages all learners in a high quality, developmentally appropriate classroom teaching.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

13. In my school, all teachers understand the approach to teaching and learning called “Learning For Mastery (LFM).

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

14. In my school all teachers understand the approach to teaching and learning called “Personalised System of Instruction (PSI).

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Daily	1	weekly	2	Quarterly	3	Monthly	4	Other specify	5

15. In a mastery-based learning, all learners can learn a set of achievable goals.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

16. In a mastery-based learning all learners will pass.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

17. In my school all learners are exposed to the clue to every lesson being studied.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

18. In my school re-enforcement of every lesson being studied is done.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

19. In my school, correction of the subject matter that needed mastery is regularly done.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

20. Cognitive behaviour, learning outcomes, quality of instruction and affective entry characteristics are the core variables in the mastery-based learning.

Daily	1	weekly	2	Quarterly	3	Monthly	4	Other specify	5

21. The teachers' role in mastery-based learning is to influence learners to love, be attached and contribute to mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

22. In a mastery-based learning environment, the teacher guides, directs and monitor a variety of division-based instructional approach to teaching and learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

23. In a mastery-based learning the role of the teacher is to pre-test and repeat mastery testing to achieve total success rate.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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24. In a mastery-based learning learners are given a detailed feedback on the type, scope and difficulty of the unit content.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

25. In my school, learners are enriched by doing projects, discussion and games.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

26. In my school, teachers offer learners enrichment activities that are challenging, valuable and rewarding.

Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

27. In my school, teachers designs various media means or projects to enhance master-based learning

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

28. In my school, learners are always engaged in a participative mastery-based learning activities.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

29. In my school, learners are given activities that provide opportunities for enrichment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

30. In my school, teachers develop lessons that pursue and broaden learners' experiences.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

31. In my school, teaching approaches are linked to deep learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

32. In my school, all teachers understand the meaning of surface learning approach to teaching and learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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33. In a mastery-based learning, all learners can succeed given the reasonable set of objectives.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

34. In my school, a group-oriented learning situation is often maintained.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

35. In my school, curriculum is divided into smaller and manageable units.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

36. In my school, each unit studied is preceded by a short diagnostic or formative assessment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

37. In my school, learning approaches emphasise less on content but mostly on mastering the content.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

38. In a mastery-based learning, learners develop prerequisite skills to move to the next unit.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

39. In my school, teachers state key outcomes before designating activities.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

40. In my school, teachers do task-analysis to present each unit.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

41. In my school, teachers work to avoid the cycle of learner failure.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

42.In a mastery-based learning teachers must develop a variety of materials for remediation.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

43. In my school, teachers determine relevant assessment type, method and instrument.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

44. In my school, all teachers preserve and maintain high standards of assessment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

45. In my school, teachers ascribe to fair assessment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

46. In my school, teacher believe in valid assessment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

47. In my school, teachers conduct reliable assessments.

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Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

48. In my school, teachers design meaningful assessments.

Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

49. In my school, teachers easily identify learners who have learnt and who have not.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

50. In my school, teachers ensure that a balanced assessment is designed.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

51. In my school, all teachers can select effective mastery-based learning strategies.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

52. In my school, teachers can modify teaching approaches to enhance mastery-based learning.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

53. In my school, all teachers can determine learners' specific learning attributes in a mastery-based learning environment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

54. In my school, the variable of re-enforcement is regularly practiced by all teachers.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

55. In my school, teachers make sure that learners have built a solid foundation before moving to the next level.

Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

56. In my school, the system of assessment systematically increases learner achievement and retention of studied content.

Daily	1	Weekly	2	Quarterly	3	Monthly	4	Other specify	5

57. In a mastery-based learning, learners proceed through a course at their own paced progress as a group.

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Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

58. In my school, helpless and struggling learners are given opportunity to master critical elements of the content before new ones are introduced.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

59. Intelligence and aptitude scores are not a big issue in mastery-based learning.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

60. In a mastery-based learning, learners persevere and are determined not only to learn the content but to master it.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

61. In a mastery-based learning, learners are confident, attend classes regularly and have positive actions.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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62. Mastery-based learning is difficult to implement.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

63. Mastery-based learning is expensive to implement.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

64. Mastery-based learning makes grading and reporting more difficult.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

65. In a mastery-based learning, too many learners will fail compared to learners in the traditional teaching environment.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

66. In a mastery-based learning, standards are too low and advanced learners are not challenged.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

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67. In a mastery-based learning, learners seek to improve and learn no matter how awkward the conditions might be.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

68. A mastery-based learning instruction is multifaceted, adaptable, differentiated in terms of knowledge and skills variables.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

69. In a mastery-based learning 80% of learners may obtain the same high level of performance attained by only 20% in a traditional learning system.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

70. In a mastery-based learning, learning is directed at a variety of group-based instruction.

Strongly Disagree	1	Disagree	2	Neither Disagree nor Agree	3	Agree	4	Strongly Agree	5

Thank you for your cooperation.

Mrs M.A Lephatsoe

Cell: 07881154

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ANNEXURE B: ETHICAL CLEARANCE FROM DEPARTMENT OF BASIC

EDUCATION IN FREE STATE PROVINCE

Enquiries: KK Motshumi
Ref: Notification of research: Mrs MA Lephatsoe
Tel. 051 404 9221 / 079 503 4943
Email: K.Motshumi@fseducation.gov.za

educati
Department of Education
FREE STATE PROVI

Dear Ms. Zonke

NOTIFICATION OF A RESEARCH PROJECT IN YOUR DISTRICT BY MRS. MA LEPHATSOE

1. The above mentioned candidates were granted permission to conduct research in your d follows:

   Topic: Teacher role in the promotion of mastery learning: Perspectives on strat performance

   Schools involved: Attached is a list of schools in Lejweleputswa District

   Target Population: 1225 educators and 35 HOD's in the list of 35 schools attached

   Period: From date of signature of this letter to September 2017. Please note the de does not allow any research to be conducted during the fourth term (quarter) of the a year nor during normal school hours.

   Research benefits: New methodologies to master teaching and learning could eme harmonizes the relationship between the learner and the content

   Logistical procedures were met, in particular ethical considerations for conducting resear Free State Department of Education.

2. The Strategic Planning, Policy and Research Directorate will make the necessary arran for the researcher to present the findings and recommendations to the relevant officials District.

Yours sincerely

DR JEM SEKOLANYANE
CFO

DATE: 03/0

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LETTER TO THE SCHOOL PRINCIPAL

Dear Sir/Madam

I am a female teacher employed by the Free State Department of Education at Harmony High School. I am attracted to the on-going debate world-wide about the role of teachers in the promotion of mastery learning. As a result of this debate, various ideas, opinion, perceptions and arguments erupted with regard the topic of study.

Attached please find interview questions***(which will take NOT more than 30 minutes of your time)***designed for HoDs in the Educational District of Lejweleputswa in the Free State province. In order for me to complete the study successfully, some information about yourself is needed, **WITHOUT** giving your name. The interview is thus completed anonymously and all information will be treated confidentially.

Thank you for your cooperation

M.A Lephatsoe

Cell: 0788115409

Email: anacleta.lephatsoe@yahoo.com

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INTERVIEW QUESTIONS FOR HODS

QUESTION 1

1.1 In a few words and in your own understanding, how would you define/describe/explain the concept “Mastery Learning?

1.2 If the concept of Mastery-based learning is practised/would be practised in future at your school, tell how this is/would be conducted in terms of the following variables:

- Training and development of teachers to master the concept “Mastery Learning”.
- The role of teachers in the implementation of Mastery-based learning at your school
- The role of teachers in enhancing/promoting Mastery Learning in your school
- The performance of learners engaged in the mastery-based learning
- The quality of mastery-based learning compared to the traditional learning techniques
- Assessment methods and or techniques in the evaluation of learners in a Mastery-based learning

1.3 What are the advantages of the Mastery Learning to education in general?

1.4 What are the disadvantages of Mastery Learning?

1.5 What are the best strategies for implementing Mastery Learning in your school?

1.6 How would you compare Mastery-based Learning to the Traditional system of teaching and learning?

END OF THE INTERVIEW.

Thank you very much.

M.A Lephatsoe

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Cell: 0788115409

Email:anacleta.lephatsoe@yahoo.com

ANNEXURE D

LETTER TO THE SCHOOL PRINCIPAL REQUESTING PERMISSION TO UNDERTAKE RESEARCH.

24 Fairbain Street
Dagbreek
Welkom
9459

The Principal

Dear Sir/Madam

Re: Permission to undertake research in your school.

I am a masters student enrolled at the Central University of Technology, Free State. I am involved in a research project which attempts to describe the role that teachers play in the promotion of mastery learning. Therefore, the targeted population for the study is the Senior Phase teachers in the Lejweleputswa District.

The project is likely to provide interesting and useful information which could be of a supportive nature to both teachers and department officials in making the system of mastery learning meaningful.

I have received permission from the Free State Department of Education to undertake the study and your school has been selected to participate in this study. I will be humbly grateful if you could be of assistance with the research by giving the enclosed questionnaires to grade 10 to 12 teachers.

The completion of questionnaires should be a take-home, one day exercise. I will be grateful if you could encourage the respondents not to leave any questionnaire items unanswered. The name of your school, teachers and HoDs involved in the study will

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remain completely anonymous. I will greatly appreciate it if you could collect and retain completed questionnaires in your office, and I will personally collect them. The success of the research will largely depend on the number of questionnaires returned. Your assistance in this regard will be greatly appreciated.

Yours sincerely

M.A Lephatsoe

Cell: 078 811 5409

E-mail addres

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ANNEXURE E

LETTER TO THE TEACHER REQUESTING PARTICIPATION TO ANSWER RESEARCH QUESTIONNAIRE.

24 Fairbain Street
Dagbreek
Welkom
9459

Dear Sir/Madam

Re: Request to participate in the study.

I, the undersigned and student at the Central University of Technology, Free State (CUT) Welkom Campus, hereby request you to participate in the research study by answering the research questionnaire/ interview.

1. Personal Details

Title	: Mrs Mmatsela Anacleta Lephatsoe
Residential address	: 24 Fairbain Street, Dagbreek Welkom 9460
Postal address	: 1664 Phahameng Mmamahabane Ventersburg 9450
Contact numbers	: 078 811 5409 / 062 773 5409
Institution	: Central University of Technology, Free State
Degree	: Master of Education
Supervisor	: Dr. ABM Kolobe
Title	: Teacher role in the promotion of mastery learning: Perspectives on strategy and performance

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2. Topic : Teacher role in the promotion of mastery learning: Perspectives on strategy and performance.

The study attempts to describe the role that teachers play in the promotion of mastery learning. Therefore, the project is likely to provide interesting and useful information which could be of a supportive nature to both teachers and department officials in their quest to establish and deliver quality, fruitful education.

I have received permission from the Free State Department of Education to undertake the study and your school has been selected to participate in this study. The study involved teachers from grade 10 to 12.

The name of the school, teachers and HoDs involved in the study will remain completely anonymous.

The success of the research will be largely dependent on your assistance, so your cooperation will be highly appreciated.

Yours truly

Mrs M.A Lephatsoe

Cell: 0788115409

Email: anacleta.lephatsoe@yahoo.com

SIGNATURE_____ DATE: _____

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ANNEXURE F: LANGUAGE EDITING CERTIFICATE

Editing Certificate

I, Anneke-Jean Denobili, hereby declare that I edited and formatted the dissertation of Mmatsela Anacleta Lephatsoe (student number 209047240) titled, *Teacher role in the promotion of mastery learning: Perspectives on strategy and performance in FET schools,* for submission purposes in fulfilment of the requirements for the degree Master of Education, in the School of Teacher Education, Faculty of the Humanities, at the Central University of Technology, Free State. All the suggested changes, including the implementation thereof, was left to the discretion of the student.

Name of Editor: Anneke-Jean Denobili

Qualifications: Bachelor of Arts Honours in Corporate and Marketing Communications *(cum laude)* and Bachelor of Arts in Corporate and Marketing Communications *(cum laude)*

Signature:  **Date Issued:** 24 September 2018

The editor will not be held accountable for any later additions or changes to the document that were not edited by the editor, nor if the client rejects/ignores any of the changes, suggestions or queries, which he/she is free to do. The editor can also not be held responsible for errors in the content of the document or whether or not the client passes or fails. It is the client's responsibility to review the edited document before submitting it for evaluation.

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