A survey of foundation phase teachers' utilisation of dynamic assessment

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A survey of foundation phase teachers' utilisation of dynamic assessment

by

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Declaration of Originality

I, Claudene Fasser (student number 15260331), declare that the dissertation, which I hereby submit for the degree Magister Educationis in Educational Psychology at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

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Claudene Fasser

January 2021

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Ethical Clearance Certificate

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RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	CLEARANCE NUMBER: **EP 17/05/01**
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This Ethics Clearance Certificate should be read in conjunction with the Integrated Declaration Form (D08) which specifies details regarding:
- Compliance with approved research protocol,
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- Informed consent/assent,
- Adverse experience or undue risk,
- Registered title, and
- Data storage requirements.

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Ethics Statement

The author, whose name appears on the title page of this dissertation, has obtained, for the research described in this work, the applicable research approval. The author declares that she has observed the ethical requirements in terms of the University of Pretoria's *Code of ethics for researchers and the Policy guidelines for responsible research*.

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Abstract

A Survey of Foundation Phase Teachers' Utilisation of Dynamic Assessment

by

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Supervisor: Dr. Suzanne Bester

Degree: M.Ed. (Educational Psychology)

The purpose of this descriptive, cross-sectional survey study was to describe how 125 foundation phase teachers in the Johannesburg North education district used dynamic assessment. The conceptual framework of the study consisted of constructs from Vygotsky's sociocultural theory, namely 'zone of proximal development' and 'scaffolding'. It also included mediation as a construct from Feuerstein's mediated learning experience theory. The study findings revealed that a majority of the respondents were familiar with dynamic assessment and used it as part of a comprehensive assessment approach. In addition, a majority of the respondents who indicated that they were familiar with dynamic assessment believed that they were competent in it. A majority of the respondents also said that dynamic assessment had advantages and value in the South African context. However, the respondents also mentioned its disadvantages, stating that it required too much additional preparation time. Lastly, with regard to learning more about dynamic assessment, a majority of the respondents reported that they were interested in receiving further training in it.

Key words

- Dynamic assessment
- Cross-sectional survey
- Foundation phase teachers
- Assessment
- Zone of proximal development
- Scaffolding
- Mediated learning experience theory

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DECLARATION OF LANGUAGE EDITING

Claudene Adar's mini-dissertation, A **survey of foundation teachers' use of dynamic assessment**, was language-edited by me between July 2020 and December 2020. It is, of course, the prerogative of the writer to accept or reject my suggested changes. I did not have sight of the final version of the dissertation.

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List of Abbreviations and Editorial Notes

ACE	Advanced Certificate in Education
ANAs	Annual national assessments
AWS	Amazon Web Services
B.Ed.	Bachelor of Education
CAPS	Curriculum and Assessment Policy Statement
CPD	Continuous professional development
GDE	Gauteng Department of Education
IP	Internet protocol
LPAD	Learning Propensity Assessment Device
M.Ed.	Master's in education
NAPTOSA	National Professional Teachers' Organisation of South Africa
NQF	National Qualifications Framework
PGCE	Postgraduate Certificate in Education
PhD	Doctor of Philosophy
SPSS	Statistical Package for Social Sciences

Referencing style: American Psychological Association (APA) 6.

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1.1 INTRODUCTION

Educational assessments are vital instruments teachers use to collect, analyse, and interpret information in order to make decisions on the progress of learners during their scholastic careers (Department of Basic Education, Republic of South Africa, 2012). According to the National Protocol for Assessment Grades R-12 (Department of Basic Education, Republic of South Africa, 2012), classroom assessments are categorised in two ways. An assessment can be formal, in other words, it is mostly summative and an assessment *of* learning (Department of Basic Education, Republic of South Africa, 2012; Dixson & Worrell, 2016). Or an assessment can be informal, in other words, it is mostly formative and an assessment *for* learning (Department of Basic Education, Republic of South Africa, 2012; Hargreaves, Gipps, & Pickering, 2014).

How an assessment is categorised depends on when in the teaching process it takes place and what its purpose is (Dann, 2014; Department of Basic Education, Republic of South Africa, 2012; Dixson & Worrell, 2016). Summative assessments usually focus on confirmation of curriculum competence and are often large-scale assessments at the end of a specific learning period (Kanjee & Sayed, 2013). Formative assessments are used with the intention of the results being used to inform teaching after the assessment (Pugh & Regehr, 2016).

In recent years, a new type of formative assessment – assessment *as* learning – has emerged (Dann, 2014; Earl, 2013). An assumption that underpins assessment *as* learning is that the learner plays a central role in the assessment process and participates actively in the process (Dann, 2014; Earl, 2013). Assessment *as* learning promotes the development of metacognitive skills such as planning, monitoring, and evaluating (Earl, 2013; Lam, 2016).

Dynamic assessment can be regarded as assessment *as* learning (Davin, 2013; Haywood & Lidz, 2006; Norwich, 2014). Purposive intervention is part of the dynamic assessment process (Bowman, Donovan, & Burns 2001; Haywood & Lidz, 2006) in that it enables learners and teachers to reflect on the assessment process (Davin & Donato, 2013). It can be used to determine how effective various forms of instruction are in teaching a learner (Symons, 2011). Dynamic assessment has been introduced because of its focus on understanding the learner and how the learner learns (Rashidi & Bahadori Nejad, 2018). It can therefore accommodate learners from various

backgrounds, learners with special needs, and learners facing socio-economic challenges (Tzuriel, 2001). The results of such assessment also give an indication of learners' performance in relation to the curriculum (Lidz & Haywood, 2014). Because dynamic assessment combines teaching and assessing into one activity, it enables the teacher to guide the learning process as a more knowledgeable other (Van der Veen, Dobber, & Van Oers, 2016; Vygotsky, 1978).

Teachers are challenged to teach and assess, as well as interpret and apply the curriculum to meet the needs of all the learners in their classrooms (Department of Basic Education, Republic of South Africa, 2015). According to Bowman et al. (2001), there are four reasons for assessment in early childhood education: (1) to support learning; (2) to identify special needs; (3) to evaluate programmes and monitor trends; and (4) to ensure the school is accountable. Assessments during the foundation phase are the sole responsibility of the school and are done at the discretion of the teacher (Department of Basic Education, Republic of South Africa, 2012). Foundation phase teachers thus have the task of producing learners who, in addition to being literate, numerate, and multi-skilled, will also one day be independent, active participants in society (Department of Education, 2002).

Dynamic assessment can be used to reveal the learning potential of each learner (Tzuriel, 2012). With policy today being less prescriptive on the manner of assessment during the foundation phase (Department of Basic Education, Republic of South Africa, 2011), teachers have the freedom to explore the potential benefits of dynamic assessment. Apart from exploring the learning potential of each learner, dynamic assessment can also help learners realise that potential (Fazlollahi, Marefat, & Vaezi, 2015).

A review of the literature was done to establish how teachers in South Africa use dynamic assessment. Although no South African studies were found, a number of international studies on the topic were discovered.

The first study was a survey done in New Zealand on 195 resource teachers' knowledge of dynamic assessment (Hodges, 2013). It found that the majority of the participants were not familiar with dynamic assessment. Of those who were familiar with such assessment, 32.9% applied it. The study further found that 92.5% of the participants believed that dynamic assessment was or could be useful in their teaching practice.

The only other studies encountered on this topic were qualitative studies. The first study, conducted in Iran, on teacher perceptions of dynamic assessment took into

consideration teacher training and length of service (Karimi & Shafiee, 2014). The study made use of semi-structured interviews with 42 English First Language teachers. The results revealed that the teachers' perception of dynamic assessment varied considerably, especially with regard to their role as assessors. Some of the respondents considered themselves classroom assessors while others saw themselves as informants, learning facilitators, and decision-makers. Karimi and Shafiee (2014) attributed the different perceptions to sociocultural factors such as the teachers' contexts, the training they received, and their years of service.

The second study was done in the United Kingdom on lecturers' perceptions of dynamic assessment (A. Nazari, 2017). The study explored dynamic assessment as an alternative method of assessment to assess non-native English-speaking students. Semi-structured interviews were conducted with 10 native English-speaking lecturers to determine the possibility of implementing dynamic assessment. A. Nazari (2017) found that the lecturers were mostly ambivalent about dynamic assessment. Although there were concerns about the challenges of implementing dynamic assessment, some respondents were open to implementing it. The concerns included needing extra time and preparation for the assessment as well as the pressure to follow standardised procedures.

The studies were done in contexts that differed from the South African context, as well as at a different phase in the education system. In addition, two of the three studies were qualitative. It would therefore be necessary to explore to what extent dynamic assessment is being used by foundation phase teachers in the South African context.

1.2   PURPOSE OF THE STUDY

The purpose of this descriptive cross-sectional survey study was to describe how 125 foundation phase teachers in the Johannesburg North District used dynamic assessment. The study explored the respondents' use of various forms of assessment and how dynamic assessment was included as part of their assessment practices. Factors that could influence the use of dynamic assessment were also investigated, such as how familiar the respondents were with dynamic assessment and how competent they felt in using it. The study considered the respondents' qualifications and experience to determine if there was a relationship between the former and their familiarity with and competence in dynamic assessment. The study also sought to establish how the respondents were trained in dynamic assessment and what their future training needs might be. Dynamic assessment, as the dependent variable, was defined as an interactive form of assessment to assess learners' skills as well as determine their learning potential. Dynamic assessment occurs when intentional

mediation is part of the assessment process, to measure how the mediation affects the learner's performance (Haywood & Tzuriel, 2002).

1.3 RESEARCH QUESTIONS

1.3.1 DESCRIPTIVE QUESTIONS

- ❖ How familiar were the foundation phase teachers with dynamic assessment?
- ❖ How competent did the foundation phase teachers feel using dynamic assessment?
- ❖ How often did foundation phase teachers use dynamic assessment compared to other forms of assessment?
- ❖ What were the foundation phase teachers' views on the advantages and disadvantages of dynamic assessment?

1.3.2 INFERENTIAL QUESTIONS

- ❖ Was there a correlation between the respondents' qualifications and their familiarity with dynamic assessment?
- ❖ Was there a correlation between the respondents' teaching experience and their familiarity with dynamic assessment?
- ❖ Was there a correlation between the respondents' qualifications and their competence in using dynamic assessment?
- ❖ Was there a correlation between the respondents' teaching experience and their competence in using dynamic assessment?

1.4 CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of the study was guided by Vygotsky's sociocultural theory (Vygotsky, 1978) and Feuerstein's mediated learning experience theory (Feuerstein, Hoffman, & Miller, 1979). These theories contain concepts such as the zone of proximal development, scaffolding, and mediation, which lie at the heart of dynamic assessment (Haywood & Lidz, 2007; Murphy, 2011; Tzuriel, 2001). Included in the theories are tenets of socially constructed learning, which emphasise the transitional nature of cognitive development and highlight the role of a teacher or a more knowledgeable other in facilitating the learning of other individuals (Haywood & Lidz, 2007; Murphy, 2011; Tzuriel, 2001). The tenets speak directly to what this study set out to investigate, namely the nature of the assessment of the learning process in foundation phase classrooms.

Vygotsky's zone of proximal development holds that learning instruction should be provided at the level of potential of the learner. Assessments should therefore be adapted to focus on the potential of the learner rather than on what he or she has already learnt (Haywood & Lidz, 2007; Tzuriel, 2001). Scaffolding, which is also part of Vygotsky's theory, provides for multiple types of applications and cultures (Losardo & Notari-Syverson, 2011), which makes it appropriate for the multicultural and varying socio-economic contexts of South Africa. The mediated learning experience theory holds that cognitive modifiability is possible regardless of the individual's age, gender, or context (Losardo & Notari-Syverson, 2011).

The study's conceptual framework is discussed in detail in Chapter 2.

1.5   CLARIFICATION OF THE CONCEPT DYNAMIC ASSESSMENT

Dynamic assessment is a term used to describe assessments that are interactive and focused on the learning process of the learner and how the learner responds to interventions during the assessment (Lidz & Haywood, 2014). The most commonly used process of dynamic assessment is the test-teach-retest method (Murphy & Maree, 2006a). In this fluid process, the learner is given a baseline test, the outcome of which guides the mediation planned by the assessor who is also the teacher in this case. Another test is administered later to determine the learner's learning potential (Amod & Seabi, 2013; Cotrus & Stanciu, 2014).

Mediation can be a carefully planned intervention involving scaffolding specific constructs the learner finds most difficult to understand; or it can be an intervention without limit, enabling the learner to work independently as the difficulty of constructs increases (Thouësny, 2010). One definition of dynamic assessment is "an assessment of thinking, perception, learning, and problem solving by an active teaching process aimed at modifying cognitive functioning" (Tzuriel, 2000, p. 386).

1.6   OUTLINE OF THE RESEARCH METHODOLOGY, APPROACH, AND PROCESS

Figure 1.1 below details the research approach and paradigm of the study. It is a visual representation of the research process, outlining the initial exploration done for the study, the research design, and the research execution. The research methodology, approach, and process are discussed in detail in Chapter 3.

EXPLORATION

RESEARCH PURPOSE

To what extent do foundation phase teachers in Johannesburg use dynamic assessment in their classrooms?

LITERATURE REVIEW

-Dynamic assessment.
-Assessment in South Africa.
-Foundation phase assessments in South Africa.

THEORY

-Vygotsky's sociocultural theory.
-Feuerstein's mediated learning theory.

RESEARCH DESIGN

RESEARCH PARADIGM

-Positivism (Breen & Darlaston-Jones, 2010; Weissman, 1994).
-Quantitative research (Johnson, 2001; Kamil, 2004; Wahyuni, 2012).

RESEARCH METHOD

-Cross-sectional survey (Creswell, 2012).
-Single survey per respondent (C. Liu, 2008).

SAMPLING STRATEGY

-Purposive sampling (Creswell, 2012).
-Foundation phase teachers employed by the Department of Basic Education.

RESEARCH PROPOSAL

RESEARCH EXECUTION

A pilot survey was done using purposive sampling to increase the reliability and validity of the survey.

Online, web-based survey (using the eSurvey Creator https://www.esurveycreator.com) as printed copies of the survey were distributed.

Descriptive questions were analysed using general tendencies and frequency distribution.
Inferential questions were analysed using cross-tabulation and chi-square.

RESEARCH REPORT

Figure 1.1: **Outline of the research process** (adapted from Bhattacherjee, 2012)

1.7   SUMMARY

This chapter introduced the research topic of the study and provided an overview of what the study entailed. Also discussed were the purpose of the study, the research questions, and the theoretical framework. An outline of the research methodology was provided to delineate the process that was followed.

The next chapter explores the literature on assessment with specific focus on dynamic assessment. The characteristics of dynamic assessment are discussed as is the use of dynamic assessment in an educational setting.

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Chapter 2
Literature Review

2.1   INTRODUCTION

This chapter commences with a discussion of the role assessment plays in teaching and learning. Teaching and assessment have a reciprocal relationship in the learning process, and consequently their mutually dependent role in a teaching and learning approach is relevant to this study. The principles and purpose of assessment are explored to provide a context for good assessment practices. The assessment needs of learners in the foundation phase are considered in order to gain insight into how assessment practices should align with these needs. The assessment goals outlined by the Department of Basic Education are discussed against the background of the requirements for foundation phase assessment. Dynamic assessment is described as an alternative form of assessment that fits into a broader, more flexible approach to assessment in the foundation phase. The main constructs of dynamic assessment are highlighted along with the various ways in which dynamic assessment has been implemented in different educational contexts. The chapter concludes with an overview of the theoretical underpinning of dynamic assessment.

2.2   ASSESSMENT AS PART OF TEACHING AND LEARNING

Teachers are expected to assess, interpret, and apply the curriculum in order to meet the needs of all the learners in their classrooms (Department of Education, 2008b). They have a mandate to ensure that all learners learn at their full potential (Prinsloo, 2001). Assessment has two core functions, namely measuring the knowledge acquired by learners in a specific subject and determining if this knowledge meets a predetermined standard. Assessment thus fulfils an essential role in teaching (Snowman & McCown, 2013).

The National Curriculum Statement states that assessment should improve the teaching and learning process and that it is an integral part of the teaching and learning cycle (Department of Education, Republic of South Africa, 2007; National Professional Teachers' Organisation of South Africa [NAPTOSA], 2018). The cycle consists of planning, teaching and assessing, feedback and support to the learner, and teacher updating through research (NAPTOSA, 2018). Teaching and assessment are

interlinked as part of the learning cycle, and the results of the one should ideally inform the other before the next phase of the cycle can continue. Such assessment is more than merely testing learners. It is the guided interactions teachers have with learners, which involve observing learners' progress and using the observations to inform future interactions – in other words, creating a smaller cycle within the larger cycle of learning (NAPTOSA, 2018).

According to the National Curriculum Statement - Foundation Phase Assessment Guidelines, the purpose of assessment should be to monitor the progress of learners while promoting their development (Department of Education, Republic of South Africa, 2008a). It should be used as a tool to identify areas of strength as well as areas in need of improvement. The purpose should also be to determine whether learners are performing according to their full potential and whether they are developing towards the required level of achievement for progression (Department of Education, Republic of South Africa, 2008a). This means that assessment should differentiate between what learners are currently achieving and what they should be able to achieve. Assessment results determine whether learners are performing at a level suitable for them to proceed to the next grade or learning outcome. The purpose of assessment, especially in the foundation phase, should be a continuous process rather than a once-off event (Department of Education, Republic of South Africa, 2007).

Naudé and Davin (2017) maintain that teachers have to consider various principles of assessment from a practical point of view. The first principle is that assessment is an integral part of teaching and learning as described above. Other principles are that assessment should be reliable, valid, relevant, and appropriate, which means that it should produce the same test results regardless of who the assessor is; that it should measure what it sets out to measure; and that it should be appropriately set at learners' levels. Teachers also have to ensure that assessments are transparent and that they provide feedback to learners. This means that learners should be aware of what is being tested and that comments for improvement should be communicated to them after completion of the assessment. The authors emphasise that these assessment principles should be woven into the teaching and learning process (Naudé & Davin, 2017).

The Assessment Guidelines of the Department of Education state that assessment should

- "be authentic, continuous, multi-dimensional, varied and balanced;
- take into account the diverse needs of learners and the context, and therefore use various assessment strategies;
- be an integral part of the teaching and learning process, and should help us to evaluate the teaching and learning;
- be accurate, objective, valid, fair, manageable and time efficient;
- be based on information from several contexts, take many forms and include a range of competencies and uses;
- be bias-free and sensitive to gender, race, cultural background, and abilities;
- be criterion-referenced as far as possible;
- be transparent so that learners and teachers have a clear understanding of what the expectations are for any assessment task." (Department of Education, Republic of South Africa, 2008a, p. 8)

These principles of assessment are underpinned by the belief that learners should be understood holistically and that their developmental needs should be taken into consideration during assessment.

The Department of Basic Education further emphasises in its Teacher's Guide for the Development of Learning Programmes - Foundation Phase that assessment should be an ongoing, planned, and integrated process in the course of which the progress of learners is measured against the learning outcomes (Department of Education, 2003). The learning outcomes should be considered for each learner as there are annual national assessments (ANAs) in literacy and numeracy for all foundation phase learners. The ANAs provide the Department of Basic Education with national standardised results that can guide outcomes-based teaching and assessment (Brindley, 2001).

Although the main purpose of standardised tests is to inform teaching and improve learning, they are also used to keep schools accountable (Maphalala & Mncube, 2017). However, Maphalala and Mncube (2017) caution that standardised testing may have the unintended consequence of teachers preparing learners only for the test content thus narrowing the curriculum. Teachers may feel pressured to 'teach to the test', and Maphalala and Dhlamini (2017) have in fact found that many teachers and principals believe that standardised assessments achieve neither competency in learning nor excellence in teaching.

The structure of school-based assessments for all subjects is outlined in the Curriculum and Assessment Policy Statements for the various subject areas (Department of Basic Education, Republic of South Africa, 2012). However, how teachers use assessments in the teaching and learning cycle is dependent on individual teachers' training, abilities, and perceptions (Vandeyar & Killen, 2007). DeLuca, LaPointe-McEwan, and Luhanga (2016) state that teachers' differing views on how teaching, learning, and assessment overlap have resulted in a range of assessment practices. Based on the above assessment purposes and principles, as well as the variability in assessment implementation, the different types of assessment available to foundation phase teachers are discussed further in the next section.

2.3   ASSESSMENT IN THE FOUNDATION PHASE

According to Piaget's theory of cognitive development, children in the foundation phase are in the concrete operational phase of development (Huitt & Hummel, 2003). During this stage of development, it is believed that children can think logically and systematically. They learn by associating abstract symbols with concrete objects they are already aware of (Huitt & Hummel, 2003). Learning is maximised by the active participation of learners in the learning process (Losardo & Notari-Syverson, 2011). Learners in the foundation phase should therefore learn through discovery, and their interests should be included in how they learn (Huitt & Hummel, 2003). However, before the teaching process begins, an assessment should be done to determine what learners already know (Blessing, 2019). This assessment could be done as a school readiness assessment by a psychologist (Amod & Heafield, 2013) or as a baseline assessment by the class teacher (Blessing, 2019). Because it is learners' introduction to formal education, the assessment should be done over a period of time, with learners in a comfortable setting while under observation (Amod & Heafield, 2013; Blessing, 2019).

Taking the developmental needs of learners into consideration, the National Protocol for Assessment stipulates that school-based assessments should be used solely for learner promotion (Department of Basic Education, Republic of South Africa, 2012). School-based assessments are usually implemented as a continuous assessment, which is a consistent process of identifying and interpreting how learners are progressing. The National Protocol for Assessment and the National Curriculum and Assessment Policy Statement (CAPS) of South Africa outline the assessment *for* learning (formative assessment) and the assessment *of* learning (summative

assessment) for foundation phase learners that teachers should use (Department of Basic Education, Republic of South Africa, 2012, 2015).

In the 1960s, a distinction was drawn between formative and summative assessment as a result of the process of curriculum development; however, this was initially referred to as formative and summative evaluation (Lau, 2016). During the curriculum development process, 'formative' evaluation was used to monitor the curriculum and revise early drafts, while 'summative' evaluation referred to the review of the final draft of the curriculum.

Bloom, Hastings, and Madaus (1971) then suggested a move beyond curriculum evaluation to the actual learning process and introduced the terms formative and summative assessment (Lau, 2016). Summative assessment as defined by Bloom et al. in Lau is "judging, grading and certifying what the learner had achieved at the end of a course or programme" (2016, p. 511). Formative assessment was considered assessment that assisted in the process of teaching and learning so that teachers could provide the support needed immediately thus making the intervention more beneficial (Lau, 2016). According to Bennett (2011), the aim of formative assessment as defined by Bloom in 1969 was to provide feedback and correction to learners during the teaching and learning process. Formative assessments were thus used to assist learners as they learned, and summative assessments were used to determine what learning had occurred within a specific period of time (Dolin, Black, Harlen, & Tiberghien, 2018).

The definition of summative assessment has not changed much over the years. It is still widely understood as a means of establishing how well learners have learnt content taught to them (Price, 2015). The definition of summative assessment as provided by the National Protocol for Assessment is that it is a "systematic way of evaluating how well learners are progressing in a particular subject and in a grade" (Department of Basic Education, Republic of South Africa, 2012, p. 4). Examples of summative assessment as provided by the National Protocol for Assessment are "projects, oral presentations, demonstrations, performances, tests, examinations and practical demonstrations" (Department of Basic Education, Republic of South Africa, 2012, p. 4).

Differing views have emerged on the definition of formative assessment (Bennett, 2011; Black & William, 2009). The various definitions include providing information to

inform the process of teaching and learning and to encourage learners in their learning (McMillian McManus, 2008; Weurlander, Söderberg, Scheja, Hult, & Wernerson 2012). However, the definition of formative assessment in the National Protocol for Assessment is that it is "the monitoring and enhancing of learners' progress … through teacher observation and teacher-learner interactions" (Department of Basic Education, Republic of South Africa, 2015, p. 3). Examples of formative assessment according to the National Protocol for Assessment are observations and discussions (Department of Basic Education, Republic of South Africa, 2015). Table 2.1 provides a comparative summary of formative and summative assessment.

Table 2.1: **Comparison of formative and summative** (Dixson & Worrell, 2016, p. 154)

Characteristic	Formative Assessment	Summative Assessment
Purpose	To improve teaching and learning To diagnose student difficulties	Evaluation of learning outcomes Placement, promotion decisions
Formality	Usually informal	Usually formal
Timing of administration	Ongoing, before and during instruction	Cumulative, after instruction
Developers	Classroom teachers to test publishers	Classroom teachers to test publishers
Level of stakes	Low-stakes	High-stakes
Psychometric rigor	Low to high	Moderate to high
Types of questions asked	What is working What needs to be improved How can it be improved	Does student understand the material? Is the student prepared for next level of activity
Examples	Observations Homework Question and answer sessions Self-evaluations Reflections on performance Curriculum-based measures	Projects Performance assessments Portfolios Papers In-class examinations State and national tests

As stated earlier, teachers in the foundation phase have the freedom to implement whatever assessment types they consider suitable. Although not expressly outlined in the National Protocol for Assessment or National CAPS (Department of Basic Education, Republic of South Africa, 2012, 2015), various forms of assessment can meet the purpose of assessment as discussed above. The types of assessment

teachers can implement are criterion-referenced tests and diagnostic or ipsative assessments (Ashraf, 2020). Dynamic assessment is an alternative form of assessment with principles similar to those of formative assessment (Leung, 2007). Dynamic assessment is discussed in the next section.

2.4   DYNAMIC ASSESSMENT

Dynamic assessment is an encompassing term that applies to various approaches to assessment (Murphy & Maree, 2009). Dynamic assessment came to the fore because of the limitations of standardised assessment in assessing human development and potential. As stated previously, standardised assessments are used to determine learners' progress at a specific point in time. They measure assessment results as a product of learning without taking into consideration learners' potential to grow (Hidri, 2019). In contrast to standardised assessment's focus on end results, dynamic assessment focuses on the assessment process to reveal the potential of learners (Navarro & Lara, 2017).

Dynamic assessment is considered a learner-friendly approach as it focuses on how learners approach tasks and their thought processes. It is also a clinically based approach and affirms the innate ability of every individual to learn (Haywood & Lidz, 2007; Losardo & Notari-Syverson, 2011). The dynamic assessment process is characterised by interaction, instruction, scaffolding, and mediation; it is also more subjective and flexible and can heighten learners' feelings of competence (Tzuriel, 2005; Vergara, Caraballo, Castellon, Vásquez, & Becker, 2019). Dynamic assessment serves as a platform for teachers to provide differentiated assessments based on learners' support needs (Elliott, 2003). Tzuriel (2000) states that teachers who use dynamic assessment focus on what learners can do and their potential to solve problems. With dynamic assessment, learners may have a better chance of experiencing success and mastery, resulting in a positive assessment experience (Lin, 2010). The nature and types of dynamic assessment are discussed next.

2.4.1   NATURE OF DYNAMIC ASSESSMENT

Dynamic assessment is a form of assessment that includes guided support, scaffolding, and mediation when gauging an individual's potential to learn (Losardo & Notari-Syverson, 2011). Emphasis is placed on how the assessment process can be used to identify learners' cognitive abilities beyond what they have already learnt

(Murphy & Maree, 2009). Tzuriel defines dynamic assessment as "an assessment of thinking, perception, learning, and problem solving by an active teaching process aimed at modifying cognitive functioning" (2000, p. 386).

Haywood, Brown and Wingenfeld (1990) state four goals of the dynamic assessment process that revolve around the modifiability of cognitive structures. The first goal is to ascertain what leaners can learn with some intervention. The second goal is to determine the extent of intervention required in a specific area. The third goal is to assess how generalisable intervention in a specific area impacts other areas of functioning. The final goal is to assess the extent of teaching or mediation needed to achieve the desired degree of flexibility in cognitive functioning (Haywood et al., 1990). Tzuriel (2005) added a further two goals, namely determining learners' learning preference, whether the mode in which the problem is presented is pictorial, linguistic, or numerical and which mediation is most effective and, as such, what is successful intervention and what is not (Tzuriel, 2005).

Dynamic assessment is process-orientated, which means it focuses more on what happens during the assessment process than on the end result. This means that in dynamic assessment the process is just as important as the result (Losardo & Notari-Syverson, 2011). The high level of flexibility and reduced bias towards socially disadvantaged learners facilitates the use of this type of assessment with younger learners, learners who experience barriers to learning, and diverse learners in terms of language, socio-economic status, and so on (Murphy & Maree, 2009; Poehner, 2008; Tzuriel, 2001).

According to Haywood and Lidz (2007), a basic assumption of dynamic assessment is that specific learning abilities (e.g. problem-solving skills) cannot be assessed satisfactorily with standardised assessment measures. The authors argue that assessments are more meaningful and accurate when assessing potential if the focus is shifted to how learners learn something new rather than what they have already learnt. Dynamic assessment not only bridges assessment and intervention, it also provides the teacher with insight into cognitive skills learners need for academic success (Elliott, Resing, & Beckmann, 2018; Stringer, 2018). Information about the specific skills that encourage or hamper successful learning is provided, as it contextualises learners' learning and thinking (Haywood & Lidz, 2007). The different types of dynamic assessment are discussed in the following subsection.

2.4.2 Types of dynamic assessment

The two major approaches to dynamic assessment are an interventionist approach and an interactionist approach (Kapantzoglou, Restrepo, & Thompson, 2012; Lantolf & Poehner, 2004; Lin, 2010).

The interventionist approach allows for standardised support as it is quantitative in nature (Bester & Kühn, 2016). The aim is to ascertain how quickly learners learn new information and how much assistance they need while learning it. The teacher, who is the mediator, standardises the mediation so that it is the same intervention for all learners (Ahmadi Safa & Beheshti, 2018). The predetermined mediations make it easier for teachers to use this approach with groups of learners. Teachers often use this approach when they are looking for a standardised way to compare learner progress over time or to compare learners within a group to each other (Sanaeifar & Nafari, 2018).

The approach can be further divided into two formats or models (Bester & Kühn, 2016; Kapantzoglou et al., 2012; Lantolf & Poehner, 2004). The first, Budoff's model, also referred to as the 'sandwich' format, proposes a rigid 'pre-test–intervention–post-test' approach (Shabani, 2012). The process follows a fixed format in which learners are given tasks in which their learning barriers can be observed. The next step is the implementation of targeted mediation by the teacher and then, lastly, learners are given equivalent tasks so that the teacher can determine their learning preference (Kapantzoglou et al., 2012; Lantolf & Poehner, 2004). The mediation is adapted and can be either implicit or explicit to accommodate learners' needs (Bester & Kühn, 2016). The pre-test results are compared to the post-test results to determine how far learners have progressed (Ahmadi Safa & Beheshti, 2018). As learners all receive the same intervention, what is analysed is how they are able to benefit from the experience (Bester & Kühn, 2016; Fernández-Ballesteros, Zamarrón, Tárraga, Moya, & Iñiguez, 2003).

The second model, Campione and Brown's graduated response model (Campione & Brown, 1987), or 'cake' format, uses standardised intervention embedded in a test, and learners are assisted during the assessment process (Shabani, 2012). The model was originally developed to operationalise Vygotsky's zone of proximal development concept, in terms of which the teacher can determine what learners can accomplish with some support (Fernández-Ballesteros et al., 2003). When it is evident that

learners are having difficulty with an item in the assessment, implicit or explicit mediation as well as prompts are allowed (Bester & Kühn, 2016; Kapantzoglou et al., 2012; Lantolf & Poehner, 2004). The mediation and prompts are predetermined and are usually scaled from most implicit to most explicit (Shabani, 2012). Analysis is done on the basis of the number of clues learners require in order to succeed in a particular activity (Lidz, 2003).

The interactionist approach to dynamic assessment is a more qualitative and individually focused approach. The mediation is not scripted and centres on interaction between teacher and learners as the teacher ascertains what mediation the learners require (Poehner, Davin, & Lantolf, 2017). The teacher uses scaffolding or mediation to assist learners (Lin, 2010). This approach aligns with Vygotsky's theory as it focuses on learners' zone of proximal development, especially their development in the assessment situation (Poehner et al., 2017). It gives the teacher an indication of what learners can accomplish with some assistance and what their potential is.

The focus of this approach is on the assessment process rather than only on the end result (Kapantzoglou et al., 2012; Lantolf & Poehner, 2004). With this approach, the teacher can provide the necessary intervention immediately after each incorrect item instead of after completion of the assessment, thus allowing the teacher to teach during the test (Dörfler, Golke, & Artelt, 2009).

The two models in the interactionist approach are Feuerstein's model and Lidz's curriculum-based approach (Bester & Kühn, 2016). The first model to have been linked to dynamic assessment was Feuerstein's model (Lidz, 1999). Feuerstein used the Learning Propensity Assessment Device (LPAD), which entails paper and pencil activities along with intervention that assesses cognitive functioning (Feuerstein et al., 1979). Feuerstein's LPAD helps determine what intervention learners require to solve problems. Feuerstein's model is similar to Budoff's in that it incorporates paper and pencil activities (Lidz, 2003). However, it differs from Budoff's in procedure and purpose as Budoff's intervention is standardised and planned in advance. Feuerstein's model is unstructured as it does not provide a step-by-step guide. The teacher is required to intuitively provide mediation as learners solve the various problems (Lidz, 2003).

Lidz's (2003) curriculum-based model, as the name implies, uses learners' curriculums as part of the assessment procedure. The process includes the selection of a task

from the curriculum and its presentation to learners. Error analysis is then done to identify the errors made by learners (Lidz, 2003). As the model includes both the process and the intervention, the assessor has first to determine learners' existing knowledge and skills, after which intervention and a post-test take place (Bester & Kühn, 2016). The following table (Table 2.2) from Thouësny (2010) summarises the differences between interventionist and interactionist approaches in dynamic assessment.

Table 2.2: **Comparison of interventionist and interactionist dynamic assessment** (Thouësny, 2010, p. 3518)

Interventionist	Interactionist
Quantitative analysis	Qualitative analysis
Large-scale assessment	Small numbers of students, time consuming
Mediation established in advance Hints ranging from implicit to explicit	Mediation tailored to learners' responsivity
Individual or group settings	Individual setting
Psychometric reliability and validity	Psychometric measures not viable
Written and spoken language	Spoken language
Computer-based assessment	Human-based assessment

Bester and Kühn (2016) highlight the main characteristics of interventionist and interactionist dynamic assessment. The four models are included in Figure 2.1.
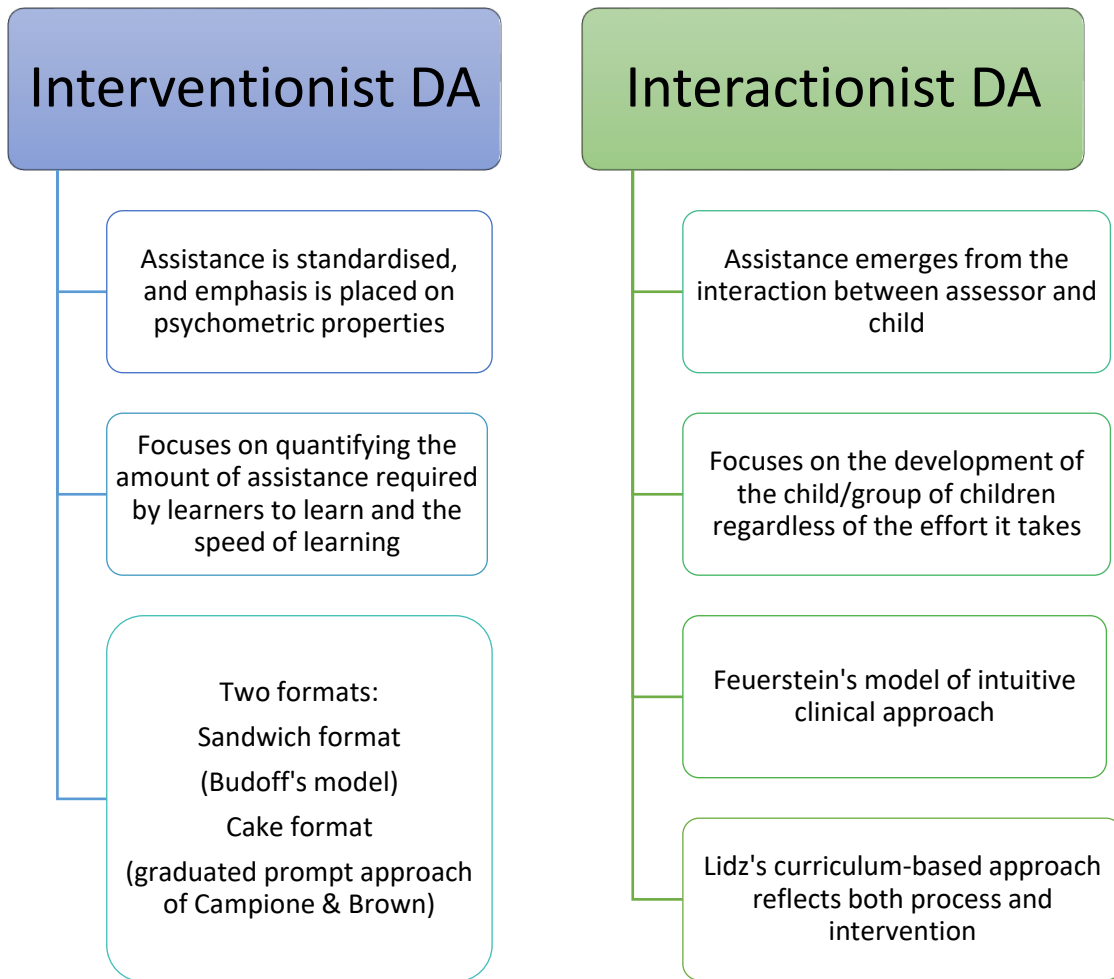
Figure 2.1: **Four models of dynamic assessment** (Bester & Kühn, 2016, p. 132**)**

Dynamic assessment and its nature and types have been discussed. The following section considers dynamic assessment in the educational context.

2.5 DYNAMIC ASSESSMENT IN EDUCATION

Dynamic assessment was originally implemented as a cognitive measure in psychological assessment (Haywood & Lidz, 2007). As a result of multidisciplinary intervention for learners, psychologists were encouraged to participate in collaborative activities with teachers, and consequently dynamic assessment shifted from a clinical to an educational setting (Albritton, Chen, Bauer, Johnson, & Mathews, 2019; Lauchlan, 2012).

Initially dynamic assessment was used in the educational context to assist in determining children's learning potential (Symons, 2011). Although its application has broadened in terms of the various ways it can be used in the classroom, dynamic

assessment is not yet widely used (Donovan, 2016; Murphy, 2008). Assessing learners through dynamic assessment enables the teacher to determine whether they are experiencing barriers to learning that are the result of something more serious or as a result of language or cultural barriers (Losardo & Notari-Syverson, 2011; Moore-Brown, Huerta, Uranga-Hernandez, & Peña, 2006; Tzuriel, 2001). Teachers can then help those who simply lack exposure and arrange more intensive intervention for learners with special needs (Department of Education, 2008b; Moore-Brown et al., 2006).

When using dynamic assessment, teachers mostly rely on the curriculum-based model with a pre-test–intervention–post-test approach (Kazemi, Bagheri, & Rassaei, 2020). The curriculum-based model can be applied at any level of schooling and in any context as long as the teacher follows the curriculum (Haywood & Lidz, 2007). He or she incorporates the sandwich format to work through the curriculum content.

The process begins with a test to determine learners' actual zone of development. The teacher then does task analysis to determine the objectives of the task, and process analysis to determine what skills learners need to complete the task successfully. The intervention is rooted in Feuerstein's theory of mediated learning experience, which emphasises interactions that will faciliate learners' ability to engage actively in learning, to self-regulate, and to increase their strategic problem-solving skills (Haywood & Lidz, 2007). The intervention is therefore aimed at enabling learners to move from operating in their zone of actual development into their zone of proximal development (Haywood & Lidz, 2007). Due to the level of interpretation and support required when administering dynamic assessment, training is offered to teachers to increase their effectiveness. Shohamy (2005) states that teachers should professionalise themselves through receiving training on assessment so that they can integrate assessment into classroom learning. Additionally, McNeil (2018), states that teacher educators need to be aware of their own practices when training teachers on dynamic assessment as this may influence the teachers' ability to implement it independently.

In the classroom setting, it may be too time consuming for teachers to work with each of the learners individually as is required in a dynamic assessment approach (Ahmadi Safa & Beheshti, 2018). In cases where teachers have to mediate a number of learners in the classroom, they can use group dynamic assessment (Ahmadi Safa & Beheshti, 2018). Vygotsky's sociocultural theory holds that a group zone of proximal

development can be established through group mediation (Daneshfar & Moharami, 2018). In group dynamic assessment, secondary interactants (learners observing the teaching) benefit from the support the teacher gives primary interactants (learner being taught). Group dynamic assessment can be done in a concurrent or cumulative framework (Ahmadi Safa & Beheshti, 2018; Kao, 2020).

Concurrent group dynamic assessment is similar to class instruction in that the teacher addresses the entire class at once. When a learner requires assistance, the assistance is shared with the entire class. Learners are assisted until they are able to work independently and the teacher is able to move onto the next learner who requires assistance (Ahmadi Safa & Beheshti, 2018; Kao, 2020; Poehner, 2009). In cumulative group dynamic assessment, each learner assumes the role of primary interactant, and the teacher provides mediation from one learner to the next so that each learner's zone of proximal development is co-constructed through participation (Ahmadi Safa & Beheshti, 2018; Kao, 2020; Poehner, 2009).

Various studies have been done on the applicability of dynamic assessment in the education setting (Black & William, 1998; B. Nazari, 2012; Poehner & Lantolf, 2005; Yildirim, 2008; Zhang, 2013). One study investigated the use of dynamic assessment during speaking assessments (Hill & Sabet, 2009). In this study, four specific types of dynamic speaking assessment applications were reviewed, namely 'mediated assistance', 'transfer-of-learning', 'zone of proximal development', and 'collaborative engagement'. The study was done with Japanese students in their first year at university taking English as a second language and had an aspect of group dynamic assessment to it. The findings revealed that dynamic assessment served not only as a useful means of assessing the learners but also contributed to their cognitive development (Hill & Sabet, 2009). In a second study, Poehner found that dynamic assessment "renders classroom interactions more systematic and more attuned to learners' emergent abilities" (2009, p. 488). Both these studies concluded that dynamic assessment was possible in group settings in regular classrooms. Additionally, Jeltova et al. (2011) found that group dynamic assessment could be successful, even in classrooms with ethnically diverse learners.

Dynamic assessment can also be used in language teaching, for example when learners learn additional languages. The interactionist approach is generally followed after instruction when teachers and learners collaborate to discuss problems, find solutions, and then reflect on the outcomes (Poehner & Infante, 2017). Haywood and

Lidz (2007) argue that dynamic assessment is useful in cases where a learner's home language differs from the language of learning and teaching. The learner may experience language difficulties (e.g. delay in language development), and factors such as cognitive impairment and lack of motivation may also impede the learner's learning.

Dynamic assessment has proven to be useful in multilingual and multicultural contexts, especially with disadvantaged groups (Amod & Seabi, 2013; Foxcroft, Roodt, & Abrahams, 2009; Murphy & Maree, 2009). South Africa is a country with 11 official languages and cultural groups, however most schools have only one language as the language of teaching and learning. Consequently, many learners are taught and assessed in their second, third, or even fourth language. Landsberg, Krüger, and Swart (2016) have found that dynamic assessment approaches are beneficial when learners are assessed in a second language.

Dynamic assessment has also been researched with deaf and hard-of-hearing learners. For example, in two case studies, Mann, Peña, and Morgan (2015) investigated the language assessment of deaf learners using American Sign Language. The study results indicated that dynamic assessment could provide insight into learning potential strategies when used in a vocabulary context (Mann et al., 2015).

Dynamic assessment is also used in contexts where learners experience barriers to learning. Barrera (2003) applied dynamic assessment alongside curriculum based learning outcomes to identify learners with learning disabilities and to determine their instructional needs. The study, which focused on secondary school learners with English as a new or second language, found that dynamic assessment seemingly had a positive impact on the reading abilities of the learners (Barrera, 2003). Dynamic assessment has also been used successfully with learners from ethnic minority or socio-economically disadvantaged groups. Also, in their study, Ukrainetz, Harpell, Walsh, and Coyle (2000) found that pre-primary learners' language ability could be tested using the sandwich method of dynamic assessment. Dynamic assessment can therefore be implemented with young learners or learners who have not yet started at school.

Dynamic assessment is also used with gifted learners (Lidz & Elliott, 2006). Research on dynamic assessment's ability to predict learner achievement in specific cognitive

functioning has pointed to a predictive element in dynamic assessment among Grade 1 learners (Seethaler, Fuchs, Fuchs, & Compton, 2012).

Contrary to the abovementioned studies, some other studies found that dynamic assessment did not improve learner outcomes. One such study by Thatcher Kantor, Wagner, Torgesen, and Rashotte (2011) compared two types of dynamic assessment with standardised assessment of preschool learners' phonological awareness. Their aim was to determine if the reliability and validity of assessments could be improved by using dynamic assessment. The study found that dynamic assessment showed no statistical improvement in the reliability and validity of learners' phonological awareness in comparison to standardised assessment (Thatcher Kantor et al., 2011). Poehner (2008) also cited instances where teachers were unsuccessful in promoting the development of learners' zone of proximal development. The following section discusses criticism of dynamic assessment in more detail.

2.6   CRITICISM OF DYNAMIC ASSESSMENT

The dynamic assessment movement arose for various reasons, one of them being concern about the accessibility and fairness of psychological assessment practices due to cultural contexts affecting the way individuals learn and develop (Haywood & Lidz, 2007; Lantolf & Poehner, 2013; Murphy, 2008). Because dynamic assessment originated from clinical practice, dynamic assessment instruments have been developed mainly by psychologists. The transfer from the clinical to the classroom context, and therefore implementation, can present challenges (Mehri & Amerian, 2015). Assessors accordingly need an adequate level of training and experience to implement dynamic assessment effectively (Lidz, 2003; Losardo & Notari-Syverson, 2011; McNeil, 2018; Tzuriel, 2013).

Sadeghi and Khanahmadi (2011) caution that dynamic assessment should be used complementarily to other forms of assessment rather than replacing them. Karimi and Shafiee (2014) state that teachers' perception of dynamic assessment may be influenced by factors such as teachers' level of education, their years of teaching experience, and their cognitive ability to transform abstract concepts into concrete learning opportunities.

A limitation of dynamic assessment is that it is time consuming (preparation, planning, and execution) (Losardo & Notari-Syverson, 2011; Tzuriel, 2013). Most dynamic

assessment instruments focus on individual learners, while teachers have to consider their whole class as well as their teaching context (Mehri & Amerian, 2015). The validity and reliability of some types of dynamic assessment are also sometimes questioned because of their subjective nature (Tiekstra, Minnaert, & Hessels, 2016). Some dynamic assessment formats do not yield standard scores and therefore it is not possible to compare learner achievement to other learners (Tzuriel, 2013). Lantolf and Poehner (2013) argue that mediation in dynamic assessment can be construed as unequal treatment and therefore the learners' potential for learning should be considered when assistance is given. Mehri and Amerian (2015) state that in order to realise dynamic assessment's full potential in an educational context, its implementation in classrooms as well as the role of the teacher should be critically examined.

However, dynamic assessment is noted also to have several advantages (Bester & Kühn, 2016; Losardo & Notari-Syverson, 2011; Tzuriel, 2000). One such advantage is that it is based on a positive outlook towards learners. It focuses not only on the tasks learners cannot do but also considers their problem-solving skills (Tzuriel, 2000). It links assessment with intervention and identifies how learners learn, what teaching strategies work best for particular learners, and what tasks they will be able to perform successfully (Losardo & Notari-Syverson, 2011). Furthermore, assessment results can indicate the type of intervention required for learners to reach their full potential (Bester & Kühn, 2016). In Hodges' (2013) study, the respondents believed that dynamic assessment would improve their teaching.

The theories underlying dynamic assessment are discussed in the next section as well as the theories that underpin this study.

2.7   THEORETICAL CONSTRUCTS UNDERPINNING DYNAMIC ASSESSMENT

Dynamic assessment has been practised over many years, yet it has only recently been formalised as an approach (Haywood & Lidz, 2007; Lantolf & Poehner, 2004; Poehner, 2013). Although there is some evidence of dynamic assessment in the early 1930s in Europe, evidence of it emerged only in 1961 in South Africa (Lloyd & Pidgeon, 1961; Murphy, 2008). The nascence of formal dynamic assessment has been linked to the theories of Binet, Vygotsky, and Feuerstein. These theorists emphasised the malleable construction of knowledge from a social, interactive perspective (Murphy &

Maree, 2006a). The following section discusses how these theories have shaped dynamic assessment in education.

In the early 1900s, Alfred Binet, among other researchers, was commissioned to find a way to identify learners with special needs so that they could be given appropriate educational support (Foxcroft & Roodt, 2018). Binet defined intelligence through testing individuals' mental ability and developed the first practical and reliable intelligence measure termed the Binet-Simon scale (Binet, 1907; Foxcroft et al., 2009). Binet stressed the importance of understanding the learning process (Haywood, 2012). Important concepts that were later adopted by dynamic assessment from Binet's work were his ideas on mediation and on developing individuals' innate abilities by focusing on their correct responses to test questions. The degree of correctness gives the teacher an indication of how much learning still needs to be done by learners (Haywood, 2012).

Similarly, Vygotsky's theory holds that "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1934, p. 211). Vygotsky's sociocultural theory emphasises the significance of social interaction during learning and highlights the role of the teacher as a mediator of learning (Murphy & Maree, 2006b). Two constructs in the theory are highlighted for their practical applicability in the classroom. These constructs are the zone of proximal development and scaffolding.

The zone of proximal development is the term Vygotsky uses for the difference between what learners can achieve independently and what they can accomplish when assisted, using methods such as scaffolding (Carusi-Lees, 2017; Lidz, 2003). Two zones are described in Vygotsky's theory: the zone of actual development and the zone of proximal development (Lidz, 2003). Vygotsky (1978) believed that knowing and measuring where learners could be was just as important as measuring and knowing where they were at present. The zone of proximal development is a continuum of progressive learning in terms of which new goals are set as learners achieve current goals (Shabani, 2012).

Mediation is used as a means of moving learners along the continuum to enhance their cognitive development. Mediation has been described as the process where "a more knowledgeable individual interprets a learner's behaviour and helps transform it into an internal and symbolic representation that means the same thing to the learner

as to others" (Snowman & McCown, 2013, p. 34). Mediation can be seen as the interaction between learner and teacher where the teacher mediates between the learner and the task by providing feedback, instruction, and support during the learning process (Shabani, 2012). According to Lidz and Peña (1996), mediation takes place during the intervention part of the assessment.

An additional element was later added to Vygotsky's theory in which learners' levels of anxiety and boredom are taken into consideration depending on how challenging the tasks are (Carusi-Lees, 2017). The figure below, (Figure 2.2) shows the zone of proximal development and scaffolding in teaching and learning.
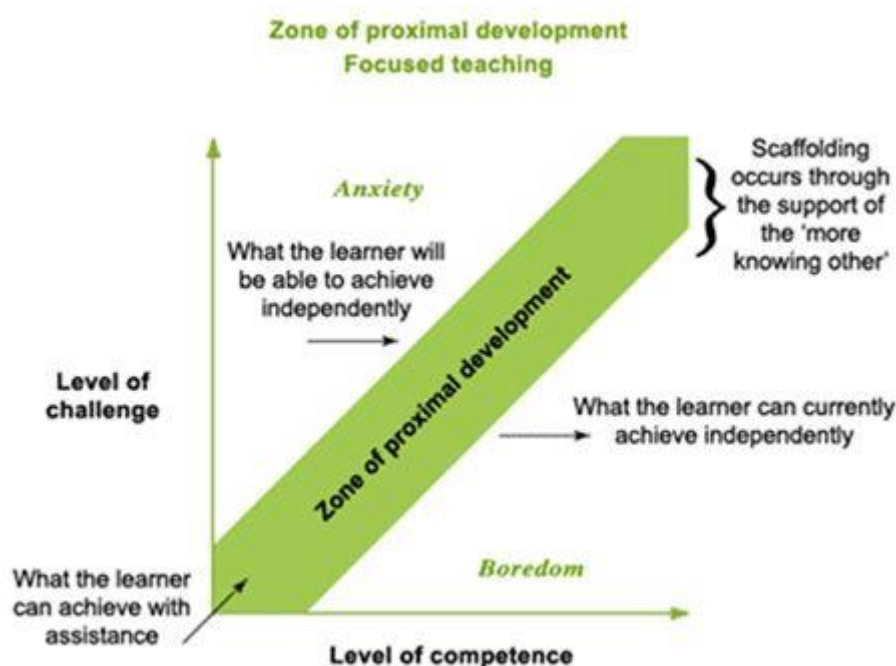
Figure 2.2:   Zone of proximal development (Carusi-Lees, 2017, p. 3)

Scaffolding, the second construct, occurs when an experienced facilitator (teacher) provides temporary 'structures' to help learners understand new concepts and progressively shifts the support structures as learners' understanding grows (Hammond & Gibbons, 2005). This often entails the teacher breaking down a task into smaller, more understandable tasks (Losardo & Notari-Syverson, 2011). The teacher, referencing the learners' existing knowledge, uses constructs the learner is familiar with to assist the learning process (Verenikina, 2003). When a teacher builds on what learners already know, scaffolding can also be referred to as guided participation (Losardo & Notari-Syverson, 2011). The term scaffolding is used similarly to its use in the building industry where a scaffold is used to support a structure and is removed once the structure can support itself (Carusi-Lees, 2017). An example of scaffolding

is focusing a learner's attention on manageable components of a task that is presented at the appropriate level of difficulty for the learner (Hammond & Gibbons, 2005).

Feuerstein's mediated learning experiences theory postulates that all learners can learn and that the mediator plays a critical role in the learning process (Feuerstein et al., 1979; Losardo & Notari-Syverson, 2011). In the mediated learning experiences theory, the emphasis is placed on learners' ability to learn along with the cognitive structures that support the learning process (Kozulin, 2002). The theory involves a process in which the assessor observes the learner while learning in order to identify potential barriers to learning. The assessor then focuses on mediating the barriers as part of the assessment procedure (Feuerstein & Falik, 2010; Lidz, 2003).

Twelve criteria need to be met for a mediated learning experience to occur. Three of these are considered key while the other nine are secondary and implemented situationally (Presseisen & Kozulin, 1992). The three key criteria are intentionality and reciprocity, meaning, and transcendence (Kozulin, 2002; Presseisen & Kozulin, 1992; Tzuriel, 2001).

Intentionality and reciprocity refers to how teachers purposefully plan to get and maintain learner attention while providing opportunities for learners to contribute during the mediation (Feuerstein, Rand, & Rynders, 2013). The criterion 'meaning' refers to creating awareness in learners about the act of learning as well as creating opportunities for shared interest in activities (Feuerstein et al., 2013; Seng, 1997). Transcendence refers to mediation that addresses an immediate learning need as well as to enabling learners to apply what is being learnt to future situations (Feuerstein et al., 2013). Transcendence can be used to mediate inductive or deductive reasoning and to improve memory as it requires learners to make comparisons and encourages critical interpretation (Feuerstein et al., 2013).

Both Vygotsky (1978) and Feuerstein (Feuerstein et al., 1979) believed that when learners interact with more knowledgeable people (teachers), their experience of learning becomes more meaningful. Both theorists stated that learners should acquire prerequisite skills as early as possible to enable them to perform better later in their academic careers (Kozulin, 2002). The goal of these theories, and therefore also of dynamic assessment, is to maximise learning effectiveness while regarding learners as individuals (Haywood, 2012).

2.8   SUMMARY

This chapter commenced by discussing assessment in the light of teaching and learning and also its purpose and principles. Forms of assessment as outlined in national policies were discussed. Dynamic assessment was considered as an alternative form of assessment to address the shortfalls in standardised assessment. The constructs and types of dynamic assessment were also presented. Dynamic assessment in the educational setting was considered and various criticisms discussed. The chapter ended with a discussion of the theories underpinning dynamic assessment

In this study, the researcher set out to determine the extent to which dynamic assessment is used in South African classrooms. Chapter 3 discusses the research approach in the study as well as the research paradigm, methodology, data collection, and quality criteria.

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Chapter 3
Research Design and Methodology

3.1 INTRODUCTION

This chapter focuses on the research design and methodology used in this study. It covers in greater detail the research and methodological paradigm, the descriptive cross-sectional survey, the sampling method, and the data collection and analysis strategies. The chapter concludes with the validity, reliability, and ethical considerations of the study.

3.2 PARADIGMATIC PERSPECTIVE AND METHODOLOGICAL PARADIGMS

The next section discusses the meta-theoretical and methodological paradigms. The paradigms, along with their advantages and disadvantages, are considered and the reasons for the use of the particular paradigmatic perspective and methodological paradigm explored.

3.2.1 META-THEORETICAL PARADIGM

The paradigm used in the study is the positivist paradigm. Positivists hold that trustworthy knowledge is gained only through what is observed using the senses (Babbie, 2012). Three fundamental assumptions define the parameters of a paradigm, namely ontology, epistemology, and methodology (Aliyu, Singhry, Adamu, & Abubakar, 2015). Ontology refers to deducing the essence of knowledge (Noonan, 2011). In positivist studies, findings are usually observable and quantitative (Babbie, 2012). The researcher is also required to collect and interpret data objectively and removed from personal experience (Muijs, 2011).

Epistemology can be defined as the study of how knowledge is understood (Sumner & Tribe, 2004) and "how something can be known" (Morgan & Sklar, 2012, p. 70). An epistemological paradigm serves as a lens through which the results of a study are interpreted (Ferreira, 2012). It also informs how the researcher makes inferences from the data collected to describe research findings (Weber, 2004). An assumption of positivist epistemology is that measures can be used to prove a statement either true or false by an objective observer (Jupp, 2006).

A major tenet of the positivist paradigm is that knowledge is obtained through logical, concrete observations, not through phenomena that are speculative and cannot be concretely tested (Weissman, 1994). Positivists view reality as external to the person and objective in nature (Wahyuni, 2012). Furthermore, according to them, reality consists of patterns and laws that can be independently discovered (Aliyu et al., 2015). Positivists therefore consider knowledge to be purely empirical and interpreted through the senses of the individual (Sousa, 2010). Other fundamental tenets are that the social world is external to the researcher (Gray, 2014), and that knowledge is independent. Therefore, the researcher can objectively present findings based on impartial data collected (Aliyu et al., 2015).

The aim of positivism is to describe, predict, control, or explain a phenomenon or relationship using scientific observation or experiment (Breen & Darlaston-Jones, 2010; Staddon, 2018). Data that is therefore collected can then be used as a basis to demonstrate scientific laws (Gray, 2014). Methods used in positivist research to collect data are experiments, mathematical models, and surveys (Walliman, 2011). A researcher would, for example, use surveys to gather large amounts of data that can be used to describe the characteristics of a particular sample (Morgan & Sklar, 2012).

Additional meta-theoretical assumptions concern the research object, validity, and reliability (Weber, 2004). The research object refers to the item or person involved in the study and how the item or person is perceived (Raadschelders, 2011). In terms of the positivist paradigm, the research object is considered to have inherent qualities the researcher cannot share in. The object is thought to be independent from the researcher and the rest of the population, allowing for an impartial reality (Weber, 2004).

Validity refers to the extent to which the research results accurately reflect what occurs in the real world (Walliman, 2011). Reliability refers to the ability to reliably reproduce findings that reflect reality (Walliman, 2011). When adopting a positivistic approach, Weber (2004) suggests that all the different types of validity (internal, external, construct, and face validity) and reliability (inconsistencies, researcher bias and measurement errors) should be considered by the researcher. The validity and reliability of this study are discussed in more detail in Section 3.7.

In summary, positivism is considered an objective approach (Babbie, 2012; Creswell, 2014) that holds that knowledge is obtainable only through scientific observation

through the senses (Breen & Darlaston-Jones, 2010). Positivists use methods such as experiments to discover the laws that govern reality and to make generalisations based on these laws (Walliman, 2011).

An advantage of the positivistic paradigm is that it enables researchers to remain objective by not imposing personal bias on the methodology of their research or data interpretation during the research process (Nightingale, 2012). In addition, the data-capturing methods facilitate the comparison of the data gathered (Morgan & Sklar, 2012).

At the same time, criticism of the positivist paradigm centres on the objectivity it assumes the researcher has (Cohen, Manion, & Morrison, 2007). Weber (2004), for example, believes researchers cannot fully detach themselves emotionally from studies they are involved in. Positivists' assumption that knowledge can only be observed has also been highlighted as problematic as it has been shown that knowledge can be based also on unobservable phenomena (Gray, 2014). A positivistic approach may be considered less effective in environments (such as the classroom) where actions cannot easily be separated from motives (Cohen et al., 2007). However, a self-report survey enables the contextualisation of observable behaviour.

Further criticism of positivism is that respondents are not always able to express themselves openly (Trochim & Donnelly, 2006) and that data analysis tends to be inflexible (Cohen et al., 2007). Although this is a criticism, the rigidity informs the implementation of specific methodological paradigms. The methodological paradigm for this study is discussed in the next section.

3.2.2 METHODOLOGICAL PARADIGM

Meta-theories of positivism support the use of a quantitative methodology, which is the methodological paradigm for this study. Quantitative research focuses on phenomena that are measurable and countable (Kamil, 2004). It can also accommodate large data collections, which can provide greater insight into the characteristics of a relationship or phenomenon (Wahyuni, 2012). Quantitative research is also considered appropriate for investigating respondents' attitudes to and beliefs about specific content (Nardi, 2018).

The form of quantitative research used in this study was non-experimental quantitative research (Johnson, 2001). According to Johnson (2001), when classifying the type of

quantitative research a study is, one should consider what questions the research aims to answer. An important characteristic of quantitative research is the description of trends and the exploration of relationship variables (Creswell, 2012). The research in the present study can be considered descriptive non-experimental research as it focused on describing a phenomenon and then recording the characteristics of the phenomenon (Johnson, 2001).

The advantages of a quantitative approach are that, with the right data set, the findings can be generalised to the larger population and extrapolations and/or predictions can be made (Maree & Pietersen, 2010). A further advantage is that the results are not influenced by the researcher's beliefs and sensitivities because of the objective nature of the approach (Maree & Pietersen, 2010).

3.2.3 JUSTIFICATION FOR THE POSITIVIST/QUANTITATIVE PARADIGM

The aim of this study was to describe the extent to which foundation phase teachers are familiar with and use dynamic assessment. The literature review in Chapter 2 revealed that no studies have been done in South Africa on the use of dynamic assessment by teachers. The present study was undertaken to address this gap in the literature.

A positivist approach was decided on so that the assessment practices of teachers could be objectively described, while the quantitative paradigm provided a platform for a large number of teachers to be surveyed. An important advantage of the positivist and quantitative paradigm in this study was that at least 100 teachers could be surveyed while maintaining limited contact with them. The limited contact as well as the researcher not being actively engaged in the research process contributed to the objectivity of the study. A disadvantage of the positivist and quantitative paradigm was that the respondents had limited options to select from, and the researcher was not able to engage with them fully.

3.3 RESEARCH DESIGN

The study made use of a descriptive cross-sectional survey as the method of data collection. Such a survey is seen as an observational method through which data collected from a specific population at a specific point in time can be analysed (Creswell, 2012, 2014; C. Liu, 2008). A survey is the instrument used by researchers to ask target populations questions and numerically log the answers provided by

respondents (Trochim & Donnelly, 2006). Because the present study incorporated a single-source cross-sectional survey, all the information gathered was received directly from the respondents. No additional information was received from co-workers or family members (O. L. Liu, 2011).

An advantage of a cross-sectional design is that it is less costly than a longitudinal study. Longitudinal studies may account for personal growth of respondents, for example, after training; however, teachers may not remain in the profession long enough for a longitudinal study to be done (Beltman, Mansfield, & Price, 2011; Yonezawa, Jones, & Singer, 2011). Thus, making a cross-sectional design more beneficial. Moreover, such a design could increase the willingness of respondents to contribute to a study as they would need to do so only once. It would also ensure easier data collection and interpretation as just one wave of data would need to be accounted for and analysed (O. L. Liu, 2011). A cross-sectional survey would also be less resource and time consuming than interviews and observations. A cross-sectional design is particularly appropriate for data collection over a short period of time (C. Liu, 2008). A quantitative, web-based survey also ensures respondent anonymity and facilitates generalising reported behaviour (Nardi, 2018).

3.4   SAMPLING

Nonprobability sampling was selected as it is useful when there are limitations on time and resources (Etikan, Musa, & Alkassim, 2016). The first type of sampling is purposive sampling, which is used when a researcher has a specific sample and goal in mind (Maree & Pietersen, 2010). The criteria for the purposive sampling in the present study were that the respondents had to be foundation phase teachers employed by the Gauteng Department of Education (GDE).

The sample frame was the entire population of teachers in the Johannesburg North District. The survey link was sent to schools and addressed to principals, who subsequently forwarded the link to teachers. The teachers then decided whether or not to participate in the study. This form of sampling was advantageous in that it reduced the time spent on selecting respondents (Creswell, 2012).

The researcher in the study, then adjusted the sampling type to convenience sampling because of the lack of responses generated by the first wave of data collection. Through convenience sampling, the physical printed copies of the survey were

distributed to schools within the district. Convenience sampling is a nonprobability sampling method where respondents have to meet practical criteria such as geographical proximity or accessibility to the researcher (Etikan et al., 2016). Snowball sampling also occurred in the study. Snowball sampling is a nonprobability sampling technique where respondents use their network to find supplementary respondents (Babbie, 2012). In this study, the teachers shared the survey link with their colleagues. The researcher thus used three different types of nonprobability sampling methods to access the population in different ways and to increase the success of the study (Alvi, 2016).

3.5 DESIGNING THE SURVEY

The survey for the study was compiled with reference to Kühn's (2016) survey, which investigated the use of dynamic assessment by educational psychologists (see Appendix C for Kühn's (2016) survey, which was customised for the South African context). In addition to questions that emerged from an in-depth literature review, the survey was based on surveys by Haney and Evans (1999); Lidz (1992); and Molano (2007). The present survey was adapted to investigate the use of dynamic assessment in an educational setting. Questions dealing with the implementation of dynamic assessment were therefore customised for application to teachers rather than psychologists.

This survey consisted of 25 questions. The respondents were, however, not required to answer all 25 questions because of the customisation of the survey, which will be discussed later in Section 3.5.2. The survey was created using eSurvey Creator, which is a platform for creating web-based surveys for distribution via email to the intended population. The survey was available in English only and comprised different sections.

3.5.1 SELECTION OF ITEMS

A deductive process that commenced with an in-depth literature review and consideration of existing surveys informed the items included in the survey. A deductive process starts with a general assumption and shifts towards a more specific assumption (Babbie, 2012; Vogt, 2005). In research, a deductive approach would entail a researcher consulting the literature to form a research question or hypothesis and then collecting data to support the question or test the hypothesis (Driscoll, 2011; O'Leary, 2007).

Figure 3.1 below illustrates the deductive process the researcher followed when selecting the items for the survey. The process commenced with an in-depth literature review in which the researcher focused on dynamic assessment. The next step in the process was to review studies where dynamic assessment had been investigated using surveys. The research question that drove the study emerged from these two steps, which then led to the customisation of a survey that would endeavour to answer the question.
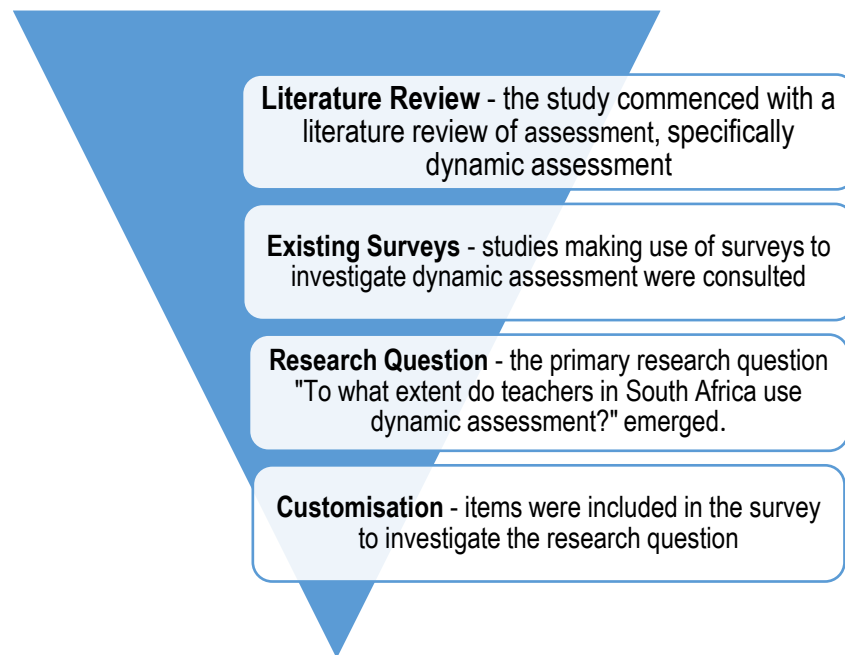
Figure 3.1: **Deductive reasoning in the study**

The questions included in the survey can be broadly categorised into background information, information on assessment practices in general, and information on dynamic assessment. Each question fell within one of five objectives, for example ascertaining teachers' current assessment practices and their familiarity with dynamic assessment. Appendix B includes the questions asked, the options the respondents could select from, and the objectives of the questions.

3.5.2 CUSTOMISATION

Customisation, also known as skip logic (Peytchev, Couper, McCabe, & Crawford, 2006) or piping (Fink, 2017), takes place when a researcher adapts the order of the workflow of questions in a survey based on the answers provided by respondents (Fink, 2017; Peytchev et al., 2006). Customising a survey enables the researcher to

help respondents focus on relevant questions. It also fulfils the important role of preventing errors of omission and commission, which occur when respondents either skip applicable questions or answer questions not applicable to them (Peytchev et al., 2006). Respondents are thus guided through the appropriate questions, maximising the efficiency of the online survey (Fink, 2017).

In the present study, the researcher effected one customisation. The respondents who reported in Question 12 that they were not familiar with dynamic assessment, skipped to Question 16, as Questions 13 to 15 deal with the extent of their familiarity with such assessment. The customisation thus diverted the respondents from answering inapplicable questions.

Figure 3.2 below shows the questions in the survey, with the sections of the survey colour coded. The questions in purple are the demographic questions; those in green are questions on the teachers' assessment practices; and those in blue refer to dynamic assessment. The figure also indicates where the flow of the questions has been changed based on the answers given by the respondents. The customisation can be seen with arrows labelled 'yes' and 'no'. The customisation and colour coding were included to provide a visual overview of how the survey was structured.
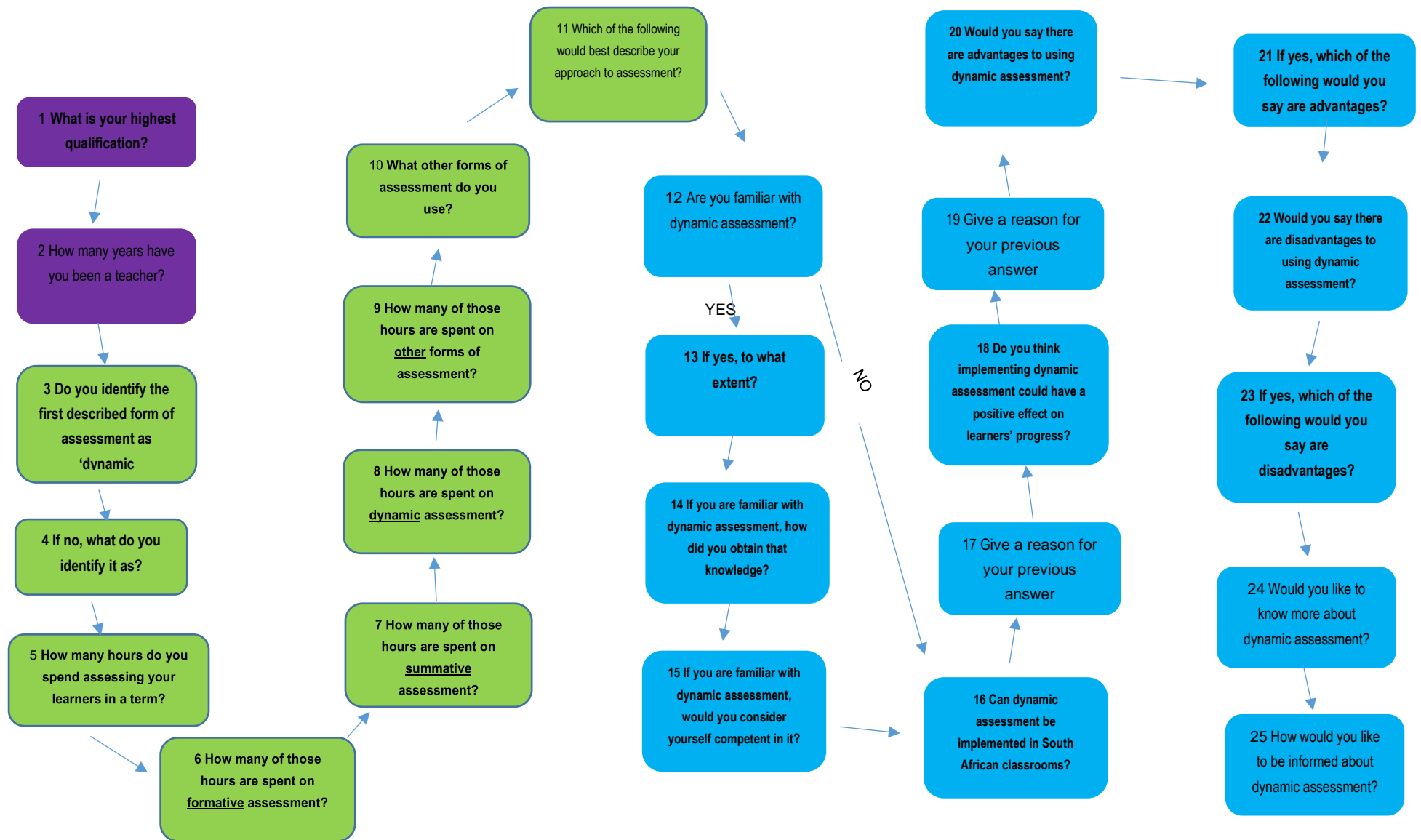
Figure 3.2: Survey questions

3.5.3 PILOTING THE SURVEY

A pilot study refers to pre-testing a specific research instrument to increase the quality of the instrument (Persaud, 2012). A pilot study is usually done with a target group that closely resembles the sample that will be responding to the survey (Persaud, 2012). The pre-test allows for objective scrutiny of the instrument in order to determine whether the items are clear, unambiguous, and measure what they are meant to measure (Tait & Voepel-Lewis, 2015).

Pilot studies indicate whether a survey is easy to complete; in particular, they reveal if the constructs/items are easily understandable or not (Van Teijlingen & Hundley, 2002) as they allow for feedback from the selected respondents. Piloting a study can also indicate whether the questions in the survey produce answers that address the research questions of a study (Van Teijlingen & Hundley, 2002). Piloting thus usually increases the reliability of a survey (Fink, 2017).

The researcher opted to pilot the study in order to get feedback on whether or not the constructs and language were comprehensible to people in the different cultural groups in South Africa as well as the time it would take to complete the survey (Creswell, 2012). Convenience sampling was used for the pilot, that is, the sample was chosen on the basis of its accessibility to the researcher through her professional network. The pilot sample consisted of five foundation phase teachers employed by the GDE in the Johannesburg South District. The pilot sample participants were asked to comment on whether the survey items were understandable and clear, and also to indicate how much time was needed to complete the survey. Feedback from the sample participants was that the items were clear and understandable and that the survey did not take long to complete.

3.5.4 DISTRIBUTING THE SURVEY

The survey was distributed to 105 primary schools in the GDE, Johannesburg North District, for which permission was granted from GDE (see Appendix D). A mixed-mode approach was used, meaning that the survey was emailed to the respondents as well as distributed in paper-based form (Kaplowitz, Hadlock, & Levine, 2004). This approach enabled the researcher to exploit the advantages of both web- and paper-based surveys, and also possibly to increase the response rate (Kaplowitz et al., 2004).

For the web distribution, the invitation to participate (see Appendix E), was emailed to the schools with the link: www.esurveycreator.com/s/teachersurvey. The respondents

were asked to follow the link if they were interested in completing the survey. On the very first page displayed to them, was an introduction to the survey as well as the informed consent disclaimer. Once the respondents had read through the landing page, they could continue with the survey. A reminder email was sent to the schools 16 days after the initial email. Follow-up calls were made to the schools on 14 August 2018.

Distribution of the printed copies of the survey occurred during August 2018. Copies of the survey were dropped off at six schools in the Johannesburg North District. The foundation phase heads of department at each school distributed the surveys to the teachers, and the completed surveys were collected at an agreed-upon time.

3.5.5 CAPTURING THE DATA

The data obtained from the online respondents were exported from eSurvey Creator in an Excel Worksheet (.xlsx). The researcher then coded and added the data from the paper respondents to the workbook. In order to avoid data entry errors, the data were then imported directly into the Statistical Package for Social Sciences (SPSS) for data analysis.

3.6 DATA ANALYSIS

The researcher used descriptive statistics to understand and explain the data. Because the researcher wanted to quantify the extent to which the teachers used dynamic assessment, descriptive statistics were a suitable data analysis method. To help the researcher better investigate the research question, descriptive statistics were used to provide the data numerically (Chambliss & Schutt, 2013; Nightingale, 2012). Descriptive statistics can be used to analyse data by looking at central trends such as means, modes, and medians (Creswell, 2012). The spread of data in terms of range and standard deviation can also be described (Kaur, Stoltzfus, & Yellapu, 2018), as well as how scores relate to one another using percentile ranks (Creswell, 2014).

There are four types of measurement in quantitative research that produce different types of data: nominal, ordinal, interval, and ratio (Stevens, 1946). The present study used nominal and ordinal measurement levels. Nominal scaling is often used to describe the frequency at which a phenomenon occurs (Wilkum, 2017). Accordingly, the study incorporated questions with a dichotomous 'yes' or 'no' answer, as well as predetermined lists the respondents had to select answers from. Ordinal scaling indicates order but not consistent measurement between concepts (Heiman, 2013).

Ordinal data were collected when the respondents rated their familiarity with dynamic assessment as 'barely', 'somewhat', or 'quite' familiar.

The researcher used the SPSS to analyse the data. As the aim of the study was to investigate the extent to which foundation phase teachers make use of dynamic assessment, frequencies, means, and percentages were calculated to quantify and describe characteristics of the data set (Kaur et al., 2018). Lidz's (1992) study used frequencies and percentiles as they are the most appropriate statistics to indicate the extent to which a phenomenon is experienced. The researcher also chose to use simple statistics as the survey was part of a mini-dissertation in which the researcher was required to demonstrate novice research skills.

3.7 QUALITY CRITERIA

In a positivist study, the instrument used to collect data is valid when it measures what it sets out to measure and is reliable when it is able to provide consistent results (Maree & Pietersen, 2010). The validity and reliability of a study hinge on the instruments used to collect the data (Drew, Hardman, & Hosp, 2014). The present study used a cross-sectional survey as the means for data collection.

3.7.1 VALIDITY

The validity of a study depends on whether the instrument used in the study correctly measures what it is meant to measure (Heale & Twycross, 2015). The various types of validity include construct validity, content validity, face validity, and external validity (Creswell, 2014; Heale & Twycross, 2015). In this study, construct validity, content validity, and face validity were relevant.

Construct validity refers to whether the items accurately measure the concepts covered in a study (Creswell, 2014). The present study used definitions of dynamic assessment consistent with other literature, thus ensuring a measure of consistency. Construct validity also entails the measurement of potential error, which can threaten an instrument's construct validity (Clow & James, 2014). To avoid this error, the researcher ensured that the items in the survey were clear and direct. The researcher and supervisor further ensured content validity through the use of a pilot survey, which helped ensure that the survey covered all relevant areas while measuring what it was supposed to measure.

Another form of validity, face validity, refers to the physical appearance of an instrument (Babbie, 2012). To ensure that the study met the basic requirements of face validity, the questions related directly to the measured constructs. The survey items were valid in this regard. Furthermore, both the online and paper survey were designed in an easy-to-read font, as well as ensuring clear, direct questions. Evans et al. (2009) state that the validity of an online survey depends on the questions in the survey and the research methodology. These requirements were met through thorough planning by the researcher and the supervisor.

3.7.2   RELIABILITY

The reliability of a study can be divided into two subcategories: repeated measurement and internal consistency (Muijs, 2004). Repeated measurement, which is a study's ability to repeat its findings, can be established through test-retest reliability and inter-rater reliability (Muijs, 2004). Internal consistency refers to how well the items in a study measure a single construct. Internal consistency can be determined using a coefficient alpha (Muijs, 2004).

The research design incorporated a cross-sectional study, which entailed focusing on the data within a single point in time (Vogt & Johnson, 2011). A test-retest method of establishing reliability can therefore not be used.

The inter-rater reliability and internal consistency of a study can be established using a coefficient alpha such as Cronbach's alpha. In the present study, however, Cronbach's alpha could not be used as limited indicators per construct had been included in the survey. For Cronbach's alpha to be calculated, a construct needs to be addressed through multiple questions (Graziano & Raulin, 2013). Although the survey focused on dynamic assessment, constructs such as familiarity were covered only in one question.

Krippendorff's alpha can be used to measure the inter-rater reliability of nominal data with any number of observers and missing data (Krippendorff, 2011; Stemler & Tsai, 2008). Krippendorff's alpha measures the reliability of a study through the agreement of observers expressing their subjective judgement of a shared experience (Zapf, Castell, Morawietz, & Karch, 2016). However, because the present study incorporated an online survey and explored the respondents' perceptions of a construct, Krippendorff's alpha could also not be used.

Although the reliability of the study could not be determined using either Cronbach's or Krippendorff's alphas, it was ensured by using survey items that had already been used in previous studies.

3.8   ETHICAL CONSIDERATIONS

The ethical requirements stipulated by the University of Pretoria and the GDE were adhered to. Ethical principles stressed by both the University of Pretoria and the GDE include honest conduct on the part of researchers and avoidance of harm to any individual. The researcher upheld these principles by ensuring confidentiality, informed consent, and integrity, which will be discussed in the next section.

3.8.1   ANONYMITY AND CONFIDENTIALITY

Anonymity and confidentiality are essential characteristics of ethical research in terms of which the researcher makes every effort to ensure that information shared by respondents in a study cannot be traced back to them (Crow & Wiles, 2008). Anonymity was ensured in the present study as the respondents were not required to provide any identifying information. The identity of individual respondents could also not be inferred as the only individually descriptive questions asked in the survey related to the respondents' qualifications and number of years of teaching. The researcher was also not given the respondents' email addresses as survey links were forwarded by an intermediary.

Furthermore, eSurvey Creator has a privacy policy regarding the data captured through a survey. The website's servers are managed by Amazon Web Services (AWS), which adheres to European data collection laws and meets an extensive range of compliance and security requirements. When capturing data, unique tracking numbers are assigned to all respondents rather than tracking their responses through their internet protocol (IP) addresses, which further ensures anonymity.

The data were kept confidential as raw data were not made available to any third party. The data were accessible only to the researcher and the supervisor directly involved in the study.

3.8.2   INFORMED CONSENT

According to Field-Springer (2017), voluntary consent given after a respondent is made aware of the details of a study is deemed informed consent. In this study, the informed

consent was the landing page of the online survey as well as the first page of the paper survey. The informed consent page contained the following information: the purpose of the study; the invitation to participate; an approximate completion time for the survey; the assurance that the survey would be completely anonymous and that the responses would be confidential; remuneration details; the assurance that participation was entirely voluntary; the closing date of the study; and the contact details of the researcher and the supervisor. See Appendix A for the informed consent attached to the survey.

3.8.3   INTEGRITY

Research integrity refers to honesty and adherence to professional standards the researcher undertakes to uphold throughout a study (Steneck, 2006). In this study, the researcher endeavoured to be honest with the respondents, ensuring that all communication was direct and unambiguous. The researcher also fully informed the respondents what the study would entail and how the results would be handled. Integrity was further ensured by presenting the research findings objectively and accurately. The researcher also endeavoured to implement honest and verifiable research methods by adhering to the guidelines laid down by the University of Pretoria.

3.9   CONCLUSION

This chapter described in detail the research paradigm, the methodological paradigm, the research design, and the research methodology followed in the study. The advantages and disadvantages of the different approaches in each subsection and the reasons for the different decisions were also discussed. The chapter outlined the processes on which the study was based and how these processes were applied.

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Chapter 4
Research Results and Findings

4.1 INTRODUCTION

This chapter covers the results of the survey in three sections. The first section deals with results that relate to the respondents' assessment practices. Discussion of the various forms of assessment the respondents used and how dynamic assessment featured as part of their assessment practices provides insight into the relative importance of dynamic assessment as one form of assessment compared to other forms of assessment.

As the purpose of the study was to investigate how foundation phase teachers use dynamic assessment, the second section discusses the dynamic assessment results with the focus on the respondents' familiarity with and competence in dynamic assessment and their perceptions of the advantages and disadvantages of such assessment. Also discussed are the respondents' views on whether dynamic assessment has a place in South African classrooms and how students can benefit from it.

Finally, the results of the respondents' dynamic assessment training are presented with specific focus on their current training as well as their possible future training needs. The chapter ends with a discussion of the findings of the study on the basis of a recursive literature review.

4.2 RESULTS

As stated in Chapter 3, the survey was distributed to foundation phase teachers in the Johannesburg North Education District electronically and in hard copy form. All told, 125 respondents emerged at the end of this process. The survey included customisation – also known as piping or skip logic – in which the questions on the extent to which the respondents were familiar with and how competent they thought they were in dynamic assessment were answered only by the respondents who had indicated that they were familiar with dynamic assessment ($n = 80$). The customisation was done to reduce omissions as the researcher considered these questions irrelevant to those respondents who had indicated they were not familiar with dynamic assessment. These respondents could answer questions on their perceptions of dynamic assessment in general. For example, questions on the advantages and

disadvantages of dynamic assessment were included for them to answer based on the definition of dynamic assessment provided in the survey. They were also asked to indicate if they were interested in receiving training in dynamic assessment in future.

Figure 4.1 shows the respondent pool per question (to illustrate the skip logic) and also summarises the number of respondents who answered the various questions. It shows the decrease in the number of respondents who answered Questions 11 to 15 due to the skip logic. When reporting the results in the sections that follow, the number of respondents are indicated per section in the various tables.
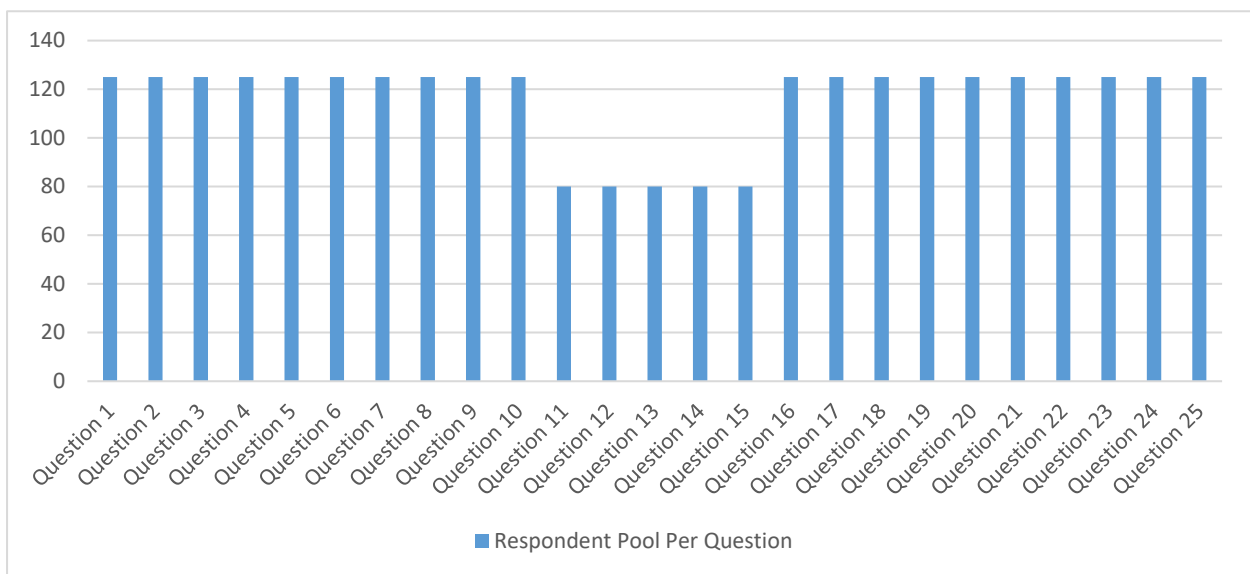
Figure 4.1:   Respondent pool per question

The following section presents the survey results on the assessment practices of the respondents. These results are dealt with first as they provide a broader indication of the use of dynamic assessment compared to other forms of assessment used by the respondents.

4.2.1   ASSESSMENT PRACTICES

As discussed in Chapter 2, the National Department of Basic Education (2015) states that assessment should be 100% school-based at the foundation phase level. The Department of Basic Education also encourages teachers to use informal and formal forms of assessment, resulting in the implementation of various assessment practices in classrooms. If it is assumed that an average South African school term is 53 days and that teachers work an average of 7 hours a day, they will then work an estimated 371 hours in a term. Based on these assumptions, 43% of the respondents in the survey indicated that they spent more than 20 hours a term on assessments, and 23%

indicated that they spent 16–20 hours a term on assessments. Of the remaining 22%, 13% indicated that they spent 6–10 hours and 9% that they spent between 0–5 hours on assessment a term. These percentages suggest that the majority of the respondents in this study (57%) spent a maximum of 5% of their teaching time on assessments, leading to the conclusion that less time was spent on assessments than on other teaching activities. Table 4.1 shows the total number of hours the respondents indicated that they spent on assessments a term.

Table 4.1: **Frequency counts for hours spent assessing (*n* = 125)**

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percentage
Hours spent assessing in a term	0–5	9	7.20	9.00	9.00
	6–10	13	10.40	13.00	22.00
	11–15	12	9.60	12.00	34.00
	16–20	23	18.40	23.00	57.00
	>20	43	34.40	43.00	100.00
	Total	100	80.00	100.00	
	No answer	25	20.00		
	Total	125	100.00		

Figure 4.2: Graphical representation of the valid percentages of the responses in Table 4.1 in pie chart format.
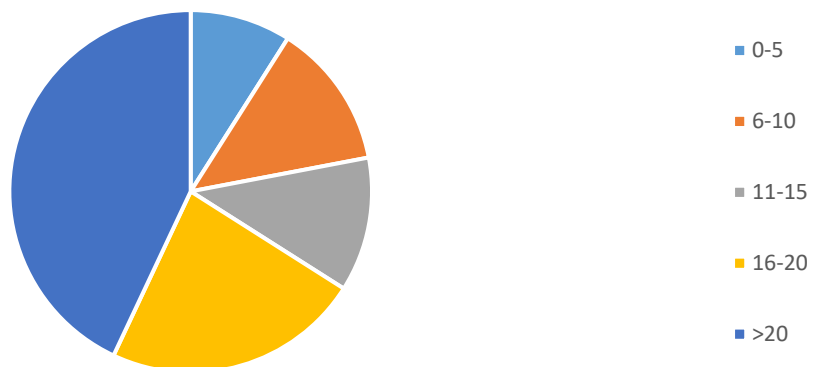
Figure 4.2: **Hours spent assessing**

The respondents were asked to indicate the time they spent on assessments by stating how much time was spent on the following types of assessment, namely formative, summative, dynamic, and other types. A five number summary was used to explore the range of the data. The data revealed that the time the respondents spent on the

abovementioned types of assessment varied widely; for example, with regard to formative assessment, some of the respondents reported that they spent 0.5 hours a term while others reported 385 hours a term. As a result of the wide variance in the data, in addition to the five number summaries, a measure of central tendency (the mode) was selected. The mode gives an indication of the number that was reported most often, implying that it is the most likely to be accurate.

The results indicate that more time was spent on formative assessment, with the remaining assessment time divided equally among summative assessment, dynamic assessment, and other types of assessment such as diagnostic or criterion-referenced assessment. From the number of respondents who reported the time they spent using dynamic assessment, it can be deduced that 53.60% on average used dynamic assessment for 5 hours a term. Table 4.2 summarises the responses by showing the mode of each type of assessment.

Table 4.2:   Modal frequency of hours spent on different assessment

Hours spent on:	Mode	Occurrences	*N*	*N* population percentage
Formative assessment	10	13	76	60.80%
Summative assessment	5	17	80	64.00%
Dynamic assessment	5	13	67	53.60%
Other assessments	5	11	54	43.20%

The next section covers the dynamic assessment survey results.

4.2.2   DYNAMIC ASSESSMENT

In this section on the results of the various aspects of dynamic assessment, the results are covered in three subsections. The first subsection reports on the respondents' perceived familiarity with dynamic assessment. The second subsection reports on their perceived competence in dynamic assessment. The third subsection reports on their perceptions of dynamic assessment.

4.2.2.1 Familiarity with Dynamic Assessment

To determine the respondents' familiarity with dynamic assessment, they were given a definition of dynamic assessment and asked whether they thought it was an accurate

description of dynamic assessment as they understood it. This question was put to all the survey respondents. The majority of the respondents (93.50%) indicated that the definition reflected their understanding of dynamic assessment while 6.50% indicated that it was not how they understood dynamic assessment. Table 4.3 shows these results.

Table 4.3: Frequency counts relating to the definition of dynamic assessment (*n* = 125)

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percentage
Indication of the provided definition of dynamic assessment as accurate	Yes	101	80.80	93.50	93.50
	No	7	5.60	6.50	100.00
	Total	108	86.40	100.00	
	No answer	17	13.60		
	Total	125	100.00		

When asked if they were familiar with dynamic assessment, 79.20% of the respondents indicated that they were familiar with it while 20.80% indicated that they were not. Table 4.4 shows the responses on familiarity with dynamic assessment.

Table 4.4: Frequency counts relating to familiarity with dynamic assessment (*n* = 125)

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percentage
Familiarity with dynamic assessment	Yes	80	64.00	79.20	79.20
	No	21	16.80	20.80	100.00
	Total	101	80.80	100.00	
	No answer	24	19.20		
	Total	125	100.00		

Of the 79.20% who indicated that they were familiar with dynamic assessment, the majority (53.33%) reported that they were somewhat familiar while 40.00% reported that they were quite familiar with it. Table 4.5 summarises the responses on familiarity.

Table 4.5: Frequency counts relating to the extent of familiarity (*n* = 80)

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percentage
Extent of familiarity	Barely familiar	5	6.25	6.67	6.67
	Somewhat familiar	40	50.00	53.33	60.00
	Quite familiar	30	37.50	40.00	100.00
	Total	75	93.75	100.00	
	No answer	5	6.25		
	Total	80	100		

Cross-tabulations were used to determine whether there was any correlation between the respondents' familiarity with dynamic assessment and their qualification level. Based on the results, it cannot be determined conclusively whether there was any correlation between the respondents' level of qualification (Appendix F) and their familiarity with dynamic assessment. Table 4.6 shows a cross-tabulation of the respondents' qualifications and their familiarity with dynamic assessment.

Table 4.6: Relationship between qualifications and familiarity with dynamic assessment

Qualification	Description	Familiarity with dynamic assessment		Total
		Yes	**No**	
Non-degree (e.g. National Senior Certificate, Advanced Certificate in Education [ACE], and Diploma)	Count	35	8	43
	% of Total	36.10%	8.30%	44.40%
Degree (e.g. Bachelor in Education [B.Ed.], Post Graduate Certificate in Education [PGCE], Masters in Education [M.Ed.], and Doctor of Philosophy [PhD])	Count	43	11	54
	% of Total	44.30%	11.30%	55.60%
Total	Count	78	19	97
	% of Total	80.40%	19.60%	100.00%

Figure 4.3 shows the percentage of respondents who indicated that they were familiar with dynamic assessment according to their qualifications.
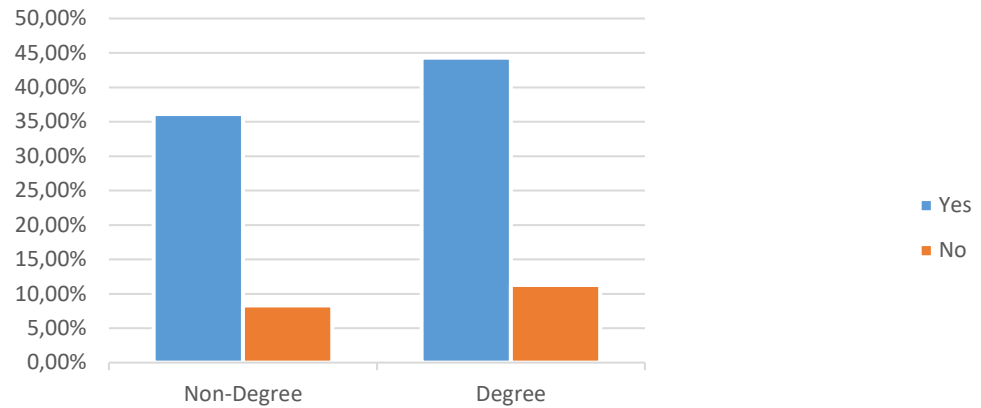
Figure 4.3: **Relationship between qualifications and familiarity with dynamic assessment**

A chi-square test was also done with the variables to further explore possible correlations. Using the frequencies shown in Table 4.7, the correlation between qualifications and familiarity with dynamic assessment was found to be statistically insignificant ($X^2(1) = .047$, $p = 0.828$). The null hypothesis that the variables were independent can therefore be accepted as there was no correlation between the respondents' familiarity with dynamic assessment and their level of qualification.

Additional cross-tabulation was done to investigate if a correlation existed between the extent of the respondents' familiarity with dynamic assessment and their qualifications. The results indicate that the extent to which the respondents were familiar with dynamic assessment was higher for the respondents with a higher level of qualification. For example, 15.10% of the respondents with a lower level of qualification indicated they felt quite familiar with dynamic assessment while 24.70% of the respondents with a higher level of qualification felt quite familiar with it. It can therefore be concluded that although level of qualification might not have influenced familiarity with dynamic assessment, it could be correlated with the extent to which the respondents were familiar with it, especially in the group that felt quite familiar with dynamic assessment. The following table shows the correlation between qualifications and extent of familiarity.

Table 4.7:   Relationship between qualifications and extent of familiarity with dynamic assessment

Qualification	Description	Extent of familiarity with dynamic assessment			Total
		Barely	**Somewhat**	**Quite**	
Non-degree	Count	3	19	11	33
	% of total	4.10%	26.00%	15.10%	45.20%
Degree	Count	2	20	18	40
	% of total	2.70%	27.40%	24.70%	54.80%
Total	Count	5	39	29	73
	% of total	6.80%	53.40%	39.80%	100.00%

Figure 4.4 illustrates the cross-tabulation in Table 4.7 in bar graph format.
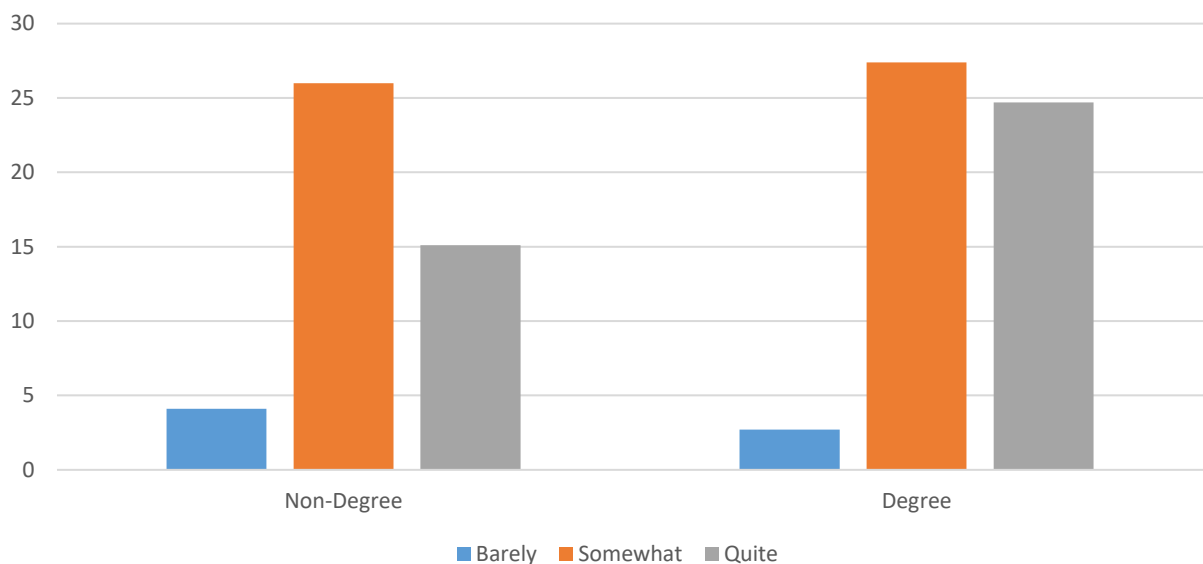
Figure 4.4:   Relationship between qualifications and extent of familiarity

In addition to the correlation between qualifications and familiarity with dynamic assessment, the correlation between number of years of teaching experience and familiarity with dynamic assessment was also considered. The results indicate that 47.50% of the respondents who reported that they were familiar with dynamic assessment were in the group that had been teaching for 10 years and longer while 31.70% of the respondents with fewer than 10 years' experience were familiar with it. At face value, the results indicate that the respondents with more teaching experience were more likely to be familiar with dynamic assessment. A cross-tabulation of the reported number of years teaching and familiarity with dynamic assessment can be seen in Table 4.8 below.

Table 4.8: Relationship between years teaching and familiarity with dynamic assessment

Number of years teaching	Description	Familiarity with dynamic assessment		Total
		Yes	No	
Fewer than 10 years	Count	32	13	45
	% of total	31.70%	12.90%	44.60%
10 years and longer	Count	48	8	56
	% of total	47.50%	7.90%	55.40%
Total	Count	80	21	101
	% of total	79.20%	20.80%	100.00%

Figure 4.5 shows the relationship between familiarity with dynamic assessment and number of years teaching.
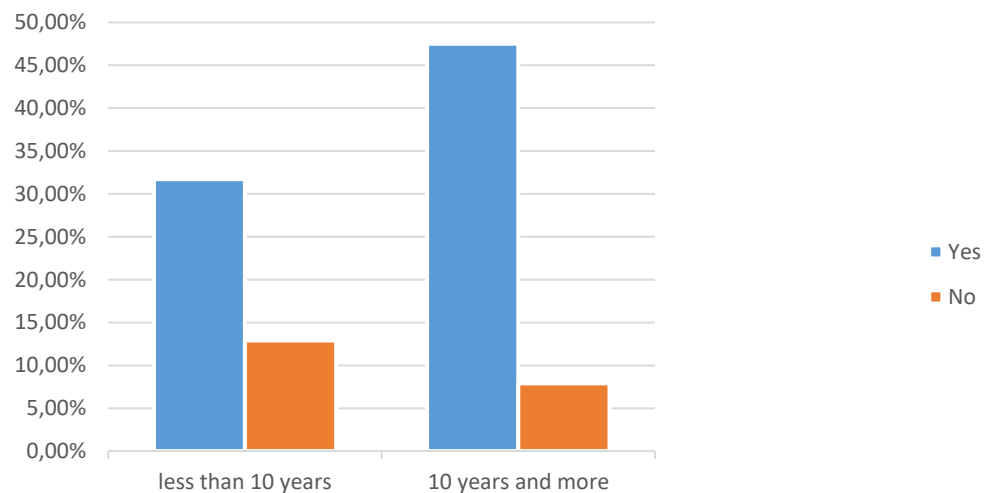
Figure 4.5: Relationship between number of years teaching and familiarity with dynamic assessment

The frequencies shown in Table 4.8 indicate that the correlation between number of years teaching of the respondents and their familiarity with dynamic assessment was not statistically significant according to the chi-square test [$X^2(1) = 3.23$, $p = 0.072$]. This suggests that the null hypothesis can be accepted that the variables were independent in the case of the respondents.

In summary, 93.50% of all the respondents agreed with the given definition of dynamic assessment. Of the respondents, 79.20% indicated that they were familiar with dynamic assessment, with 40.00% indicating that they were quite familiar. Furthermore, 55.83% indicated that they used dynamic assessment.

The results reveal that more respondents were aware of dynamic assessment than those who used it. It can therefore be deduced that there were respondents who felt somewhat or quite familiar with dynamic assessment but did not use it. According to the cross-tabulation between familiarity with dynamic assessment and experience as a teacher, the respondents with 10 or more years' experience were more likely to be familiar with dynamic assessment. This suggests that these respondents might have had more opportunity to learn about dynamic assessment during their careers. However, the correlation was not statistically significant.

The next section deals with the results pertaining to the second aspect of dynamic assessment covered in the survey. These results indicate the respondents' perceived competence in dynamic assessment.

4.2.2.2 Competence in Dynamic Assessment

In the following section on perceived competence, only the results of the 80 respondents who indicated that they were familiar with dynamic assessment are discussed. Of this group, 64.94% indicated that they felt competent doing dynamic assessment while 35.06% felt they were not competent. Table 4.9 shows the results of the respondents' perceived competence.

Table 4.9:   Frequency counts relating to competence in dynamic assessment (n = 80)

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percent
Competence in dynamic assessment	Yes	50	62.50	64.94	64.94
	No	27	33.75	35.06	100.00
	Total	77	96.25	100.00	
	No Answer	3	3.75		
	Total	80	100.00		

The correlation between perceived competence and qualifications, as well as number of years teaching, was explored in the study. Cross-tabulations were done on perceived competence and level of qualification. Of the respondents who indicated that they were competent in dynamic assessment, 37.30% had a higher level of qualification and 26.70% had a lower level of qualification. The results indicate that the respondents who reported a higher level of qualification were more likely to feel competent in doing dynamic assessment. However, using chi-square, the correlation was not statistically significant [X^2 (1) = 0.295, p = 0.587], and the variables were

therefore independent. Table 4.10 and Figure 4.6 highlight the correlation between perceived competence and qualifications.

Table 4.10: Relationship between qualifications and perceived competence in dynamic assessment

| Qualification | Description | Competence in dynamic assessment | | Total |
		Yes	No	
Non-degree	Count	20	13	33
	% of total	26.70%	17.30%	44.00%
Degree	Count	28	14	42
	% of total	37.30%	18.70%	56.00%
Total	Count	48	27	75
	% of total	64.00%	36.00%	100.00%
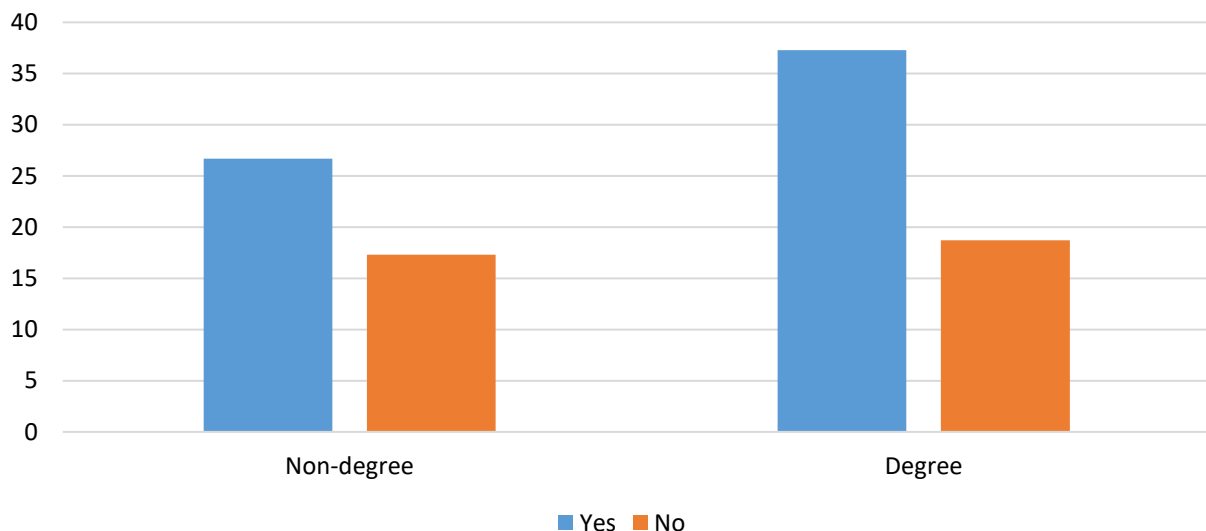
Figure 4.6: Correlation between qualifications and perceived competence

In addition to the above, the existence of a correlation between years of experience and perceived competence was also explored. The results indicate that the respondents who had 10 years and longer teaching experience (39.00%) felt more competent than those who had fewer than 10 years' experience (26.00%). The respondents with more years of teaching experience thus felt more competent in conducting dynamic assessment. However, using chi-square, the correlation was not statistically significant [X^2 (1) = 0.143, p = 0.706], and the variables were therefore independent. Table 4.11 and Figure 4.7 illustrate the correlation between perceived competence and years of experience.

Table 4.11:   Relationship between years teaching and perceived competency in dynamic assessment

Number of years teaching	Description	Competency in dynamic assessment		Total
		Yes	**No**	
Fewer than 10 years	Count	20	12	32
	% of total	26.00%	15.60%	41.60%
10 years and longer	Count	30	15	45
	% of total	39.00%	19.50%	58.40%
Total	Count	50	27	77
	% of total	64.90%	35.10%	100.00%
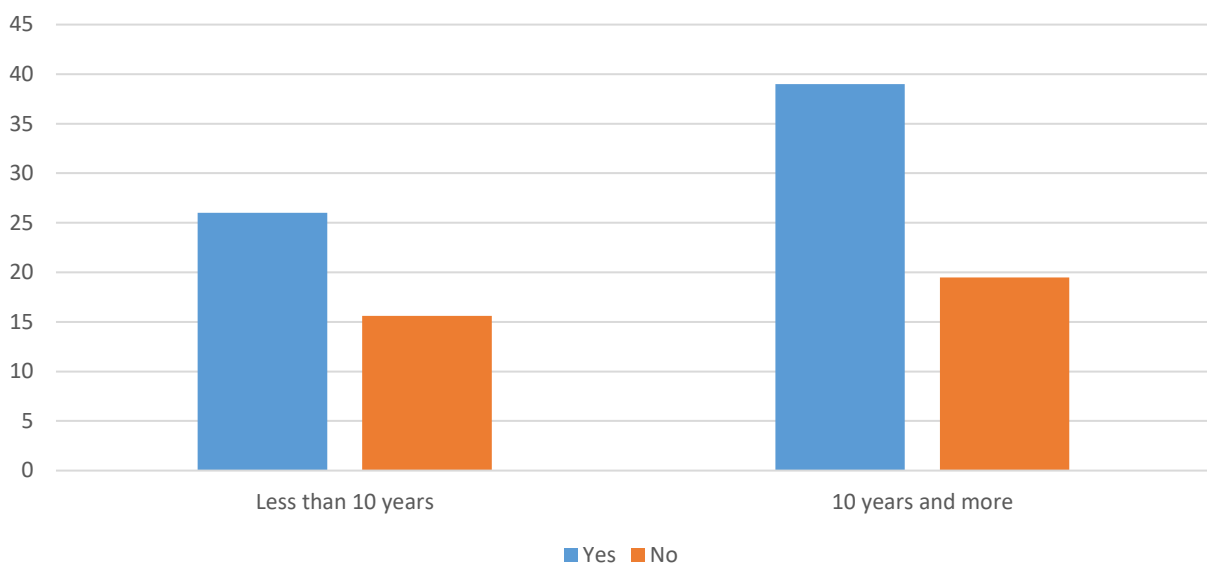
Figure 4.7:   Relationship between number of years teaching and perceived competence

In conclusion, the results regarding the respondents' competence in dynamic assessment indicate that 64.94% of the respondents who were familiar with dynamic assessment felt that they were competent in using it. On investigating the existence of a correlation between perceived competence with qualifications and years of teaching experience, the results indicate that there was no significant correlation.

The third aspect of dynamic assessment explored in the survey were the respondents' perceptions of dynamic assessment, more specifically their perceptions of its advantages and disadvantages. The results are discussed in the following subsection.

4.2.2.3 Perceptions of Dynamic Assessment

The respondents' perceptions of dynamic assessment were investigated in an endeavour to better understand the use of dynamic assessment. The respondents

were requested to use the definition provided in the survey when answering so that respondents' who were unfamiliar with dynamic assessment could also respond. The first issue that was investigated was whether the respondents thought dynamic assessment could be implemented effectively in South African classrooms. The results indicate that the majority of the respondents (79.80%) thought it could be implemented effectively while 20.20% thought it could not be. Table 4.12 below shows the number of responses and corresponding percentages.

Table 4.12:   Frequency counts on implementation of dynamic assessment (*n* = 125)

Variable	Option	Raw	Percentage	Valid percentage	Cumulative percentage
Can dynamic assessment be implemented effectively in South African classrooms	Yes	71	56.80	79.80	79.80
	No	18	14.40	20.20	100.00
	Total	89	71.20	100.00	
	No answer	36	28.80		
	Total	125	100.00		

The respondents were asked if they thought dynamic assessment could have a positive effect on learners' progress. The majority of respondents (92.40%) believed that it could have a positive effect on learners compared to 7.60% who believed that it could not. Table 4.13 shows the responses.

Table 4.13:   Frequency counts on positive effect of implementation of dynamic assessment

Variable	Option	Raw	Percentage	Valid percentage	Cumulative percentage
Could implementing dynamic assessment have a positive effect on learners' progress?	Yes	85	68.00	92.40	92.40
	No	7	5.60	7.60	100.00
	Total	92	73.60	100.00	
	No answer	33	26.40		
	Total	125	100.00		

The respondents were asked to indicate whether they thought dynamic assessment had advantages or disadvantages. The results indicate that the majority of the respondents (95.40%) thought that dynamic assessment had advantages. Table 4.14 shows the respondents' responses regarding their perceived advantages of dynamic assessment.

Table 4.14: Frequency counts on perceived advantages of implementing dynamic assessment (*n* = 125)

Variable	Option	Raw	Percentage	Valid percentage	Cumulative percentage
Perceived advantages	Yes	83	66.40	95.40	95.40
	No	4	3.20	4.60	100.00
	Total	87	69.60	100.00	
	No answer	38	30.40		
	Total	125	100.00		

To further explore the respondents' perceptions of the advantages of dynamic assessment, they were asked to indicate what they considered the advantages to be. Because the respondents could select more than one option as their response, the percentage was determined on the basis of the number of responses ($\frac{number\ of\ times\ item\ was\ selected}{total\ number\ of\ responses}\ x\ 100 = \%$). The results indicate that the highest rated advantage was that dynamic assessment '*shows teachers the potential of the learner*'. Table 4.15 shows the responses.

Table 4.15: Frequency counts on perceived advantages of dynamic assessment (*n* = 83)

Variable	Response	Raw data	Percent
Perceived advantages of dynamic assessment	It shows me the potential of the learner	54	65.06
	It connects instruction and assessment	30	36.14
	It gives me a starting point to teach from	48	57.83
	I do not know enough about it to state advantages	15	18.07

Figure 4.8 illustrates the percentages of the perceived advantages listed in Table 4.15 above.
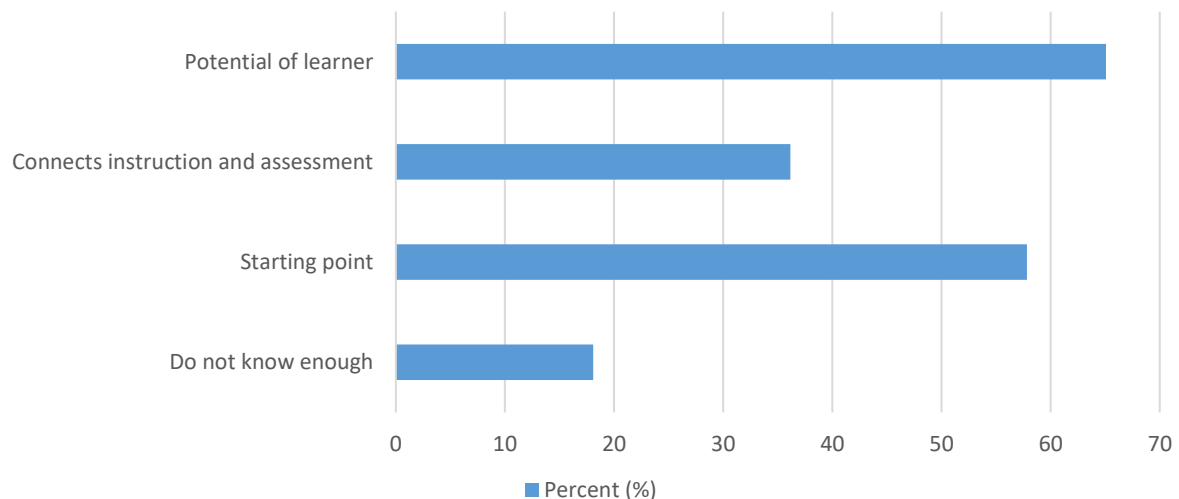
Figure 4.8: **Perceived advantages of dynamic assessment**

When asked about the disadvantages, 56.00% of the respondents indicated that dynamic assessment had disadvantages while 44.00% indicated that it did not. Table 4.16 below shows the responses to the question on the perceived disadvantages of dynamic assessment.

Table 4.16: **Frequency counts on perceived disadvantages of implementing dynamic assessment (n = 125)**

Variable	Option	Raw	Percentage	Valid percentage	Cumulative percentage
Perceived disadvantages	Yes	47	37.60	56.00	56.00
	No	37	29.60	44.00	100.00
	Total	84	67.20	100.00	
	No answer	41	32.80		
	Total	125	100.00		

As with the advantages, the respondents were asked to select what they considered the disadvantages to be. The number of responses was once again used to determine the percentages. The highest ranked disadvantage was indicated as '*it requires too much additional preparation time*'. Table 4.17 shows the responses.

Table 4.17: Frequency counts on perceived disadvantages of dynamic assessment (*n* = 83)

Variable	Response	Raw Data	Percent
Perceived disadvantages of dynamic assessment	It does not separate instruction from assessment	14	29.79
	It is not outlined in the CAPS curriculum	19	40.43
	It requires too much additional preparation	27	57.45
	I do not know enough about it to state the disadvantages	17	36.17

Figure 4.9 illustrates the percentages of the perceived disadvantages listed in Table 4.17 above.
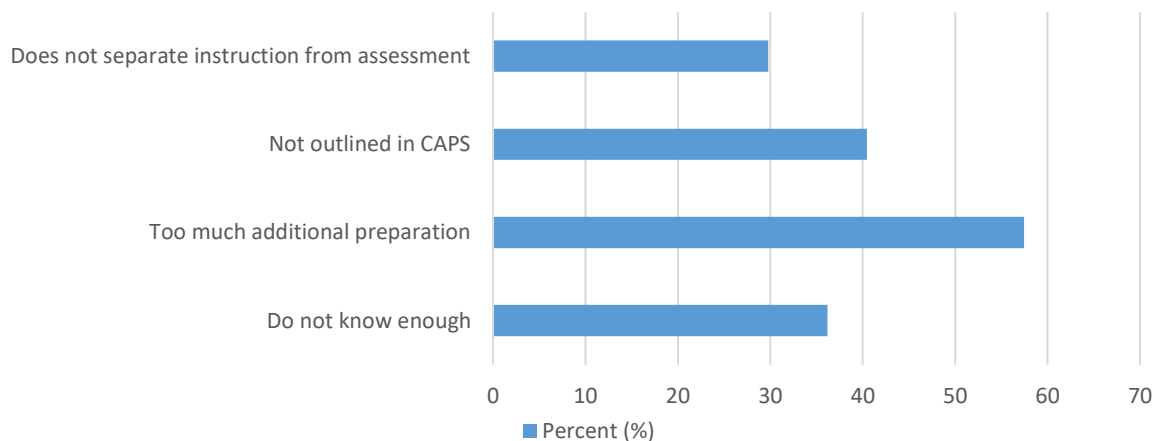
Figure 4.9: Perceived disadvantages

The final section on the results provides information on how the respondents were trained in dynamic assessment and also on their future training needs.

4.2.3 TRAINING IN DYNAMIC ASSESSMENT

The respondents who indicated that they were familiar with dynamic assessment were asked to indicate how they became familiar with it. Of these respondents, 38.75% indicated that reading up on dynamic assessment was how they became familiar with

it. Table 4.18 shows the tabulation of the results, and Figure 4.10 shows the results in bar graph format.

Table 4.18: **Frequency counts on the method of familiarity (** n **= 80)**

Variable	Response	Raw data	Percent
Method of familiarity	Reading	31	38.75
	Workshops	26	32.5
	Tertiary coursework	21	26.25
	Other	1	1.25
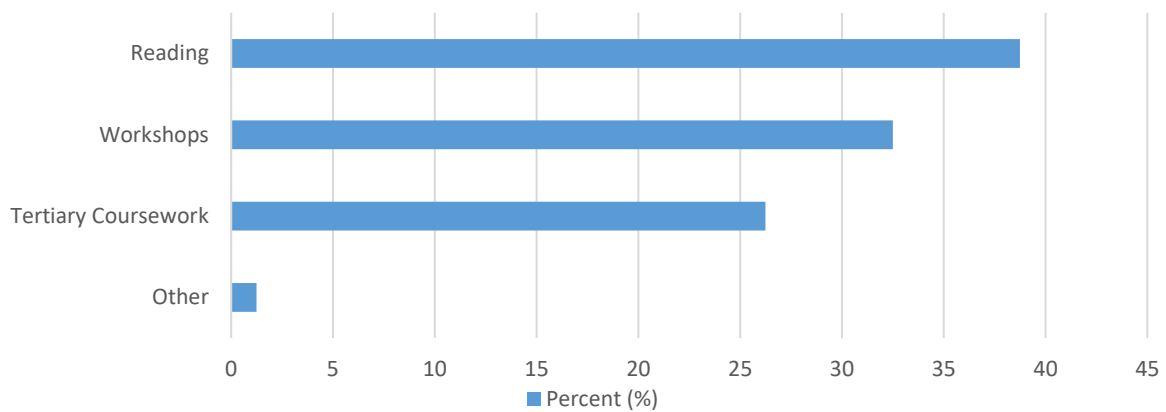
Figure 4.10: Method of familiarity

The respondents were also asked to indicate whether they would like additional training in dynamic assessment. Nearly 90% (88.70%) indicated that they would be interested in knowing more about dynamic assessment while 11.30% answered they would prefer not to learn more about dynamic assessment. Their responses are shown in Table 4.19.

Table 4.19: **Frequency counts on interest in knowing more about dynamic assessment**

Variable	Response	Raw data	Percent	Valid percentage	Cumulative percentage
Interest in knowing more about dynamic assessment (n = 125)	Yes	86	68.80	88.70	88.70
	No	11	8.80	11.30	100.00
	Total	97	77.60	100.00	
	No answer	28	22.40		
	Total	125	100.00		

The respondents who indicated that they would like to learn more about dynamic assessment were asked in what format they would like the training to take place. Of these respondents, 72.09% indicated that they would prefer 'continuous professional development (CPD) workshops'. Other options were CPD online courses (34.88) and National Qualifications Framework (NQF) certificate courses (37.21). Table 4.20 shows the respondents' training preferences.

Table 4.20:   **Frequency counts on methods of being informed about dynamic assessment**

Variable	Response	Raw data	Percent
Methods of being informed about dynamic assessment (*n* = 86)	Continuous professional development workshops	62	72.09
	Online continuous professional development	30	34.88
	NQF certificate course	32	37.21

Figure 4.11 illustrates the percentages of responses to methods of learning more about dynamic assessment.
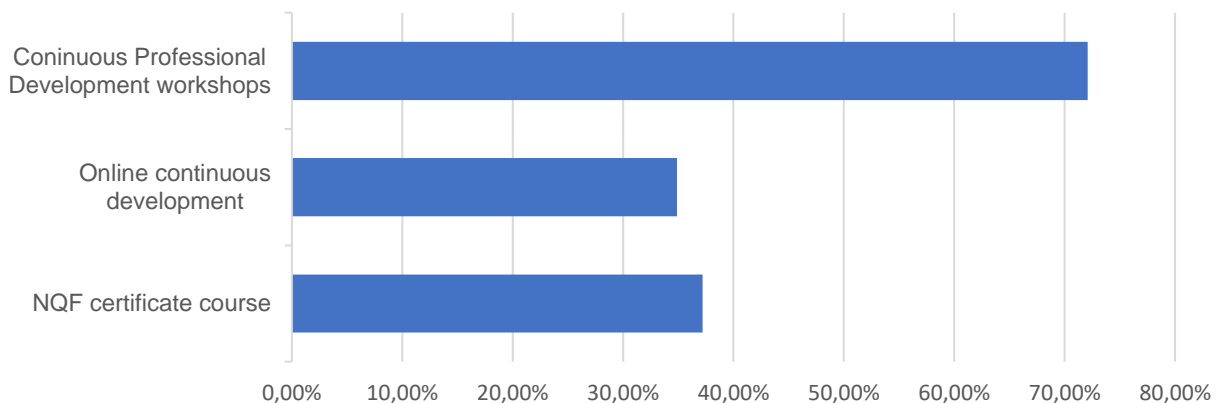
Figure 4.11: Methods of being informed

The following section covers the findings of the survey as part of a recursive literature review.

4.3   FINDINGS OF THE STUDY IN THE CONTEXT OF RELEVANT LITERATURE

The purpose of this study, as stated in Chapter 1, was to explore foundation phase teachers' use of dynamic assessment. Earlier in this chapter the respondents' use of dynamic assessment was contextualised with reference to the broader assessment practices they used. This provided insight into the importance of dynamic assessment

compared to other forms of assessment. The present study's results reveal that at least 43.00% of the respondents spent 20 or more hours on assessment a term. Further analysis of how the respondents used their hours of assessment indicates that 60.80% spent on average 10 hours a term using formative assessment. It can therefore be surmised that formative assessment was clearly the preferred mode of assessment. A further 5 hours a term was used for dynamic assessment, summative assessment, and other forms of assessment each.

Bearing in mind the developmental needs of learners in the foundation phase, using formative assessment more often than other types of assessment could be considered beneficial to learners' progress in their formative years. However, the results of this study by no means imply that other forms of assessment are not beneficial in the foundation phase. Other factors need to be considered before any conclusion can be reached as to why other forms of assessment are less used than formative assessment.

To understand how respondents used dynamic assessment, it had first to be clarified how familiar they were with it. The majority of the respondents (79.20%) reported that they were familiar with dynamic assessment. However, this picture changed when the extent to which they were familiar with it was explored. Only 40.00% reported that they were quite familiar with dynamic assessment. As 53.60% of all the respondents indicated that they implemented dynamic assessment, there must have been respondents who implemented dynamic assessment but were not quite familiar with it. This raises the question as to how competent they were in the use of this form of assessment.

The study results indicate no significant correlation between how familiar the respondents were with dynamic assessment and their level of qualification or their years of teaching. The majority of the respondents reported that they familiarised themselves with dynamic assessment by reading about it. In Hodges' (2013) study on teachers, reading was also indicated as the method most used by the respondents to familiarise themselves with dynamic assessment. However, a study conducted with educational psychologists revealed that the majority of the respondents were familiar with dynamic assessment through its inclusion in their coursework at tertiary level (Kühn, 2016). In the present study, only 26.25% of the respondents reported that dynamic assessment had been introduced to them during their coursework at tertiary level. This raises questions about how undergraduate teacher qualification programmes train students in the use of dynamic assessment. Smit (2010)

recommends an investigation into the content of courses such as a bachelor's degree in education to determine the extent to which dynamic assessment features.

Although 53.60% of the respondents in the present study reported actually implementing dynamic assessment themselves, 79.80% said they believed that dynamic assessment could be implemented successfully in South African classrooms. Vandeyar and Killen (2007) found in their study that teachers' perceptions are consistent with their actual implementation of assessment in the classroom. Therefore, teachers who are familiar with dynamic assessment and believe that the advantages outweigh the disadvantages are more likely to implement it in their own classrooms. These findings are in line with those of Hodges' (2013) study where the majority of the respondents, whether familiar with dynamic assessment or not, indicated that its implementation would be beneficial to students.

Conversely, in a study by Adokh and Rafiee (2017), the teachers indicated a low feasibility for the implementation of dynamic assessment in Iranian English classes. These authors suggested that the low feasibility was due to the lack of clearly defined parameters to guide teachers in the transition from theory to implementation. In another study done in Iran, Karimi and Shafiee (2014) found that teachers' perceptions of dynamic assessment were influenced by their level of education and years of teaching experience. Similarly, Hodges' (2013) study suggested that successful implementation of dynamic assessment could be contingent on the training teachers received in it.

The present study also investigated the respondents' perceptions of the possible advantages of dynamic assessment. The majority of the respondents (92.40%) reported that dynamic assessment could have a positive effect on learners' progress. These findings correspond with those of Rashidi and Bahadori Nejad (2018) who also found that learners' progress could improve using dynamic assessment. Most of the respondents (95.40%) in the present study believed that dynamic assessment had advantages. Of these respondents, the majority (65.06%) reported that dynamic assessment could assist in determining learners' potential and indicated this as an advantage. In studies by Deutsch and Reynolds (2000), as well as Kühn (2016), a perceived advantage noted by educational psychologists was that dynamic assessment helped them give teachers practical ideas to assist their teaching. The findings of the present study, alongside those of Deutsch and Reynolds (2000) and Kühn (2016), suggest that dynamic assessment can provide a platform for collaboration between teachers and educational psychologists.

Finally, the results of this study indicate that the respondents were interested in learning more about dynamic assessment regardless of whether they were currently familiar with it or not. Similarly, in Hodges' (2013) study, the respondents indicated interest in knowing more about dynamic assessment. The respondents in the present study identified continuous professional development workshops as their first preference for training in dynamic assessment. In Kühn's (2016) study, the same views were expressed by educational psychologists. Deutsch and Reynolds (2000) maintain that training in dynamic assessment should be a continuous professional development priority for educational psychologists. Hodges (2013) emphasises the need for training in dynamic assessment for teachers in New Zealand.

4.4   SUMMARY

This chapter covered the results of the survey. Frequency tables were used to show the responses from the survey as percentages. Additionally, cross-tabulation tables were used to identify possible correlations between variables. The study results were then discussed in the light of other studies on dynamic assessment. Chapter 5 deals with the research questions and reviews the strengths, limitations, and implications of the study. Recommendations are also made for future research.

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Chapter 5
Summary, Findings and Recommendations

5.1   INTRODUCTION

As stated in Chapter 1, the purpose of this descriptive cross-sectional survey study was to describe how 125 foundation phase teachers in the Johannesburg North education district used dynamic assessment. In order to better understand the respondents' use of dynamic assessment, their assessment practices and the time spent on the various forms of assessment were explored. Factors that could influence the use of dynamic assessment were also investigated, such as how familiar the respondents were with dynamic assessment and how competent they felt in using it. The study considered the respondents' qualifications and teaching experience in determining if there was a relationship between them and the respondents' familiarity with and competence in dynamic assessment. The respondents' training in dynamic assessment as well as their interest in learning more about dynamic assessment were also surveyed.

The literature on assessment suggests that assessment is an integral part of the teaching and learning process as it monitors learners' progress and indicates whether they have learnt what is required for them to advance academically. Teachers implement formative and summative assessment as laid down by the Department of Basic Education. However, teachers have flexibility in their assessment approaches as learner promotion depends solely on school-based assessments.

Although not outlined by the Department of Basic Education, assessment *as* learning has a strong element of feedback and also helps learners develop critical thinking skills. One form of assessment *as* learning, namely dynamic assessment, also provides insight into learners' learning potential. Many teachers integrate dynamic assessment into their intervention praxis and also use it to gauge learners' potential in the teaching and learning process. The literature on dynamic assessment indicates that teachers often apply the interventionist type of dynamic assessment, using the 'sandwich' model. Studies were discussed earlier on how the various ways dynamic assessment could be used by teachers. However, most of these studies were not conducted in South Africa, probably because dynamic assessment is widely considered as an alternative form of assessment in this country. One of the aims of this study was therefore to explore its frequency of use in South Africa.

In the next section, the researcher discusses the questions posed in Chapter 1. The questions are outlined and answered based on the survey results. The following section discusses contributions from this study, after which the limitations of the study are discussed and then, finally, recommendations for future studies are made.

5.2 ANSWERING THE RESEARCH QUESTIONS

Descriptive as well as inferential questions were posed for this study. These questions are covered in the next section.

5.2.1 DESCRIPTIVE QUESTIONS

Four descriptive questions were posed in Chapter 1 relating to the respondents' familiarity with and competence in dynamic assessment. Additional questions were on how much time the respondents spent on dynamic assessment as part of their assessment practices, as well as what the respondents considered the advantages and disadvantages of dynamic assessment. The four descriptive questions are answered below.

5.2.1.1 How familiar were the foundation phase teachers with Dynamic Assessment?

A majority (79.20%) of the respondents in the present study indicated that they were familiar with dynamic assessment. However, only 40.00% were quite familiar with it, indicating that the majority of the respondents were only somewhat familiar with dynamic assessment.

5.2.1.2 How competent did the foundation phase teachers feel using Dynamic Assessment?

A majority (64.94%) of the respondents who indicated that they were familiar with dynamic assessment reported that they felt competent enough to implement it.

5.2.1.3 How often did the foundation phase teachers use Dynamic Assessment compared to other forms of assessment?

A majority (53.60%) of the respondents indicated that they were already implementing dynamic assessment in their classrooms. Formative assessment was reported as the preferred method of assessment with the most time commonly spent on it. Assessment

times were fairly evenly spread among dynamic assessment, summative assessment, and other forms of assessment (5 hours a term).

5.2.1.4 What were the foundation phase teachers' views on the advantages and disadvantages of Dynamic Assessment?

A large majority (95.40%) of the respondents indicated that dynamic assessment had advantages. Furthermore, the respondents selected '*It shows me the potential of the learner*' as the most significant advantage. Additionally, a majority (56.00%) of the respondents indicated that dynamic assessment had disadvantages. The most selected disadvantage was '*it requires too much additional preparation*'. In addition, a majority (79.80%) of the respondents indicated that they thought dynamic assessment could be implemented in South African classrooms. Although some disadvantages were reported, the respondents generally had a positive perception of dynamic assessment.

5.2.2   INFERENTIAL QUESTIONS

The four inferential questions posed in Chapter 1 sought to determine if there were any correlations between the respondents' qualifications and years of experience and their familiarity with and competence in dynamic assessment.

5.2.2.1 Was there a correlation between the respondents' qualifications and their familiarity with Dynamic Assessment?

No correlation was found between the respondents' qualifications and their familiarity with dynamic assessment.

5.2.2.2 Was there a correlation between the respondents' teaching experience and their familiarity with Dynamic Assessment?

No correlation was found between the respondents' years of teaching experience and their familiarity with dynamic assessment.

5.2.2.3 Was there a correlation between the respondents' qualifications and their competence in using Dynamic Assessment?

No correlation was found between the respondents' qualifications and their perceived competence in dynamic assessment.

5.2.2.4 Was there a correlation between the respondents' teaching experience and their competence in using Dynamic Assessment?

No correlation was found between the respondents' years of teaching experience and their perceived competence in dynamic assessment.

5.3   LIMITATIONS OF THE STUDY

One aspect of the research process that presented as a limitation and over which the researcher had very little or no control related to the online distribution of the survey. This distribution method was selected as it promised to be both cost and time efficient and also because it meant potentially that the survey could be accessed by a larger number of respondents. However, a major unforeseen limitation was that the researcher was unable to email the link to the survey directly to the teachers because there was no database containing the direct contact details of the teachers. The researcher was given access only to the email addresses of the schools where the foundation phase teachers could be reached via the school administrators. This limited the number of respondents who were able to access the survey directly and thus limited the responses to the survey. To overcome this limitation, the researcher implemented a paper-based distribution of the survey in addition to the electronic distribution.

5.4   POTENTIAL CONTRIBUTION OF THE STUDY

The study provides valuable insight into our understanding of the use of dynamic assessment in South Africa. It is the first descriptive survey to explore the use of dynamic assessment with teachers and, as such, other surveys will be able to build on it. In addition, it provides useful information for policy-makers and education managers on in-service training or continuous professional development courses. It also provides information on the current training teachers receive in dynamic assessment and can contribute to discussions on the inclusion of dynamic assessment in teacher training at tertiary level.

5.5   RECOMMENDATIONS FOR THE FUTURE

Based on the findings of this study, the following recommendations are made for future studies.

- A similar study should be done in the whole Gauteng area or, alternatively, a national study should be done to compare assessment methods across provincial departments.
- A study on the different phases of schooling should be done to compare the use of dynamic assessment in the different phases.
- A qualitative or mixed-methods study should be done to further explore teachers' perceptions of dynamic assessment. Allowing the teachers to answer qualitatively may provide richer insight into their experiences.
- A study should be done on the modules on dynamic assessment offered at different institutions for a tertiary degree in education. Such a study could provide insight into the training teachers receive on dynamic assessment.

5.6   CONCLUDING REMARKS

The purpose of this cross-sectional survey study was to investigate how foundation phase teachers use dynamic assessment. Although the study was limited in its sample size and scope, it is the first cross-sectional survey on how foundation phase teachers in South Africa use dynamic assessment. It can be regarded as a starting point for further research on this topic. The study findings provide insight into how dynamic assessment is already used in South African schools and highlight the value of formative assessments, such as dynamic assessment, as part of a portfolio of assessment methods that teachers in the foundation phase can use. The study stresses the need for foundation phase teachers to receive training in alternative assessment methods such as dynamic assessment.

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APPENDICES

Appendix A:
Survey

Appendix B:
Breakdown of Survey Items

Appendix C:
Reference Survey (Kühn, 2016)

Appendix D:
Approval from GDE

Appendix E:
Invitation to Survey

Appendix F:
Additional Statistics

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Faculty of Education

Survey of Foundation Phase Teachers' Use of Dynamic Assessment

The purpose of this proposed research is to investigate how foundation phase teachers in Gauteng use dynamic assessment in their classrooms. The findings will provide insight into the assessment practices of teachers, which could be used to guide future teacher training. The use of dynamic assessment in the classroom can also help teachers identify learners with special needs, which is in line with the Screening, Identification, Assessment and Support (SIAS) policy. Please read through the following information carefully before you decide whether or not you would like to participate in the research.

Time: The survey should not take more than about 15 minutes of your time.

Confidentiality and anonymity: You will not be required to provide any identifying information as part of the survey, and your responses will remain confidential. The data collected via www.esurveycreator.com will be stored on the website's servers. No information will be shared with a third party, which is in accordance with the website's privacy policy. The website's servers are managed by Amazon Web Services (AWS). AWS adheres to European data protection laws and meets an extensive range of compliance and security requirements.

Possibility of harm/risk/discomfort: There are no foreseeable negative consequences for you for taking part in this study.

Remuneration: There will be no payment for participating in the study.

Dissemination: The study will be made available on the Open Access Repository of the University of Pretoria in the form of a mini-dissertation. Although other researchers will have access to the research findings, the raw data will remain confidential.

Voluntary participation: Your participation in the study will be voluntary, and there will be no negative consequences for your declining to participate. You may withdraw from the study at any time, and you may also request the deletion of any answers already submitted by you.

Closing date: Please complete the survey by no later than 19 August 2018.
If you agree to participate in the study, you acknowledge that your participation is voluntary, and you declare that you are a foundation phase teacher in Gauteng and that the information you will provide will be true and accurate.

The survey consists of three sections. The first section provides background information; the second section provides information on assessment practices; and the third section focuses on dynamic assessment.

<u>**SECTION 1: BACKGROUND INFORMATION**</u>

1. **What is your highest qualification?** **Please tick**

National Senior Certificate	
Advanced Certificate in Education	
Diploma	
B.Ed.	
PGCE	
M.Ed.	
PhD	

2. **How many years have you been a teacher?** **Please tick**

≥40	
30 - 39 years	
20 - 29 years	
10 - 19 years	
1 - 9 years	
Less than a year	

Section 2: Assessment practices

The following definitions are provided to establish what is meant by the terms 'dynamic assessment', 'formative assessment', and 'summative assessment'.

Dynamic Assessment

Dynamic assessment is an interactive assessment process aimed at increasing the knowledge of learners through active teaching and assessing their thinking, perception, learning, and problem-solving skills. The fundamental goal of dynamic assessment is to determine learners' learning potential in addition to measuring their present performance. The process allows the teacher to identify what learners are experiencing difficulties with and address these difficulties. The most commonly used dynamic assessment process is the test–teach–retest method where the teacher plans various types of interventions in between testing and retesting the same learning outcome.

Formative Assessment

"Informal (assessment for learning) or daily assessment is the monitoring and enhancing of learners' progress. This is done through teacher observation and teacher-learner interactions, which may be initiated by either teachers or learners. Informal or daily assessment may be as simple as stopping during the lesson to observe learners or to discuss with the learners how learning is progressing. It should be used to provide feedback to the learners and teachers, close the gaps in learners' knowledge and skills and improve teaching. Informal assessment builds towards formal assessment and teachers should not only focus on the formal assessment" (Department of Basic Education, 2012).

Summative Assessment

"Formal assessment (assessment of learning) provides teachers with a systematic way of evaluating how well learners are progressing in a particular subject and in a grade. Teachers must ensure that assessment criteria are very clear to the learners before the assessment process. This involves explaining to the learners which knowledge and skills are being assessed and the required length of responses. Feedback should be provided to the learners after assessment and could take the form of whole-class discussion or teacher-learner interaction" (Department of Basic Education, 2012).

3. **Do you identify the first described form of assessment as 'dynamic assessment'?**

Please tick

Yes	
No	

4. **If no, what do you identify it as?**

_____

5. **How many hours do you spend assessing your learners in a term?**

Please tick

0 – 5	
6 – 10	
11 – 15	
16 – 20	
› 20	

6. How many of those hours are spent on <u>formative</u> assessment?
7. How many of those hours are spent on <u>summative</u> assessment?
8. How many of those hours are spent on <u>dynamic</u> assessment?
9. How many of those hours are spent on <u>other</u> forms of assessment?

10. **What other forms of assessment do you use?**

Please tick

Criterion-referenced assessments	
Diagnostic assessments	
Ipsative assessment	
Other:	

11. **Which of the following would best describe your approach to assessment?**

Please tick

I generally observe learners and then use my observations to measure assessment outcomes.	
I generally set regular tests to determine how much of the curriculum the learners have understood.	
I generally assess learners before teaching a learning outcome.	
I generally assess learners at the end of a learning outcome.	
I use my assessments to guide learners to a new level of understanding	
Other	

SECTION 3: DYNAMIIC ASSESSMENT

Please answer on the basis of the definition of dynamic assessment provided.

12. **Are you familiar with dynamic assessment?**   **Please tick**

Yes

No

13. **If yes, to what extent?**   **Please tick**

Barely familiar

Somewhat familiar

Quite familiar

14. **If you are familiar with dynamic assessment, how did you obtain that knowledge?**   **Please tick**

Reading

Attending workshop

Coursework at tertiary level

Other:

15. **If you are familiar with dynamic assessment, would you consider yourself competent in it?**   **Please tick**

Yes

No

16. **Can dynamic assessment be implemented in South African classrooms?**   **Please tick**

Yes

No

17. **Give a reason for your previous answer.**

18. **Do you think implementing dynamic assessment could have a positive effect on learners' progress?**   **Please tick**

Yes

No

19. **Please give a reason for your previous answer.**

20. **Would you say there are advantages to using dynamic assessment?**   **Please tick**

Yes

No

21.	**If yes, which of the following would you say are advantages?**		**Please tick**

It indicates the potential of learners.

It links instruction and assessment.

It gives me a starting point to teach from.

I do not know enough to state any advantages.

22. **Would you say there are disadvantages to using dynamic assessment?**   **Please tick**

Yes

No

23. **If yes, which of the following would you say are disadvantages?**   **Please tick**

It does not separate instruction from assessment.

It is not outlined in the CAPS curriculum.

It requires too much additional preparation.

I do not know enough about dynamic assessment to state its disadvantages

24. **Would you like to know more about dynamic assessment?**   **Please tick**

Yes

No

25. **How would you like to be informed about dynamic assessment?**   **Please tick**

Continuous professional development workshops

Online continuous professional development courses

NQF certificate courses

APPENDIX B: BREAKDOWN OF SURVEY ITEMS

Question number	Question asked	Options that could be selected	Objective of question
1.	What is your highest qualification?	- National Senior Certificate - Advanced Certificate in Education - Diploma - B.Ed. - PGCE - M.Ed. - PhD	To create the context within which the teacher is answering as well as give insight into teachers' level of experience.
2.	How many years have you been a teacher?	- ≥40 - 30 - 39 years - 20 - 29 years - 10 - 19 years - 1 - 9 years - less than a year	

The following definitions are provided to establish what is meant by the terms 'dynamic assessment', 'formative assessment', and 'summative assessment'.

Dynamic Assessment
Dynamic assessment is an interactive assessment process aimed at increasing the knowledge of learners through active teaching and assessing their thinking, perception, learning, and problem-solving skills. The fundamental goal of dynamic assessment is to determine learners' learning potential in addition to measuring their present performance. The process allows the teacher to identify what learners are experiencing difficulties with and address these difficulties. The most commonly used dynamic assessment process is the test–teach–retest method where the teacher plans various types of interventions in between testing and retesting the same learning outcome.

Formative Assessment
"Informal (assessment for learning) or daily assessment is the monitoring and enhancing of learners' progress. This is done through teacher observation and teacher-learner interactions, which may be initiated by either teachers or learners. Informal or daily assessment may be as simple as stopping during the lesson to observe learners or to discuss with the learners how learning is progressing. It should be used to provide feedback to the learners and teachers, close the gaps in learners' knowledge and skills and improve teaching. Informal assessment builds towards formal assessment and teachers should not only focus on the formal assessment" (Department of Basic Education, 2012).

Summative Assessment
"Formal assessment (assessment of learning) provides teachers with a systematic way of evaluating how well learners are progressing in a particular subject and in a grade. Teachers must ensure that assessment criteria are very clear to the learners before the assessment process. This involves explaining to the learners which knowledge and skills are being assessed and the required length of responses. Feedback should be provided to the learners after assessment and could take the form of whole-class discussion or teacher-learner interaction" (Department of Basic Education, 2012).

3.	Do you identify the first described form of assessment as 'dynamic assessment'?	- Yes - No	To ascertain what teachers may understand dynamic assessment as.
4.	If no, what do you identify it as?	*[qualitative answer]*	
5.	How many hours do you spend assessing your learners in a term?	- 0 – 5 - 6 - 10 - 11 - 15 - 16 - 20 - ›20	
6.	How many of those hours are spent on <u>formative</u> assessment?	*[insert number]*	
7.	How many of those hours are spent on <u>summative</u> assessment?	*[insert number]*	
8.	How many of those hours are spent on <u>dynamic</u> assessment?	*[insert number]*	
9.	How many of those hours are spent on <u>other</u> forms of assessment?	*[insert number]*	
10.	What other forms of assessment do you use?	- Criterion-referenced assessments - Diagnostic assessments - Ipsative assessment - Other:	To ascertain teachers' current assessment practices.
11.	Which of the following would best describe your approach to assessment?	- I generally observe learners and then use my observations to measure assessment outcomes. - I generally set regular tests to determine how much of the curriculum the learners have understood. - I generally assess learners before teaching a learning outcome. - I generally assess learners at the end of a learning outcome. - I use my assessments to guide learners to a new level of understanding - Other	
12.	Are you familiar with dynamic assessment?	- Yes - No	To determine the familiarity teachers have with dynamic assessment.
13.	If yes, to what extent?	- Barely familiar - Somewhat familiar - Quite familiar	
14.	If you are familiar with dynamic assessment, how	- Reading - Workshop - Coursework at Tertiary level - Other	

		did you obtain that knowledge?		
15.	If you are familiar with dynamic assessment, would you consider yourself competent in it?	- Yes - No	
16.	Can dynamic assessment be implemented in South African classrooms?	- Yes - No	To ascertain teachers' perceptions of dynamic assessment.
17.	Please give a reason for your previous answer	*[qualitative answer]*	
18.	Do you think implementing dynamic assessment could have a positive effect on learners' progress?	- Yes - No	
19.	Please give a reason for your previous answer	*[qualitative answer]*	
20.	Would you say there are advantages to using dynamic assessment?	- Yes - No	
21.	If yes, which of the following would you say are advantages?	- It shows me the potential of the learner - It connects instruction and assessment - It gives me a starting point to teach from - I do not know enough to state advantages	
22.	Would you say there are disadvantages to using dynamic assessment?	- Yes - No	
23.	If yes, which of the following would you say are disadvantages?	- It does not separate instruction from assessment - It is not outlined in the CAPS curriculum - It requires too much additional preparation - I do not know enough about dynamic assessment to state disadvantages	
24.	Would you like to know more about dynamic assessment?	- Yes - No	To determine viable options for dynamic assessment training
25.	How would you like to be informed about dynamic assessment?	- Continuous Professional Development Workshops - Online Continuous Professional Development Courses - NQF Certificate Courses	

Question number	Question asked	Options that could be selected
1	What is your year of birth?	Year in which the educational psychologist was born.
2	What is your gender?	Male. Female.
3	What is your level of education?	Master's degree. Doctoral degree.
4	How many years have you been practising as an educational psychologist?	Less than 3 years. 4–7 years. 8–11 years. 12–15 years. 16 or more years. Other, please specify.
5	In which type of setting are you currently employed? Respondents could select more than one option in this question	School setting. Private practice. Hospital setting. Community mental health setting. Outpatient medical/psychiatric clinic. Other, please specify.
6	In what province are you currently practising?	Gauteng. Western Cape. Northern Cape. Free State. Limpopo. KwaZulu-Natal. Mpumalanga. North West. Eastern Cape.
7	Please indicate the number of psychological assessments that you (and/or someone you supervise) have conducted in the past 12 months:	0. 1–10. 11–20. 21–30. 31–40. 41–50. More than 50. Other, please specify.
8	Which assessment instruments do you mainly use when measuring the cognitive abilities of children? Respondents could select more than one option in this question	Senior South African Individual Scale Revised (SSAIS-R). Junior South African Individual Scale (JSAIS). Wechsler Scales. Kaufman Assessment Battery for Children. The Learning Potential Assessment Device.

Question number	Question asked	Options that could be selected
		Cognitive Modifiability Battery.
		Individual Scale for General Scholastic Aptitude (ISGSA).
		Grover Counter Scale (GCS).
		Paper and Pencil Games.
		Cognitive Assessment System (CAS).
		Raven's Progressive Matrices.
		Learning Potential Computerized Adaptive Test (LPCAT).
		Other, please specify.
9	Please read the following statement and answer the subsequent questions. Respondents could select both options in this question	I read the passage Other, please specify.
10	Are you familiar with dynamic assessment?	Yes. No.
11	Would you like to know more about dynamic assessment?	Yes. No.
12	Please indicate why not.	Any reason why the educational psychologist does not want to know more about dynamic assessment.
13	How would you like to be informed about dynamic assessment? Respondents could select more than one option in this question	Universities. CPD courses. Online courses. Private training. Other, please specify.
14	To what extent are you familiar with dynamic assessment?	Barely familiar. Somewhat familiar. Quite familiar.
15	How did you obtain your knowledge about dynamic assessment? Respondents could select more than one option in this question	Reading. Workshop. Coursework. Internship. Clinical setting. Academic training. Other, please specify.
16	Did your training equip you to perform dynamic assessment competently?	Yes. No.
17	Would you like to know more about dynamic assessment?	Yes. No.
18	How would you like to be informed about dynamic assessment?	Universities. CPD courses. Online courses

Question number	Question asked	Options that could be selected
	Respondents could select more than one option in this question	Private training Other, please specify
19	Please comment why not	Any reason why educational psychologists do not want to know more about dynamic assessment.
20	What is your attitude towards dynamic assessment?	Very positive. Somewhat positive. Not very positive. Other, please specify.
21	Which of the following advantages of dynamic assessment have you experienced? Respondents could select more than one option in this question	Considers the child's potential as well as existing problem-solving skills. Positive assessment experience for the child. Informs intervention. Identifies how the child learns. Identifies teaching strategies that will work best for the child. Implies change. Makes provision for the effect of educational and social disadvantage. Indicates how the removal of learning barriers may change a child's performance. Focuses on the child's ability but also on how the child approaches tasks and which thought processes are used. Decreases cultural bias in assessment. Other, please specify.
22	Which of the following disadvantages of dynamic assessment have you experienced? Respondents could select more than one option in this question	Approaches used in dynamic assessment are lengthy in terms of the mediation of learning processes. Requires the practitioner to do additional planning to perform curriculum-based interventions. Practitioners need to be well trained. Does not give a standard score or compare the child to other children the same age. Its validity and reliability are often questioned. Other, please specify.
23	Have you (and/or someone you supervised) used dynamic assessment in the past six months?	Yes. No.
24	How often in the past six months have you used dynamic assessment?	At least once a week. At least once every three months. At least once every six months.
25	If you are familiar with dynamic assessment but do not use it every six months, it is due to –	Approaches used in dynamic assessment are lengthy in terms of the mediation of learning processes.

Question number	Question asked	Options that could be selected
	Respondents could select more than one option in this question	Requires practitioners to do additional planning to perform curriculum-based interventions.
		Practitioners need to be well trained.
		Does not give a standard score or compare the child to other children the same age.
		Validity and reliability of dynamic assessment are often questioned.
		Other, please specify.
26	Which of the following dynamic assessment instruments/techniques do you use when using dynamic assessment? Respondents could select more than one option in this question	Learning Potential Assessment Device.
		Graduated Prompts Approach.
		Cognitive Modifiability Battery.
		Swanson-Cognitive Processing Test.
		Testing the Limits.
		Learning Potential Computerized Adaptive Test (LPCAT).
		Butterfly Dynamic Assessment Battery.
		Non-standardised Curriculum-based Dynamic Assessment.
		None of the above
		Other, please specify.
27	In which one of the following instances are you most likely to use dynamic assessment? Respondents could select more than one option in this question	Children who present with an emotional disturbance, personality disorder, or learning impairment.
		Children who come from a different cultural or linguistic background to the language of the assessment.
		Children affected by inequalities caused by a lower socio-economic status.
		When discrepancies seem to exist between the children's aptitude and performance.
		Where standardised assessments yield low or borderline scores when assessing cognitive functioning.
		Other, please specify.
28	How likely are you (and/or someone you supervise) to continue including dynamic assessment instruments in your psychological assessment?	Very likely.
		Likely.
		Somewhat likely.
		Not likely.
		Highly unlikely.
		Other, please specify.
29	How likely are you (and/or someone you supervise) to administer (or continue to administer) dynamic assessment with children from a different cultural background, socio-economic status, language, and learning difficulties?	Very likely.
		Likely.
		Somewhat likely.
		Not likely.
		Highly unlikely.
		Other, please specify.

APPENDIX D: APPROVAL FROM GDE

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

	8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	16 January 2018
Validity of Research Approval:	05 February 2018 – 28 September 2018 2018/04
Name of Researcher:	Fasser Adar C.S
Address of Researcher:	526 Cork Avenue
	Bryanston Ext 3
	Johannesburg 2094
Telephone Number:	083 825 3635
Email address:	claudenefa@gmail.com
Research Topic:	A Survey of Foundation Phase Teachers' Utilisation of Dynamic Assessments
Number and type of schools:	1453 Primary Schools
District/s/HO	All Districts

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

19/01/2018

1

Making education a societal priority

Office of the Director: Education Research and Knowledge Management
7ᵗʰ Floor, 17 Simmonds Street, Johannesburg, 2001
Tel: (011) 355 0488
Email: Faith.Tshabalala@gauteng.gov.za
Website: www.education.gpg.gov.za

1.   The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.

2.   The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.

3.   A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.

4.   A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.

5.   The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.

6.   Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.

7.   Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.

8.   Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.

9.   It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.

10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.

11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.

12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.

13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.

14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

Ms Faith Tshabalala
CES: Education Research and Knowledge Management
DATE: 19/01/2018

2

Making education a societal priority

Office of the Director: Education Research and Knowledge Management
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Website: www.education.gpg.gov.za

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• Email Body of Invitation To Teachers Via Their Principals on 3 May 2018

Dear Principal,

My name is Claudene Fasser and I am an educational psychology master's student at the University of Pretoria. I would like to invite the foundation phase teachers at your school to participate in the research study *'A Survey of Foundation Phase Teacher' Use of Dynamic Assessment'*.

The purpose of this research is to investigate how foundation phase teachers in Gauteng utilize dynamic assessment in their classrooms. The findings of this research could provide insight into the assessment practices of teachers that may be used to guide future teacher training.

The teachers will be required to answer an electronic survey that should take about 10 minutes of their time. They will be able to answer the survey at any time before the closing date 8 May 2018 and from anywhere that has internet access with an internet accessible device (including cell phones).

The study will be made available on the Open Access repository of the University of Pretoria in the form of a mini-dissertation. Other researchers will therefore have access to the findings of the research.

If you have any questions concerning the research please contact the researcher: Claudene Fasser (claudenefa@gmail.com), under the supervision of Dr. Suzanne Bester (suzanne.bester@up.ac.za). (Ethical clearance reference number: EP 17/05/01)

If you agree to having your teachers participate in the study please forward the survey link to them.

The link is: https://www.esurveycreator.com/s/teachersurvey

Yours sincerely,
Ms. Claudene Adar (Fasser)

- Attachment included in email on 8 August 2018 as a reminder to complete the survey

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Education

08 August 2018

Dear teacher,

You are invited to participate in the research study *'A Survey of Foundation Phase Teacher' Use of Dynamic Assessment'* by completing a survey. The purpose of this research is to investigate how foundation phase teachers in Gauteng use dynamic assessment in their classrooms. Assessment plays an important role in how school is experienced by the learner and helps teachers meet their job requirements. Insight into the assessment practices of teachers may guide future training and provide understanding into possible areas of support.

Requirements: You will be required to complete an electronic survey which should take no more than 10 minutes of your time.

Closing date: Please complete this survey by 14 August 2018

If you have any questions concerning the research please contact the researcher: Claudene Fasser Adar (claudenefa@gmail.com), under the supervision of Dr. Suzanne Bester (Suzanne.bester@up.ac.za). (Ethical clearance reference number: EP 17/05/01)

To participate in the study please enter the link into your internet browser or use your phone's camera to scan the QR code:

www.esurveycreator.com/s/teachersurvey

Yours sincerely,

Ms. Claudene Fasser Adar

APPENDIX F: ADDITIONAL STATISTICS

1. Biographical Information

The biographical section of the survey focused on what the teacher reported as his/her highest qualification and the number of years teaching. The majority of the respondents' indicated that their highest qualification is a Bachelors in Education (44.92%), with the second being a Diploma (24.58%) and the third being an Advanced Certificate in Education (16.10%). Less than 10% of the respondents each selected Post Graduate Certificate in Education (8.47%), Master in Education (2.54%) and National Senior Certificate (2.54%). One of the respondents (0.85%) stated a Post Graduate Doctoral Degree as their highest qualification and 5.60% chose not to answer the question. Table F1 presents the results for the first question in a table, indicating the amount of times the response was selected, the percent including the respondents who did not answer, the valid percentage of responses as well as the accumulation of the valid percentage. Figure which follows, depicts the responses graphically in a pie chart.

Table F1: Frequency counts for qualification (n = 125)

Variable		Response	Raw Data	Percent (%)	Valid Percent	Cumulative percentage
Qualification	Non-degree	National Senior Certificate	3	2.40	2.54	2.54
		Advanced Certificate in Education	19	15.20	16.10	18.64
		Diploma	29	23.20	24.58	43.22
	Degree	B.Ed.	53	42.40	44.92	88.14
		PGCE	10	8.00	8.47	96.61
		M.Ed.	3	2.40	2.54	99.15
		PhD	1	0.80	0.85	100
		Total	118	94.40	100.00	
		No answer	7	5.60		
		Total	125	100.00		
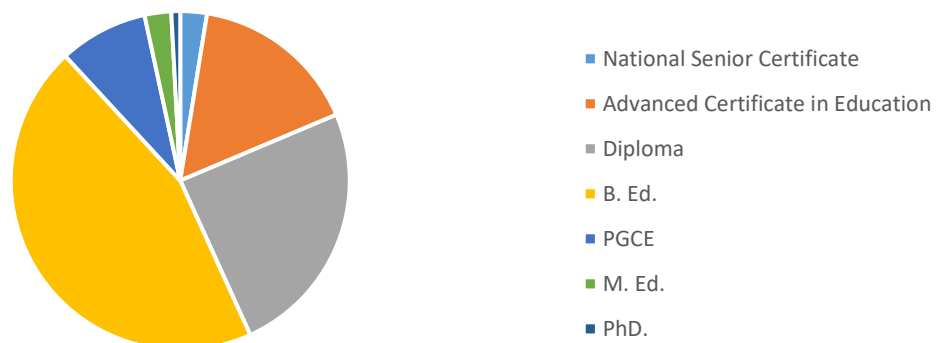
Figure F1: Distribution of qualification

The second question established that 36% of the respondents have been teaching for a period of 1–9 years, with 21.6% having 20–29 years of experience. 17.60% of the respondents have 10–19 years of experience while 12%, 9.60% and 3.20% respectively represent 30–39 years, less than a year and more than or equal to 40 years. Table F2 below, indicated the responses to question two of the survey, while Figure F2 illustrates the results in a pie chart.

Table F2: **Frequency counts for number of years teaching (*n* = 125)**

Variable	Response	Raw Data	Percent (%)	Valid Percent	Cumulative percentage
Number of years teaching	Less than a year	12	9.6	9.6	9.6
	1–9 years	45	36.0	36.0	45.6
	10–19 years	22	17.6	17.6	63.2
	20–29 years	27	21.6	21.6	84.8
	30–39 years	15	12.0	12.0	96.8
	≥40 years	4	3.2	3.2	100.0
	Total	125	100.00	100.00	

Figure F2: **Distribution for number of years teaching**

2. Additional Analysis on Assessment Practices

The five number summary consists of the minimum number, (the lowest number reported); quartile one (the central number of the lower half of the dataset); median (the number that occurs in the middle of the dataset); quartile three (the central number of the upper half of the dataset); and maximum number (the highest number reported) in the data set. Figure F3 illustrates how the data were spread in a box and whiskers graph.

Table F3: **Five number summary on number of hours spent on different forms of assessment**

Hours spent on:	Minimum	Quartile one	Median	Quartile three	Maximum
Formative Assessment	0.5	3.5	6	10	385
Summative Assessment	0	3	5	8	165
Dynamic Assessment	0	2	4	5	165
Other Assessments	0	1	3	5	385
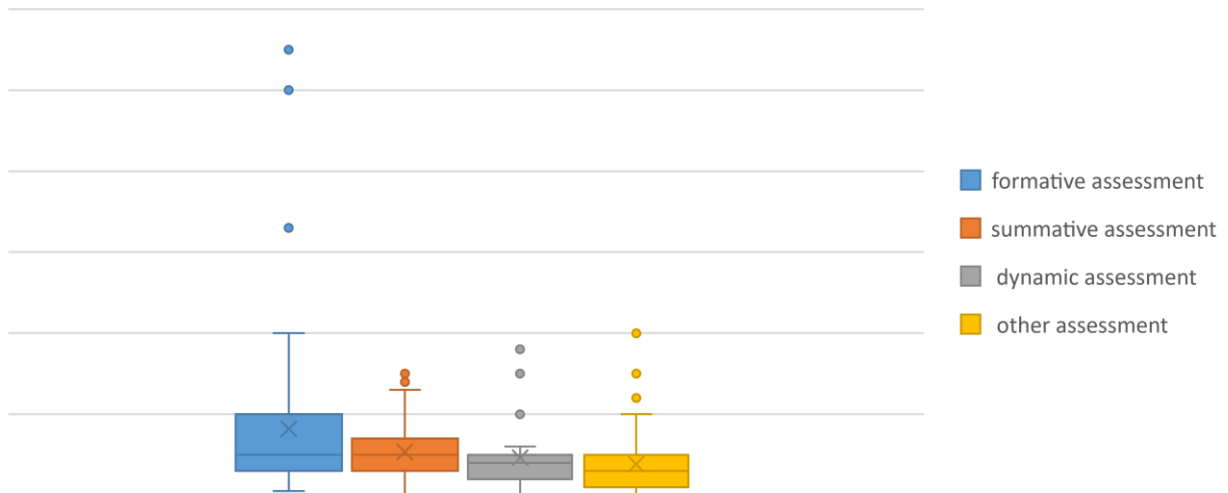
Figure F3:   Number of hours spent per assessment

3. Expanded Cross-tabulations

Below presents the cross-tabulation of variables based on how the questions were posed in the survey.

Table F4:   Relationship between highest qualification and number of years teaching

Highest qualification	Description	Number of years teaching					
		Less than a year	1-9 years	10-19 years	20-29 years	30-39 years	≥40 years
National Senior Certificate	Count	0	2	1	0	0	0
	% within qualification	0.0%	66.7%	33.3%	0.0%	0.0%	0.0%
	% within years	0.0%	4.9%	5.0%	0.0%	0.0%	0.0%
	% of Total	0.0%	1.7%	0.8%	0.0%	0.0%	0.0%
Advanced Certificate in Education	Count	3	5	5	6	0	0
	% within qualification	15.8%	26.3%	26.3%	31.6%	0.0%	0.0%
	% within years	27.3%	12.2%	25.0%	22.2%	0.0%	0.0%
	% of Total	2.5%	4.2%	4.2%	5.1%	0.0%	0.0%
Diploma	Count	1	4	5	10	7	2
	% within qualification	3.4%	13.8%	17.2%	34.5%	24.1%	6.9%
	% within years	9.1%	9.8%	25.0%	37.0%	46.7%	50.0%
	% of Total	0.8%	3.4%	4.2%	8.5%	5.9%	1.7%
B. Ed.	Count	5	23	6	9	8	2
	% within qualification	9.4%	43.4%	11.3%	17.0%	15.1%	3.8%
	% within years	45.5%	56.1%	30.0%	33.3%	53.3%	50.0%
	% of Total	4.2%	19.5%	5.1%	7.6%	6.8%	1.7%

Highest qualification	Description	Number of years teaching					
		Less than a year	1-9 years	10-19 years	20-29 years	30-39 years	≥40 years
PGCE	Count	2	5	1	2	0	0
	% within qualification	20.0%	50.0%	10.0%	20.0%	0.0%	0.0%
	% within years	18.2%	12.2%	5.0%	7.4%	0.0%	0.0%
	% of Total	1.7%	4.2%	0.8%	1.7%	0.0%	0.0%
M.Ed.	Count	0	1	2	0	0	0
	% within qualification	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%
	% within years	0.0%	2.4%	10.0%	0.0%	0.0%	0.0%
	% of Total	0.0%	0.8%	1.7%	0.0%	0.0%	0.0%
PhD	Count	0	1	0	0	0	0
	% within qualification	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	% within years	0.0%	2.4%	0.0%	0.0%	0.0%	0.0%
	% of Total	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%
Total	Count	11	41	20	27	15	4
	% within qualification	9.3%	34.7%	16.9%	22.9%	12.7%	3.4%
	% within years	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	9.3%	34.7%	16.9%	22.9%	12.7%	3.4%

Table F5:   **Relationship between highest qualification and familiarity with dynamic assessment**

Highest qualification	Description	Familiarity with dynamic assessment		Total
		Yes	No	
National Senior Certificate	Count	2	0	2
	% within qualification	100.0%	0.0%	100.0%
	% within familiar	2.6%	0.0%	2.1%
	% of Total	2.1%	0.0%	2.1%
Advanced Certificate in Education	Count	12	3	15
	% within qualification	80.0%	20.0%	100.0%
	% within familiar	15.4%	15.8%	15.5%
	% of Total	12.4%	3.1%	15.5%
Diploma	Count	21	5	26
	% within qualification	80.8%	19.2%	100.0%
	% within familiar	26.9%	26.3%	26.8%
	% of Total	21.6%	5.2%	26.8%
B.Ed.	Count	36	8	44
	% within qualification	81.8%	18.2%	100.0%
	% within familiar	46.2%	42.1%	45.4%
	% of Total	37.1%	8.2%	45.4%
PGCE	Count	5	2	7
	% within qualification	71.4%	28.6%	100.0%
	% within familiar	6.4%	10.5%	7.2%
	% of Total	5.2%	2.1%	7.2%
M.Ed.	Count	2	0	2
	% within qualification	100.0%	0.0%	100.0%
	% within familiar	2.6%	0.0%	2.1%
	% of Total	2.1%	0.0%	2.1%
PhD	Count	0	1	1
	% within qualification	0.0%	100.0%	100.0%
	% within familiar	0.0%	5.3%	1.0%
	% of Total	0.0%	1.0%	1.0%
Total	Count	78	19	97
	% within qualification	80.4%	19.6%	100.0%
	% within familiar	100.0%	100.0%	100.0%
	% of Total	80.4%	19.6%	100.0%

Table F6:   Relationship between years teaching and familiarity with dynamic assessment

Number of years teaching	Description	Familiarity with dynamic assessment		Total
		Yes	**No**	
Less than a year	Count	8	2	10
	% within years	80.0%	20.0%	100.0%
	% within familiarity	10.0%	9.5%	9.9%
	% of Total	7.9%	2.0%	9.9%
1–9 years	Count	24	11	35
	% within years	68.6%	31.4%	100.0%
	% within familiarity	30.0%	52.4%	34.7%
	% of Total	23.8%	10.9%	34.7%
10–19 years	Count	16	3	19
	% within years	84.2%	15.8%	100.0%
	% within familiarity	20.0%	14.3%	18.8%
	% of Total	15.8%	3.0%	18.8%
20–29 years	Count	16	4	20
	% within years	80.0%	20.0%	100.0%
	% within familiarity	20.0%	19.0%	19.8%
	% of Total	15.8%	4.0%	19.8%
30–39 years	Count	12	1	13
	% within years	92.3%	7.7%	100.0%
	% within familiarity	15.0%	4.8%	12.9%
	% of Total	11.9%	1.0%	12.9%
≥40 years	Count	4	0	4
	% within years	100.0%	0.0%	100.0%
	% within familiarity	5.0%	0.0%	4.0%
	% of Total	4.0%	0.0%	4.0%
Total	Count	80	21	101
	% within years	79.2%	20.8%	100.0%
	% within familiarity	100.0%	100.0%	100.0%
	% of Total	79.2%	20.8%	100.0%

Table F7: Relationship between highest qualification and extent of familiarity with dynamic assessment

Highest qualification	Description	Extent of familiarity with dynamic assessment			Total
		Barely	**Somewhat**	**Quite**	
National Senior Certificate	Count	0	2	0	2
	% within qualification	0.0%	100.0%	0.0%	100.0%
	% within extent	0.0%	5.1%	0.0%	2.7%
	% of Total	0.0%	2.7%	0.0%	2.7%
Advanced Certificate in Education	Count	1	6	5	12
	% within qualification	8.3%	50.0%	41.7%	100.0%
	% within extent	20.0%	15.4%	17.2%	16.4%
	% of Total	1.4%	8.2%	6.8%	16.4%
Diploma	Count	2	11	6	19
	% within qualification	10.5%	57.9%	31.6%	100.0%
	% within extent	40.0%	28.2%	20.7%	26.0%
	% of Total	2.7%	15.1%	8.2%	26.0%
B.Ed.	Count	2	15	16	33
	% within qualification	6.1%	45.5%	48.5%	100.0%
	% within extent	40.0%	38.5%	55.2%	45.2%
	% of Total	2.7%	20.5%	21.9%	45.2%
PGCE	Count	0	3	2	5
	% within qualification	0.0%	60.0%	40.0%	100.0%
	% within extent	0.0%	7.7%	6.9%	6.8%
	% of Total	0.0%	4.1%	2.7%	6.8%
M.Ed.	Count	0	2	0	2
	% within qualification	0.0%	100.0%	0.0%	100.0%
	% within extent	0.0%	5.1%	0.0%	2.7%
	% of Total	0.0%	2.7%	0.0%	2.7%
Total	Count	5	39	29	73
	% within qualification	6.8%	53.4%	39.7%	100.0%
	% within extent	100.0%	100.0%	100.0%	100.0%
	% of Total	6.8%	53.4%	39.7%	100.0%

Table F8: Relationship between highest qualification and perceived competence in dynamic assessment

Highest qualification	Description	Competence in dynamic assessment		Total
		Yes	No	
National Senior Certificate	Count	0	2	2
	% within qualification	0.0%	100.0%	100.0%
	% within competent	0.0%	7.4%	2.7%
	% of Total	0.0%	2.7%	2.7%
Advanced Certificate in Education	Count	8	3	11
	% within qualification	72.7%	27.3%	100.0%
	% within competent	16.7%	11.1%	14.7%
	% of Total	10.7%	4.0%	14.7%
Diploma	Count	12	8	20
	% within qualification	60.0%	40.0%	100.0%
	% within competent	25.0%	29.6%	26.7%
	% of Total	16.0%	10.7%	26.7%
B.Ed.	Count	25	10	35
	% within qualification	71.4%	28.6%	100.0%
	% within competent	52.1%	37.0%	46.7%
	% of Total	33.3%	13.3%	46.7%
PGCE	Count	2	3	5
	% within qualification	40.0%	60.0%	100.0%
	% within competent	4.2%	11.1%	6.7%
	% of Total	2.7%	4.0%	6.7%
M.Ed.	Count	1	1	2
	% within qualification	50.0%	50.0%	100.0%
	% within competent	2.1%	3.7%	2.7%
	% of Total	1.3%	1.3%	2.7%
Total	Count	48	27	75
	% within qualification	64.0%	36.0%	100.0%
	% within competent	100.0%	100.0%	100.0%
	% of Total	64.0%	36.0%	100.0%

Table F9:   Relationship between years teaching and extent of familiarity with dynamic assessment

Number of years teaching	Description	Extent of familiarity with dynamic assessment			Total
		Barely	**Somewhat**	**Quite**	
Less than a year	Count	0	6	1	7
	% within years	0.0%	85.7%	14.3%	100.0%
	% within extent	0.0%	15.0%	3.3%	9.3%
	% of Total	0.0%	8.0%	1.3%	9.3%
1–9 years	Count	2	14	7	23
	% within years	8.7%	60.9%	30.4%	100.0%
	% within extent	40.0%	35.0%	23.3%	30.7%
	% of Total	2.7%	18.7%	9.3%	30.7%
10–19 years	Count	1	10	5	16
	% within years	6.3%	62.5%	31.3%	100.0%
	% within extent	20.0%	25.0%	16.7%	21.3%
	% of Total	1.3%	13.3%	6.7%	21.3%
20–29 years	Count	1	6	8	15
	% within years	6.7%	40.0%	53.3%	100.0%
	% within extent	20.0%	15.0%	26.7%	20.0%
	% of Total	1.3%	8.0%	10.7%	20.0%
30–39 years	Count	0	2	9	11
	% within years	0.0%	18.2%	81.8%	100.0%
	% within extent	0.0%	5.0%	30.0%	14.7%
	% of Total	0.0%	2.7%	12.0%	14.7%
≥40 years	Count	1	2	0	3
	% within years	33.3%	66.7%	0.0%	100.0%
	% within extent	20.0%	5.0%	0.0%	4.0%
	% of Total	1.3%	2.7%	0.0%	4.0%
Total	Count	5	40	30	75
	% within years	6.7%	53.3%	40.0%	100.0%
	% within extent	100.0%	100.0%	100.0%	100.0%
	% of Total	6.7%	53.3%	40.0%	100.0%

Table F10: Relationship between years teaching and perceived competency in dynamic assessment

Number of years teaching	Description	Competency in dynamic assessment		Total
		Yes	No	
Less than a year	Count	6	2	8
	% within years	75.0%	25.0%	100.0%
	% within competent	12.0%	7.4%	10.4%
	% of Total	7.8%	2.6%	10.4%
1–9 years	Count	14	10	24
	% within years	58.3%	41.7%	100.0%
	% within competent	28.0%	37.0%	31.2%
	% of Total	18.2%	13.0%	31.2%
10–19 years	Count	8	7	15
	% within years	53.3%	46.7%	100.0%
	% within competent	16.0%	25.9%	19.5%
	% of Total	10.4%	9.1%	19.5%
20–29 years	Count	10	6	16
	% within years	62.5%	37.5%	100.0%
	% within competent	20.0%	22.2%	20.8%
	% of Total	13.0%	7.8%	20.8%
30–39 years	Count	9	2	11
	% within years	81.8%	18.2%	100.0%
	% within competent	18.0%	7.4%	14.3%
	% of Total	11.7%	2.6%	14.3%
≥40 years	Count	3	0	3
	% within years	100.0%	0.0%	100.0%
	% within competent	6.0%	0.0%	3.9%
	% of Total	3.9%	0.0%	3.9%
Total	Count	50	27	77
	% within years	64.9%	35.1%	100.0%
	% within competent	100.0%	100.0%	100.0%
	% of Total	64.9%	35.1%	100.0%

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