

**Teachers' perceived understanding of formative assessment
and how it impacts their classroom practice: A case-study
investigation**

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Published

2019-10-21

Thesis Type

Thesis (PhD Doctorate)

School

School Educ & Professional St

DOI

[10.25904/1912/3516](https://doi.org/10.25904/1912/3516)

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**Teachers' perceived understanding of
formative assessment and how it impacts
their classroom practice: A case-study
investigation**

Hind Hegazy, M. Ed.

**A thesis submitted in fulfilment of the requirements for
the award of Doctor of Education**

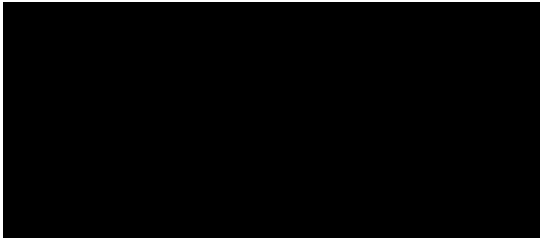
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May 2019

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed)



Hind Hegazy

Abstract

This study examined Junior Secondary teachers' perceived understanding of formative assessment and how it influenced teachers' pedagogical choices and practices in the classroom. The study adopted a qualitative approach to research using interpretive phenomenological and analytical approaches to provide in-depth insight into the ways in which Junior Secondary teachers perceive, understand and apply formative assessment in their classrooms and how these practices impact student engagement with learning. Three key questions steered the research; 1) What are Junior Secondary teachers' perceived understandings of formative assessment? 2) What are Junior Secondary teachers' classroom practices of formative assessment? 3) How do Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes? Data were collected from three Junior Secondary teachers from one school through semi-structured individual interviews, focus group discussions and classroom observations. The data were analysed using Smith, Jarman & Osborn (1999) Interpretive Phenomenological Analysis (IPA) framework and Wiliam and Thompson's (1998) formative assessment model. Five themes were identified in this study; first, the study found that Junior Secondary teachers' understanding of formative assessment is evolving and consequently their formative assessment practices were also developing. Second, teachers need to effectively embed formative assessment practices in their lessons to ensure the success of all students. Third, varying student levels meant that there is critical need to differentiate learning to meet individual students' learning needs. Fourth, there is a need to develop common and shared expectations between systemic, school and classroom approaches to formative assessment and evaluation of students' learning. Finally, time was an underlying theme that hindered the effective and consistent implementation of formative assessment practices.

Keywords: formative assessment, formative assessment practices, Junior Secondary

Acknowledgments

I would like to thank my supervisors Professor Donna Pendergast, Associate Professor Christopher Klopper and Associate Professor Georgina Barton for the professional support, encouragement and advice they have provided throughout my doctorate journey. I would like to especially acknowledge Associate Professor Georgina Barton for her patience, guidance and always ensuring that I am staying the course. Thank you Georgina for caring so much about my work, and always following up, responding to my questions and queries so promptly and pushing me to the finishing line. I would also like to thank Professor Nan Bahr who was part of my journey; in particular, for the suggestions she made in reference to Chapter 3 of this thesis.

Copyediting services were provided by Matthew Sidebotham AE in accordance with university policy and the Institute for Professional Editing's Guidelines for Editing Research Theses.

Thank you to my very special family who has continued to support me through the vicissitudes of my research. To my husband Hazem, I am forever grateful for your ongoing encouragement and always redirecting me onto the right path in times of despair. I must express my gratitude to my daughter Amina who was always willing to proof read countless pages of my thesis, and always reminding me 'MUM!! You can do this'. To my daughters Habiba and Malika, thank you Habiba for the cups of tea and coffee and beautiful lunches brought to my studying desk without asking and Malika for the power hugs and kisses that kept me going.

Finally, I would like to thank the Griffith University Higher Degree Research and library staff for their guidance and taking the time to help with any of my requests and always being helpful and friendly.

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Glossary of Terms

While this study specifically focuses on Junior Secondary learning, the terms defined below will be used interchangeably. Although in different systems and countries the terms refer to slightly different age groups, all definitions retain a core focus on the unique characteristics of students during this critical learning phase and emphasise the implications for teaching and learning. Additionally, using the terms interchangeably emphasises this unique learning stage on both international and national platforms and allows the study to maintain relevance and importance on an international level.

Middle school: refers to an organisational structure that caters for middle years learners and their unique learning needs. Middle school age range varies from system to system and from one country to another. Middle school is unusually housed as a separate school, within or outside a broader campus (Bucher & Manning, 2005).

Middle years learner: There is no common agreement on the exact age range of the middle years learner (Bahr, 2017). Bucher & Manning (2005), Chadbourne (2004), Cumming (1993) and George et al. (1992) use the term ‘middle years learners’ to cover the ages ten to fifteen years. Much of the international and national literature refers to the ‘middle years’, that is, the period between primary and upper secondary school.

Young adolescents: Young adolescents are defined in *This We Believe* (National Middle School Association, 2003) as students ten to fifteen years old. These students are identified as needing educational programs designed specifically for their age group because of their unique intellectual, social, emotional and physical development (Cohen., 2006).

Junior Secondary: Junior Secondary is a phase of education introduced by the Department of Education Queensland, in state secondary schools for Years 7, 8 and 9, which helps to ensure the bridge between primary and secondary school is safe, strong and consistent for all students. Junior Secondary focuses on age-appropriate education and support for students’ wellbeing and transitions.

CHAPTER 1

Introduction

1.1 Introduction

Assessment is a fundamental element of teaching and learning. It refers to all processes employed by educators to make judgements about students' learning (Bennett, 2011). According to Harlen (2005), 'these processes include making decisions about what is relevant evidence for a particular purpose, how to collect and interpret the evidence and how to communicate it to intended users' (p. 207). This is particularly important for middle years learners, as it develops their sense of autonomy and supports them in self-regulating their learning to achieve their learning goals.

The international emphasis placed on educational quality is focused on effective assessment that is directly connected to promoting learning and helping students achieve success (Black & Wiliam, 2018). Many researchers and educators (e.g., Popham, 2017; Masters, 2014; Wiggins & McTighe, 2011; Wiliam, 2017) view assessment and evaluation as a part of learning and classroom teachers as playing a critical role in using assessment to improve and extend student learning. Willis and Cowie (2014) refer to assessment as a 'generative dance' wherein assessment is 're-imagined as a dynamic space in which teachers learn about their students as they learn with their students, and where all students can be empowered to find success' (p. 23). This is especially relevant to supporting middle years learners in becoming agentic learners who effectively engage with their learning (Watkins, Carnell & Lodge, 2007; Wyatt-Smith & Colbert, 2014; Klenowski & Wyatt-Smith (2014). Effective assessment addresses the role of both teacher and student as learners, stressing the key role of the teacher in aligning pedagogy and assessment.

In recognising the key role teachers play in the teaching and learning process, the Australian Professional Standards for Teachers (AITSL, 2011) define the work of teachers and make explicit the importance of high-quality, effective teaching in twenty-first century schools. The

Standards specifically relate to teachers' ability to effectively assess and provide feedback that moves the learning forward, and they highlight the importance of building assessment expertise in the teaching community. Teaching relies on establishing and understanding where students are in their learning, and where they need to be, in order to support them in reaching their full learning potential. Hence, it is crucial to understand teachers' beliefs, perceptions, attitudes and conceptions pertaining to teaching and learning, and how this subsequently leads to positive student learning outcomes. This thesis explores how Junior Secondary teachers conceptualise and use formative assessment to support their students' learning during their middle school years.

Teachers employ different assessment forms in the classroom for a multitude of purposes, including assessment as, for, and of, learning (Amua-Sekyi, 2016). This involves teachers collecting data concerning students' learning and achievements in order to provide information to students and parents, presenting an overall summary of their learning. According to Harlen (2007a) assessment plays an integral part in students' learning, not only in measuring a student's achievement of the learning outcomes but also in encouraging the process of learning. Consequently, the primary purpose of assessment is to improve students' learning. Assessment that informs teaching and learning is an ongoing process of gathering and interpreting evidence about students' learning to determine where students are in their learning, where they need to go, and how best to get there (Wyatt-Smith, Klenowski & Colbert, 2014). Assessment enables educators to determine whether educational goals have been achieved, and it serves as the means by which teachers ensure that learning has taken place. Furthermore, the aforementioned process provides information that informs and affects decisions regarding educational policy, curriculum and pedagogical instruction (Masters, 2014).

Klenowski & Wyatt-Smith (2014) note that effective assessment of students' capabilities is particularly important for middle school students, and it is crucial to develop a deliberate approach to assessing middle years students in ways that cater for their developmental and learning needs (Pendergast, Main & Bahr 2017). Researchers and educators consider formative assessment to be one of the most powerful approaches to enhance student achievement (Heritage, Kim, Vendlinski & Herman, 2009; Brookhart, 2013; Popham, 2017). However, research reveals that teachers have a better understanding of summative assessment than of

formative assessment (Bennett, 2011; Heritage & Heritage 2013; OECD, 2005). Moreover, Bennett (2011), Dunn and Mulvenon (2009), Kingston and Nash (2011) and Master (2015) all explain that there is a lack of consistency in terms of how teachers conceptualise the latter and implement its practices. Current literature supports this claim, indicating that when teachers reflect on their teaching practice, the area in which they are least confident is that of assessment (Masters, 2017; Klenowski & Smith-Wyatt, 2014). In addition, Black and Wiliam (1998, p. 9) note that ‘there is a wealth of research evidence that the everyday practice of assessment in classrooms is beset with problems and short-comings’. That being so, this study aims to examine Junior Secondary teachers’ perceived understanding of formative assessment and how it influences their pedagogical choices and practices in the classroom in one Queensland secondary school.

The Queensland Government State School Strategic Plan (2018) mandates the use of age-appropriate authentic assessment practices and evidence-based teaching approaches that best address the unique needs of early adolescent students. Wyatt-Smith, Cumming and Elkins (2010) further identify the need to ascertain what students already know or bring into the classroom to develop effective instruction. In its recent position paper, Adolescent Success (2018) emphasises that ‘successful education in the middle years requires an intentional approach to teaching and learning that is responsive and appropriate to the full range of needs, interests and achievements of young adolescents’ (p. 1). Hence, effective assessment that is cognisant of the nature of the middle school learners is central to teaching and learning young adolescents (Wyatt-Smith & Bridges, 2008). Young adolescents need to develop identity, relationships, purpose, empowerment, success and a sense of safety (Pendergast, Main & Bahr, 2017). Thus, middle years students require deliberate educational practices that are learner-centred, collaboratively organised, outcome-based, flexibly constructed, community-oriented, adequately resourced and strategically linked (Adolescent Success, 2018; Chadbourne, 2004; Carrington, 2006). Formative assessment is rooted in instructional practices and connected to the teaching and learning cycle (Pinchok & Brandt, 2009). Formative assessment provides an age-appropriate approach to assessment that can support middle years students in reaching their full learning potential.

1.2 The context of the research

In its effort to reinforce the importance of the middle years as a critical phase in young adolescents' lives, the Department of Education in Queensland, Australia, introduced the Junior Secondary phase of learning in 2013 encompassing students from Year 7 to Year 9 (aged 12–15 years). For the purposes of this study, the term 'middle years' refers to the Queensland Junior Secondary phase and is used interchangeably with 'Junior Secondary'. Prior to 2013, Year 7 was typically located in primary schools. The transition of Year 7 to high school followed the successful introduction of the 'Prep' year in 2007 and an increase in the school starting age by six months (to five years). In 2015, this Prep cohort would have been in its eighth year of schooling and turning 13 years of age. Therefore, educators agreed that, as young teenagers, they were ready for the greater independence and depth of learning that high schools provide. By the beginning of the 2015 school year, all state high schools had in place a Junior Secondary model focusing on the specific academic, social and emotional needs of early adolescent learners in Years 7 to 9.

The Junior Secondary phase is underpinned by six guiding principles: distinct identity, quality teaching, student wellbeing, parent and community involvement, leadership and local decision-making (Department of Education, Training and Employment, 2014a) These principles provide a strong foundation upon which schools and teachers develop appropriate strategies, practices and processes to engage students and to support their learning progress (Queensland Government, 2014a). The Junior Secondary phase involves a philosophical commitment and intentional pedagogical approach that aim to provide optimal learning experiences for young adolescents. Part of the quality teaching principle is the practice of effective assessment to promote learning through timely feedback that informs future teaching and learning and builds students' confidence in their ability to learn (Swain & Pendergast, 2018; Wyatt-Smith, Klenowski & Colbert, 2014). Thus, for the Junior Secondary provision to fulfil its initial promise of providing a strong foundation for improved outcomes for students, educators need to bring forward changes that will impact on the skills and knowledge young adolescents bring to the classroom. Educators also need to equip students with the skills to participate effectively in the world around them (William., 2017).

The focus on young adolescent learning experiences and the role teachers play is crucial; teachers need to be responsive to young adolescents' learning needs in this critical phase (Vagle, 2012). Teachers need to develop middle years teaching and learning practices, including pedagogies and assessment that will engage students in a meaningful and successful learning experience and allow them to reach their full academic potential. Baird, Andrich and Hopfenbeck (2017) conclude that assessment and students' learning are interconnected and that assessment is a powerful element of shaping middle years learning progress. According to Sadler (1989), a seminal assessment scholar:

[T]he indispensable conditions for improvement are that the student comes to hold a concept of quality roughly similar to that held by the teacher, is able to monitor continuously the quality of what is being produced during the act of production itself, and has a repertoire of alternative moves or strategies from which to draw at any given point. In other words, students have to be able to judge the quality of what they are producing and be able to regulate what they are doing during the doing of it. (p. 121)

Sadler's (1989) comments are echoed by Goss, Hunter, Romanes and Parsonage (2015), who assert that effective formative assessment informs both students and teachers of how the learning is going and provides a framework whereby teachers and students can continuously engage and evaluate what is already known against new learning. Hence, a focus on developing the skills of self-evaluation, meaningful discussions and reflective thinking for the purpose of improving one's own learning progress is crucial for learning success. Formative assessment provides middle years learners and educators with a pedagogical framework that offers a comprehensive model of the dynamic relationship between teachers and students and caters for the learning needs of students in this unique phase. Formative assessment practices align with the developmental needs of middle years students, offering them a continuous process to engage in their own learning by receiving feedback that is non-evaluative, specific, timely and related to their learning goals; reflecting on and improving their work to deepen understandings; and undergoing frequent assessment, including peer and student self-assessment and assessment embedded within learning activities (Wanner & Palmer, 2018).

Engaging students in a collaborative learning process that engages them socially and academically (Cizek, 2010) is important for positive learning outcomes. However, there is

evidence to suggest that the conceptualisation and implementation of formative assessment varies among educators (Bennett, 2011; Dunn & Mulvenon, 2009; Kingston & Nash, 2011). This can affect the effective implementation of instructional practices. James explains that the ongoing process of formative assessment has been ‘sometimes misinterpreted as an exhortation to teachers to (summatively) test their students frequently to assess the levels they attain on prescribed national/state scales in order to fix their failings and target the next level’ (2017, p. 12). Boud (2000) explained that the challenge associated with assessment is that it has to serve ‘double duty’, implying that assessment is as much about learning and individualisation as it is about grading and standardisation. Consequently, it must be both principled and practical to implement.

The aim of all assessment is to advance student learning (Carless et al., 2009; Gibbs & Simpson, 2004) and formative assessment, in particular, emphasises the learning aspect. Seminal work on formative assessment, such as that of Black and Wiliam (1998), Clark (2011) and Heritage (2010), all refers to formative assessment as an ongoing assessment during a period of study; it responds to the evolving needs of the learner, relates to identified learning objectives and implies scaffolded learning to help learners reach identified learning objectives. Popham (2017) argues that formative assessment, when effectively implemented in the classroom, significantly helps students’ learning progress. In their leading work, Black and Wiliam (1998a) conclude that student gains in learning prompted by formative assessment are ‘amongst the largest ever reported for educational interventions’ (p. 61).

1.3 Problem statement

Teachers’ use of assessment information has prompted much research in recent years (Macfarlane-Dick & Nicol, 2006; Neitzel & Davis, 2011), with the common approach being to evaluate learning by assessing students at the end of a unit of work (Popham, 2017). For some time, the research literature has provided strong evidence that formative assessment however, leads to learning progress and improvement (Black et al., 2005; Black & Wiliam, 1998; Blanchard, 2008; Willis, 2010). Despite the recognition of formative assessment being effective for learning, assessment practices commonly tend to be conducted by educators at the end of a unit of work as a measure of students’ performance (Wiliam, 2013; Wyatt-Smith

et al., 2010). Some educators may provide scaffolded tasks during the course of the unit but there is evidence to suggest that there is a lack of consistency in understanding formative assessment and how to effectively implement it within the classroom (Bennett, 2011). It is important to ensure that teachers develop common understandings of effective ways to implement assessment practices. Effective formative assessment focuses teachers' decisions on pedagogical actions to adjust instructions and to guide students in adjusting their learning strategies (Heritage, 2011). This is particularly important for middle years students, as this is a critical time in their learning; it is a time where students can be at a great risk of disengaging from learning (Gibbs & Poskitt, 2010). That being the case, educators need to ensure that students in this learning phase are engaged with their learning through effective formative assessment practices.

Formative assessment describes the processes by which teachers and learners use information about student achievement to make adjustments to the students' learning to improve their achievement (Harlen, 2007; Heritage, 2008). It is about using information to adapt teaching and to support learning to ensure that students are progressing. Formative assessment requires teachers to constantly make adjustments to address students' learning needs (Black & Wiliam, 2009). It encourages teachers to collect information about where students are in their learning. Formative assessment has the potential to allow teachers to reflect on their practice and take small steps in improving their practice in a more powerful way. This is particularly significant as it allows teachers to interpret their judgements, make decisions about what to do next and set plans of action for future progression (Clark, 2011; Heritage, 2010). It also provides students with ongoing support and feedback that ensures their engagement in the learning progress.

Effective formative assessment provides the essential links between learning, instructional practices and ways of identifying students' learning needs. Young adolescents need to build self-confidence and demonstrate their intellectual strength (Zimmerman, 2000). Assessment that serves only as measurement of students' performance may reinforce failure and inhibit young adolescents' learning (OECD, 2008b). Therefore, it is important to evaluate students' deeper understanding and engage them in assessments practices that enable the evaluation of learning while it is occurring. Formative assessment in the form of ongoing feedback is

especially helpful for clarifying learning goals, addressing students' progress and involving students in meaningful self- and peer-assessment, through which they become agentic, self-regulated, autonomous learners (Murray & Rosanbalm, 2017).

1.4 Statement of purpose

The key concern of many educators is ensuring their work is effective and results in positive growth in students' learning. My role as an English classroom teacher in a secondary school and as a pedagogical coach¹ enabled me to reflect on my own practice and observe my teaching colleagues making decisions about students' learning, how best to address their learning needs, and what instructional practices should be implemented to engage students in the learning process. Working with teachers allowed me to identify the need to clarify teachers' understanding of the purpose of assessment and, consequently, how it influences their classroom instruction. This key idea became the focus of this study; the need to examine teachers' perceptions and conceptual understandings of formative assessment and how they implement practices effectively to address students' specific needs in the middle years learning phase. Thus, this study was undertaken with the following objectives:

- To investigate teachers' perceptions, perspectives, understandings and feelings with regard to their formative assessment experiences.
- To develop a deeper understanding of how teachers' perceptions and understanding of formative assessment influence the implementation of evidence-based pedagogical practices.
- To explore how teachers use formative assessment practices to provide middle years students with tailored and adequate leaning support, ensuring their learning progression in this critical phase.

Given the Queensland Department of Education's renewed focus on the middle years phase of learning, this study is timely, pertinent and aligned with the department's key initiatives,

¹ A pedagogical coach provides high-quality capability development program for the school's leadership teams and develops teacher competence and confidence in effective classroom practices.

priorities and reforms. The Junior Secondary phase saw Year 7 incorporated into high school; evidence suggests students in this age group often disengage from learning, consequently increasing the importance of developing practices that can provide them with tailored educational support. It is important to examine teachers' perceptions of formative assessment practices and to identify the implications for future practice with the aim of supporting middle years teachers' work in improving student learning outcomes.

1.5 Research Questions

This study explores the detailed accounts of the formative assessment experiences provided by three teachers to gain a greater understanding of their perceptions and how, in turn, these perceptions influence their teaching practices. According to Moustaka, phenomenology enables the researcher to explore 'a topic and questions that have both social meaning and personal significance' (1994, p. 104), and to delve deeper into the perspectives and perceptions of the people who have experienced the phenomenon. The study utilises Interpretive Phenomenological Analysis (IPA) as a methodology to ascertain the process used by the teachers to operationalise formative assessment in the classroom and how this is then translated to pedagogical practice. The study provides insight into the inter-subjectivity of how teachers implement formative assessment and the decisions they make to cater for the different learning needs of students. The aim will be achieved by investigating the overarching research question:

What are the current perceptions of formative assessment and how do these perceptions impact on the practices of Junior Secondary teachers at one school?

The overarching question will be guided by three research questions:

- 1) What are Junior Secondary teachers' perceived understandings of formative assessment?
- 2) What are Junior Secondary teachers' classroom practices of formative assessment?
- 3) How do Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?

1.6 Overview of methodology

As this study is about examining middle years teachers' perceived understanding of formative assessment and how it influences pedagogical choices and practices in their classrooms, an appropriate theoretical framework must include a robust model for understanding effective formative assessment practices. To answer the overarching research question (What are the current formative assessment perceptions and practices of Junior Secondary teachers at one school?), the formative assessment framework proposed by Wiliam and Thompson (2009) is adopted as a conceptual framework for the study. The framework provides a unifying basis for the diverse formative assessment practices, offers the means to enact effective assessment practices and establishes the relationship, connections and inter-subjectivity between the domains of teacher and student.

Essentially, Wiliam and Thompson's framework supports teachers in focusing on the students as active learners, reflecting the main principles of the constructivist view of learning. It highlights the key role of students as the main agents of their own learning, by helping students review their work and that of their peers work in light of learning goals; and it furnishes criteria to help them to develop metacognitive approaches to learning (Allal, 1993; Laveault & Allal 2016). When formative assessment is implemented effectively, middle years learners are actively involved in constructing knowledge and understanding through cognitive processes (Stiggins, 2005) within a social and cultural context (Greenfield, 2009; Rogoff, 2003; Vygotskiĭ & Cole, 1978). Students build on their prior knowledge and develop the metacognitive skills required to regulate their own learning (Brandsford et al., 2004; Wyatt-Smith, 2015). The constructivist theory places emphasis on the learner and, as Jonassen (1994) explains, encourages and supports a collaborative and collective edifice of knowledge. Hence, in the National Middle School Association report, Garrison and Ehringhaus (2007) indicate that, for formative assessment to be implemented effectively, students need to be actively involved in the assessment process as evaluators of their own learning and as a resource for other students.

Aligning with the constructivist perspectives of formative assessment, prominent researchers emphasise the social dimensions of formative assessment (Briggs & Coleman, 2012; Black, &

William, 2009). They recommend viewing formative assessment as a process of successful teacher–student communication about learning objectives, goals and criteria. Additionally, assessment has been defined in an OECD report as a dialogue constructed ‘with reference to a process of learning, as a function of interactions within an educational relationship’ (OECD, 2005, p. 13). Activating students as learning resources for one another and involving them in classroom and in peer-group discussion contributes to creating a rich culture wherein students are active members of a community of learners and their social learning is salient and effective. The constructivist framework reflects the dynamic, interactive and social relationship between teachers and students, in which teachers and students collaborate to jointly contribute to the teaching and learning process.

Sociocultural theory explains that students develop knowledge and understanding not only as individuals but also in an interactive social context guided by more experienced others including teachers and peers (Davies, 2013; Vygotsky & Cole, 1978). Vygotsky (1980) explains that learning is enhanced as a ‘joint productive activity’ within the social classroom setting, where students and teachers are engaged as a collaborative community of learners (Ash & Levitt, 2003; Wells, 1999). Formative assessment advocates and theorists also endorse the concept of the Zone of Proximal Development (ZPD), suggesting that the aim of assessment is to recognise students’ current set of skills and abilities and to identify the skills that students need to develop (Shepard, 2000). Magnusson, Templin and Boyle (1997) suggest that with the use of more authentic, dynamic assessment, students are better able to demonstrate understanding of the concept than through traditional assessment measures. Moss, Girard and Haniford (2006) argue that sociocultural theory needs to be taken into consideration when assessing and evaluating students. They describe assessment tools as cultural tools located within a wider institutional, social and national context. For example, Pryor and Crossouard (2008) explains that the social nature of formative assessment is not just accomplished socially within the classroom but is also located within wider sociocultural structures. Thus, it has a direct impact on the way formative assessment is facilitated and enacted. Formative assessment practices reflect aspects of the constructivist sociocultural view, emphasising the centrality of the learner in constructing meaning in an interacting social setting.

Formative assessment offers a practical process in which constructivist and sociocultural concepts are integrated in the teaching and learning cycle. Engagement of middle years learners in effective formative assessment offers a promising path to ensuring students are provided with a framework that considers the practices, strategies and processes that best support and engage young adolescents.

William and Thompson's (2008) framework allows deep and rigorous investigation of the proposed data by assisting in identifying key strategies and approaches to effective formative assessment practices for middle years students. Without such a framework, it would not be possible to pinpoint (a) what Junior Secondary teachers perceive to be effective formative assessment practices, and (b) how they enact these perceptions within their curriculum, pedagogy and assessment. Equally important is how I, as the researcher, conducted this study. The following section explores the philosophical, ontological and epistemological perspectives informing the development of this study's research design.

1.6.1 Philosophical orientation

Teaching and education in general is constantly changing to keep up with the fast-changing world of the twenty-first century (Fullan, 2014). As part of such change in the social influences on, and demands of education and teachers, and due to the different teaching roles I have assumed over the past 21 years, my philosophical perspective has evolved. These experiences have shaped my view that teaching and learning is fundamentally intentional and involves complex cognitive processes (Popham, 2017).

The meaning of the learning experience is co-constructed by one's interaction with the social world and what one makes of it. Working with and alongside teachers, it is evident that their professional expertise is profoundly influenced by their individual beliefs and experiences, which in turn shape their thinking and their choices (Masters, 2014; Popham, 2017; Vygotskiĭ & Cole, 1978). As the ultimate aim of this research is to understand teachers' perspectives on formative assessment and how those perspectives influence their teaching practices, it is important to establish how teachers understand and make sense of formative assessment and their own personal approaches to formative assessment practices.

Creswell (2013) explains that the social world is changeable, based on human thought and action. This means that the world can be interpreted based on human experiences and interactions; hence, reality is relative and subject to change. The social world of humans is different from the physical world of nature ‘[T]he social world is the array of nonphysical phenomena produced by interacting human being constantly involved in a process of sense making’ (Andriessen, 2007, p. 128). Thus, ideas are judged, not on their coherence with actual factual matter, but on their practical effect and implications for actions. Furthermore, the social world is constructed depending on how individuals choose to look at it and make sense of it (Gergen, 2009). Individuals and groups participate in the creation of their perceived social reality, and this reality is ever-evolving as social interactions occur. Accordingly, this study examines Junior Secondary teachers’ perceptions and use of formative assessment and how these perceptions influence their pedagogical choices and practices.

1.6.2 Ontology and epistemology

This study is ontologically positioned in social constructionism, the position that multiple realities are constructed through our lived experiences. Reality exists independently of individuals’ consciousness; however, without consciousness there is no meaning. This view aligns with Crotty’s (1998) view that reality is the dynamic interaction between the subjective and the objective. Accordingly, knowledge is conceptualised as a construction of reality from a certain perspective, based on the perceptions of the individual. Based on this perspective, I focus on understanding how Junior Secondary teachers construct their conceptual understanding of formative assessment and its practices in a classroom setting.

This ontological view will adopt an interpretivist epistemological lens to understand the meaning and actions that teachers bring to contexts, hence understanding their reality. Comprehending human behaviour requires reconstructing the self-understandings of those engaged in performing it. To comprehend the behaviour of others is to understand the meaning of what they do on their own terms. A social phenomenon develops in particular social contexts (Smith, Flowers & Larkin, 2009), where the subjective experience of individuals is shaped by the historical, social and situational context in which the experience occurs. Individuals construct their understanding of an experience based on previous experiences and the social

world in which they exist (Creswell & Poth, 2018). Different individuals have different experiences and, thus, different ways of viewing the same situation. Hence, my driving motivation in conducting this study is to understand the meaning Junior Secondary teachers bring to their formative assessment experience and the implications for their pedagogical practices and teaching decisions.

This philosophical framework of the social phenomenon and meaning-making has implications for methodology. Social constructivism relies on an inductive approach (Bryman, 2012), whereby a study is not driven by theory but, rather, important theory and patterns of meaning develop and evolve with progression of the study. Thus, the ultimate goal of this study is to understand the complex nature of the subjective experience of Junior Secondary teachers with formative assessment. As a result, a qualitative Interpretive Phenomenological Analysis (IPA) method is most suited to the study. The selection of an interpretivist framework is relevant to this study because the key focus of the study is on the personal perspectives of each participant. The study relies on the participants' own personal experiences to construct and understand their experiences with formative assessment, and utilising the interpretivist approach helps demonstrate how teachers make subjective and personal connections to the phenomenon of formative assessment, resulting in multiple realities (Creswell, 2013). The interpretive lens provides a guiding framework that allows for a deeper understanding of the participants' experiences with the phenomenon and aids in the investigation of their reality and lived experiences (Ponterotto, 2005a). This, in turn, unveils the perceptions of Junior Secondary teachers in relation to how formative assessment practices are utilised to address students' learning needs.

According to Creswell and Poth (2018, p. 15), 'qualitative research is multi-method in focus, involving an interpretive, naturalistic approach in which the researcher attempts to make sense of or interpret phenomena in terms of the meaning people bring to them'. The IPA approach 'describes the common meaning for several individuals of their lived experiences of a concept or phenomenon' (Creswell, 2013, p. 76). Engaging with the participants' reality and experiences of formative assessment will help develop common ground between the scope of the research and the priorities and interests of the participants. This reflects my epistemological and theoretical orientation regarding the nature of knowledge and is consistent with my

qualitative ontological stance, focusing on the construction of the phenomena—in this case, perception and use of formative assessment—in real world settings involving individuals immersed within it (Scheurich & Young, 1997).

In alignment with the aim of this study and due to the nature and scope of the study, an ideographic case-study approach to IPA was deemed the most appropriate to yield the best outcomes for the intention of the study. Smith and colleagues (1999), seminal researchers in IPA, recommend this approach for the exploration and in-depth description of common themes from a small sample, such as the three voluntary purposively selected samples for this study. The data collection tools included semi-structured interviews, focus groups and classroom observations. Using Smith, Flowers & Larkin (2009) inductive multi-stage approach—which includes reading and re-reading, initial noting, developing emergent themes, searching for connections across emergent themes and moving to the next case—the qualitative data were coded and analysed with the aid of the NVivo 11 software. The research was undertaken at a state high school situated in a middle socio-economic area situated about 14 km from the central business district of Brisbane, Queensland. The participants of the study included three voluntary, purposively selected Junior Secondary teachers and their classes. More details about the study's approach are provided in Chapter 3

This study favours a relativist and interpretive approach, where 'social actors are seen to jointly negotiate the meaning for actions and situations' (Blaikie, 2007, p. 96). As such, reality is co-constructed between the researchers and participants and is researched and shaped by individual experiences. The broad area of the study is commensurate with the ontological and epistemological position. The methodological approach adopted within this study is illustrated in Figure 1.1.

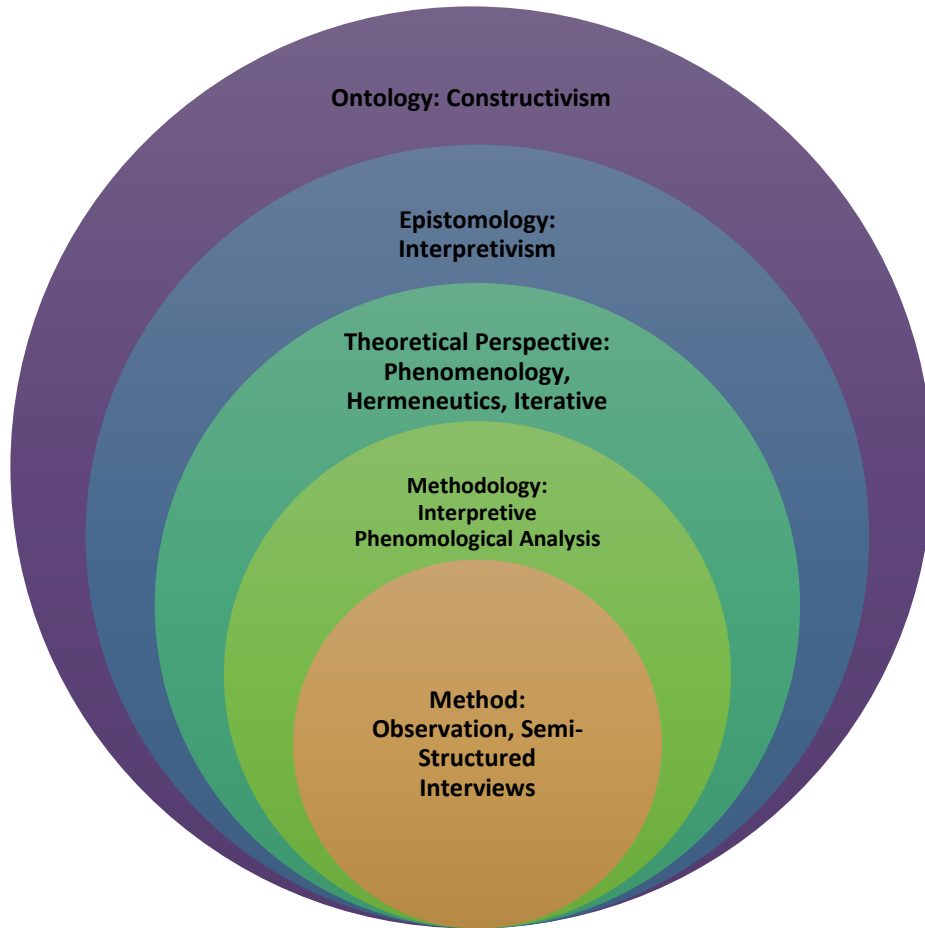


Figure 1.1: A diagrammatic representation of the IPA conceptual framework, illustrating its ontological and epistemological conception and methodological approach.

1.7 Significance of the study

There is limited research on the field of formative assessment practices for middle years in the Australian context, particularly in relation to the recent systemic change in Queensland with Year 7 moving to high school for the first time. Moving Year 7 to secondary school in 2015 was a major reform. This study provides insight into whether the Junior Secondary objectives related to assessment have been fulfilled or meet their initial promise. Often, the educational sector and policy-makers work to create effective policies centred on ensuring the success of all students. However, these policies, if not effectively implemented by teachers, will jeopardise the efficacy of this reform. Importantly, in order to effectively implement these policies teachers must also be trained and equipped with authentic, professional learning and development that meets their professional needs (Fullan & Hargreaves, 2016). As such, this

study is timely in its investigation of teachers' perceptions and views with regard to the pedagogical practices that best address the unique characteristics of middle year students during this learning phase. Additionally, recent research by the Grattan Institute (2017) has shown that 40 per cent of students in secondary school are disengaged in learning. Hence, this study intends to examine Junior Secondary teachers' perceived understanding of formative assessment and how it influences teachers' pedagogical choices and practices in the classroom.

This study not only investigates teachers' perceptions of formative assessment but also explores how these views influence teachers' utilisation of formative assessment to support the student learning experience. This aspect has not been previously explored in the context of Junior Secondary in Queensland. Additionally, *The Queensland State School Strategic Plan 2018–2022* prioritises ensuring that every student succeeds. This study is, therefore, a timely effort to identify effective formative assessment practices that enable the engagement of middle year's students in the learning process and support their learning progress.

This study looked at how information gathered from assessment about students' learning influences teachers' decisions and understanding of how to cater for students' individual learning needs. The study allowed the researcher to observe a group of teachers to develop a deeper understanding of their formative assessment perceptions and their formative assessment practices and to recommend changes to improve implementation of formative assessment for middle years learners. Identifying effective, evidence-based teaching strategies through formative assessment practices is likely to support greater success in engaging and challenging Junior Secondary students.

1.8 The role of the researcher

Lincoln and Guba (2000) emphasise the importance of explaining the researcher's role and 'unpacking' their control over the research process. The researcher's control over the research process has implications for what counts as research data and how researchers generate and communicate it. In order to establish clarity around the researcher's role, Lincoln, Lynham and Guba (2011) suggest a reflexive approach. They define reflexivity as 'the process of reflecting critically on the self as a researcher, the human as instrument' (Lincoln, Lynham & Guba, 2011, p.183). This process involves an exploration of the multiple identities that the researcher

brings to the research and the ways in which he/she shapes the research process (Lincoln & Guba, 2000).

It is important to note that, in this study, the research process has been affected by the researcher's decisions at the different research stages. Denzin and Lincoln (2002, p.349) defines these steps as an interpretive process that includes:

- framing the research question
- deconstructing and analysing critically prior conceptions of the phenomenon
- capturing the phenomenon, including locating and situating it in the natural world and obtaining multiple instance of it
- reducing the phenomenon, or reducing it to its essential elements
- constructing the phenomenon back in terms of its essential parts, pieces and structures, and
- contextualising the phenomenon, or relocating the phenomenon back.

Influenced by Denzin and Lincoln (2002) process, the researcher had partial control over the research process. This included not only the kind of data collected and generated but also what counted as research findings. It is worth pointing out that this process was not a fully controlled process; during the data collection, the researcher tried to provide the participants with opportunities to prioritise their answers. During the analysis, the participants' responses were fitted into the structure and were compared and contrasted with one another, regardless of whether they fit within the structure. Reflecting upon the research experience, participants were given procedural autonomy to contribute to the research process. The meaning-making was mutually constructed and participants' meanings were interpreted by the researcher.

1.9 Structure of the thesis

This chapter has provided an overview of the study. Chapter 2 provides a comprehensive review of literature relating to two main areas. The first is formative assessment, and the review focuses on models related to formative assessment and best practice. The second area is the middle years phase of learning, its unique characteristics and best practices to address the

social, emotional, wellbeing and learning needs of students. The aim of this exploration of the literature is to identify any gaps relevant to this study.

Chapter 3 provides a justification of and rationale for the use of Interpretive Phenomenological Analysis as a methodology for this study. It also outlines the nature of the data collected. A description of the qualitative data is provided and a plan for analysis is explored, justifying the analytical techniques used to extract data and identify key themes.

Chapters 4 and 5 present the findings of the data, with Chapter 4 focusing on the classroom observations, looking at the classroom practice of each participant individually and then aligning the classroom practices with the models of formative assessment explored in the literature. Chapter 4 provides a first-order perspective on teachers' implementation of formative assessment practices within the classroom. In Chapter 5, the identified themes from the semi-structured interviews and focus group discussions are presented as a response to the three key research questions.

Chapter 6, the final chapter of the thesis, presents the major finding of the research study and identifies key implications for future practice to support middle years teachers' important work in improving student learning outcomes.

CHAPTER 2

Literature review

2.1 Introduction

This chapter provides a review of contemporary literature on formative assessment in the middle years. The chapter begins by exploring assessment, with a key focus on formative assessment, and highlights the interplay between middle years evidence-based pedagogical practice and formative assessment practices. The following section outlines the philosophy of the *Middle Years of Schooling* from a national perspective, with a particular focus on Queensland Junior Secondary educational reform. It examines the middle years learner phase and the implications of the biological, cognitive and physiological development of young adolescents for teaching and learning. The final section discusses the implications of the proposed study and summarises the main points of the literature review as these relate to formative assessment in the middle years of learning.

2.2 Assessment

Curriculum, instruction, learning and assessment are the pulse of teaching and learning; driving everything teachers do (Heritage, 2008; Sadler, 1989; Popham, 2008). Effective assessment provides teachers with information to gauge where students are in their learning journey. Assessment also offers both teachers and students feedback about individual students' current and desired learning objectives. According to Heritage (2008), '[t]eachers can calibrate their teaching to any missing precursor understanding or skill revealed by assessment, and determine what the next steps are to move the students forward from that point' (p. 3). Assessment allows teachers to identify individual students' learning gaps and consequently support them in reaching their full learning potential.

Assessment is thus an essential component of the teaching and learning cycle. Assessment for, assessment as, and assessment of, learning are approaches that enable teachers to gather evidence and make judgements about student achievement. Stiggins (2005) and Bennett (2011)

argue that these assessment approaches are not necessarily discrete approaches; they may be used individually or in conjunction. The principles of assessment for learning and assessment as learning strategies have some common elements. Assessment for learning and assessment as learning both incorporate self-assessment and peer-assessment, and strategies for students to actively monitor and evaluate their own learning feedback, together with evidence, to help teachers and students decide whether students are ready for the next phase of learning or whether they need further learning experiences to consolidate their knowledge, understanding and skills (Shepard, 2018). Assessment for learning and assessment as learning approaches, in particular, help teachers and students to determine whether a student's current understanding is at an acceptable level to move the learning forward.

Assessment of learning assists teachers in using evidence of student learning to assess achievement against outcomes and standards. Sometimes referred to as 'summative assessment', it usually occurs at defined key points during a unit of work or at the end of a unit, term or semester (Stiggins & Chappuis, 2006), and may be used to rank or grade students. The effectiveness of assessment of learning for grading or ranking depends on the validity and reliability of activities. Its effectiveness as an opportunity for learning depends on the nature and quality of the feedback (Bennett, 2011). Assessment of learning:

- is used to plan future learning goals and pathways for students
- provides evidence of achievement to the wider community, including parents, educators, the students themselves and outside groups, and
- provides a transparent interpretation across all audiences. (Madaus, Russell & Higgins, 2009)

According to *Assessment, Evaluation and Reporting in Ontario* (2013), assessment for learning "is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there" (p.31). Assessment for learning involves teachers using evidence about students' knowledge, understanding and skills to inform their teaching. Assessment for learning:

- provides students with descriptive feedback and coaching for improvement
- involves formal and informal assessment activities as part of learning and to inform the planning of future learning
- encourages self-assessment and peer assessment as part of the regular classroom routines (OECD, 2008)

As essential steps in assessment for learning teachers need to: plan assessment concurrently and integrate it seamlessly with instruction; share learning goals and success criteria with students to ensure that students and teachers have a common and shared understanding of these goals and criteria as learning progresses; gather information about student learning before and during instruction using a variety of assessment strategies and tools; use assessment information to inform instruction, guide next steps and help students monitor their progress towards achieving their learning goals.

The important distinction between assessment for learning and assessment of learning is that assessment for learning is used in making decisions that affect teaching and learning in a short-term future, whereas assessment of learning is used to record and report what has been learned in the past. In short, the nature of the assessment is determined by what the information is to be used for assessment, thus the purpose of improving student learning is seen as both assessment for learning and assessment as learning.

The national educational goal of educators and policy-makers is to ensure that students of all ages are able to reach their full learning potential. Additionally, educators and policy-makers stress the importance of providing middle years students with opportunities to reach their full learning capacity, since this is a unique developmental and learning phase that defines the future learning progression of a student (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008). Middle years learners' engagement in positive and rich learning experiences is associated with positive outcomes in every facet of life. Understanding the complexities facing middle years learners, and providing them the right conditions in which to flourish, forms the foundation of educators' and policy-makers' commitment to ensuring that every student succeeds.

In light of this, the Queensland Department of Education is committed to developing an intentional approach to cater for this unique phase of learning, known as Junior Secondary. In 2008, the Middle Years of Schooling Association (MYSA), now known as Adolescent Success, states:

[M]iddle schooling is an intentional approach to teaching and learning that is responsive and appropriate to the full range of needs, interests and achievements of middle years students in formal and informal schooling contexts. Middle schooling has the following elements: clear philosophy relevant to the context; comprehensive range of signature practices; evidence-based approach. (MYSA, 2008)

In its most recent position paper, Adolescent Success reiterate and emphasise that ensuring the success of middle years learner requires an intentional and deliberate teaching and learning approach, it states:

[S]uccessful education in the middle years requires an intentional approach to teaching and learning that is responsive and appropriate to a full range of needs, interests and achievements of young adolescents (Adolescent Success, 2018).

As such, the Queensland Department of Education middle schooling reform calls for a new vision of middle school teaching and learning. Aligned with this vision is a constructivist approach to assessment practices and design organised around themes that connect learning to the world of the individual, where real issues and contexts are connected to the world beyond the classroom (Beane & Beane, 2006). Middle schooling reform focuses on ensuring student success, helping every student reaching their full potential and improving the wellbeing of this age group by confronting alienation and disengagement, which is a widespread experience for many young adolescents in their schooling situation (Cumming & Cormack, 1996; Smyth & Hattam, 2004; Yates & McLeod, 2007), potentially, threatening their achievement and success (Nayler, 2009). In Queensland, the renewed focus on the importance of the middle years phase of learning is reflected in the Junior Secondary reform; encompassing students from Years 7 to 9. The reform recognises these years as a distinct phase of schooling with particular features, challenges and opportunities associated with early adolescence (DET, 2016a). It is clear that the middle years of schooling represent a crucial developmental phase in the teaching and

learning of young adolescents (Pendergast, Main & Bahr, 2017). As such, assessment practices that engage students in ways that will facilitate their sense of agency and enable them to reflect on their own learning and identify strategies to progress their learning are imperative to ensure student success. Therefore, this study aims to investigate the current formative assessment perceptions and practices of Junior Secondary teachers.

2.2.1 Formative assessment

There are many definitions of formative assessment but it is commonly defined as an ongoing assessment during a period of study. Formative assessment responds to the evolving needs of the learner, relates to identified learning objectives and implies scaffolded learning to help learners reach identified learning objectives (Black & Wiliam, 1998; Clark, 2011; Rea-Dickins & Gardner, 2000). In their seminal research on the efficacy of formative assessment, Black and Wiliam put forward the following as a working definition:

[W]e use the general term assessment to refer to all those activities undertaken by teachers – and by their students in assessing themselves – that provide information to be used as feedback to modify teaching and learning activities. Such assessment becomes formative assessment when the evidence is actually used to adapt the teaching to meet student needs. (1998, p.2)

This definition stresses the role of formative assessment in adapting instruction to individual students' learning needs based on the assessment results. Fundamentally, formative assessment seeks to present students with explicit goals or outcomes of instruction, to help them assess their current position in relation to these goals and to equip them with the tools to bridge the gap between the two. It is implicit that there is a set of practices at the core of formative assessment that lead to adopting instruction to improve learning. Key educational researchers emphasise this point when they describe formative assessment, as identified in the following examples:

[F]ormative assessment, therefore, is essentially feedback both to the teachers and to the pupil about present understanding and skill development in order to determine the way forward. (Harlen & James, 1997, p. 369)

[Formative assessment] refers to assessment that is specifically intended to provide feedback on performance to improve and accelerate learning. (Sadler, 1998, p. 77)

[A]n assessment is formative to the extent that information from the assessment is fed back within the system and actually used to improve the performance of the system in some way. (Wiliam & Leahy, 2007, p. 31)

[F]ormative assessment is defined as assessment carried out during the instructional process for the purpose of improving teaching or learning ... What makes formative assessment formative is that it is immediately used to make adjustments so as to form new learning. (Shepard, 2008, p. 281).

Heritage (2010) offers a more comprehensive definition of formative assessment, acknowledging the purpose and practices of formative assessment, and this definition will be adopted for the purposes of this study. Heritage states that formative assessment is... “a planned process that takes place continuously during the course of teaching and learning to provide teachers and students with feedback to close the gap between current learning and desired goals” (2010, p. 10).

As described in the literature, the key features of formative assessment are that it (a) takes into account the effects of external social-cognitive factors on the individual’s cognitive response (Heritage, 2010); (b) is identified as highly qualitative processes that focuses on interaction, support, and development (Black & Wiliam, 1998); and (c) seems to be incongruous with the summative view (Gipps & Stobart, 2003). However, many claim that the use of formative assessment is ‘just teaching’, because it lacks the reliability and validity of summative assessment (Harlen & James, 1997).

In contrast to formative assessment, summative assessment occurs at the end of a period of study. It captures where learners are at that point and what they can do in terms of test performance (Hanna & Dettmer, 2004). However, in isolation, summative assessment can be seen as providing a restrictive view of ability and proficiency because the outcomes are defined by the task types and concepts embedded within the test and what has been taught in the unit of work. Thus, it is argued that summative assessment does not capture all that the learner knows (Harlen & James, 1997). The distinction between formative and summative assessment

is problematic and has been disputed on two main grounds in the theoretical literature (Harlen & James, 1997; Taras, 2005). Tension arises from the lack of understanding of the assessment purposes and how educators act on the information collected from assessment. This distinction can be described as spurious and, therefore, requires greater clarity (Bennett, 2011). Consequently, instead of focusing on the nature of the assessment, educators need to think about the purpose and the use to which the assessment is put (Carless, 2007). Secondly, it can be argued that summative assessment is judgemental whereas formative assessment is purposeful. The purpose of formative assessment is to promote continued progress, with decisions made about the next course of action and processes implemented to support the next phase of learning (Taras, 2005). So, whether it is small-scale, classroom-based assessment or large-scale, standardised assessment, what matters is the sense that learning is central to all assessment. This is important to consider, particularly for middle years learners, as it allows teachers to focus on their learning needs and address them accordingly.

Harlen (2007) argues that the varied purposes and types of assessment are not independent of one another; rather, they are a part of an interconnected system used to make decisions about students, with each part influencing how each individual assessment is used and interpreted. He identifies summative assessment as a summary of student achievement at a particular point in time, whereas formative assessment is the term used to identify assessment in relation to students' learning goals. He explains that formative assessment is 'the process of deciding, collecting, and making judgements about evidence relating to students' achievement of particular goals of learning' (2007, p.69). Harlen explains that typically researchers treat these two reasons—supporting learning, and reporting on what has been learned—as different purposes for assessment and 'mistakenly as different *kinds* of assessments that are somehow opposed to one another' (Harlen, 2007b, p. 1). The notion that these assessment goals are incompatible results in teachers not seeing the connection between how students learn and how students demonstrate learning. Hence there is a need for educators to experience a shift in paradigm, moving from the idea of assessment *of* learning to the idea of assessment *for* learning. Similarly, Taras (2005) states that summative assessment can be used formatively, and Gipps and Stobart (2003), like Harlen, argue that formative and summative assessment are not opposing ideas at all—rather, they sit on a spectrum. Gallagher and Worth (2008) likewise

argue that the distinction between summative and formative assessment may be a false one and that the difference between the two terms has more to do with how the information is collected rather than what type of assessment is used. The issue, then, is that there is a lack of clarity around formative and assessment purposes. Educators need to develop an understanding that assessment is not an end in itself, but rather a means to an end. It is important to shift the focus from the conventional views of assessment as grades and standards to an approach that prioritise the centrality of learning. An approach where assessment tasks are regarded as learning tasks and where students are involved in the assessment process. Harlen (2005) explains '[i]t takes a great deal of support and courage for teachers to turn around their practices from being test oriented to learning oriented' (p. 210).

Learning lies at the heart of assessment, but part of the difficulty is associated with discriminating between different types of assessment and the need for emergence of a new term (Carless, 2007); a term that emphasises learning and places students at the heart of the teaching and learning process. This kind of approach would support the philosophy of the middle years phase and capitalise on students' individual capabilities, ultimately addressing their learning needs. This study will draw on Black and Wiliam's (1998), Heritage's (2010) and Shepard's (2008) definitions, with formative assessment taken to mean assessment that is used to inform the teaching and learning process, whereby both teachers and students use the evidence to plan teaching and to progress learning.

2.2.2 Types of formative assessment

There are a number of different types of formative assessment, including formal, informal, divergent, convergent, computer-based and computer-adaptive (Miller & Lavin, 2007; Ruiz-Primo & Furtak, 2007; Sharkey & Murnane, 2006). Ruiz-Primo and Furtak (2007) explain that formal formative assessment is a planned, information-gathering process that focuses on a definitive aspect of learning, in a whole-class setting. In contrast, informal formative assessment is incidental, with teachers gathering information in any given situation where communication occurs between teachers and students (Ruiz-Primo & Furtak, 2007).

Miller and Lavin (2007) clarify the difference between convergent and divergent formative assessment. In the former, the teacher is solely responsible for setting the learning goals and

assessing whether students achieve them; hence, the student plays an inactive role. Divergent formative assessment, on the other hand, involves teachers and students working together, with teachers guiding students in setting learning goals and achieving them. Heritage, Kim, Vendlinski and Herman (2009), however, explain that effective formative assessment actively engages students in their own learning. Formative assessment engages students in an active process whereby they take responsibility for their own learning and set goals and identify ways to progress their learning,

Sharkey and Murnane (2006) discuss two forms of formative assessment: computer-based and computer-adaptive assessment. Each of these approaches to formative assessment has strengths and weakness. Sharkey and Murnane state that the strength of computer-based assessment is that it is practical, makes it quick to score and easy to access students' results, and that students' longitudinal developmental data are easily accessible. Computer-based assessment can, however, discourage students from engaging with paper-based assessment, and multiple-choice questions in such assessments are generic and broad (Sharkey & Murnane, 2006). The main difference between computer-based and computer-adaptive assessment is that the latter focuses on the individual students, as it examines the skill level of each individual student. In contrast, the former is aligned with curriculum achievement standards. It asks the same question of each student to examine whether students have achieved proficiency levels on the tested skills (Sharkey & Murnane, 2006). Whether it is computer-based or computer-adaptive, what is important is what the teacher gleans from the information gathered and how they use the information to support students' learning.

Yin and colleagues (2008) explain that it is what the teachers do with the information collected from the assessment, whether planned or embedded, that makes the difference. They clarify that when teachers use the information collected from the assessment to cater for different students' learning needs and adjust the teaching to address those needs, students' outcomes will improve and they will be more engaged and motivated. Understanding the different types of assessment enables teachers to use the most suitable type of assessment in any given context.

2.2.3 Frequency of formative assessment

Research has shown a positive correlation between the frequency of assessment and students' level of achievement (Martinez & Martinez, 1992; Peterson & Siadat, 2009). Fuchs and Fuchs (1986) indicate in their meta-analysis of 21 studies that frequency of classroom assessment has an effect size of .85, or a percentile gain of 30 points². Similarly, in a meta-analysis of 29 studies on the frequency of assessment, Banger-Drowns, Kulik and Kulik (1991) indicate that more frequent class assessment increases students' level of achievement. These findings highlight the importance of formative assessment as a continual, ongoing process (Harlen, 2007; Heritage, 2010; Black & Wiliam, 1998). Bangert-Drowns, Kulik and Kulik (1991) further explain that frequent classroom assessment stimulates practice and enables the teacher to reflect on and adjust instructional practices to address students' learning needs; equally importantly, it provides both teachers and students with more opportunities for feedback (Marzano, 2009; Sadler, 1989).

Others have noted, however, that over-assessing can waste valuable learning time and disengage students from learning (Gardner & Gardner, 2012; Gipps, 1994). It is important to have a balance. For example, Peterson and Siadat (2009) argue that while there is a direct relationship between the frequency of assessment and students' outcomes, the improvement in outcomes was not significant. Also Banger-Drowns, Kulik and Kulik (1991) caution that teachers should systematically use frequent classroom assessment as a form of feedback. This suggests that it is what teachers do with the information collected from assessment that makes a real difference. When teachers provide students with actionable, sound feedback, they have a clear picture of their progress and how they might improve. When teachers work with students in a collaborative process to engage them cognitively in learning, students' progress toward their learning goals.

² Effect size is equivalent to a point on the normal distribution, once there is point on the normal distribution, the expected percentile gain (loss) can be determined for someone at the 50th percentile.

2.2.4 Models of formative assessment

There are number of proposed formative assessment models presented in the research literature. These include the model developed by the OECD Centre for Educational Research and Innovation (CERI). One particular CERI study examined exemplary practice in secondary schools in eight countries. It identifies six key elements of effective formative assessment:

1. establishment of a classroom culture that promotes interaction and the use of assessment tools
2. establishment of learning goals, and tracking of individual students' achievement toward those goals
3. use of a variety of instructional strategies to meet diverse students' learning needs
4. use of different approaches to assess students understanding
5. feedback on students' performance and adaptation of instruction to meet identified needs, and
6. active involvement of students in the learning process. (OECD, 2005, p. 6)

These six elements introduce teachers to a formative assessment model that supports them in shaping their approach to teaching and learning. Teachers can draw upon each of the six elements to create a dynamic learning environment and move students toward achieving their learning goals.

William proposes a formative assessment model that offers a conceptual framework for formative assessment practices. He believes that formative assessment is concerned with the creation of, and capitalisation on, 'moments of contingency' in the regulation of learning (2010, p. 2). He explains that formative assessment provides these moments of contingency in instruction—where teachers, students and/or peers collect evidence about students' achievement to make decisions about the next step. William (2010) categorised moments of contingency into synchronous moments, in which there is interaction or communication between the teacher and the student; and asynchronous moments, in which evidence of students' performance is gathered and utilised to provide students with feedback and/or modify the learning instructions, as displayed in Figure 2.1.



Figure 2.1: Regulation within synchronous and asynchronous moments (Wiliam, 2010).

Wiliam’s ‘moments of contingency’ concept highlights the importance of teachers addressing and acting on the information collected by adjusting instruction and providing students with immediate feedback. Wiliam (2010) indicates that this occurs during the teaching and learning cycle, with teachers making decisions and providing constructive feedback to support students’ learning and adopting teaching to cater for individual and diverse learning needs. It also points to the different types of assessment ,including long, medium and short cycles, and emphasises the proactive role of the short cycle.

Similarly, and drawing on Ramaprasad’s (1983) three key processes in learning and teaching—establishing where the learners are in their learning, where they are going, and what needs to be done to get them there—Wiliam and Thompson’s formative assessment model acknowledges the roles of the teacher, the learners and their peers. The framework consisted of five key practices:

1. clarifying and sharing learning intentions and criteria for success
2. engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding
3. providing feedback that moves learners forward
4. activating students as instructional resources for one another, and
5. activating students as the owner of their own learning. (2008, p.57)

This framework is significant because it offers a comprehensive model that reflects the dynamic relationship between teachers and students. It highlights the important role of teachers in engineering effective practices and emphasises how students are responsible for their own learning and deciding how to put feedback into action. In doing so, this framework also identifies the pedagogical practices that allow this to occur. Figure 2.2 illustrates that teachers, students and peers all have a role to play in formative assessment.

	Where the learner is going	Where the learner is right now	How to get there
Teacher	1. Clarifying learning intentions and criteria for success	2. Engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding	3. Providing feedback that moves learners forward
Peer	Understanding and sharing learning intentions and criteria for success	4. Activating students as instructional resources for one another	
Learner	Understanding learning intentions and criteria for success	5. Activating students as the owners of their own learning	

Figure 2.2: Elements of the formative assessment model (William & Thompson, 2008).
 Source: Black & William (2018). *Classroom assessment and Pedagogy* (p. 560).

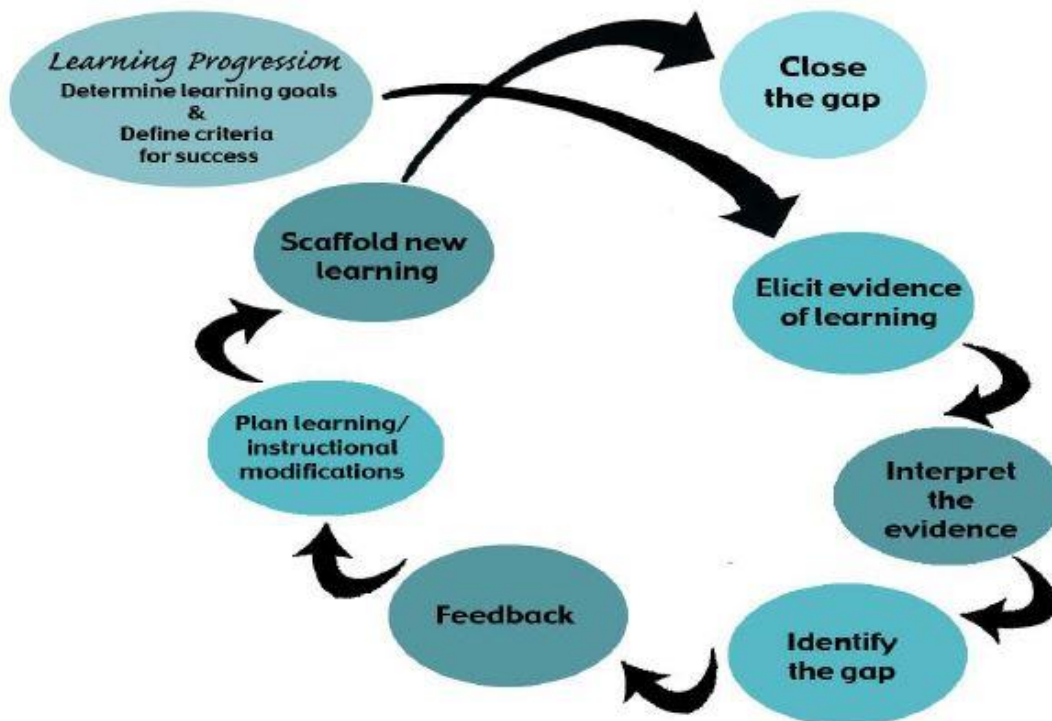


Figure 2.3: Heritage's formative assessment model (Heritage, 2010).
 Source: Heritage (2009a). *The process of formative assessment* (p.3).

In 2007, Heritage also introduces a model of the formative assessment process, in which she aggregates the attributes of formative assessment (see Figure 2.3). According to Heritage et al. (2009, p.2), formative assessment comprises four main elements:

1. identifying gaps in students' learning
2. deciding where students are in their learning and what they need to learn
3. adjusting instructions to address individual students' learning needs, and
4. supporting them toward achieving their learning goals.

Both models (Figures 2.2 and 2.3) include the process of feedback. Teachers' use of descriptive feedback helps students improve learning and close the learning and instructional gap. It helps students to be involved in their own learning as they reflect on their learning (Hattie & Timperley, 2007). Formative assessment provides students with the opportunity to practise and be corrected during the learning process. Additionally, formative assessment breaks down a larger learning objective into sub-objectives. This helps teachers to consistently monitor students' learning to ensure mastery of the set of skills needed to achieve the learning objective (Popham, 2008). Similarly, Alvarez and colleagues propose six guiding principles for effective formative assessment. They argue that effective formative assessment:

1. promotes students' learning through continually monitoring students' progress
2. elicits evidence of learning through a variety of tasks depending on the instructional purpose
3. changes the roles of teachers and students, where the teacher is focused on creating a supportive learning environment in which the students are at the centre of teaching and learning
4. uses learning progression to anchor learning goals and monitor learning
5. results in meaningful feedback and adjustments to improve instruction for students, and
6. enables students to become self-regulated and autonomous learners. (2014, p. 12)

These guiding principles have the potential to offer educators clear guidelines that can inform their understanding of formative assessment and, therefore, their teaching practice.

2.2.5 Comparing models of formative assessment

As can be seen, the aforementioned models have a number of similarities. They outline how formative assessment emphasises learning through a feedback loop process. They all also emphasise the importance of adaptation of instruction, establishment of learning goals and active interaction from teachers and students as key elements of formative assessment (see Table 2.1). The CERI (OECD, 2005), however, focuses on using learning progressions as a criterion for developing learning goals. In her formative assessment model, Heritage (2010) identifies learning progression as the developmental progression of enabling knowledge and skills students need to acquire to achieve desired learning goals and objectives. Heritage noted that ‘learning progressions that clearly articulate a progression of learning in a domain can provide the big picture of what is to be learned, support instructional planning, and act as a touchstone for formative assessment’ (2008, p. 1). This view suggests that, unless there is a strong connection between pedagogy and assessment, the line of sight between teaching and learning becomes unclear, with no specific objective that aligns with and caters for students’ individual learning needs.

The key elements presented by the different frameworks explored here, and outlined in Table 2.1—specifically those proposed by Wiliam and Thompson (2008)—address the needs of young adolescents by enabling teachers to lay the foundations for lifelong, self-directed learning, and prepare students for the twenty-first century. The key practices proposed by Alvarez et al. (2014), the OECD (2005), and Wiliam and Thompson (2008) provide an interpretation of educational aims, such as ‘personalisation of learning’ and ‘inclusion’, reflecting the spirit of the Junior Secondary initiative. The frameworks offer pedagogies for engagement and provide a number of signifying practices that guide the effective use of formative assessment ensuring students’ learning needs are met.

Table 2.1: Outline of key studies on formative assessment

Study	Centre for Educational Research and Innovation (OECD, 2005)	Alvarez et al. (2014)	Wiliam (2010); Black, Harrison, Lee, Marshall & Wiliam (2005)
Characteristics	<p>Examined exemplary practice in secondary schools in eight countries & identified six key elements for effective formative assessment:</p> <ul style="list-style-type: none"> a) establishment of a classroom culture that promotes interaction and the use of assessment tools b) establishment of learning goals, and tracking of individual students achievement toward those goals c) use of a variety of instructional strategies to meet diverse students' needs d) use of different approaches to assess students understanding e) feedback on students' performance and adaptation of instruction to meet identified needs 	<p>Proposed six guiding principles for effective formative assessment:</p> <ul style="list-style-type: none"> a) promotes students' learning by continually monitoring students' progress b) elicits evidence of learning through a variety of tasks depending on the instructional purpose c) changes the roles of teachers and students with teachers focused on creating a supportive learning environment in which the students are at the centre of teaching and learning d) uses learning progression to anchor learning goals and monitor learning e) results in meaningful feedback and adjustments to improve instruction for students f) enables students to become self-regulated and autonomous learners. 	<p>Noted that early work on formative assessment centred on five main evidence-based practices:</p> <ul style="list-style-type: none"> a) sharing success criteria with learners b) classroom questioning c) comment only marking d) peer and self-assessment e) formative use of summative tests.

As can be seen from these models of formative assessment practices, a number of key signature pedagogies are also presented (as outlined in the list below). These pedagogical practices provide the road map by which teachers implement effective formative assessment.

Studies: Heritage, (2010); Wiliam & Thompson, (2008)
<ul style="list-style-type: none">• Clarifying and understanding learning intentions and criteria for success• Planned evidence gathering• Adjustments to teaching and learning• Student involvement – peer and self- assessment• Engineering effective classroom discussions, questions and tasks that elicit evidence of learning• Providing feedback that moves learners forward• Activating students as instructional resources for each other• Activating students as owners of their own learning

These models offer teachers a framework around which they can build deeper understanding of formative assessment practices and how they can be effectively implemented. The models strongly emphasise formative assessment as a continual, ongoing process, with the attributes overlapping within it. The models highlight that ‘ongoing formative assessment by teachers can provide guidance to students which supports and extends their learning, encouraging deeper learning and the development of transferable competencies’ (NRC, 2012). Hence, this study will use these models as a framework for working with Junior Secondary teachers to explore the attributes of effective formative assessment and how are these implemented in the classroom. The following section presents the key formative assessment practices and how they can support the learning and enhance the outcomes of middle years learners.

2.2.6 Formative assessment practices

The formative assessment models explored in the previous sections of this chapter offer the theoretical grounding for formative assessment in practice. The models provide a pedagogical lens for both teachers and researchers, through which they can identify strategies and approaches that support the teaching and learning process. The models provide the middle years teachers with a framework that aligns with evidence-based practice for middle years

learners. Aligning the models will support teachers in meeting the needs of young adolescents at this critical juncture in their schooling.

It has already been established that teachers' practice in the middle years is a main priority for the twenty-first century agenda (Melbourne Declaration, MCEETYA, 2008). It is important for teachers to be active in reflecting on their pedagogical and instructional practice and to utilise evidence-based practice that best meets the learners' needs (Main & Bryer, 2007). Wolfe states that it is important 'to assist teachers in carefully studying new research and innovations to determine whether they validate their practice, require them to rethink their practice, or both' (1998, p. 64).

Increasingly, there is a focus on how teachers can use information collected from assessment to inform their classroom decision-making and demonstrate efficacy within the learning context (Ingvarson & Rowe, 2008). Numerous projects (Hallinan, 1994; National Middle School, 2003; MYRD, 2003) have been developing research-driven approaches to improve students' learning achievements in the middle years of school. The Middle Years Research and Development Project (2003) informed the pathway of improvement and reform in the middle years. It identifies the main features for advancement of learning in the middle years and emphasises the urgent need for reform to be informed by data-driven, evidence-based pedagogy to implement quality practices that respond to the individual academic, social and emotional needs of early adolescent learners.

An effective pedagogical framework encompasses a repertoire of strategies and practices enabling teachers to make evidence-based decisions to support learning and improve students' academic outcomes. There are a number of pedagogical frameworks that draw on research about how to cater for students' wellbeing and improve their academic outcomes. It is important to emphasise that effective pedagogy requires effective assessment to provide the essential links between learning, instructional practices and ways of identifying students' needs; as Wyatt-Smith, Klenowski and Gunn. note:

[E]ffective pedagogy requires effective assessment, assessment that provides the critical links between what is valued as learning, ways of learning, ways of identifying need and improvement, and perhaps most significantly, ways of bridging school and other

communities of practices ... Nothing can be so dampening on learning by middle years students as narrowly-construed assessment that serves only to reinforce a sense of failure and diminish self-esteem. (2010, p.272)

The following section discusses effective formative assessment pedagogical practices that accommodate the characteristics of middle years learners. Students in this age group often disengage from learning, increasing the importance of developing techniques that will provide them with tailored and adequate educational support. In particular, the practices of feedback, setting learning goals, learning progressions, peer- and self-assessment, and collaboration are explored.

2.2.6.1 Feedback

Hattie and Timperley (2007) explain that effective feedback is the single most powerful tool teachers have to help improve students learning. Black and Wiliam (1998) argue that students' low achievement is often the result of students failing to understand what teachers require of them. Effective feedback can help clarify learning objectives and guide student learning, thus supporting them in improving and progressing in their learning. Effective feedback can include descriptions of the quality of students' work in relation to the learning objectives; observations about students' learning processes and strategies that will help them improve; and the fostering of students' self-efficacy by drawing connections between their work and their effort (Hattie, 2012). Wiliam (2013) explains that effective feedback is regular and descriptive, and helps students to self-assess and reflect on learning and set goals. Effective feedback can support middle years learners by providing cues to capture students' attention and focus them on success; information about concepts that have been misunderstood; motivation for students to invest more effort in the task; and by directing students' attention to the processes needed to succeed (Hattie, 2012; Wiliam, 2013). The ultimate purpose of feedback is to help students learn by reducing 'discrepancies between current understandings and performance and a goal' (Hattie, 2012, p.86).

2.2.6.2 Learning Goals

Wiggins and McTighe (2011) explain that learning goals are the first step of the formative assessment process, 'what is worthy and requiring understanding' (DeMeester & Jones, 2009,

p. 5). Students' understandings of goals have critical motivational and cognitive impacts (Brookhart, Andolina, Zuzu & Furman, 2004), and students develop self-regulation when evaluating their own work (Sadler, 1989). Self-monitoring is an integral component of the goal-setting cycle. Ongoing reflection enables both teachers and students to develop a clear picture of learning, assess progress and refine goals. This is particularly important for middle years, as it develops students' ownership of their learning. Self-assessment and reflection against learning goals allow students to take ownership of their learning, in partnership with their teacher. Thus, students work toward becoming self-managing and self-regulated learners (Covington, 1992).

2.2.6.3 Learning Progressions

A learning progression assists teachers to identify the incremental steps students must take to learn new concepts, build on what they already know and develop increasingly sophisticated understandings and skills (Popham, 2008). Masters (2013) notes that '[l]earning progressions ... provide valuable frames of reference for thinking about student learning and for establishing where individuals are at any given time in their progress toward deeper understandings' (p. 21). Hence, Masters identifies a strong connection between pedagogy and assessment and advocates the strengthening of the quality of the learning and the validity of the assessment. This will in turn connect and engage students with learning and improve student learning outcomes.

Heritage, Kim, Vendlinski and Herman (2009) note that learning progression is important, as it determines students' entry points into the learning of a unit of work, scaffolds learning, provides information for personal learning goals and helps monitor progress over time. DeMeester and Jones (2009) suggest presenting learning progression to students as a continuum of learning, helping them identify the skills they need to develop to move along the continuum. This enables both teachers and students to 'see and understand the scaffolding they will be climbing as they approach learning goals' (Stiggins, 2005, p.327).

2.2.6.4 Peer- and Self-Assessment

Peer- and self-assessment are important strategies for middle years learners particularly. For example, Black and Wiliam explain that 'since the responsibility for learning rests with both

the teacher and the learner, it is incumbent on each to do all they can to mitigate the impact of any failures of the other' (2009, p. 7). Wiliam (2013) explains that peer-assessment activates students as teaching resources for one another to improve their learning. He further argues that '[p]eer assessment, provided it is geared toward improvement rather than evaluation, can be especially powerful – students tend to be much more direct with each other than any teacher would dare to be' (2011, p. 144). Peer-assessment benefits both the students receiving and the students giving the feedback, as students think through the work and what needs to happen to improve it. This process allows the students to internalise the success criteria in the context of other students' work. Sadler (1989) points to the importance of peer-assessment in providing students with opportunities to interact with multiple approaches and perspectives and interact with a range of imperfections. This is particularly important for middle years learners, as it helps develop their self-confidence and encourages them to improve their learning. Activating students as instructional resources for one another supports group goals and individual accountability, and is more powerful than simply having students work on a task in a group (Wiliam, 2011).

Self-monitoring enables students to reflect on learning, evaluate progress and take steps to improve their learning. As students develop confidence in using a range of self-monitoring strategies, they cultivate their metacognitive learning skills and build their capacity to become self-regulated, independent learners. Sadler (1989) explains that self-assessment is a key element of formative assessment, activating students as learners of their own learning (Wiliam, 2013). Harris and Meltzer state that 'when students self-monitor, they review their progress toward their goals, evaluate the outcomes, and redirect their effort as needed' (2015, p. 21). When middle years students self-monitor their learning over the long term, they come to understand themselves as learners. They are able to regulate their learning behaviour and confidently use strategies that they know will enhance their own learning.

2.2.6.5 Collaboration

Collaboration supports a culture in which teachers and students are partners in the teaching and learning process. Both teachers and students are jointly active in learning, and they share the responsibility for learning (Shore, Wolf & Heritage, 2016). As such, the focus is on

teacher–student and student-to-student interactions and the learning. This, in turn, will foster the teacher–student relationship and encourage students to have a voice and build their confidence as they are supported by teachers and by each other. Gillies and Boyle (2010) Propose that if student to students and teacher to student collaboration is planned for and structured effectively it can promote academic and social educational out comes. Effective collaboration enables middle years learners to develop a sense of autonomy and personal agency as they take responsibility for their own learning,

As highlighted in this literature review, effective formative assessment can offer an effective pedagogical framework for teaching and learning. It allows teachers to change the way they interact with students, how they set up learning experiences and guide students toward learning goals, even how they define assessment (Bennett, 2011; Shepard, 2000). Pollard defines pedagogy as ‘the practice of teaching framed and informed by a shared and structured body of knowledge’ (2010, p.4). Pedagogy is the means by which teachers enact curriculum expectations; it includes the approaches, methods and strategies applied by teachers to implement curriculum. Teachers deploy a blend of pedagogical practices to respond effectively to a given classroom context. Similarly, formative assessment helps teachers differentiate instruction, target it to meet specific learning goals, and evaluate the effectiveness of instructional methods (Gallagher & Worth, 2008). Marzano (2009) describes such practices as the ‘art and science’ of teaching. There is no specific script or set of instructions for teachers to follow; instead, he emphasises teachers’ discretionary use of pedagogical practices that best suit the learning context and that have been found to have a high probability of enhancing student achievement. Accordingly, effective formative assessment practices can help teachers to engage in implementing a dynamic and interconnected pedagogy that offers both students and teachers access to a multi-dimensional teaching and learning process.

Effective formative assessment pedagogical practices should combine assessment with instruction. Heritage, Kim, Vendlinski and Herman (2009) explain that the process involves providing instructional support to help students progress toward the learning goals; providing clear and detailed feedback to close the instructional gap; and actively involving students in their own learning and assessment through collaboration with the teacher to develop a shared

knowledge about their current learning, enabling students to self-monitor their learning and determine when they need support. These practices can help young adolescents to cope with the multiple changes occurring in their lives and can contribute to improved academic achievement by increasing students' motivation to engage in learning (DEEWR, 2008). Furthermore, Gallagher and Worth (2008) indicate that formative assessment is the most effective way to cater for individual students' learning. It drives differentiation, where teachers adjust the teaching and adjust their instruction in response to collected information through formative assessment. Similarly, Pinchok and Brandt (2009) reference Bloom's 'mastery learning' work and his emphasis on the need to address the variance in students' achievement by differentiating instruction and assessment. Moon (2005) emphasises that the information provided by the assessment allows the teacher to adjust instruction to meet the needs of individual students. Formative assessment provides teachers with timely information, which they can use to determine students' current understanding and the areas that are nearly within students' proximity (Vygotsky, 1980). It is a planned practice that is built in as part of the lesson to gauge learning after teaching and take necessary actions (Clark, 2011; Heritage, 2010); accordingly, formative assessment is an appropriate approach that meets the learning needs of middle years learners.

Formative assessment practices align with the purpose of teaching and learning and address the demands placed on both the teachers and students. The Melbourne Declaration on Educational Goals for Young Australians (MCEETYA, 2008) emphasises the school's responsibility to respond to contemporary society through curriculum and strategies that promote quality and contemporary educational experiences. This shows that pedagogy, as well as curriculum, needs to align and reflect the educational context (Fingal, 2012).

2.2.7 Formative assessment challenges for teachers

Despite what we know about formative assessment as an effective approach to assessment practices, Dunn and Mulvenon (2009) express uncertainty about this strategy and some researchers note the challenges teachers may face (Rumble & Aspland, 2010; Pendergast, 2007b). Harlen (2007b) confirms that there seems to be a general convention among teachers that includes a common language and understanding of assessment. Conversely, 'there is no

agreed upon lexicon with regards to formative assessment and suspect methodological approaches in the effort to demonstrate positive effects that could be attributed to formative assessment' (Dunn & Mulvenon, 2009, p.1). Therefore, there is a lack of understanding of formative assessment and, consequently, an ill-defined purpose. Harlen (2007b) posits that when teachers use formative assessment mechanically, without a deep understanding of its meaning or purpose, it could have negative impacts. Furtak and Heredia (2014) find significant variation among teachers enacting formative assessment.

In practice, the effective implementation of formative assessment has proven to be complex and challenging for some teachers. Atkin et al., (2005) identified that teachers needed significant support to develop meaningful formative assessment practices. This has implications for both policy-makers and educators in their goal of improving students' performance. As Black and Wiliam (1998) explain, formative assessment is not a magic bullet for education; rather, it is a complex process that requires extensive professional development. Thus, this study intends to examine middle years teachers' perceived understanding of formative assessment and how it influences classroom practices. This is achieved by exploring how teachers plan for assessment; observing the learning and formative assessment practices in everyday classrooms; analysing and interpreting this data; and then offering recommendations for improving students' learning based on the learnings from this literature review. The next section will examine the middle years learner phase and the implications for teaching and learning.

2.3 Middle years education

Over the past two decades there has been a strong emphasis on middle years education reform. The literature regarding the age boundaries for middle years is inconsistent and offers a diverse range (Bahr, 2017). While some studies propose an age range of 10–19 years (Atuyambe et al., 2009), others propose a range from 15 to 22 years (Park, Kim & Kim, 2009). The Australian Curriculum Studies (1998) identified the middle years of schooling as including young adolescents 11–15 years of age, typically in Years 5 to 9 (Barratt & Australian Curriculum Studies, 1998). Despite the varied age ranges proposed to signal the onset of adolescence, there is a general agreement across the literature on the importance of this phase. As such, the middle

years phase has attracted considerable interest as a distinct educational phase that requires further understanding of middle years learners as individuals.

In Australia, the middle years have been a high priority of the education system, especially since the *Melbourne Declaration on Educational Goals for Young Australians* (MCEETYA, 2008) identified the ‘middle years’ as one of eight areas needing collective planned action. The Declaration stated that:

[T]he middle years are an important period of learning, in which knowledge of fundamental disciplines is developed, yet this is also a time when students are at the greatest risk of disengagement from learning. Students’ motivation and engagement in these years is critical, and can be influenced by tailoring approaches to teaching, with learning activities and learning environments that specifically consider the needs of middle years students. (MCEETYA, 2008, p.12)

Realising the importance of this period of learning, and the great risk of students’ disengagement in these critical years, the national focus has been on adapting approaches and creating learning environment specific to the needs of middle years students.

In Queensland, one of the six states of Australia, a renewed focus on the importance of the middle years phase of learning is reflected in the Queensland Government’s Education White Paper, *A Flying Start for Queensland Children* (2016a). The paper introduces the notion of ‘Junior Secondary’ phase encompassing years 7 to 9, recognising these years as a distinct phase of schooling with particular features, challenges and opportunities associated with early adolescence. All state high schools had formed Junior Secondary by 2014, with it being officially completed with the move of Year 7 from a primary school context to secondary school in 2015. The Junior Secondary phase encompasses a narrow age sector within the wide range of middle years students, including 12- to 15-year-old students, and draws on much national and international research on the middle years of schooling (Bahr, 2017). In developing the Junior Secondary model, the Queensland Department of Education identified six main guiding principles that underpin the Junior Secondary initiative (Department of Education, 2016c). These principles (see Table 2.3) provide the foundation upon which schools and teachers can develop strategies, policies and processes to engage students during

these critical years of academic, social, emotional and physical development. The principles also provide an evidence-based approach to teaching and learning practices that meet the needs of students in early adolescence, and support schools to ensure a smoother transition between primary and secondary school (Pendergast et al., 2014).

Table 2.2: Junior Secondary Guiding Principles

Source: Adopted from Department of Education and Training (DET). (2010).

Guiding Principle	Explanation
<i>Distinct identity</i>	Junior Secondary students are encouraged and supported to develop their own group identity within the wider high school. This can involve dedicated school areas and events.
<i>Quality teaching</i>	Teachers working with students in the Junior Secondary years are given the skills they need through additional professional development, so they can support young teens through these crucial early high school years.
<i>Student wellbeing</i>	We will meet the social and emotional needs of Junior Secondary students with a strong focus on pastoral care. For example, schools could provide a home room to support students as they adjust to new routines and greater academic demands.
<i>Parent and community involvement</i>	We want parents to stay connected with their students' learning when they enter high school. Parent involvement in assemblies, special events, award ceremonies and leadership presentations will be welcomed.
<i>Leadership</i>	Schools are encouraged to create leadership roles for students in Years 7, 8 and 9. Dedicated teachers experienced with teaching young adolescents will lead Junior Secondary supported by the principal and administration team.
<i>Local decision-making</i>	The needs of each school community will influence how Junior Secondary is implemented in each school.

Consequently, for the Junior Secondary provision to fulfil its initial intent, changes need to be brought forward that will positively influence the skills and knowledge that young adolescents bring to the classroom as well as the kind of educational provision required to equip them to participate effectively in the world around them (Wyatt-Smith, Cumming & Elkins, 2010). Many schools are explicitly focusing on the alignment of pedagogy, curriculum and assessment as they begin to reshape the Junior Secondary. Pellegrino, Chudowsky & Glaser

(2001) express the need to identify what students know in order to develop effective instruction. Hence, effective assessment that is cognisant of the nature of the middle years learner is central to the teaching and learning of young adolescents (Wyatt-Smith, Cumming & Elkins, 2010)). Formative assessment enables teachers to identify where students are at the different stages of their learning (Wyatt-Smith, Adie, van der Kleij & Cumming, 2017). Furthermore, formative assessment enables teachers to continually monitor and address the learning needs of students as soon as these needs arise. As such, effective formative assessment will enable and facilitate the success of the middle years learners.

2.3.1 Middle years learners

During this crucial developmental learning stage, young adolescents experience significant physical, emotional, social and cognitive changes. Understanding the implications of students' development within this phase provides a strong foundation for educators to cater for diverse learners' needs. This is achieved by designing and tailoring instructional practices to cater for the challenges and individual differences of students throughout this phase (Pendergast et al., 2014). Effective assessment practices play an integral role in the teaching and learning process for all students and in particular middle years learners (Wyatt-Smith, Cumming & Elkins, 2010)). Effective teaching and learning practices pertinent to middle years learners require teachers to have the knowledge relevant to teaching adolescents and the generic qualities associated with effective teaching (Rumble & Aspland, 2010).

As noted in *A Flying Start for Queensland Children* (Queensland Government, 2016a, p.11), 'educators agree that young teenagers are ready for greater independence and the depth of learning that high school provides'. Hence, the Junior Secondary movement is a student-centred school movement dedicated to the intellectual, social and emotional growth and wellbeing of early adolescent students (Bahr, 2010). A renewed focus on the middle years learner provides an opportunity to think differently about learning and teaching in the Junior Secondary phase (Pendergast, 2017). It presents a unique opportunity to raise students' attainment, increase equity of students' outcomes and improve students' ability to learn and develop as twenty-first century lifelong learner.

The developmental needs of middle years learners are interconnected, with one aspect affecting another (Manning & Bucher, 2012). Understanding the developmental phase of the middle years learners has implications for teaching and learning. Teachers of middle years students need to acknowledge and consider the varied developmental characteristics of young adolescents so that they can design instruction and classroom management strategies to address these ongoing changes, and support and capitalise on these characteristics. Manning & Bucher (2012) and Bennett (2010) maintain that the middle years phase should be considered in a way that serves the unique developmental needs of young adolescents. The following section will investigate literature related to young adolescents' biological, cognitive and physiological development

2.3.1.1 Biological Development

Developmental researchers emphasise adolescence as a period of great importance in the development of young adults (Steinberg & Lerner, 2004). Adolescence is not a discrete period; rather, it is a developmental stage between childhood and adulthood (Luna et al., 2004). During adolescence, many biological, cognitive and physiological changes occur. Between the ages of 12 and 18 years of age, dramatic physical changes occur in adolescents. During this developmental stage, more rapid growth occurs than any other time except from birth to three years (Meece & Daniels, 2008); this adolescent growth spurt usually lasts two to three years. Adolescence can be subdivided into three stages: early adolescence (11–14 years), middle adolescence (15–18), and late adolescence (18–21). It is an evolutionary process. Steinberg and Lerner (2004) explain that early depictions of adolescence (Hall, 1904) represented this period as a biological development stage, characterised by troublesome and extreme patterns of behaviour caused by the physical and hormonal changes of puberty. Hence, adolescents' education focused on managing and regulating troublesome behaviour under a supervised and controlled setting (Borman & Schneider, 1998). Bahr (2017) argues that while biological changes are important, as they can frame students' self-concept, they are only one aspect of many in a specific developmental phase. As such, middle years development models should not be limited to the physical constitution.

However, when teachers understand the physical changes that occur during adolescence and the impact it could have on learners' self-image, self-esteem, self-confidence, social relationships and mood, they will be able to understand students' attitudes and behaviours and support them to cope with those changes (Meece & Daniels , 2008) Educators need to be aware that students' sense of identity may be affected by physical development, which in turn impacts learning. Students may experience feelings of insecurity because of their physical changes. This may result in lack of self-confidence, which can affect students' engagement and achievement (Borman & Schneider, 1998).

2.3.1.2 Cognitive Development

Traditional views of adolescence indicate this period to be a time of turmoil, characterised by extreme mood swings (Borman & Schneider, 1998). Researchers today are less likely to emphasise 'storm and stress' as biologically programmed characteristics of adolescents' development, but do recognise that people experience increased levels of emotion and conflict at this stage of life (Blakemore & Choudhury, 2006). This kind of adolescent behaviour can be explained by understanding how brain maturation develops. Even though 95 per cent of the brain's actual size is developed by the age of six, the business of connecting, coordinating and integrating all of its components continues in a process that takes over twenty years (Ashtari & Cyckowski, 2012). Understanding the brain growth of young adolescents has direct implications for teaching and learning, as teachers can capitalise on opportunities when students are at higher peaks of cognitive development.

Piaget's theory of the cognitive stages (1977), which is accepted as a seminal lens for considering cognitive development, explains how children's thinking, reasoning and problem-solving begin at birth with the sensory-motor stage (0–2 years), moves through the operational stage (2–7 years) and the concrete operational (7–11 years) and finally reaches the formal operational stage (12–16 years) at or around puberty. Although this remains relevant, Dahl (2004) notes the first sparks of this new scientific way of thinking may be seen at the age of 11 and 12, but its development tends to be inconsistent and complete activation takes many years.

As individuals enter adolescence, brain development begins to provide the capacity for more abstract thought (Arnett, 2013). Adolescents begin to regulate behaviour and base their actions on moral codes. They consider the feelings of others and become more sensitive to the beliefs and philosophies of society. In adolescence, teens are transitioning into a more social form of moral reasoning, which is linked to Piaget's formal operational stage of development. Kohlberg (1981) views moral development as the ability to make moral judgement about right and wrong actions in particular situations. As children pass through stages of cognitive growth, they will respond to questions of right or wrong behaviour in more sophisticated ways.

Research into cognitive development (Keating, 2004) shows adolescence to be a significant period for the development of more intricate and sophisticated reasoning about the world. This new representation of adolescence, from the sociocultural view, explains the profound effects of the demographic, social, cultural and technological changes brought about by globalisation (Alvermann, 2002; Arnett, 2013; Carrington, 2006). Hence, adolescents' education has moved from a practice of social control to more understanding and supporting approaches to guide adolescents through this developmental stage, extend their abilities, and motivate and engage them in more relevant, empowering learning experiences (Carrington, 2006).

Research on brain development and functionality has implications for middle school educators. Posner and Rothbart (2007) explain how our bodies grow at different rates; we reach puberty at different ages and emotional and psychological maturation at different times. The brain is no different; thus, it is important for educators to understand that students within an age group are not all equally ready to learn a specific topic, concept, skill or process. It is imperative that educators and parents understand that maturation of the brain impacts learning readiness. For educators, this is particularly essential when designing lessons and identifying which strategies to use, addressing the unique abilities of each learner and tailoring strategies and approaches to differentiate for the needs of the individual learners. The theories of Vygotsky (1956), Piaget (1958), Erikson (1963) and Dewey (1896) reflect an interactive, constructive way of learning, wherein the role of the teacher is to support, guide and pose questions to promote thinking and extend students' capacities.

2.3.1.3 Psychosocial Development

Early research, as conducted by Erikson (1968) regarding the psychosocial development theory, has served to identify the personal development of adolescence. Bryan (2000) states that Erikson's psychosocial theory provides a framework to examine the interrelatedness of social, physical and cognitive development in learning. Erikson indicates that personal development occurs in a series of discontinuous stages that are influenced by personal relationships and societal expectations (Meece & Daniels, 2007). Erikson explains that it is crucial to resolve critical issues related to each stage, for, when they are resolved successfully, specific strengths emerge. Conversely, if they are not resolved successfully, psychosocial strengths may be diminished and later deter new learning. Meece and Daniels (2007) emphasise the importance of the role of others in resolving critical issues and development of psychosocial strength. Moreover, in describing the zone of proximal development (ZPD), Vygotsky (1980) explains that development hinges on the degree to which the learner has the opportunity to solve problems with adult direction or with more capable peers rather than working independently on less challenging problem. Hence, Vygotsky's ZPD implies the importance of formative assessment in understanding the learners' domain-specific thinking to be able to guide and direct the learners' problem-solving (Daniels & Shumow, 2003).

Bryan (2000) indicates that conceptual change instruction should be designed not only to consider cognitive development but also capitalise on what we know about other aspects of human development. Hence, it is imperative for educators to understand and consider the multifaceted developmental needs of Junior Secondary students and provide them with optimum learning experiences. Instructional strategies need to capitalise on the unique developmental characteristics of early adolescents and must provide opportunities for students to positively interact with teachers and peers, practise hands-on activities and refine higher-order thinking skills.

Young adolescents learner bring a set of assets that are physical, physiological and cognitive. These assets reflect their wants and developmental needs, which are individual and unique (Bahr, 2017). Understanding the developmental process of middle years learner is crucial to helping educators foster the learners' maturational development (Chadbourne, 2004).

Consequently, it is recommended that educators evaluate and reflect on current practices to identify the most appropriate developmental tasks that will support the social and emotional wellbeing and engagement in learning for the middle years learners (Daniels & Shumow, 2003). The following section draws on and discusses the research implications of young adolescents' development for teaching and learning.

2.3.2 Implications for middle years educators

It is argued that teachers with solid foundation of knowledge of young adolescent development are more effective teachers (McEwin & Greene, 2011). Understanding the key areas of development in young adolescents influences how teachers teach and interact with middle years students. The research explored in the previous section can help teachers understand how students change over time and what explains the observed changes, thus allowing them to devise pedagogical approaches and engineer learning experiences that capitalise on and cater for these changes.

Each of the key areas of development in young adolescents—biological, cognitive and psychosocial—has implications for curriculum design, pedagogical and behaviour management and assessment. Dinham and Rowe (2008) assert that age-appropriate quality teaching is a major factor impacting on student achievement. Through age-appropriate quality teaching practices, teachers can accommodate the different aspects and changes of development in young adolescents in the middle years. In light of the international research on key practices for the middle years, MYSA (2008), now named Adolescent Success, has identified a set of signifying practices for middle years, including:

- higher-order thinking strategies
- integrated and disciplinary curricula that are negotiated, relevant and challenging
- heterogeneous and flexible student groupings
- cooperative learning and collaborative teaching
- authentic and reflective assessment with high expectations
- democratic governance and shared leadership, and
- parental and community involvement in student learning.

These practices have curriculum pedagogy and assessment as their foundation. Thus, teachers need to consider their pedagogical approaches and assessment practices to ensure their teaching is responsive to the learning needs of early adolescents and is targeted to meet the needs of individual learners. This can be achieved through assessment that provides instructionally tractable information for contingent teaching and learning, whereby teachers gather evidence for improving student learning (Yee, 2016). One way to ensure success through the learning journey for middle years students is the effective use of formative assessment. Formative assessment at its core supports teachers in identifying where students are in their learning and allows them to focus on the learning gaps and address the student accordingly by modifying the learning approach that to best suit each student. Using this strategy, teachers can inform their practice while students can inform their learning. Formative assessment offers a set of quality teaching practices that are ideally situated to optimise teaching and learning and engage students in the middle years.

2.3.3 Middle years learning and engagement

Understanding the characteristics of the middle years learner, and the implications of this developmental stage for learning, can help educators identify risk factors that may affect learning. This section explores the literature on the importance of student engagement in learning and how it aligns with the students' social and emotional wellbeing and academic success (Masters, Meiers & Rowe, 2003).

The literature related to students' transition to middle schooling reports a negative impact on student outcomes, with a decline in academic achievement and engagement recorded. Literacy and numeracy skills can decline during adolescence, and some students who are already underachieving can fall further behind their peers (Dinham & Rowe, 2008). McGee, Ward, Gibbons and Harlow (2003) identify the following factors as contributing to declining achievement for some students during the transition from primary to secondary school:

- changes in students' perceptions of themselves as learners, particularly in relation to their beliefs concerning ability and effort
- less interest in school subjects and increased interest in social and nonphysical activities

- different teaching and learning practices at secondary school in comparison with primary school, and
- assessment practices becoming more formal, impersonal and evaluative than the intrinsic approaches of assessment used at primary school.

At this critical developmental stage, young adolescents are pursuing and establishing their individual identity in the complex world in which they live (Chadbourne, 2004). The manner in which young adolescents navigate their complex world, in order to have their needs met in these challenging conditions and circumstances, is largely a function of interactions (positive and negative) with the world around them, particularly with family and schools (Crawford & Rossiter 2006). These issues and concerns can be improved by different organisational, curriculum, assessment and pedagogical approaches (Pendergast, Main & Bahr, 2017).

In an extensive review of the literature on factors affecting middle years learners' engagement and learning outcomes, Gibbs and Poskitt (2010) identify eight factors that influence student engagement (see Table 2.4). Gibbs and Poskitt explain that while engagement is commonly viewed as having three main components—emotional, behavioural and cognitive—attending to emotional and behavioural needs is essential for deep cognitive learning. The first two of the eight factors identified by the authors as influencing student engagement are relationships with teachers and peers, and relational learning. These aspects are also evident in the formative assessment models of Wiliam and Thompson (2008) and Heritage (2010). Gibbs and Poskitt (2010) argue that student learning comprises more than relationships, and they discuss a further six factors that relate to learning: dispositions to be a learner, motivation and interest, personal agency, self-efficacy, goal orientation and academic self-regulated learning. These six factors align very closely with the five key elements in Wiliam and Thompson's (2008) formative assessment model. The focus is on fostering students' learning through engaging them in an encouraging and supportive learning experience. Classrooms in which students are active participants of the teaching, and learning process, and where specific timely feedback is given to guide students with their current learning, are highly effective in engaging students (Joselowsky, 2007). Engagement and achievement are two sides of the same coin, and encouraging students to set goals, make choices in their learning, experiment with new ideas, and self-regulate their learning will enhance both their engagement and achievement.

Table 2.3: Gibbs and Poskitt’s (2010) student engagement factors

Factors	Description
<i>Relationships with teachers and other students</i>	Student–teacher relationship can enhance student learning and foster their social and emotional wellbeing.
<i>Motivation and interest in learning</i>	Motivation energises, directs and sustains student engagement with learning; classroom environment that motivates students ensures their short-term learning and promotes their long-term success.
<i>Goal orientation</i>	Goal-setting promotes student self-efficacy and self-regulation; goals provide the impetus for and the direction of action, while action entails effort and persistence in order to sustain a task. Engaging students in the selection, planning and assessment of a task under free-choice conditions indicates motivation to perform the task.
<i>Academic self-regulation</i>	Self-regulation enables students to be proactive and take ownership of their learning; it involves student monitoring, reflecting on and self-evaluating performance to improve outcomes. Self-regulation cultivates the skills necessary to become lifelong learner.
<i>Self-efficacy</i>	Students’ level of self-efficacy affects their motivation and ability to accomplish a given task. Students’ self-efficacy increases as they become more confident and capable in achieving outcomes.
<i>Relational learning</i>	Relational learning supports students to work collaboratively building on one other’s strengths.
<i>Personal agency</i>	Students’ active involvement in learning and wellbeing allows them to have a voice in their own learning, engages them with learning and develops them as autonomous learners. Learner agency will develop when learners are involved in the whole learning process, including decisions about the curriculum, process and assessment of learning.
<i>Disposition to be a learner</i>	Student behaviours and attitudes toward learning affect the degree to which they are inclined to engage in learning. Developing students’ resilience and willingness to engage in challenging tasks will cognitively engage them in a meaningful learning experience.

In addition to the engagement factors identified by Gibbs and Poskitt (2010), there are some researchers who are of the view that the classroom environment can influence students’ engagement with learning (Evertson & Weinstein., 2006; Jones & Jones., 2004; Marzano,

Marzano & Pickering 2003; McDonald, 2013; Porter, 2007). McDonald, (2013) asserts that learning is a function of the interaction between the students and their environment. As such, the classroom environment affects students' engagement with learning. The quality of the classroom environment matters to both student wellbeing and academic learning. Simonsen et al. (2008) explain that the physical environment of the classroom—including classroom layout, desk arrangement and visual displays—can promote students' engagement in learning and ensure students thrive. Classroom layout and desk arrangement can increase the effectiveness of instruction and encourage collaboration, feedback and discussions between students. Olds claims that 'the motivation to interact with the environment exists in all children as an intrinsic property of life, but the quality of the interactions is dependent upon the possibilities for engagement that the environment provides' (1979, p. 91). Thus, it is important to ensure that the classroom layout and setup are conducive to learning experiences that facilitate group work and peer collaborations and interaction.

Based on Gibbs and Poskitt's (2010) extensive literature review on student engagement, it is evident that students engage in learning when they have clear goals and direction about their learning and when the learning experience is designed to connect them to the real world in a meaningful and enjoyable experience that develops their sense of autonomy and fosters and nurtures relationships between the students and teachers (Pendergast, 2017). With this understanding, instructional strategies need to capitalise on the power of students' engagement and provide opportunities for students to positively interact with teachers and peers and to be goal-oriented, self-regulated and autonomous learners.

In their literature review, Gibbs and Poskitt (2010) identify a range of pedagogical approaches that promote and support student engagement. Table 2.5 lists the three key pedagogical approaches identified and outlines the key strategies by which each approach could be implemented.

Table 2.4: Gibbs and Poskitt’s (2010) pedagogical approaches for student engagement

Engaging students in fun learning activities	Making learning meaningful	Nurturing trusting relationships
<ul style="list-style-type: none"> • Viewing learning from a student perspective • Learning discussions • Cooperative learning • Peer tutoring • Problem based learning • Hands-on work • Demonstrations • Use of videogames and technology 	<ul style="list-style-type: none"> • Indicating purpose for learning and relating content to students’ lives • Supporting students to take ownership and responsibility for their learning • Providing meaningful feedback that moves the learning forward • Setting goals and planning to support students to self-regulate their learning 	<ul style="list-style-type: none"> • Caring about students • Knowing the students • Provide all students with equal opportunities to participate in learning • Treating all students with respect

The pedagogical approaches identified by Gibbs and Poskitt (2010) for engaging middle years learners are congruent with formative assessment practices. Formative assessment, at its core, is responsive to students’ learning needs and represents the self-regulated learning strategies required for students to develop their identities as middle years learners (Jarvela, Jarvenoja, Malmberg & Hadwin, 2013). Typically at this stage, students’ self-concept and social identity are specifically and strongly influenced by school-related factors such as teachers, learning experiences, teaching strategies, peer relationships and the classroom environment (Gullotta, Adams & Markstrom, 2000). As such, formative assessment addresses each student as an individual, including their personalised way of learning, supporting them in developing a positive sense of self as a middle years learner. Wiliam (2013) asserts that when students take an active role in monitoring and regulating their learning, their achievement is increased, which creates a strong sense of self and increases their motivation levels. Similarly, the importance of self-regulation is that it allows students to learn more about themselves as learners and develop the strategies that best allow them to achieve their learning goals

(Csikszentmihalyi, 2014). The process of effective formative assessment provides the opportunity to construct a supportive classroom environment and a learning climate that reflects the collaborative partnership between teachers and students. Successful teaching practices that respond to the needs of young adolescents, along with a strong and positive student–teacher relationship, will allow young adolescent learners to develop positive self-concepts and identity within a supportive environment where it is safe to take risks and learn from mistakes (Giles, 2012).

Quality teaching and learning is contextual and dynamic, particularly for middle years learners. In light of this, effective middle years teachers must consider and make decisions about an array of interacting factors that ultimately influence students’ learning. They need to design a deliberate pedagogical framework that encompasses instructional strategies that are cognisant of and cater for the specific cognitive, social and emotional developmental needs of the middle years learner.

2.3.4 The middle years teacher

It is a widely held belief that the teacher is key to successful educational change (Dinham & Rowe 2008; Fullan 2007; Rowe 2003; Hattie 2012; Pendergast et al. 2015). Drawing on the innovative teacher literature, the key qualities of the teacher are ‘altruism, passion and creativity’ (Cumming & Owen 2001, p. 3), and being highly attuned to the young adolescents’ life, with a particular focus and emphasis on how young adolescents learn and how popular youth culture impacts on the teaching and learning process (Fullan 2007). When identifying the context of the middle years teacher, there is a common conception that the middle years teacher is someone who understands the social and global context of the twenty-first century. Rumble and Aspland (2010) explain that while teachers at any level must possess generic skills to be effective practitioners, middle years teachers must have some specific attributes and qualities.

Stronge, Ward & Grant (2011) explain that generic skills include interpersonal and communication skills; collaborative skills; problem-solving and decision-making skills; organisational and time management skills; and classroom management skills. Additionally, Rumble and Aspland (2010) identify four key attributes pertinent specifically to middle years

teachers (see Figure 2.1). These are (1) the ability to forge middle years learners' identity; develop an integrated curriculum; work collaboratively within professional learning teams to plan and teach; have an in-depth understanding of the characteristics and needs of young adolescences; and willingness to develop positive relationships with students, families and the community (Flockenhaus, 2006; Rumble and Aspland, 2010); (2) the ability to develop a common language and pedagogy of learning, and common values and consistent expectations of students (Kenney & Quigley, 2006); (3) the ability to use content knowledge and teaching strategies pertinent to middle years (OECD, 2011); and (4) the ability to understand current students' expectations and develop appropriate expectations for middle years learners (Dinham & Rowe, 2008).

In Queensland, the Junior Secondary agenda identifies the importance of quality teaching by highlighting how it addresses the academic and social needs of young adolescents. Middle years teachers need to ensure their teaching is responsive to the learning needs of early adolescents and is targeted to meet the needs of individual learners. The six guiding principles proposed by Queensland Education (Department of Education, 2016c) provide middle years teachers and schools with a road map that guides them in supporting the learning of middle years students. As such, it is important to ensure ongoing professional development for middle years teachers, supporting them in developing a deeper understanding of this learning phase and the implications for teaching and learning. This, in turn, will enable teachers to develop a repertoire of quality teaching practices (Rumble & Aspland, 2010).

Curriculum, instruction, learning and assessment are the core of teaching and learning. They underpin everything teachers do. As teachers recognise the growing need to establish a nexus between formative assessment and student learning, assessment practices need to be considered in ways that will support student learning and reinforce a sense of achievement and positive self-esteem, especially in the middle years. The following section discusses the implications for the proposed study and outlines the future research agenda.

2.4 Implications for the proposed research

After reviewing the literature in the areas of formative assessment and middle years, there is evidence to suggest that—despite a range of assessment types being employed—there is a lack

of clarity with regard to the purpose and use of different assessment types (Bennet, 2011; OECD, 2011; Willis & Cowie, 2014). This could have serious implications for middle years learners, given that the literature also states the need for age-appropriate and engaging pedagogy that includes effective formative assessment practices.

Andersson and Palm (2017), Heritage (2008) and the OECD (2011) explain that this lack of clarity can be attributed to a lack of understanding regarding the formative assessment process and how to effectively implement it in the classroom. This suggests a need for future research focusing on helping teachers with the task of assessment. Black and Wiliam's (1998) work provides direction in the hope of influencing future reform to focus on supporting classroom teachers. They conclude that '[a] focus on standards and accountability that ignores the processes of teaching and learning in classrooms will not provide the direction that teachers need in their quest to improve' (p.10). They argue the need to move inside the 'black box' of the classroom and explore the potential for assessment to raise standards as an integrated part of each student's learning. Black and Wiliam's (1998) research provides a solid base to stimulate practitioners' research. Wiliam's (2010) formative assessment model provides a tool to guide this study in exploring the current formative assessment perceptions and practices of Junior Secondary teachers.

For effective implementation of formative assessment, Black and Wiliam (1998) recommend combining empirical and practitioner research that clearly outlines the actual classroom methods used in formative assessment. This study aims to engage teachers to identify their current formative assessment practices and reflect on what works for both teachers and students.

As established in this literature review, the middle years phase of learning is a distinct and significant period in the young adolescents life. It is during this time they develop their own identity and potentially engage as effective learners. In order to address the needs of students during this critical period, Queensland state schools have shifted Year 7 to high school and developed six guiding principles to underpin the Junior Secondary movement. One of these key principles is 'quality teaching'. As is evident from the assessment literature, effective implementation of formative assessment will enable quality teaching and, consequently,

quality learning. A key implication of Rea-Dickins and Gardner's (2000) research is the need for a focus on teacher development. They explain that teachers need opportunities to develop skills in assessing and interpreting individual students' assessment. Similarly, Harlen (2007b) argues that teachers are not competent in administering and evaluating formative assessment; hence, students are unable to use feedback to improve their work or diagnose their misunderstandings. Wiliam (2013) further explains that to improve teaching quality, it is important to create a culture of continuous improvement among teachers. Wylie and Lyon (2012) explain that effective implementation of formative assessment requires changes on the part of both teachers and students. They note that 'the nature of these changes, how they interact with other classroom processes, and the knowledge and skills required is not fully understood' (p.2).

It is apparent from this literature review that there is a theoretical knowledge base for formative assessment; according to Wylie and Lyon (2012), what is needed now is ongoing formative assessment research to address: (a) the kind of instructional knowledge teachers need to engage in, interpret and act appropriately on evidence from formative assessment; (b) the kind of feedback teachers need to improve the quality and frequency of formative assessment; and (c) how teachers develop routines to help process evidence collected from formative assessment. This study intends to address this gap and add to the body of knowledge regarding effective implementation of formative assessment practices. This will aid in identifying linkages between effective formative assessment practices and students' learning and derive implications for professional development and further research.

Educators need to understand how teaching and learning are connected—and the implications for the middle years learner—to understand what happens in the classroom (Alter & Coggshall, 2009; Blömeke & Delaney, 2012). As Wiliam (2007) succinctly states, 'assessment is the bridge between teaching and learning' (p.184). The *Queensland State School Strategy 2018–2022* provides a concrete direction for educators to employ quality evidence-based practices focused on success for every student. With this imperative, teachers need to be supported in understanding what evidence-based practice looks like in the classroom. Only then can assessment fulfil its potential role as the most powerful force in systematic education reform (Wiliam, 2006; 2013).

2.5 Summary

Ensuring the engagement and success of middle years learners requires a pedagogical framework that focuses on students' innovation and ability to apply skills and knowledge in new contexts in creative ways (Fingal, 2012). Kelemen (2010) explains that traditional pedagogies are no longer appropriate and suggests developing pedagogies that focus on knowledge application, as opposed to knowledge acquisition, to enable students to become effective participants in the continually changing globalised world. In this context, formative assessment approaches build students' 'learning to learn' skills by emphasising the process of teaching and learning, and involving students as partners in that process (Wiliam, 2008), effecting a pedagogy that aligns with the demands of our globalised world.

There is a general consensus on how students learn best: 'virtually all the authoritative voices in each field are calling for schools that are student-centred, active, experiential, democratic, collaborative, and yet rigorous and challenging' (Zemelman, Daniels & Hyde, 2005, p. viii). This consensus applies to different subject areas and year levels. It includes 13 intertwined principles about best practice; namely, that students learn best when teaching and learning is student-centred, experiential, holistic, authentic, expressive, reflective, social, collaborative, democratic, cognitive, developmental, constructivist and challenging. The detail of each of these principles, as documented by Zemelman, Daniels & Hyde, (2005,), captures the essence of the middle years reflected in the Junior Secondary Guiding Principles and, equally, reflects effective formative assessment practices.

It is evident from the literature that formative assessment offers a promising framework to support students' learning progress, specifically in the middle years, as it capitalises on students' proximal development. Researchers have established that effective implementation of formative assessment can potentially support student learning and engage both teachers and students in a collaborative, supporting teaching and learning development. Based on these understandings, this study will examine how effective implementation of formative assessment in the Junior Secondary phase can both engage and aid teachers in identifying and catering for students' learning needs through modifying instruction that best address individual students' learning gaps, thus, ensuring that students' progress in their learning. This study aligns with

the Queensland state school strategic focus on supporting the Junior Secondary initiative by ensuring that every student succeeds (Department of Education, 2018). This study aims to add to the body of work relating to factors that influence the use of teaching strategies that enhance teaching and learning, in particular the use of formative assessments in the classroom. It is anticipated that findings from this study may provide educators and schools with insights for improving how formative assessments are utilised and how teachers can be supported to effectively engage with these assessment practices.

CHAPTER 3

Theoretical framing and methodology

3.1 Introduction

This chapter provides the theoretical framing and methodology informing the research. Crotty (1998) stresses the importance of having a clear theoretical framework that underpins the selected methodology for the study. This ensures that the research design and method are applicably aligned with the philosophical, ontological and epistemological perspectives underpinning the study's research questions and aims (Silverman, 2010). This chapter outlines the rationale for the research design and describes the research approach and the methods used in this study. The data analysis approach is then explained, which follows Smith, Flower & Larkin (2009) Interpretive Phenomenological Analysis (IPA) inductive multi-stage approach in order to establish the essence and meaning of the phenomenon being investigated. The chapter concludes with detailed discussion of ethical considerations, threats to reliability and validity and a chapter summary.

3.2 Methodology

The aim of this study is to examine Junior Secondary teachers' perceived understanding of formative assessment and how it influences teachers' pedagogical choices and practices in the classroom. For this reason, this study adopts the phenomenological inquiry paradigm, using qualitative and naturalistic approaches to inductively and holistically understand the teachers' experience when implementing formative assessment. The following section will briefly outline the theorisation of phenomenology, providing an insight for deeper understanding of the methodology of phenomenology. It will then introduce IPA as the approach to analysing the data for the proposed study.

3.2.1 Brief chronology of phenomenology

Husserl (1931) was the first to conceptualise and theorise phenomenology as a qualitative research method in order to study people's lived experiences. Since then, a number of theorists have expanded on the application and further developed Husserl's pioneering work to align the theory with contemporary research (Moustakas, 1994; Van Manen, 1990). Van Manen emphasises that 'hermeneutical phenomenology is the "lived experience" of research participants and the interpretation of the life they have lived and experienced' (1990, p.4). Moustakas (1994), a seminal author in phenomenology, advocates transcendent phenomenology, which focusses on describing the lived experience of the subject rather than the researcher's interpretations of the personal experience. Moustakas conceives phenomenology as an approach to determine the intention and meaning of the experience.

This view supports Heidegger's (2008) conception of phenomenology as an interpretive experience of what it means to exist in the world. Accordingly, phenomenology is deeply rooted in understanding and comprehending human experience. As the main aim of this study is to investigate the formative assessment perceptions and practices of Junior Secondary teachers and to explore their lived experience, phenomenology is the best suited method, as it will assist in understanding and making meaning of the teachers' own lived experiences with formative assessment in their classrooms. Consequently, the data can be effectively analysed using a method known as Interpretive Phenomenological Analysis (IPA). The work of Smith, Flowers and Larkin (2009) has revolutionised the concept and theory of phenomenology in current practice—leading to this framework.

3.2.2 Interpretive Phenomenological Analysis (IPA)

Interpretive Phenomenological Analysis was developed by Smith in the mid-1990s and was advanced to support in-depth exploration and deeper understanding of individuals' subjective experiences (Smith, 2004). It is an approach that richly 'describe[s] the common meaning for several individuals of their lived experiences of a concept or phenomenon' (Creswell, 2013, p.76). Thus, IPA provides a close examination of how people make sense of their lived experiences.

The term 'interpretive phenomenological analysis' signifies the combination of phenomenology and interpretation. As Smith and Osborn explain, 'it involves a detailed examination of the participants' world and their own individual personal perception and their view of the world insider perspective' (2008, p. 53). IPA, as defined by Smith, Flowers and Larkin (2009), permits a more flexible and interpretive process, whereby the researcher must interpret individuals' mental and emotional states based on what they say. Additionally, the meanings attached to fieldwork experiences are inevitably framed by the researcher's own implicit concepts. Ultimately, IPA attempts to get as close as possible to the participants' world using an interpretative process for meaning-making. This approach enables the researcher to not just 'bear witness' to emergent themes, but also become an active participant in the discovery of those themes (Pringle, Drummond, McLafferty & Hendry, 2011).

Phenomenology, hermeneutics and idiography are three individual theoretical methodologies; however, as conceived by Smith and Osborn (2008), a combination of these three theoretical principles underpins IPA. IPA draws upon aspects of each of these three theoretical methodologies in order to understand and interpret the lived meaning of participants. Firstly, based on phenomenology, IPA explores individuals' views or accounts of an event or experience as it appears to the individuals. It aims to identify the essence of the experience and what makes a particular experience significant or unique. Lavery (2003) defines phenomenology as the study of 'lived experience' and how the phenomenon appears to the consciousness, with a focus on what it means to exist in a given experience and the meaning of an experience to the individual involved. While Husserl (1964) proposed that phenomenological research should be a purely descriptive process, focused on collecting information and reflecting on a given experience to gain sense of its underlying order, structure and coherence, IPA focuses on providing an account of how things appear to our awareness and how the world appears to us in terms of our subjective experience of it. Within Husserl's framework, we see reality in terms of what he refers to as the 'natural attitude', where we proceed throughout our lives with the common natural belief that the reality we inhabit is fundamentally separable from our subjective experience of it: 'the world is out there relative to our experience of it'. In contrast to the natural attitude, Husserl proposed the phenomenological attitude, whereby we suspend or bracket our belief in the natural attitude

by recognising that it is a kind of belief. IPA does not attempt to provide an objective view of the lived experience; rather, the researcher must have a strong personal response to the data and recognise that findings are simply an interpretation, not a reflection.

The IPA approach also differs from traditional phenomenological approaches in its ability not only to identify, but also to capitalise on both convergent and divergent themes. As such, it often highlights the value of those differences, rather than simply focusing on the commonalities; this latter approach of commonality-seeking tends to be prioritised in more traditional phenomenological approaches (Pringle et al., 2011). The detailed accounts of the experiences as told by the research participants will help create a greater understanding of Junior Secondary teachers' perceptions of formative assessment and what they means for them—and, thus, to explore the inter-subjectivity of how teachers implement formative assessment and what decisions do they take to cater for different students learning needs.

Secondly, IPA attempts to understand how participants make sense of their personal experience (Smith, 2004). IPA realises the importance to understand 'individuals' mindset and the language which mediates individuals' experiences of the world' (Freeman, 2011, p.546). Thus, IPA endeavours to understand individuals 'personal conceptions through an interpretive process. This interpretive process is often referred to as double hermeneutic, this is because as the participants make meaning of their world, the researcher attempts to make sense and decode the participants meaning making' (Smith & Osborn, 2008).

The third theoretical basis for IPA is idiography. The IPA idiographic approach focuses on the detailed analysis of every single case before making general statements. Focusing on the particular rather than the universal (Baier & Warnock, 1990), IPA is primarily concerned with 'what happens when the everyday flow of lived experience takes on a particular significance for people' (Smith, Flowers & Larkin, 2009, p. 12). This reflects the epistemological and theoretical orientation adopted in this study regarding the nature of knowledge. It is also consistent with the qualitative ontological stance that every individual constructs their own meaning in a lived experience and, thus, that experience is unique to every individual. IPA focuses on the construction of phenomena in real-world settings involving individuals immersed within it. For this research, it is important to understand the individual perspective

of each of the three Junior Secondary teachers on formative assessment and their interpretation of the formative assessment experience in the classroom, making IPA a suitable lens to apply.

Although IPA has its roots in phenomenology, IPA looks beyond simply uncovering meaning, and employs a double hermeneutic approach, a process that includes both discovery and interpretation of the meaning of an experience while remaining intrinsically focused on the individual and the experience itself (Pringle et al., 2009). The IPA approach is flexible and responsive, and encourages an organic flow of questioning, interpretation and meaning-making—for both the participant and the researcher—as the process unfolds (Smith et al., 2009; Willig, 2008). It involves not only examining what is said, but also looking beyond the words themselves to begin questioning what those words might mean in the larger context of the experience. Figure 3.1 illustrates the key features underpinning IPA.

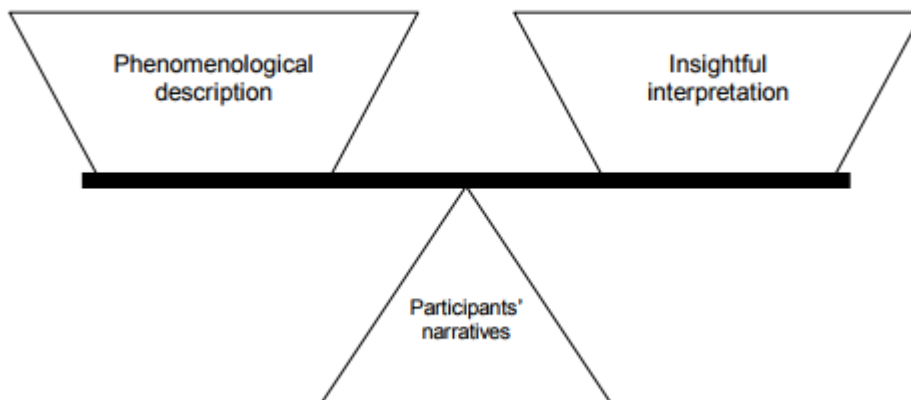


Figure 3.1: A diagrammatic representation of IPA (adapted from Smith et al., 2004).

This figure is a diagrammatic representation of IPA as a ‘balance’ of participants’ narratives between describing a phenomenon and insightfully interpreting the phenomenon. This is important for this study, as it is necessary for the Junior Secondary teachers to not only define formative assessment but also understand what it looks like in practice. The next section describes the selected research setting and participants.

3.3 Research design

This section outlines the research design and explains the research process and methods employed. According to Dale and Mason (2010), decisions about research design are grounded in the practice, process and context of the research situation. This research is interested in teachers' perceptions of formative assessment and seeks to explore how Junior Secondary teachers implement formative assessment pedagogy and practice in their daily classroom and what meaning they make out of it. Smith et al. (2009) advocate the relevance and value of IPA as a methodology for inquiring into and understanding educational practice. Considering the key aim of this study, the three theoretical principles of IPA—focusing on the participants' own perspectives and beliefs on their lived experiences (Husserl, 1970), closely examining the unique experience of each individual participant, from which themes that respond to the research questions emerge (Eatough, Smith & Shaw, 2008) and aligning to the interpretative tradition of meaning-making (hermeneutic)—offer an appropriate approach for understanding and documenting teachers' views and experience of formative assessment in terms of how it is implemented in their daily classroom practice.

In order to support the exploration of teachers' perspectives, the research design was planned to allow teachers opportunities to construct their meaning. This was achieved through the teachers' semi-structured interviews and focus group. The classroom observations allowed for the understanding of teachers' formative assessment practices within the context in which it takes place, and the interplay between the characteristics of the context and how various agents of the context respond to it. 'The aim is not to judge, but to understand' (Hammersley, 2005, p. 395). Figure 3.2 illustrates the main steps of this research project.

The following section will discuss the research questions, research setting, participants and research process and methods.

The Research Process

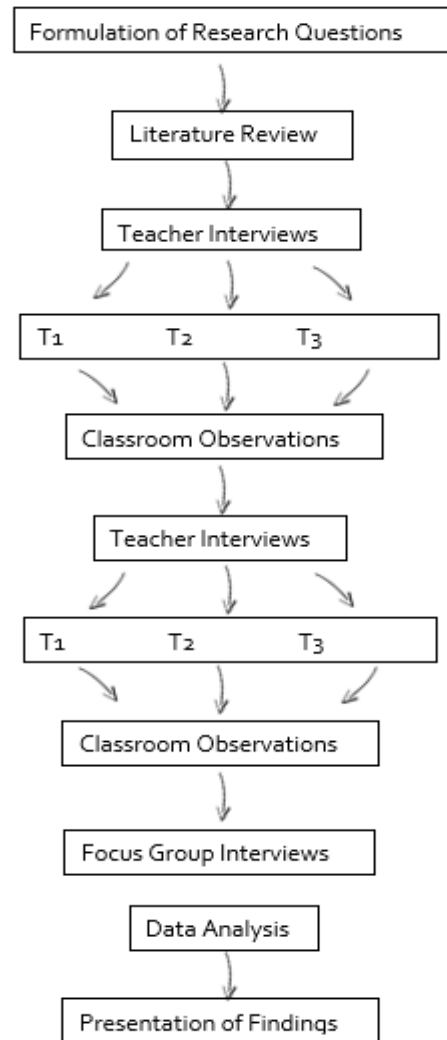


Figure 3.2: The research process

3.3.1 Research Questions

The aim of this study examines Junior Secondary teachers' perceived understanding of formative assessment and how it influences teachers' pedagogical choices and practices in the classroom. To address this aim, the overarching research question for the study is:

What are teachers' perceptions of formative assessment and how do they impact practices of Junior Secondary teachers at one school?

This main research question was investigated through the following key three questions:

- Research Question 1: What are Junior Secondary teachers’ perceived understanding of formative assessment?
- Research Question 2: What are Junior Secondary teachers’ classroom practices of formative assessment?
- Research Question 3: How do the Junior Secondary teachers’ perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?

Table 3.1 outlines the three key research questions, the methods used and the analysis plan to answer each question.

Table 3.1: Outline of research methods and analysis plan

Research question	Data collection method	Analysis plan
1. What are Junior Secondary teachers’ perceived understanding of formative assessment?	Semi-structured interviews Focus groups	Thematic analysis (NVivo) - Identify and interpret common, recurrent and emergent themes - Analysing patterns among themes. Formative assessment theoretical framework will be used as a unit of analysis to code the data.
2. What are Junior Secondary teachers’ classroom practices of formative assessment?	Videod classroom Observations Semi-structured interviews Field documents Focus groups	Thematic analysis (NVivo) - Identify and interpret common, recurrent and emergent themes - Analysing patterns among themes - Aligning teachers’ practices to formative assessment theoretical framework.
3. How do the Junior Secondary teachers’ perceptions of formative assessment align with their practices in the classroom in relation to positive student learning outcomes?	All data sets	Thematic analysis (NVivo) - Identify and interpret common, recurrent and emergent themes - Analysing patterns among themes. Formative assessment theoretical framework will be used as a unit of analysis to code the data.

3.3.2 Research setting

The study was conducted in a secondary public school within a metropolitan region of Queensland, Australia. The focus on the middle years was underpinned and motivated by the Queensland Department of Education's introduction of the Junior Secondary phase of learning in 2013 encompassing students in Years 7 to 9 (aged 12–15 years). These students' experience of schooling was influenced by structural changes aligned to the philosophy of Middle Schooling (Department of Education, 2016c). This change defined Years 7 to 9 as a distinct phase of schooling, and this reform was more about a consistent approach to pedagogical, relational and organisational practice for Years 7 to 9 than the structural move of Year 7 into a high school setting. It signalled an intentional approach to teaching and learning in the early adolescent years to bring about improved educational experiences for middle years learners. Hence, the presumption is made that the Junior Secondary teachers will have a more comprehensive knowledge of this learning phase and its implications for teaching and learning due to the department's policies on Junior Secondary.

This particular Queensland State High School was approached due to its achievement of second place in the Queensland Showcase Awards for Excellence in Schools (Showcase Awards) two years in a row (2015 and 2016). The Showcase Awards are presented annually to Queensland state schools with excellent practices that significantly improve outcomes for students. This was indicative of the school's commitment to evidence-based practice and the implementation of best practice that supports teachers in identifying where students are in their learning and how to support them in achieving their learning goals using effective pedagogical practice. This was particularly promising as it represents the essence of formative assessment practices. Additionally, the school represented a middle income and diverse community; that is, a school that represents general population within Queensland secondary schools. Contact was made with the school's principal to request permission to conduct the study at their school. The principal supported the researcher in the process of recruiting the research participants. A voluntary, purposive sample was selected by sending a research participation invitation to all Junior Secondary teachers at the school. Three teachers responded to the invitation expressing interest in participating and all were then invited to participate in the study.

The school on which this research study was conducted provides Year 7 to Year 12 co-educational experience. The school enjoys a reputation of academic excellence and innovation, a tradition that has spanned many years. One of the school's aims is to revolutionise teaching and learning so that students are creative, curious problem-solvers ready for a future that is unknown. The school is a large metropolitan school with an enrolment in excess of 1500 students. Of these students, over 50 per cent come from a language background other than English.

In preparing for the Junior Secondary years, the school has placed a strong emphasis on providing Junior Secondary students with education that is responsive to the developmental needs of students in the early years of adolescence. The school has committed to developing the Junior Secondary identity through:

- fewer teachers per class grouping and smaller class sizes where teachers 'know the learner'
- home rooms to reduce movement and support transition into high school
- rigorous and engaging curriculum choices
- intensive tracking, identification and support processes, and
- a student success strategy where a caring adult connects with each student each day.

The school has developed a comprehensive curriculum and extra-curricular program that addresses individual students' learning needs. The school has adopted *The Art and Science of Teaching* (Marzano, 2013) as a framework to support a consistent evidence-based approach to effective instruction. This is significant, as formative assessment practice is interwoven through Marzano's framework; as he explains 'formative assessments might be one of the more powerful weapons in a teacher's arsenal' (Marzano, 2013, p. 13). The school has developed a range of processes to support the enactment of an evidence-based pedagogical framework, particularly in relation to curriculum planning, assessment and the development of a culture of professional learning. Collaborative team planning is a characteristic of the school; each group of teachers under each department plans the unit of work being taught together. Each of the teachers within that department is then allocated a number of lessons in which they are responsible for the preparation of the PowerPoint presentations and learning

activities. After a set number of lessons, the teachers meet to share feedback on how the lessons went for the teachers and students and differentiate accordingly. The school supports the professional learning of teachers and has developed different professional learning communities that focus on various learning priorities that enable the professional growth of teachers. One of the professional learning groups' key focuses is on formative assessment. Coincidentally, the formative assessment professional learning group was led by one of the research participants.

This context sheds the light on the school's emphasis on professional collaboration for planning and evidence-based practice in an effort to ensure that both students and teachers are supported. This context is important for this study; it implies that the participants have existing knowledge of evidence-based practices and lived experience with formative assessment. The way the school structures teachers' professional learning suggests that teachers continue to expand their understanding of different teaching practices. Thus, the participants are able to provide rich accounts of their lived experiences with formative assessment.

3.3.3 Participants

It is important to provide a rationale for selection of Junior Secondary teachers, as Smith et al. (2009) argue that 'samples are selected purposively because they can offer a research project insight into a particular experience' (p. 48). As such, this study sought to purposively select Junior Secondary teachers in a school that implements formative assessment practices. This was in adherence to Smith et al.'s suggestion that the 'primary concern of IPA is with a detailed account of individual experience as the issue is quality, not quantity, and given the complexity of most human phenomena, IPA studies usually benefit from a concentrated focus on a small number of cases' (2009, p. 51). Smith (2004) explains that a small sample allows for a deeper and more detailed nuanced analysis. He further argues that IPA can be conducted on single case (Radley & Chamberlain, 2001; Smith, 1996; Yin, 2014), stating that 'such work is important in clearly marking the a place for the significant contribution of the case in its own right' (Smith, 2004, p. 42). Reviewing a single case study in depth allows for insight into the particular individual and their response to the specific situation. It also allows connections to

be made between different aspects of individuals' accounts. Baier and Warnock (1990) point out that delving deeper into the particular will lead us to the universal.

The participants for this study were selected through purposeful sampling, ensuring that they had direct experience with formative assessment. The three participants were from the same teaching department, and there were two female and one male teacher involved, all within the 25–45 years age bracket. Two of the participants were on fixed-term contracts, where the contracts end at the end of the school year; the third had a permanent position. The teaching experience of the participants ranged from four to 25 years. Initially, the teachers were sent the research information sheet outlining the research purpose, research plan and data collection strategy. In a brief meeting with all research participants, a consent form was presented to all participants for signing and return.

The demographic information in Table 3.2 presents details about the teachers who participated in the study.

Table 3.2: Participant demographics (see Appendix C)

Teachers	Gender	Qualifications	Teaching subject	Years teaching	Years teaching middle years	Year level
<i>Anna</i>	Female	Bachelor of Arts / Master of Educational Studies	English, History & Geography	4.5	4.5	8–9
<i>Cullum</i>	Male	Bachelor of History Education with Honours	English, History & Geography	25	20	8
<i>Rose</i>	Female	Bachelor of Education	English	16	16	9

3.4 Data sources and research plan

The steps followed in this study were intertwined and did not follow a linear process. For example, although the questions for teacher interviews were mainly informed by the literature

review, the initial teachers' interview and subsequent classroom observations helped refine the questions for the second round of teachers' interview and focus group questions. New questions were added and some were abandoned based on individual classroom observations and seeking clarifications for individual teachers' practices. Data analysis was ongoing and started from the first interviews. Overall, the research data were generated constructively, around a semi-structured framework, with each step informing the next. Therefore, data collection and analysis were iterative processes.

3.4.1 Data collection plan

All the data were collected and stored at the home of the researcher with back-up copies placed on hard-drive. Additional back-up copies of materials were stored using Google Drive on the researcher's personal computer, which is password-protected and stored at the home of the researcher.

To gain an in-depth understanding of how teachers at the research site perceive and implement formative assessment practices, and to ensure alignment with the nature of formative assessment, this study was conducted and the data collected over three stages at three different points in time. Each stage represents the process teachers undergo to gauge students' learning progression throughout the teaching unit. These steps incorporated the initial understanding of the student prior to learning, knowledge acquisition during learning and assessment of students at the end of the unit to determine whether the intended learning objectives of the unit have been achieved. The aim and the methods of the data collected in each stage are as outlined below.

- **Stage 1:** data from this stage aimed to understand the three Junior Secondary teachers' perceptions of formative assessment. This was conducted through individual interviews at the beginning of the term before the commencement of the unit of work.
- **Stage 2:** in this stage the data were gathered during the teaching and learning of the unit of work and included classroom observations accompanied by teacher semi-structured interviews. Data from Stage 2 aimed to further capture teachers' practices through classroom observations and follow-up interviews. It was intended to support

understanding formative assessment with the view to identify the ways in which it manifests itself in the classroom.

- **Stage 3:** the data in this stage included the focus group discussions. The key aim of the focus group was to provide teachers with an opportunity to reflect on their shared experience and provide clarification regarding what they perceive to be hindering or enabling factors of effective formative assessment as a group.

Figure 3.3 illustrates the data collection stages for this study.

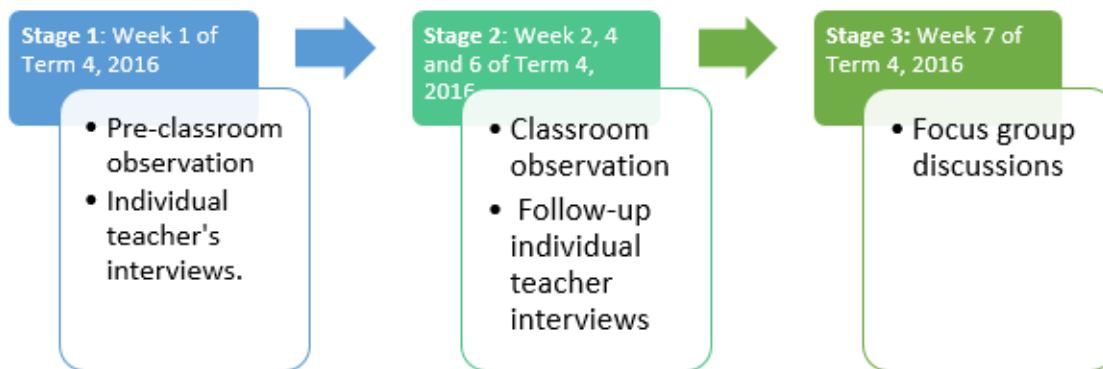


Figure 3.3: Data collection stages

The research data were generated through the use of a number of research methods:

- interviews were conducted to explore teachers' perceptions of formative assessment and identify their views of their formative assessment practices;
- observations were conducted to describe teachers' formative assessment practices and contribute to the understanding of key ideas emerging from the teachers' interviews; and
- focus group interviews were conducted on teachers' reflections and understanding, with the participants sharing understandings and experience of formative assessment.

The following section provides a rationale for the use of interviews, classroom observations, focus group discussions and field notes as data sources for this study.

3.4.2 Data sources

The researcher's epistemological assumptions have implications for the choice of research methods, and the way in which data is gathered has further implications for data analysis. The selection of semi-structured interviews, classroom observations and focus group discussion coincides with the ontological and methodological views of this study, focusing on understanding the social world through observing, participating and experiencing 'real life' (Dale & Mason., 2010, p. 85) settings and interactions, and recognising the importance of interactions, actions and behaviours in the meaning-making process of the researched phenomenon (formative assessment). The data sources in this study included semi-structured interviews, classroom observations, focus group discussions and field documents

3.4.2.1 Semi-structured interviews

As this study aims to examine Junior Secondary teachers' perceived understanding of formative assessment and how it influences their pedagogical choices and practices in the classroom, it was vital to conduct semi-structured interviews to provide information on aspects of the phenomenon that cannot be readily observed (Merriam, 1998). According to Englander (2012), an important aspect of interviews in phenomenology is to 'keep track of the three dimensions of time present in the interview situation. The participant is in the present, describing a memory of an experience during which she [or he] remembered something' (p.29). Consequently the semi-structured interview is crucial for qualitative research, as it relies on open-ended questions intentionally designed to elicit detailed responses (Englander, 2012).

McMillan and Schumacher (2010) explain that this form of interviewing allows researchers to use both a structured approach as well as a more 'conversational' style in order to answer the research questions. Silverman (2006) explains:

[T]he importance of open-ended interviews, as this enables respondents to demonstrate their unique way of looking at the world. It recognises that what is a suitable sequence of questions for one respondent might be less suitable for another, and open-ended questions enable important but unanticipated issues to be raised. (p.109)

Before the commencement of the interviews, the researcher met with all teachers to answer and/or clarify any questions they might have with regard to the study and to collect the signed consent form from each participant. At that time, the researcher was also able to acquire accurate demographic data from each of the participants.

Interviews with the teachers were conducted in Stages 1 and 2 of the study. The teachers were formally interviewed two times throughout the course of the study. The first interview was conducted in the first week of Term 4 in 2016. Before classroom observations, the teachers were asked a range of questions about formative assessment (see Appendix F for questions). The questions, developed after close examination of the formative assessment literature, focused on understanding participants' views and understandings of formative assessment and aimed to capture their personal accounts, stories and experiences to provide a comprehensive description of the phenomenon of formative assessment. The interview questions were designed to elicit responses central to the three research questions. The use of open-ended questions allowed the participants to respond in ways that overlapped the research questions and helped identify recurring themes and patterns central to the study's questions.

Interview questions one through three were designed to elicit responses to the first research question, which focuses on middle school teachers' description and understanding of formative assessment and its practices. Question one provides the participants with a definition of formative assessment practices and asks them to consider how they might change or add to the definition. This definition was chosen as it refers to a wide variety of practices that teachers use to ascertain students' progress during a lesson and/or a unit of work. The definition was an open definition that allowed teachers to unpack formative assessment practices and further discuss their interpretation of the definition, thus providing an insight into teachers' perceived understanding of formative assessment and its practices. Wiliam asserts that teachers 'need a definition that can accommodate all the ways in which assessment can shape instruction' (2011, p. 40). Questions two and three allow teachers to describe their experiences with formative assessment practices, the frequency of these practices, and their understanding of the benefits (Creswell, 2013; Merriam, 2009; Patton, 2002).

Interview questions four through seven were designed to address the second research question, which most directly correlates to teaching and learning instruction in relation to the formative assessment practices. Kurtz et al. (2010) stress the importance of alignment between enacted standards, classroom instruction and assessment practices. According to Kurtz et al., alignment of these elements constitutes ‘a necessary condition for assessment results to yield valid inferences about what students know’ (2010, p. 132). The participants responses to questions four through seven provided crucial insight into their perceptions of formative assessment theory, common experiences with FA practices and understanding of adjusting instruction as a component of formative assessment practices (Doubet, 2015; Kurtz et al., 2010; Marzano, 2010; Shute, 2008).

Interview questions eight through thirteen provided the participants with the opportunity to describe their formative assessment practices and identify any difficulties that limit their ability to implement formative assessment practices consistently, which frames the central focus of research questions one and three in the study. Doubet (2015) explains that there is often a lack of clarity among teachers as to when and how to assess student understanding formatively. Consequently, many teachers settle into routines, such as questioning students at surface level using lower-level thinking skills (recall only) and overlooking student misconceptions for the sake of covering the curriculum content (Buck & Trauth-Nare, 2009; Dorn, 2010; Shute, 2008). Understanding the obstacles that prevent teachers from implementing formative assessment practices more consistently benefits student learning progress and develops a pathway for professional accountability that highlights instructional improvement among middle school teachers (Dorn, 2010; Doubet, 2015). Questions fourteen provide insight into resources and professional learning experiences that middle school teachers find beneficial to help them use formative assessment practices more consistently.

The second interview was conducted after the completion of the second observation in week five of Term 4, 2016, and was designed to seek clarification and enable teachers to reflect on their practices and decision-making in the lessons. At the conclusion of the interviews, the participants were asked whether they would like to add any information that they felt important for the research. The semi-structured nature of the interviews allowed for a developmental research approach to be adopted through the entirety of the interviews, with some of the

question prompts explored further depending on the dynamics of the interviews. All interviews took approximately 60 minutes each and were undertaken individually and face-to-face in an office setting. The interviews were audiotaped and later transcribed.

3.4.2.2 Observations

Observation is defined as a research method that involves ‘immersing of researchers in a setting to generate data through experiencing and observing that setting at first hand’ (Manson, 2002, p.85). The engagement in the social setting is important to capture naturally occurring phenomena within the setting in which they occur (Denzin, 1989). Using observations as a method for data generation reflects the view that social situations can be interpreted through understanding and making sense of them in consideration of the setting-specific factors. Manson (2002) recognises the significance of interactions, actions and behaviours in making sense of social reality and suggests that the social world can be best interpreted by observing, participating and experiencing ‘real-life’ settings and interactions.

In light of this, the classroom observation was intended to provide opportunity to observe how teachers develop classroom routines to help them process evidence from students ‘on the fly’. This followed the advice of Bakeman and Quera (2012) on how observation allows the researcher to understand the ‘process—how things work and not just outcomes, observations captures behaviour unfolding in time, which is essential to understanding process’ (p.208). The observation allowed for development of an understanding of the teachers’ instructional skills and the different aspects of the instructional setting.

The classroom observations were conducted in Stage 2 of the study and were based on note-taking and included comments on instructional components—for example, the learning objective, activity, content, materials, grouping, time, teachers’ role and assessment practices. All classroom observations were video-recorded. This was important as it provided an archive for authenticating and revisiting the findings. Three sets of classroom observations were conducted in each classroom and observed a total of nine lessons as a non-participant observer with the purpose of exploring the nature of enacted teaching practices and how they are received by students. Each observation for each teacher was conducted at different periods throughout the unit of work: one at the beginning of the unit, one in the middle and one at the

end of the teaching unit (see Table 3.3 for timeline of observed lessons). After the second classroom observation, the teachers were individually interviewed to clarify any emerging issues and provide their interpretation for the observed formative assessment practices. Before attending the second interview, teachers were given the recording of their observed lessons, as it was important for the teachers to offer their reflections on their own practice during their second interview. Thus, the use of recorded lessons supported the process of constructive meaning-making.

Table 3.3: Timeline of observed lessons

Date	Teacher	Lesson sequence
Term 4 week 2-10 October	T1- observation 1	Lesson 2
Term 4 week 2-10 October	T3- observation 1	Lesson 2
Term 4 week 2-10 October	T2-observation 1	Lesson 2
Term 4 week 4-24 October	T1- observation 2	Lesson 8
Term 4 week 4-24 October	T3- observation 2	Lesson 6
Term 4 week 4-24 October	T2-observation 2	Lesson 8
Term 4 week 6-10 November	T1- observation 3	Lesson 14
Term 4 week 6-10 November	T3- observation 3	Lesson 15
Term 4 week 6-10 November	T2-observation 3	Lesson 15

3.4.2.3 Focus Groups

Focus groups as a method aligns with the theoretical and methodological views of this study. The theoretical framework underpinning this study, including social constructivism and formative assessment theory, reflects the aspects of collaboration and social interactions as key elements of the theories. Similarly, focus group interviews emphasise the collaborative and social interactions inherent in group dynamics. They provide a collaborative setting in which the participants and the researcher discuss and reflect on their shared experiences with the phenomenon (Creswell, 2013; Merriam, 2009; Patton, 2002). Focus groups with teachers allow for beliefs to be developed and help elicit a diversity of views within a group context.

Focus groups provide more detailed and wide-ranging information than one-to-one interviews (Krueger & Casey, 2009). Thus, while the interview provided insight on individual teacher perspectives, the focus group discussions further enhanced and supported formative assessment meaning-making.

The focus groups were conducted in Stage 3 of the data collection, following the last classroom observation, the teachers were invited to the focus group discussion in week seven of Term 4, 2016. Relying on the collaborative and social interactions inherent in group dynamics, the focus group discussion employed scenario-based questions (see Appendix G for questions). Moustakas (1994) suggests that '[b]road questions ... may also facilitate the obtaining of rich, vital, substantive descriptions of the co-researcher's experience of the phenomenon' (p.116). Alvesson and Sandberg (2011) explain that scenario-based questions allow the researcher to create 'interesting research', stimulating challenging ideas and uncovering participants' assumptions and perceptions. The utilisation of Wiliam's (2016) broad scenario-based questions allowed the participants to engage in a dialogue in which they were able to reflect on their shared experience with formative assessment. The scenarios presented narrative descriptions of different formative assessment practices, manufactured for the purpose of stimulating discussion about formative assessment practices and providing insight into teachers' perceptions of the scenario—thereby revealing their understanding and views of formative assessment. In some instances during the focus group discussion, guiding and follow-up questions were needed to clarify responses. In addition, there were seven questions that aided in the teachers' reflection process and enabled the teachers to clarify and elaborate on their perceptions of formative assessment as the discussion progressed. The focus group participants met in the office of one of the teachers, and the group interview took approximately 60 minutes. Following the same process as the semi-structured individual interviews, focus group discussions were recorded and later transcribed.

3.4.2.4 Field documents

Field documents consisted of teachers' planning documents, researcher's notes and reflections, observations and anecdotal notes. The field documents served as 'corroborating evidence from different sources to shed light on a theme or perspective' (Creswell, 2013, p.251). The main

objective of the utilisation of multiple data sources in this study is to enrich the understanding of formative assessment and to ensure validating the data across the different data sets. Table 3.4 summarises the links between the alignment of research methods and the aims and objectives of the study.

Table 3.4: Description of data methods

Research Methods	Nature	Research Aims and Objectives	Application
Teacher interviews	<ul style="list-style-type: none"> • Semi-structured • Audio recorded 	<ul style="list-style-type: none"> • To understand teacher’s perspectives and views on formative assessment 	<ul style="list-style-type: none"> • With three teachers • Data Collection Stage 1&2
Classroom observations and follow-up interviews	<ul style="list-style-type: none"> • Semi-structured • Video-recorded 	<ul style="list-style-type: none"> • To describe formative assessment practices in class context • To support the teachers’ interview finding and provide insight into classroom practices 	<ul style="list-style-type: none"> • 9 lessons (3 lessons with T1 in Year 9 English class, 3 lessons with T2 in Year 8 English class and 3 lessons with T3 in Year 8 Geography class) • Data Collection Stage 2
Focus group	<ul style="list-style-type: none"> • Semi-structured • Audio recorded 	<ul style="list-style-type: none"> • To support teachers’ reflections • To provide social interactions for understanding the participants shared experiences with formative assessment 	<ul style="list-style-type: none"> • One focus group discussion with the 3 teachers • Data Collection Stage 3
Field notes	<ul style="list-style-type: none"> • Observational notes • Teachers’ unit plans 	<ul style="list-style-type: none"> • To support other research methods 	<ul style="list-style-type: none"> • Teachers sharing planning documents

3.5 Data analysis

In managing the data analysis process, Miles, Huberman, and Saldaña (2014) suggest three simultaneous stages of data analysis: data reduction, data display and conclusion drawing. They suggest that this is an interactive model, and that there is not a linear sequence. While Miles, Huberman, and Saldaña (2014) present the model in stages, they are not reflective of a

liner sequence, but rather they reflect stages that occur in a cyclic and simultaneous manner. These stages of data analysis is reflected in this study as follows;

- **Stage 1:** preparing the raw data and transcribing all interviews and focus group data and reviewing all classroom observations and making notes and memos.
- **Stage 2:** organising the interview and focus group data through coding and identifying emerging themes. Smith et al.'s (2009) inductive multi-stage approach was used as the main strategy for identifying emerging themes. This stage also used the formative assessment theoretical framework of Black and Wiliam (2010) to identify what types of formative assessment were being used during classroom observations.
- **Stage 3:** discussion of findings from all data sets and drawing conclusions.

The following section focuses on Stage 2 of the data analysis and explains the strategies used for developing themes from the interview and focus group data. It also describes the analytical approach utilised to identify formative assessment pedagogical instruction observed during the classroom observations.

3.5.1 Data analysis strategies

Upon completion of the interviews, the interviews were transcribed verbatim into electronic format. After data collection and transcription, data analysis followed a sequential process, beginning with analysis at an individual level, case-by-case, for each of the three participants before proceeding to a group-level analysis that brought together data for all participants. Two key strategies were utilised to shape the analytical approach for this study: Wiliam and Thompson's (2008) formative assessment framework and Smith et al.'s (2009) inductive multi-stage approach. The latter approach was used to analyse the interview and focus group data while Wiliam and Thompson's (2008) formative assessment framework was used to support the analysis of classroom observations. The following section outlines the analytical processes used for the analysis of the interview data and classroom observations.

3.5.2 Organisation of data through coding

According to Creswell (2013), qualitative research is an inquiry process of understanding, wherein the researcher develops a 'complex, holistic picture, analyses words, reports detailed

views of informants, and conducts the study in a natural setting' (Creswell, 1998, p. 15). Thus, the key goal for the researcher is to immerse themselves in a deep analytical and interpretive process, capturing and deriving the participants' understanding, knowledge and sense-making of the phenomenon under investigation (Creswell & Poth, 2018). For this reason, the IPA data analysis framework proposed by Smith et al. (2009) was utilised for this study. As a methodology, IPA is recognised for its analytical flexibility and ability to focus on each participant's lived experience: 'as with many other approaches in qualitative psychology, the essence of IPA lies in its analytic focus. In IPA's case, the focus directs our analytic attention towards our participants' attempts to make sense of their experiences' (Smith et al., 2009, p. 79).

In considering the three key features of IPA (phenomenology, hermeneutics and idiography), it was important to utilise a data analysis strategy that aligns with and reflects the theoretical underpinning of the IPA methodology, specifically the idiographic approach to the perspective of individuals, where the focus is on the relationship that exists between the participants and the world around the experienced phenomenon. Thus, ensuring a comprehensive understanding of each individual participants' perspective was necessary before developing more general categorisation. The use of Smith et al.'s (2009) inductive multi-stage approach to data analysis allowed both the accomplishment of the main goals associated with IPA theoretical underpinnings and the extraction of ultimate meaning from both participant perspectives and the sense-making process of the researcher. The following section outlines the inductive multi-stage approach utilised in this study.

- Step 1: Reading and re-reading

This initial step involved close reading of each transcript a number of times as well as repeatedly listening to the audio-recording. This helped immerse the researcher in the data and re-enacted the context and setting in which the study was conducted. The re-reading of the transcript helped provide some new insights into participants' perspectives on formative assessment. As such, each individual participant became the focal point of the analysis.

- Step 2: Initial noting

The purpose of this step is to familiarise the researcher with the interview transcription. At this stage the researcher highlighted distinctive key words, phrases and emotional responses (e.g. pauses, hesitations, time taken to respond) and started the coding process. The coding process was conducted over two stages. The researcher instigated the process with structural coding and, in particular, began to note comments pertaining to the descriptive, linguistic and conceptual language used by the participant. Eventually, the researcher noted comparisons and contrasts, nuances, and slight paradoxes in what the participant said, thus beginning the second round of coding using the process of pattern coding to recognise similarly coded data and further summarise it to create or consolidate sub-categories. At this point, the researcher started to critically examine the word choices and implicit meanings behind the statements that were made throughout the interview (Saldaña, 2016).

- Step 3: Developing emergent themes

The researcher examined the data sets (that is, the data sources for each teacher) to identify emerging themes in the data. The focus was on data reduction while still maintaining the integrity of the complex information. The whole and the parts were examined and a new map was then created by analytically examining the codes and data extricated in the prior steps of the analysis.

- Step 4: Searching for connections across emergent themes

At this stage, there was a chronological map of the information presented and, by using that map, the researcher then examined how these themes align. While there was not a prescriptive checklist as to how the analyst should complete this mapping, it was important that the researcher remained open-minded as to allow the other transcripts to relate with each respective interview.

- Step 5: Moving to the next case

This step involved completing the prior steps with the remaining sets of interviews. The process for each interview followed the same steps; however, it was imperative to allow each theme to be developed from each interview to ensure that the identified themes was unique for each of the participants.

- Step 6: Looking for patterns across cases

In this final step, the researcher looked for patterns to emerge when engaged with the transcripts. This involved examining similarities between the cases, as well as making connections between each case. This allowed the researcher to develop a combined set of themes noted in each case respectively. The researcher listed all themes that were coded in each transcript, examined all themes' operational definitions to find ones that were similar across all participants, and combined similar themes under broad higher-order themes and determined on how sub-themes fit under the higher-order themes. A code book was created in NVivo 11 to be used for the group-level analysis. The codebook comprised all the quotes in each higher-order theme according to the sub-theme that the quotes supported. Through NVivo's Node Summary Report, the number of quotes and number of participants who were quoted were recorded in each theme to provide evidence of the prevalence and density of themes, as recommended by Smith and Firth (2011).

3.5.3 Semi-structured interview analysis approach

The analysis of the semi-structured interviews and focus group was underpinned by the guiding principle for conducting IPA research as described by Smith, Flowers and Larkin (2009). The inductive multi-stage approach proposed by Smith et al. (2009) helped guide the analysis and create levels of coding that led to the discovery of emergent and subordinate themes throughout the data. Smith et al. (2009) propose a six-phase guide to conducting thematic analysis: (1) becoming familiar with the data, (2) generating initial codes, (3) developing emergent themes, (4) searching for connections across themes, (5) moving to the next case, and (6) looking for patterns across cases. This approach supported the thematic analysis within and across cases analysis, with each case analysed individually and then cross case analysis utilised using divergent techniques to identify evidence through multiple participants' lenses. It is important to note that while this study utilised Smith et al.'s (2001) thematic analysis approach, the thematic analysis for this study was not a linear process moving from one phase to the next. Instead, it was a recursive process, moving back and forth through the phases as required.

NVivo 11 software was utilised for the analysis of the interview and focus group data collected in this study. The NVivo 11 software provided the platform for the generation of initial codes through multiple cycles of coding and merging codes as result of continued discovery of meaning and essence, and identifying the main themes linked to the study's three research questions. The data were analysed using the process of open coding. After each participant interview was transcribed, the researcher read the transcript through in its entirety before beginning the process of coding. Following the initial read-through, the researcher created initial codes representing what was being described in the data. Subsequent to making note of the initial codes, the researcher began a third read-through and made note of any possible themes that were emerging from the data. This process was then repeated with each participant transcript. When all the transcripts were coded, the researcher compared the codes from each interview to the other interviews to determine the themes that emerged from the data as a whole.

3.5.4 Aligning classroom practice with the formative assessment framework

The classroom observations were examined using Wiliam and Thompson's (2008) framework to analyse and interpret teachers' practices against the framework. Teachers' classroom practices were examined in relation to the five key strategies identified in Wiliam and Thompson's (2008) framework, which was explored in Chapter 2. This reflects the implementation reality of formative assessment practices in the classrooms of the three Junior Secondary teachers participating in this study.

The aforementioned formative assessment framework was used to structure the analysis of the teachers' formative assessment practice. It guided the process of identifying the alignment between teachers' formative assessment practices and the defining characteristics of formative assessment. The formative assessment practices implemented in each classroom were classified in relation to the five key elements identified in Wiliam and Thompson's (2008) formative assessment framework: (1) clarifying learning intentions and criteria for success, (2) engineering effective classroom discussions and other learning tasks that elicit evidence of students' understanding, (3) providing feedback that moves learners forward, (4) activating students as instructional resources for one another, and (5) activating students as the owners of their own learning. The purpose of presenting the classroom observation analyses against

the key strategies identified in Wiliam and Thompson's framework is to complement the thematic analysis and provide real-life examples of how teachers use these strategies to makeup a formative assessment classroom practice. Using the framework provides an opportunity to investigate the alignment of themes identified in the interview and focus group data with the key elements that constitute the formative assessment framework.

3.6 Research validity

As a qualitative research approach, the key intention of the IPA analytical approach is to examine and interpret the 'lived experience' of the research participants. The main objective is to understand the experienced phenomenon from the perspective of the participants and present a true statement of the participants' perceptions and an accurate account of what has been learned. As such, appropriate mechanisms should be in place to ensure the authenticity of the research data and findings. Building on Lincoln, Lynham and Guba's (2011) concept of trustworthiness, Marshall and Rossman (2011) developed the criteria of soundness, outlining the need for qualitative research to establish rigour and demonstrate true value. Lincoln and Guba (1985) posit that trustworthiness involves establishing credibility, transferability, dependability and conformability. These features will each be considered in the context of this research project.

3.6.1 Credibility

Creswell (2013) and Lincoln and Guba (1985) refer to credibility as the overall confidence in the accuracy and trustfulness of the represented findings. Marshall and Rossman (2011) explain that credibility demonstrates strong connections between the preponderance of evidence substantiated by the research and the extent of believability of the results, where the readers do not doubt the findings. Additionally, Rodwell and Byers state that '[c]redibility is established through activities that increase the possibility that credible findings will be produced' (1997, p.117). Lincoln and Guba (1985) outline a number of strategies for establishing research credibility, including prolonged engagement, persistent observation, triangulation and peer debriefing.

Prolonged engagement. Prolonged engagement means extending the presence of the researcher at the research site, ensuring enough time is spent to build trust with the participants and experience the breadth of variation within the research context (Lougen, 2009). In this study, adequate time was spent in the research site over a term (10 weeks); this allowed for observation and development of an understanding of the school culture and social setting. The researcher met with the deputy principal and head of department in meetings and through various professional interactions. This enabled the establishment of rapport and trust with different individuals within the research site, including the participants, which in turn co-constructed meaning between the researcher and the research participants. Data tools included interviews, focus groups and observations. Two interviews with each individual teacher, one focus group with the teachers and three focus groups with the students were conducted. Additionally, two observation sessions were conducted with each of the three teachers. In turn, data tools allowed for prolonged engagement within the research site and fulfilled the necessary level of interaction between the researcher and research participants.

Persistent Observation. Just as prolonged engagement provided the scope of the research setting, observations provided deep and rich understanding of the phenomenon of formative assessment practice in the research site. As Lincoln and Guba explain,

if the purpose of prolonged engagement is to render the inquirer open to the multiple influences—the mutual shapers and contextual factors—that impinge upon the phenomenon being studied, the purpose of persistent observation is to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail. If prolonged engagement provides scope, persistent observation provides depth. (1985, p.304)

Conducting three observations in this study for each classroom enabled exploration of the formative assessment practices in depth and detail in the classroom, as well as of how teachers and students lived the phenomenon of formative assessment in the classroom. The persistent observation facilitated the decision-making process regarding which factors are important and which irrelevant and narrowed the focus to the most relevant aspects of the formative assessment practice phenomenon in the research setting.

Triangulation. For this study, four data collection tools were utilised: semi-structured interviews, focus groups, observations, and field notes and artefacts, allowing for the ‘use of multiple and different sources, methods, investigators and theories to provide corroborating evidence’ (Creswell, 2013, p.251). These methods were used to collect data from the participants across three stages, ensuring robust, comprehensive and well-developed findings. As suggested by Denzin (1989) and Patton (2002), the use of different data collection methods allows for methodological triangulation. Different methods, including interviews and observations, allowed for the consistency of findings generated by the various methods to be checked. Furthermore, the methods used to collect data across the three different stages in the research further allowed for the triangulation of information sources. Triangulation of information sources allowed for examination of the consistency of different data sources within the same method. For example, semi-structured interviews were utilised in Stages 1 and 1 and the observation was utilised in Stages 1, 2 and 3. Finally, peer debriefing was utilised with the supervisory team for this study.

3.6.2 Transferability

Transferability refers to the degree to which the research findings are transferable to other contexts and settings (Marshall & Rossman, 2011). Within qualitative research, and IPA specifically, the key focus is on the possible transferability of findings from group to group rather than on generalisation. Smith et al. argue for ‘theoretical generalisability’, whereby professionals may be able to ‘assess the evidence in relation to their existing professional and experiential knowledge’ (2009, p.4). Accordingly, it can be argued that IPA has much to contribute to our understanding of the phenomena of formative assessment in the Junior Secondary setting, as it can complement claims derived from quantitative studies through a focus on the specific particulars that can help illuminate the universal (Smith, 2011).

As recommended by Lincoln and Guba (1985), this study presents sufficient contextual information about the fieldwork and thick description of the phenomenon of formative assessment practices, allowing readers to have an adequate understanding of it and thereby enabling them to compare the instances of the phenomenon described in the research report with those they have seen emerge in their specific contexts. It is the professionals’ decision to

determine the level of confidence in transferring the results and findings presented to other contexts.

3.6.3 Dependability

According to Lincoln and Guba (1985) and Marshall and Rossman (2011), dependability is the ability to replicate the research process, thereby enabling future researchers to duplicate the work. Thus, the research design may be viewed as a 'prototype model'. There is potential for the research design of this study to be replicated in different contexts. As the study presents thick descriptions explaining the research design and its implementation, and describes how the study was planned and executed, others could implement it elsewhere.

3.6.4 Confirmability

Confirmability refers to the extent to which the findings are attributed to the experience and ideas of the participants, rather than the predilections and preferences of the researchers (Marshall & Rossman, 2011). In this study, triangulation plays an integral role in promoting confirmability and mitigating any researcher bias. Miles et al. (2014) consider that a key criterion for confirmability is the extent to which the researcher admits his or her own predispositions. To this end, this study presents a detailed description of the beliefs underpinning methodological choices and methods adopted, thus enabling future researchers to determine how far the data and constructs emerging from it may be accepted. In terms of results, the thematic analysis process allowed for numerous documented checks of the data throughout the study, thus supporting the confirmability of the research findings.

3.7 Limitations of the study

This study was conducted in a secondary public school, within the metropolitan region of Queensland, Australia; as such, the information may not be applicable to schools within the other regions throughout the Queensland state or extend to other states in Australia. The participant numbers and context may also limit the extent to which the information can be generalised to other regions. For example, given this study involved three Junior Secondary teachers in one school, it is important to note that the situation and participants studied are not

time- or context-free, making it difficult to deduce whether the same findings would be revealed at a different site.

3.8 Ethical considerations

It is imperative and ethically important that all research studies are cognisant of the rights and privacy of the individuals participating in the project, ensuring no harm is caused (Simons, 2009). Ethical approval was sought and obtained for this study from the Griffith University Higher Education Ethic committee (GUHREC). Measures were taken to ensure all participants understand that participation was voluntary and were made aware of their capacity to withdraw from the study at any time. The participants received a letter outlining all information regarding the study and a consent form. Confidentiality was guaranteed for all participants. While there was minimal risk to participants in this study, all information and names of participants and the school have been concealed and pseudonyms are used to refer to the participants. Similarly, the school involved in the study was asked for permission to access students' results and documents useful to the study. The school was assured that findings would be appropriately used. According to Murphy and Dingwall (2001), stress and anxiety could be seen as harm. The researcher identified two main potential sources of stress for participants. The first was time; teacher participation as subjects in observations and interviews on top of their teaching workload may have created a stressful environment. This issue was mitigated through discussion and planning with participants to hold interviews and observations at the most suitable and preferable time for the participants. The second source of potential stress derived from the unease participants may feel regarding their professional standards with a researcher present in the classroom. This source of stress was mitigated through discussion between participants and the researcher and involved clarification of the aim of the study, the methods utilised, and the reiteration of confidentiality and anonymity during data collection, analysis and reporting, and after the conclusion of the reporting period.

3.9 Summary

The methodology for this interpretative phenomenological study aligns with the purpose of examining Junior Secondary teachers' perceived understanding of formative assessment and how it influences teachers' pedagogical choices and practices in the classroom. Three central research questions guided the research. Furthermore, this chapter discusses the research design and data collection methods, provides an overview of the research setting, and sets out the limitations of the study. Having addressed the overall research process in Chapter 3, Chapter 4 presents the findings and analysis of the teacher interviews and focus groups.

CHAPTER 4

Analysis and Findings: Interview data

4.1 Introduction

This study was designed to investigate how teachers view formative assessment as part of their everyday teaching practice. It also aimed to determine the influence on and implications for their implementation of formative assessment in the classroom. Developing a deep understanding of teachers' perceptions and pedagogical instruction related to formative assessment has implications for further supporting teachers' professional development and building their instructional capabilities with the view of supporting students' learning progression. The following research questions were investigated in this study:

1. What are Junior Secondary teachers' perceived understanding of formative assessment?
2. What are Junior Secondary teachers' classroom practices of formative assessment?
3. How do the Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?

This chapter is the first of two chapters reporting the findings from the study. It reports on the data collected from the interviews and focus group discussion and presents the key emerging themes. Chapter 5 presents the data from the classroom observation and examines teachers' formative assessment classroom practice against Wiliam and Thompson's (2008) framework.

4.2 Analysis and findings of interviews and focus group data

The semi-structured interviews and focus group discussion were conducted with three Junior Secondary teachers to examine their perceptions of formative assessment practices. This section presents a brief description of the participants' profiles, presents the findings from the study through the study's three research questions, and discusses themes in the context of the research questions, which are aligned to the theoretical framework for the study.

In alignment with the Interpretative Phenomenological Analysis paradigm, it is important to reflect the participants' views and perspectives (Smith, Jarman & Osborn, 1999). Accordingly, the primary focus of each discussion point is the voice of the participant, allowing them to speak for themselves and demonstrating the value of what they said. Utilising verbatim quotations from each interview and focus group is, therefore, an essential component of this section. The selection of the data reported here was guided by two principles: (1) providing insight into the participants' formative assessment perceptions, and (2) demonstrating the teachers' formative assessment practices and implementation processes.

4.2.1 Participant profiles

The participants for this study were selected through purposeful sampling; there were three participants, two females and one male junior secondary teachers.

A. Cullum

Cullum is an experienced senior English teacher who has been teaching for 25 years. He is the Head of Junior Secondary and teaches English, History and Geography for Year 8 (students aged approximately 12–13 years). Cullum received his training in the United States of America before moving to Australia 20 years ago. Cullum values how education in Australia emphasises developing students' capabilities to think critically about what they are learning.

I believe that the Australian, or the Queensland education system is much more, I say holistic-based, they value deeper understanding. (Cullum, Interview 1)

Cullum is very enthusiastic about the opportunity the Australian curriculum provides to develop and extend students' thinking skills. He elaborated further on his understanding of the curriculum and its expectations:

[A]n example might be when you learn about let's say World War II in Australia when you think about the American involvement in World War II as a result of the Japanese bombing of Pearl Harbor the teaching and the meaning and the learning behind that is, teachers tell students the facts and expect them to understand why, what contributed to it, what were the causes and what were the effects and I call that holistic. I think that's probably a bad choice of words, it's a much more deeper understanding, it's more critical thinking, it's more higher-

order thinking. In Australia, I think it's enlightening, that I don't have to focus on facts. I can focus on the important meanings. (Cullum, Interview 1).

Cullum's comments reflect his focus on deep understanding and the importance of developing thinking skills that enhance students' meaning-making. Cullum's 25 years of teaching experience has all been in the middle school level. As a head of department for Junior Secondary, he has an active role in the school executive team committee and he manages seven Junior Secondary teachers and 12 Junior Secondary classes. Cullum saw his participation in this study as an opportunity to consider his teaching practice, and stated on number of occasions that taking part in this study made him more aware of his practice and brought 'formative assessment to my forefront' (Cullum, Observation 2).

B. Anna

Anna is a new teacher to this school, having started at the beginning of the year in which the data were collected. Anna had been teaching for 4.5 years. During this time, she had moved between seven schools. Anna explained that her frequent movement from one school to another was due to short-term contract work. However, she believed that her involvement with other schools has allowed her to build a repertoire of different pedagogical practices, especially as in her previous school they focused on explicit teaching and effective strategies for the implementation of explicit teaching. 'I've seen a lot of different ways of doing things and so my practice tends to be a blend of all of the different places I've been and trying to find the best' (Anna, Interview 1). Anna indicated that a key focus in her previous school was 'unpacking' the two different types of assessments.

[T]he last school I was at, we were just going through the three different types of assessment so that was kind of where we were then and that discussion that we had at the school I was working at last year, I think, is then informed practices a little bit more as I've continued in other schools. (Anna, Interview 1)

At the time of the research, Anna was completing studies for a Bachelor of Law degree; she explained that, because of uncertainty with employment, she wanted to ensure that she had options. Anna teaches English, History and Geography for Years 8 and 9.

C. Rose

Rose has been teaching for 16 years, all at the middle years level. Rose teaches English to Year 9 (aged approximately 13–14 years). She presented as highly confident in her own teaching practices and was proud to state that her practice ‘aligns with the school’s strategic priority’ (Rose, Interview 1). She led the professional learning community for formative assessment at the school. In conversations with Rose, she always referred to the school pedagogical framework and emphasised the importance of using the success criteria and communicating them clearly to students by demonstrating how ‘it is important to bring everything back to the language of success criteria’ (Rose, Interview 1). In the first interview, She indicated that it is important that teaching practice is guided by students’ learning needs. She expressed her preference for Marzano’s teaching model.

I prefer Marzano with the idea of discussion. I mean, honestly, as far as personal pedagogy goes, I do believe that what you apply to a class should be driven by the needs of that class and not an enforced pedagogy because it sounds good. (Rose, Interview 1)

It was evident from Rose’s comments that she places emphasis on teaching practices that meet the specific learning needs of individual students.

4.2.2 Findings

The findings of this study were identified through the analysis of the individual interviews, focus group discussion and the review of site documents. The NVivo qualitative software was utilised for the initial identification process of primary codes. The NVivo software provided the platform to upload transcripts, identify codes, code primary transcripts through multiple cycles, merge codes as result of continued discovery of meaning and essences, and identify themes linked to the study’s three research questions. Further, the software allowed for the linking of codes to the questions asked in the individual interviews and focus group discussion. These questions were already linked by design to the study’s research questions and theoretical framework(s) and were connected to the foundation of literature related to this study.

Following the in-depth analysis of the interviews and focus group transcripts, five key themes were identified. The emerging themes from the data were classified into two categories: themes

that related to teachers’ perceptions (including *Developing understanding* and *Embedding effective practice*) and themes that related to teachers’ interpretation and implementation of formative assessment pedagogical practices (including *Differentiation*, *Shared expectations* and *Time*). As these two categories influence and complement one another, they are presented here together to present a coherent view of how teachers’ perceptions influence their decision-making and implementation of formative assessment practice. The five themes and their related sub-themes are outlined in Table 4.1 below.

Table 4.1: Key themes identified with their related sub-themes

Category	Theme	Sub-Theme
Themes relating to teachers’ perceptions	Developing understanding	<ul style="list-style-type: none"> • Defining formative assessment • Frequency and types of formative assessment • Understanding the formative assessment process
	Embedding effective practice	<ul style="list-style-type: none"> • Focus on learning objective and success criteria • Feedback • Group work
Themes relating to teachers’ interpretation and implementation of formative assessment pedagogical practices	Differentiation	<ul style="list-style-type: none"> • Gauging class understanding • Varying students’ levels
	Shared expectations	<ul style="list-style-type: none"> • Executive team expectations vs teachers’ expectations
	Time	<ul style="list-style-type: none"> • Work load • Planning expectations

The themes were identified based both on their prominence within the transcripts and on individual teachers’ accounts that captured their unique and in-depth perspective. While each theme is presented individually, it is important to note that they occurred within the context of the wider shared account, and only this wider shared account can capture the true complexity of the data and the inter-connections that exist between each theme. The following section presents the findings from the study through the study’s three research questions and discusses the themes in the context of the research questions.

4.2.2.1 Research Question 1

The first research question—What are Junior Secondary teachers’ perceived understandings of formative assessment?—sought from the participants insights into their perceptions of formative assessment. The central idea of this research question focused on questions related to the participants’ descriptions of the definition and the process of formative assessment. The participants described their perceptions in terms of their understanding of formative assessment and their instructional experiences with formative assessment practices. This research question identified *Developing understanding* as the main theme to describe Junior Secondary teachers’ perceived understanding of formative assessment.

Defining formative assessment

Question one of the interview asked teachers to consider the definition of formative assessment – ‘Formative assessment practices are generally defined as those assessment practices used by teachers as assessment for learning a learning check-up during the learning process that informs teachers’ decisions about future instructions’ (Bailey & Jackicic, 2012; Marzano, 2010); and what, if anything, they would change or add to the definition. This question was designed after reviewing the literature related to formative assessment and the different definitions offered. This question aligns with Research Question 1 and focuses on the teachers’ description and common understanding of formative assessment practices. The purpose was to develop a deep, broad and comprehensive understanding of the teachers’ perceptions of the phenomenon of formative assessment.

When asked to consider the definition of formative assessment, the participants’ responses varied somewhat from the first interview to the focus group discussion. In the first interview, Cullum, Anna and Rose were content with the formative assessment definition as presented to them. Anna stated:

I think that’s pretty accurate. I don’t think I would add anything extra that reflects basically how I use it anyway. (Anna, Interview 1)

While Cullum and Rose were satisfied with the definition, they elaborated and suggested additional information. Cullum explained:

I think that's a very comprehensive definition, formative assessment is by its very nature typically informal. However, I don't see in this definition that there is an identified understanding that it can be both formal and informal. I think that perhaps to make that even better, more comprehensive and complete I believe formative assessment can be formal and informal and I'm not sure if this definition clearly shows that. (Cullum, Interview 1)

Rose also unpacked the definition, as she wanted to ensure the inclusion of practice examples. As she explained,

if we're wanting to make a more complete definition, in particular, a practical definition where teachers could use I would use examples of what that could entail. For example; classroom discussions to engage student learning I would look at success criteria completion of success criteria of students so they could gauge I would include some type of example of what or how formative assessment is actually implemented in the classroom. (Rose, Interview 1)

Rose's comments reflects her focus on classroom learning instruction and her eagerness to focus on effective pedagogical practices. While Cullum's views on the formative assessment definition did not change from interview one, it was evident that he definitely reflected on his teaching and the implications for his practice.

I would not change or add anything to the definition. The thing that I would like to say about it is that because of this process, I was more aware of formative process and the importance of formative assessment and how it can inform my teaching methods. (Cullum, focus group)

Cullum's reflections on how his participation in this research study made him more conscious of formative assessment practices were evident in the individual interview and classroom observations.

There was a noticeable change in both Anna's and Rose's responses to the same question. In the focus group discussion, Anna indicated that the definition as it stands is missing the concept of differentiation.

I think it's also missing the whole differentiation thing as well, because you do have situations in the classroom where you can see that three-quarters of the class that are nailing it but there's a portion of the class that isn't nailing it. (Anna, focus group)

Rose added:

I think in the current climate it's lacking because I think that there does need to be something in there about how it can effectively assist differentiation in the classroom, which I think is really important, and there's no mention of that here. (Rose, focus group)

Anna and Rose's suggestion of including differentiation in the formative assessment definition indicates their consideration of the implications of formative assessment practices. Their comments indicate that they are aware of the different learning needs of the students and the necessity of having provisions in place to meet the needs of individual students. Anna and Rose's comments further support the theme of differentiation, which is further discussed under Research Question 3.

The teachers' reflections on the definition of formative assessment provided to them at the beginning of the study demonstrated that they considered their definition through a more critical lens throughout the duration of the study. Such consideration has aided teachers in developing and refining their understanding of formative assessment. Furthermore, during both interview and focus group discussions, all teachers expressed their views on formative assessment and how it supports students' learning. Cullum explained:

[I]t certainly gives us the tools to know how we should be moving forward for students. I think it's the most important aspect of teaching. Formative assessment, to me, is timely check-ins to ensure that there are no surprises at the end. (Cullum, Interview 1)

While teachers see the value of formative assessment and understand its impact on student learning, their discussion mainly focused on formative assessment as a tool for advancing underachieving students or students who are struggling. Teachers were not using, and did not discuss, formative assessment as a tool to understand and support the learning of all students, including average and excelling students. Cullum explained:

[T]he benefit of formative assessment, when you're gathering data and you see that students are not achieving, you need to find a way to remediate the students that are not meeting the minimum requirements. (Cullum, Interview 1)

The data reveals that there is no shared understanding of the term ‘formative assessment’ amongst these participants. It is apparent that what formative assessment means, and what it encompasses, differs between the teachers. However, there is potential to identify areas of similarity when discussing the topic and reflecting on classroom practices. During the focus group discussion, the participants were able to contribute their interpretation, which led to further discussion and consideration, whereby a collective, nuanced understanding was achieved. This supports the need for shared understanding, and thereby shared application, to ensure consistency of practice. This is particularly important in the middle years schooling phase, as students actively seek consistent and transparent application of pedagogical approaches and strategies. Throughout the duration of the research, it was apparent that the teachers were developing their conceptual understanding of formative assessment and its practices. For example, this was evident in the variance in the teachers’ responses from the semi-structured interviews to the focus group discussion. The teachers’ responses on the formative assessment definition questions at the beginning of the study evolved and changed toward the end of the study, reflecting development in teachers’ perceptions, understanding and growth in their professional learning about formative assessment.

The teachers’ responses to subsequent questions in the semi-structured interviews and focus group support the theme of *Developing understanding*. The teachers’ comments on the frequency and types of formative assessment utilised in the classroom also provided insight into their level of understanding regarding formative assessment. This is explored in the next section.

Frequency and types of formative assessment

When asked about the frequency of formative assessment practices in the classroom, the participants indicated that their use of formative assessment had increased over time, which demonstrates a positive progression in the implementation of formative assessment.

[W]hen I first started teaching I never used formative assessment. (Cullum, Interview 1)

Rose also explained:

I think now I have greater awareness of what I want the student outcomes to be each lesson, not just their overall outcome for the unit but knowing exactly what tools I need them to have each lesson really has made me focus on making sure that I'm giving them those tools. (Rose, Interview 1)

Supporting the idea of the developing use of formative assessment Anna stated:

I think I'm using it a little bit more just as I've developed as a teacher. [T]his is my fifth year of teaching so [I have] gone to different schools with different expectations and it's starting to come around that more schools are expecting this. (Anna, Interview 1)

The frequency of the teachers' use of formative assessment ranges across a continuum from daily to fortnightly. However, when asked about her current use of formative assessment, Anna said that her use is 'not as often as I could' (Anna, Interview 1) and, when asked why that is, she explained, 'I think sometimes time just gets away' (Anna, Interview 1). While Anna believes that her implementation of formative assessment is not as frequent as it could be, she acknowledged that formative assessment allows teachers to know their students' level of achievement at all times. She explained:

I think that's more effective than testing twice a year. I think testing the students twice a year, how do you know what movement's happened in between that time as well? Other than the fact that we observe them inside the classroom as well, so to test them only twice a year, I think it's probably far better to have to big tests but to actually be doing like other mini, quick, reads-type tests to actually have a bit more of an accurate track of where they're going because if you're responding only twice a year than you've got six months where somebody could be falling behind and you haven't caught that yet. (Anna, Interview 1)

Anna's comment reflects her understanding of the importance of knowing where each student is at any point of his or her learning. The main issue for her, though, is time.

Rose explained the type of formative assessment she implemented, and provided a rationale for when it was utilised:

[W]e'll get them to model that [skills] with a rough draft or even if it's for an exam we'll get them to do that piece that is a formative piece so that we can see if they've grasped the key concepts within the boundaries of whatever genre that we're asking them to perform in. I think that there is most certainly a lot of validity in doing this type of formative assessment with the students. We can't send them into these things blind, because more of them would fail. (Rose, Interview 1)

The central idea of this comment is providing the students with an opportunity to practice and receive feedback on their assessment. Rose demonstrates her understanding of the importance of practicing the type of questions that will evaluate their students' learning at the conclusion of a unit. This was emphasised by Rose throughout the interview and focus group discussions.

As discussed in the methodology chapter (Chapter 3), the focus group discussion was centered on classroom-based scenarios to probe participants' experiences. The participants were presented with two different scenarios (see Appendix G) and were asked to express their views, share and compare experiences, and discuss the extent to which they agreed or disagreed with each other. In the focus group, the idea of over-testing students surfaced, with Cullum cautioning that

[w]e need to be careful if testing students twice a year in the lead up to NAPLAN week, this school [scenario school] would need to be careful that they're not over-testing. If you're testing them and then testing them again and then testing them again, you're going to lose them, some of the students are going to become test-fatigued, are going to realise I want to save my best for NAPLAN so I won't perform so well on the practice, and you're maybe not going to get true data. (Cullum, focus group)

Rose affirmed the need for caution by adding,

if they are over-tested they will not take it as either an earnest learning experience or honest preparation for something. They will take it as in 'Oh, we're doing this again'. I suppose there is a careful line. (Rose, focus group)

From the interviews, teachers stressed the importance of students understanding the purpose of formative assessment and emphasised the importance of designing formative assessment in a manner that informs the teaching and learning process.

The types of formative assessment most commonly used by the teachers also related to the theme of *Developing understanding*. The teachers described in the interviews how they utilised different types of formative assessment, including questioning, small-group engagement, written work in notebooks, and quizzes. Despite teachers using these different types of formative assessment, their responses in the interviews indicated that the only type of formative assessment they used as evidence of students' learning was students' written tasks, which was also the only type of formative assessment on which they provided feedback. Table 4.2 outline teachers' primary method for formative assessment as identified by the teachers in the interviews.

Table 4.2: Participants' primary method, frequency and trajectory of formative assessment

Participant	Primary method of FA assessment	Frequency of FA assessment	Trajectory of FA assessment
Anna	Questioning	Multiple times a day	Increasing usage
Cullum	Questioning	Multiple times a day	Increasing usage
Rose	Discussion	Multiple times a day	Increasing usage

Although teachers indicated that they use questioning throughout their lessons to gauge students' understanding, the only data they consider and act on is students' written tasks. The teachers indicated that they used a staged assessment method to test students' progress in a unit of work. The staged assessment process involves the final assessment task being divided into three sections, whereby students completed the first section, handed it in to the teacher and received feedback for the student to action. Students then receive feedback for the second stage of the assessment, and so forth. The final result of each student should be an average of these three tasks, hence making it summative assessment. Anna clarified the intricacies of the staged assessment process:

There is the assessment that came up in the following lesson as well. That was a very quick checking for understanding and they got that assessment back within a week as well. So they're working on their next task on Monday because, they've got that feedback as well to then apply to the next assessment task, they can take some of the feedback that I gave them

from the first task and apply it to the second task and then we'll just take an average of the grades across the three tasks. So, for those kids who didn't do so well, it's a bit of a push to say, 'Oh well I need to put a bit more effort in, but now I kind of know where I went wrong so I can change it for next time'. (Anna, Interview 2)

Rose also indicated that this was a preferred method of conducting assessment, confirming her ideas about the importance of students practising and becoming familiar with an assessment task prior to the end of a unit and summative assessment item, as it provided students with greater opportunity for success. She explained:

[W]hat we've done is we're working through their assessment in chunks. So, you know, we have done our narrative hook, we've then moved on and we did our concept. They've all written now their concept and they were all provided with feedback. We're in the process of finishing analysing their feature articles. (Rose, Interview 2)

The teachers' responses shed light on the fact that teachers value the importance of feedback and perceive that the feedback they provide will aid students' learning progress. While the teachers emphasised the importance of feedback, they did not identify specific feedback strategies and techniques. There could have been more informal feedback provided during classes, which will be reported on in Chapter 5. In reference to a point discussed earlier in this chapter (see pp.105-106), their idea of feedback was limited to written feedback on written assessment drafts. This perspective aligns with the theme of *Developing understanding*, as it indicates the need for the teachers to develop their understanding of the ongoing feedback process as not limited to written forms given to students during drafting and the conclusion of summative assessment tasks. This is important as it has implications for further professional development focused on formative feedback to move learning forward.

Understanding formative assessment as a process

In the focus group discussion, Anna introduced the idea of 'capital F' and 'little f'. She explained that capital F stands for written tasks that students complete. These tasks are set by the school twice a term to determine the reading and writing levels of students. Anna also explained that the 'little f' is the daily formative assessment that engages students and teachers to understand where students are in relation to the specific lesson objectives. Mention of capital

F and little f sparked an interesting discussion and allowed the participants to reflect on the process of formative assessment. Within the school, Cullum indicated that there were not enough little f exercises conducted and that they could be used as a better opportunity to record and gather evidence of where students were in their learning. It also meant teachers could act on this evidence accordingly. Cullum explained, 'I believe that we're recording the big F junctures'. Rose also added (confirming her interview remarks about her need to implement formative assessment more frequently), 'It's often the capital F formative assessment that we weigh our data on'.

The participants agreed not only that their current practices need to be more frequent, but also that they need to ensure they action the learning evidence collected from all formative assessment types, ensuring they address all students. Cullum asserted:

[W]e need actual data recording either on a note page or electronic recording of those little f's, there are the students who tend to always put their hand up and the vocal ones the ones who aren't speaking to us, the ones who are harder to hear their voice, the ones that are maybe have more potential to fall through the cracks. I believe that this process is going to help me find some junctures where I can just get hard data and recording of the little f formative assessment and make sure that these junctures are being met by all the students and not just assuming that they are because most of them are getting it, because I get caught out sometimes at the test end the summative end going, 'Ugh', you know? 'I could've done a better job there'. (Cullum, focus group)

Cullum's comment indicates that if he is provided with further support on how to record and act on the data collected from formative assessment, it will certainly allow him to effectively support students' learning needs.

Rose added:

I think the little f's used more constantly can actually be more effective.

This comment highlights the theme of *Developing understanding*, as teachers are aware that the school community can do more in relation to formative assessment. The teachers needed to develop a deeper understanding of formative assessment as a process. This process has key elements that will support teachers' effective utilisation of daily instructional practices

targeting students' learning needs and ensuring their engagement in learning. Elements such as engineering effective discussions, tasks and activities can elicit evidence of learning and provide feedback that moves learners forward.

Through continued professional interactions, reflections and self-assessment, teachers can develop a deeper understanding of formative assessment as a pedagogical framework that equally supports both students and teachers (Wiliam, 2017). This study identified Junior Secondary teachers' perceptions of formative assessment to be evolving and their understanding as still developing. The description of Junior Secondary teachers' perceptions of formative assessment as *Developing understanding* is deeply rooted in formative assessment theories, including those of Wiliam & Thompson (2010), Heritage (2015) and Marzano (2017).

Formative assessment informs teachers and allows them to adjust instruction in the moment and over time. As such, teachers can benefit from formative assessment as they reflect on their practice to inform and adjust the formative assessment practices implemented and their understanding of them. The theme of *Developing understanding* is further supported by the social constructivism and experiential learning theories, where learning is evident in the social interactions between teachers and students and teachers and their professional colleagues. The implementation of pedagogical practices in the classroom, along with the teacher's reflections (with colleagues, as a professional learning community) on the implementation of such practices aids teachers in enhancing their practice, further developing their understanding and optimising student outcomes. Hence, the teaching episodes as a lived experience reflect the nature of experiential learning, the interaction between the teachers as learners and their immediate teaching environment, stimulate growth and activate learning. This is important in considering teachers' professional learning. Continual and regular collaborative professional learning that provides teachers with opportunity to access targeted learning based on their needs and the needs of their students enables them to develop deeper understanding, thus consolidating and demonstrating effective practices. This also allows the teachers to be immersed in their practice. *Embedding effective practice* was the second theme that helped describe the Junior Secondary teachers' perceptions of formative assessment.

4.2.2.2 Research Question 2

Research Questions two ('What are Junior Secondary teachers' classroom practices of formative assessment?') allowed the participants to describe their formative assessment classroom practices and unpack what it looks like in their classrooms. The question provided the participants with further opportunity to endorse and validate the responses with regard to their perceptions and understanding of formative assessment practices. Consequently, the data analysis identified *Embedding effective practices* as a central theme to describe Junior Secondary teachers' formative assessment classroom practices. Additionally, data analysis of the classroom observations in Chapter 5 will address this research question further.

Each of the three teachers indicated that it is very important to ensure the success of all their students. They believed that, for this to happen, it was important for teachers to gauge where students are at in their learning, identifying the next steps to take and how they are going to help students achieve their goals. In order for this process to occur, teachers needed to utilise two main types of strategies: (1) strategies to identify where students are at in their learning, and (2) strategies to help students progress and achieve their learning goals. The interviews and focus group discussion shed light on teachers' views on effective formative assessment practices as they discussed the key pedagogical instructions they considered important to ensuring positive learning outcomes.

Learning objectives and success criteria

Clearly stated learning objectives and success criteria are essential components of the formative assessment strategy. Learning objectives facilitate student learning by communicating expectations about the desired outcomes for each lesson. As Reed (2012) asserts, explicitly linking classroom activities to learning objectives helps students understand the purpose of the instruction and feel motivated to engage with the learning.

The school's implementation of Marzano's (2015) pedagogical framework, *The Art and Science of Teaching*, has placed an emphasis on sharing the learning intention and success criteria at the beginning of every lesson. All teachers confirmed that sharing learning intentions and success criteria is something they do every lesson, and include as the first slide in their

teaching PowerPoint presentation. When teachers were asked about how the learning intention and success criteria are effectively communicated to their students, Cullum stated:

[L]earning intentions and criteria for success are words that our students are familiar with, and they know what it means and they engage with it almost every lesson. It helps to point where the learner is right now. (Cullum, Interview 2)

Anna emphasised that it is a key focus of their school:

[P]articularly for us here, we do have the focus on the learning intentions and the teacher physically going through that. (Anna, Interview 2)

She elaborated further, giving more insight on how she appreciates the learning intention and success criteria:

That was a discussion I ended up having to have with my pre-service teacher because she put it up there and she'd get the kids to write it down and then move on and I think for the kids it's really important to be discussing that because it gives them an idea of what they need to achieve and it gives them the opportunity to have a quantifiable list of things to do to be able to achieve success. (Anna, Interview 2)

Anna's comments on the learning intention reflect her understanding of the role it plays in supporting both student learning and teachers' lesson delivery and planning.

[I]t gives them an opportunity to be able to, I suppose, self-assess how they're going. As well as it gives them an idea of where they are in the lesson, because if you tell them that these are the things that we're looking at doing and it gets to five minutes before the end of the lesson and we're still on the first one or they are still on the first one, they know that they've missed some things and they need to go back, or it's a decision that I've then made that they've been struggling on thing number one and so we've spent extra time trying to hone in on that to get those skills up and leave those for another lesson. (Anna, Interview 2)

Anna indicated that the learning intention allowed her students to be aware of where the lesson was heading and supported them in ascertaining where they were and where they needed to be, an awareness that was central to their ultimate success.

Additionally, Rose described the importance of using the success criteria every lesson to reinforce the learning goals for the lesson. She explained that the success criteria provided her students with a point of reference whereby they were actively engaging in their own learning.

I always look at the success criteria that I have set up or I have negotiated with the students for the lesson. I often do that as a checkpoint. (Rose, Interview 2)

The teachers' comments indicate that they recognise the learning objective and success criteria as an effective strategy to engage students in learning. According to the teachers, the success criteria allow the students to identify where they are going in their learning and provide them with a checklist that not only steps them through their learning but also provides them with the criteria against which to evaluate their own learning.

Feedback

The literature distinguishes between evaluative and descriptive feedback, with the latter being described as having a formative capability (Hattie, 2016; Gibbs et al., 2000). Descriptive feedback ascertains students' current achievement level and identifies means of improvement and ways to move forward. Thus, this type of feedback goes a step further than correcting students' work and assigning an achievement standard grade.

The teachers demonstrated understanding of the important role feedback plays in students' learning. Rose and Anna posited that feedback is the main strategy they use to move students forward. Rose explained that her understanding of formative assessment has enabled her to use feedback more regularly. She provides her students with frequent feedback to support and guide their learning.

I provide verbal feedback every lesson. I also collect their workbooks on a weekly basis and provide feedback on how their note-taking is going. As well as how effectively they've responded to whatever tasks they've been asked to do. Often, I present group feedback at the end of the week to my classes, which I find really valuable and that's really simple it's in the form of what I've seen this week happen in our classroom and that might be both successes and things that are goals that we need to still achieve. (Rose, Interview 2)

Rose went on to explain how she communicates her feedback to students to ensure it moves the learning forward.

I usually do that by form of putting it in some sort of PowerPoint and saying, 'This week these are the things we have achieved, here we go, and we still need to look at these things'. A lot of those come directly from our proficiency scales so that they've all got those in their book, we often highlight together, where we feel what success we've had that directly relates to our proficiency scale. (Rose, Interview 2)

Rose's comment indicates that, while she provides whole-class feedback, she only provides individual feedback during the drafting period of assessment. At other times, Rose provides students with general collective feedback, whereby she identifies common trends and patterns of error or success in the work of her students, which she then summarises for all her students in a PowerPoint presentation. This feedback could take the form of celebrating success or highlighting areas for improvement to move the learning forward as a whole class.

While agreeing on the importance of feedback, Cullum clarified that there are other strategies to implement in order to address students' learning needs.

I agree that feedback is important to individual students but I don't believe that formative assessment relies on that. I think it can be very good without that. I can sometimes use just questioning in class and the students' lack of response to what I would've thought to be a question they would all get immediately, tells me I need to backtrack, [that] it's time to go at this from different angle, and I haven't fed back to the students the fact that they didn't know. So I can grab these cards. (Cullum, Interview 2)

Cullum's views on feedback indicate his understanding that formative assessment relies on embedding a suite of strategies. This reflects his awareness of formative assessment as a process that includes a number of interdependent strategies. Cullum further elaborated on the different type of feedback he gives his students.

[I]f it's simple questioning, the feedback is positive verbal and non-verbal language. If it's homework, I use stickers in their homework book. If it's done well or I see that they've made an effort, I put a sticker in their book and their stickers accumulate and we trade them in on what we call a 'tagging system'. So, it's a positive behaviour system. (Cullum, Interview 1)

Cullum's descriptions of the feedback strategy he implements within his practice comprises approval and rewards when achievement was satisfactory and disapproval when achievement was not satisfactory. This type of feedback is classified as 'evaluative' in the literature, and regarded as not having direct links to formative assessment (Tunstall & Gipps, 2012).

The use of written feedback, specifically for the purpose of suggesting the way forward in learning, appeared to be less common than teachers' oral in-class feedback and was limited to students' summative tasks. In these cases, the content of such feedback involved suggestions to students of other ways of doing things. Additionally, as will be discussed in later sections, time limits appeared to be a key issue for teachers in providing regular feedback. In discussing frequency, teachers drew a distinction between their oral and written feedback. All teachers agreed that the time available for regular written feedback was limited and pointed to the difficulties of checking every single piece of work that students wrote. Limitations of time were not only a concern for written feedback but were reported to limit formative assessment practices as a whole.

Group work

Activating students as instructional resources for one another is one of the five key elements presented in Wiliam and Thompson's (2008) formative assessment framework, as explored in the literature review. Facilitating effective group work can be an effective strategy to support students' learning and provide them with the opportunity to learn from one another. In ensuring effective and productive group work, teachers need to set clear expectations, strategically build groups, structure activities, scaffold work with a supportive classroom culture, and stress individual accountability (Marzano, 2017).

The teachers' discussions about students' collaboration was centred on group work and how this strategy is used in the classroom. The teachers' use of group work varied from one teacher to another depending on how group work is perceived by each teacher and the purpose for which the group work is utilised. Cullum explained how he used group work and discussed his decision with regard to the composition of the group.

I like ability groupings, some teachers like mixed groupings. But I find that when there's a mixed grouping the low students hide in the mixed groupings. (Cullum, Interview 2)

Cullum cautioned that it is important to ensure that all students within a group are engaged with the task, as doing otherwise could run the risk of student disengagement.

I often find that group work or collaboration is risky because if the students aren't engaged in the material that you're teaching them in the lesson that it's just an opportunity for them to chat socially with their friends rather than talk academically or educationally about the topic. (Cullum, Interview 2)

Anna's rationale for group work focused on the group structure and the number of students within each group.

[G]enerally, the ones that are in the groups of three are the kids that I can trust working in a group of three. The groups of two tend to be ones that need a little more opportunity for less distraction and if you add a third person in there sometimes they do get a bit distracted. (Anna, Interview 1).

Anna commented further on the frequency of group work as a strategy, explaining:

[W]e do, quite often, get the pairing or the group work going. So, for think, pair, share or talk to your elbow buddy about a topic, depending on how good the pairings are can be highly successful or can be not so successful. (Anna, Interview 2)

Rose's use of collaborative grouping reflected a varied approach, in which she used both mixed- and same-ability grouping depending on students' learning needs.

[S]ometimes, I take kids that are stronger learners and set them up, in group work with kids that aren't as strong so that they model for them which is great. There are other activities where I find that certain kids just need to work through at a pace, you know, with kids of the same ability. So, I suppose I go, I make those judgements to try and get everyone up to speed. (Rose, Interview 2)

Effective utilisation of group work not only provides an opportunity to build a culture of collaboration in the classroom, but also activate students as learning resources for one another. Effective group work helps students build on each other's learning and provide timely

feedback to supports learning right at the moment it is needed (William, 2016). The three teachers believed that developing appropriate skills to manage effective group work while holding high expectations of all students is crucial to the success of group work. The teachers pointed to the complexities of managing mixed-ability groupings, as they have to manage activities, curriculum and classroom strategies. They perceived smaller class size and sufficient time to plan lessons as being important for successful group work.

It is important to note that, during the interviews, teachers discussed how current classroom layout does not make it easy for teachers and students to fully engage in group work. They explained that the classroom layout presented as a factor that impedes effective formative assessment practices. Anna explained:

I struggle sometimes with how that works in a classroom where we still teach from the front. So, I've got kids who end up with their back to the board and they have to turn around, or they're on their side and they have to turn around because of the position of their desks in the groups. (Anna, Interview 2)

Cullum also suggested:

If I had an opportunity to change the layout, the first thing I would do is get rid of the individual desks and bring in larger desks and have perhaps four sitting around a desk together. (Cullum, Interview 2)

These remarks indicate that classroom layout can also contribute to effective group work. The current classroom layout and desk arrangement prevent teachers from using group work more frequently and effectively as it limits the physical flexibility to move students around the space.

The teachers' interview data revealed a consensus on the importance and value of embedding formative assessment practices. While teachers talked about the importance of formative assessment, however, their comments reflected variation in how they implemented key formative assessment practices. The teachers recognised that their formative assessment practices could be more consistent and effective in order to move students' learning forward.

All of the teachers' responses demonstrated that they were familiar with the formative assessment process and the elements it encompasses. The interviews and focus group questions

provided teachers with an opportunity to reflect on the effectiveness of the strategies they currently utilise while also providing the researcher with insight into how teachers view, implement and reflect on their formative assessment strategies. It was evident that, while teachers appreciate and value formative assessment and have a holistic understanding of the steps it entails, they need further support to ensure effective and consistent implementation of such strategies. The theme of *Embedding effective formative assessment practices* aligns with and supports the previous theme of *Developing understanding*; as teachers develop their understanding of formative assessment as a process, they will also develop skills to embed effective practice. As such, the themes complement and correlate with each other. The implementation of effective formative assessment practices, at its core, supports the notion of differentiation. Effective formative assessment practices cater for varying students' levels and address their individualised learning needs.

4.2.2.3 Research Question 3

The final research question ('How do the Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?') is centred on identifying the alignment between teachers' perceptions and classroom practice. It also offers teachers an opportunity to voice their challenges and describe what supports and/or hinders their formative assessment implementation. The analysis of this question revealed three main themes: *Differentiation*, *Shared expectations* and *Time*. While the interview and focus group data present the themes for this question, the data analysis of the classroom observation presented in Chapter 5 further explores and answers this research question (as with Research Question 2).

Differentiation

All teachers agreed that effective implementation of formative assessment has the potential to support learning by differentiating instruction to meet students' learning needs. As such, differentiated instruction aims to meet students' differences in learning needs in order to provide all students with the best possible learning opportunities. The teachers focused on the importance of ascertaining where students are at in their learning; however, they acknowledged that varying student levels present a challenge.

Gauging class understanding

During the focus group discussion, all participants discussed the importance of gauging classroom understanding and how that supports their decision-making in terms of addressing students' learning needs. For example, Rose noted:

I would gauge how many of the students reached a certain level of success within the lesson which gives me valuable feedback for moving forward because then I can go, 'Okay, I need to support these students', it helps with my differentiation. (Rose, Interview 2)

She also explained that she frequently uses students' proficiency scales³ as an indicator for where students are at in their learning. This helps both her and the students to determine next steps. She clarified that the proficiency scale gives her the language for feedback.

A lot of those come directly from our proficiency scales, they've all got those in their book, we often highlight together, where we feel we, what success we've had that directly relates to our proficiency scale. (Rose, Interview 2)

Anna also asserted the importance of identifying early on where each student at in each stage of their learning.

[D]o they have that particular building block that will create that piece of assessment at the end do they not, and if so then we need to go back so they don't get to the end and they've got a wall full of holes and then you have to go and try to fill them in whereas it's easier when your laying down the brickwork to make sure it's right the first time. (Anna, Interview 2)

Embedding formative assessment practices to check students' understanding and identifying the opportunities for it in every lesson were raised during the focus group discussion, where Anna explained that

just making sure that I'm checking for that understanding as we're going, and that, I think is something that if you can build that sort of a mindset into teaching in a classroom that's probably going to be one of the easiest ways to get teachers into doing conscious formative assessment is just, even like they suggested having slides with checking for understanding

³ Proficiency scales show various levels of understanding by describing specific criteria based on a content standard

and questions on my slide for checking for understanding to prompt me to stop and check for understanding. So you can layer it. So you can get into the habit of every time you move onto a new concept, check for understanding. (Anna, focus group)

This suggestion was received with much enthusiasm by the other participants, with Rose asking:

Do we expand our expectation here in light of what you've said which is really valuable to make it a more holistic, where it is the expectation that everyone has some sort of checking for understanding at the end of their lesson than that would be across the board? (Rose, focus group)

Each of the teachers' explanations revealed their understanding of the importance of identifying students' strengths and weakness to be able to fully support them and engage them in the learning process. While teachers identified that it is essential to ascertain students' levels at different points in learning, they noted that taking action to address individual students' learning needs can present a challenge, particularly in that students' learning levels can vary significantly within the one class. Furthermore, Anna and Rose's comments align with Cullum's reflections on how their participation in this study provided them with the opportunity to reflect on and consider their future teaching practice and how they can effectively embed formative assessment practices.

Varying student levels

The teachers indicated that managing a classroom of students at different learning levels can present as a challenge and can be a barrier to formative assessment. As Cullum stated,

I have a varying range of ability levels within the class. And so it's always a challenge for me. (Cullum, Interview 2)

Anna echoed this response, reflecting the complexity within her classes.

In my two Year 8 classes, I have six kids on individual curriculum plans. Which severely impacts the way that the classroom looks because I've got kids with high behavioural needs as well. So I've got one student in one class who is doing general capabilities because he's got Down syndrome so that impacts the students around him as well, and it's trying to take

into consideration those sorts of things as well and trying to get him engaged. So the classroom, in that sort of situation, looks a bit different. (Anna, Interview 2)

Cullum asserted:

[I]t's always a challenge for me as a teacher to do a good job with my differentiation and I catch myself wishing I had been more prepared for those students who do catch on quickly. And find a way to accelerate them while I know that the lesson that I have planned won't be too difficult for my lower-level students. (Cullum, Interview 2)

When prompted about what she would do if, halfway through the lesson, she identified that students have achieved the learning intended for the lesson, Rose stated:

[I]f I was that confident that they all had the concept, I would certainly seek further evidence of that. In refining the work that we have done because they may understand the concept but that doesn't necessarily mean that their piece is the best it can be. (Rose, Interview 2)

Anna explained that all units of work are developed by the subject area teaching team and that, when developing the PowerPoints for each lessons, they ensure that there are different activities for a range of skill levels. Anna clarified that sometimes she adds slides with extension activities to differentiate for her students; this will depend on where her students are in their learning. She stated:

[T]here's often activities I skip because I know that my kids may not necessarily achieve very well and I'd much rather give them tasks that I know they will achieve and will be slightly challenging rather than giving them something that's going to force a failure but if they were really understanding then I wouldn't be so worried about giving them those harder tasks. (Anna, Interview 2)

Cullum also confirmed this.

[A]s a team, we put up PowerPoints, there's opportunities sometimes, if we think, for extension, so I'll point out a couple of students and say I want you to do the extension work that's there, because I see that you're finished and waiting on the rest of the class. So we can certainly do that. (Cullum, Interview 2)

Anna also identified group work as a teaching strategies that can be utilised to differentiate learning.

[I]t does give you that kind of time to be able to, whilst they're working in groups, I can take out a couple of the really low students and I work a little bit more with them. (Anna, Interview 2)

Notably, she signalled that she

often find[s] that group work or collaboration is risky because if the students aren't engaged in the material that you're teaching them in the lesson that it's just an opportunity for them to chat socially with their friends rather than talk about academically or educationally about the topic. (Anna, Interview 2)

In his earlier comment, Cullum clarified his provision for group work.

I like ability groupings but some teachers like mixed groupings. I find that when there's a mixed grouping the low students in the mixed groupings hide. (Cullum, Interview 2)

The teachers' comments revealed that they found differentiation in relation to formative assessment to be challenging, particularly as students' levels could vary significantly within the one class. The main strategies identified and implemented by teachers for differentiation were limited to grouping students and including extension work for more capable students. Teachers identified grouping as an opportunity to support students. Anna explained that when students are within their groups, she can work with individual students to further support them; Cullum expressed concerns regarding mixed abilities group as he feared that low-ability students might be disadvantaged by not having to put in the effort.

Differentiated tasks also involve additional activities, mainly for the purpose of providing extension work for high-achieving students. All three teachers adopted this practice, as this is considered when the lesson presentation is developed during the collaborative planning. It is important to note that teachers' interview data indicated that their priority for differentiation was generally oriented to supporting students with lower abilities; all three teachers justified differentiation on this basis. The teachers' remarks on how they implement differentiation strategies reflected their perceptions and levels of understanding of formative assessment

processes and practices, indicating an alignment with the themes of Developing understanding and Embedding effective practices.

Shared expectations

Competing curriculum expectations and the school improvement priorities can often put teachers under pressure (Master, 2016). Cullum commented on this issue.

I have a curriculum that I must follow and there are requirements for summative assessment, so I must always ensure that my students meet those local criteria that are from my department head. (Cullum, Interview 1)

Rose also explained how sometimes they are driven by the curriculum content and they feel the need to ensure it all taught well to students.

[O]ne of the main challenges is when we're heavy in content, if it's a unit of work that is heavy in content then sometimes I find I need to stop myself and I say to myself, 'You're talking too much this lesson, stop, go back, revise the lesson because you're talking too much'. If you're talking that much, they're going to stop listening. When it's content heavy I want to tell them all of this. (Rose, Interview1)

Anna expanded on how stressful this could be for teachers and unbeneficial for students.

[W]e've got so much pressure to make sure that we're hitting these deadlines that it almost gets to the exam time and you're revising and you're doing that sort of thing but it may just very well, if you had some extra time to be able to stop and say, 'No, we are going to do this quick activity now to see where you are'. Then it might save some time maybe later on in the revision stage, because you know what you need to focus on a little bit more. (Anna, Interview 1)

Notably, Anna raised the point of formative assessment deployment in different subject areas when she indicated that it is not equally easy to design formative assessment tasks in all subject areas.

I find it relatively easy to do in Geography, relatively easy to do in History but I'd really like to be able to get a little bit more confidence in designing things for English as well. So, experiences where they can do their formative assessment in an English situation. It is easier for knowledge and content as opposed to skill-based. (Anna, Interview 1)

The three teacher responses reflected the pressure of having to adhere to the curriculum mandate and the difficulty of having to deliver the curriculum, with its heavy content and time constraints. The key obstacles to implementing effective formative assessment practice reflected common structural and attitudinal challenges. It is important to develop strong connections between systemic, school and classroom approaches to curriculum demands, formative assessment and evaluation of student learning.

Time

The issue of time was raised consistently by each participant. For example, time limitations appeared to be a key issue for teachers in effectively implementing formative assessment. The practical constraints of time, class sizes and resources were common factors discussed by all participants. Anna stressed that her time is her main challenge.

Time, time is the biggest thing, I get three spares [lessons] in my week and I'm also doing some study outside of school. So, I don't have a lot of time in my life as it is but sometimes you start out with really good intentions but then it just falls by because [of] time. (Anna, Interview 2)

Anna also expressed that time constraints limits her ability to provide written feedback to all her students.

[B]ecause I have two Year 8 English classes, two Year 8 Geography classes and then teaching a Year 11 class, it starts piling up. Because I've got two Year 8 classes, all the assessment comes in at the same time. So, I've got, for Geography, for example, I have to mark 60 papers. I just run out of time. (Anna, Interview 2)

All participants indicated that formative assessment can be difficult at times. When teachers have three to four classes across different year levels and different subjects, they have to provide feedback to all their students. As Anna stated:

I find it sometimes a little bit more difficult in an English context to give them some formative assessment because it's easier to design formative assessment situations for content based things. So, knowledge and understanding that is very easy to actually formulate those sorts of things. Whereas English, its often you're writing a paragraph and for me the amount of time I have to actually sit down and give detailed feedback on a paragraph, that's

not actually their assessment to grade. Sometimes, just you feel the pressure of time with that. (Anna, Interview 2)

Cullum echoed Anna's frustration.

Time, we see these students for three hours in a week and it would be quite easy to ensure that all of the teaching that I need to do to make sure that the content is covered is done in those three hours, but I also need to find a way to mark the roll and cater for students that are coming and going for alternate programs and behaviour management and differentiation. So, time, time. I would love to have another lesson with them each week just to make up for it. (Cullum, Interview 2)

Rose also focused on time as a factor that makes the implementation of formative assessment difficult.

I find it difficult and I find it time consuming but I understand the value of it so I do it. (Rose, Interview 2)

While Anna explained that she has developed strategies to manage her time and workload effectively, she cautioned that this can be difficult for other teachers.

[I]t gets a bit stressful like that sometimes and it's great for the kids and I, this is half the reason why I'm constantly at school, at ridiculous hours of the morning, is to make sure that I'm getting through that but I can easily see for somebody who is not necessarily enjoying what they're doing that can be a heck of a lot of hardship. For somebody who might be struggling where they are in their career it could be very difficult as well, because it does require really precise time management and even for me, with the amount of stuff I'm doing, I struggle sometimes. (Anna, Interview 2)

Anna also raised the issue of resources, expressing frustration with the lack of resources available for catering to different abilities.

[C]ertainly [I] don't have the resources to be able to provide them sometimes with the one-on-one work that they probably need because just the way the funding is worked, I have one teacher aide who will be there or may not be there depending on whether the student is there, and her main focus is on the student and making sure that he is having success. (Anna, Interview 2)

She explained that previously she had tools that supported her implementation of formative assessment.

I've used whiteboards as well, so write an answer on a whiteboard and show it to me as well, not so much here because I'm not really set up for that in the same way I have been at previous schools. (Anna, Interview 2)

Cullum also explained that having a teacher aide working with special needs students provides for differentiation for those students and allows him to engage fully with the rest of the students.

[F]ortunately for me in English the lowest students are taken out, so they go, but in Geography they're all together and those lower students are supported by a teacher aide in that they are on a modified program. So, in a structured way we've catered for the lowest. (Cullum, Interview 2)

The three teachers described varying student levels, competing expectations and time limits as often leaving them uncertain and under pressure. While identifying the barriers preventing effective implementation of formative assessment, it became evident from the teacher's responses that they required shared expectations to be in place, specifically concerning curriculum expectation and school key priorities. Teachers also identified time as a key constraint on their ability to effectively implement formative assessment and act upon collected data by investing time to provide students with written and verbal feedback. The theme of *Lack of shared expectation* aligns to the theme of *Embedding effective practice*, as the teachers found it difficult to action the data they collected about student learning during the lesson. Teachers indicated that there is a varied range of student abilities within the classroom, which creates a challenge for teachers in effectively implementing formative assessment. This theme also aligns with the *Developing understanding* and *Embedding effective practice* themes, in that teachers need to be supported in developing their understanding and expertise in differentiating for different ability levels within the classroom. It is evident from teachers' comments that developing common, shared curriculum expectations and providing them with the support to differentiate for varying student levels will enable them to overcome barriers and maintain consistent and effective implementation of formative assessment.

4.3 Summary

This phenomenological analysis sought to understand Junior Secondary teachers' perceived understanding of formative assessment and how it influences pedagogical choices and practices in the classroom. The analysis of the teachers' interviews and focus group discussion identified five key themes: *Developing understanding*, *Embedding effective practice*, *Differentiation*, *Shared expectations* and *Time*. The themes were discussed within the outline of the study's three research questions and aligned with Wiliam's (2010) formative assessment framework. The analysis of the interview and focus group data found that Junior Secondary teachers' perceptions of formative assessment continues to evolve with new experiences and social interactions. Consequently, their formative assessment classroom practices also continue to develop. While the three Junior Secondary teachers understand the importance of knowing their students academically, socially and emotionally through formative assessment practices, their implementations of formative assessment reflect and align with their perceptions of formative assessment, which sit on an ever-evolving continuum. Further, Junior Secondary teachers feel pressured by lack of shared expectations and by time constraints that can hinder effective and consistent implementation of formative assessment practices.

The next chapter explores each classroom context and describes the key formative assessment activities observed in each teacher's classroom in relation to the key elements of formative assessment frameworks identified in the literature review, particularly Wiliam and Thompson's (2008) formative assessment framework. The chapter presents the analysis of the formative assessment practices pertaining to the whole group of teachers and further responds to Research Questions 2 and 3.

CHAPTER 5

Analysis and Findings: Classroom observations

5.1 Introduction

This chapter analyses and presents the findings of the data gathered from the classroom observations. One of the challenges in identifying what constitutes formative assessment is that it relies on the accounts of the theoretical understanding of the issue (William 2017; Marzano, 2016). One may understand formative assessment theoretically but be unable to identify what it actually looks like in everyday practice. To better understand how teachers implement formative assessment practices, it is important to observe their classroom interactions. According to Morrison, Bachman & Connor (2005), teachers' pedagogical instructions and interactions with students at classroom level can determine how much is learned. Learning is contingent on the teachers' ability to create and sustain optimal learning experiences and environments. Aligning with the principles of Interpretative Phenomenological Analysis (IPA), it is important to understand the phenomenon of formative assessment within the social context in which it occurs (Yin, 2014). Classroom observation provides an opportunity to be immersed in the context of the phenomenon. Alexander (2010) explains that classroom observations generate useful information on the quality of teaching and learning, and, in particular, the way teachers teach and how learners are exposed to learning opportunities.

The next section analyses the data collected during the teaching (observations) and documents the learning journey of the three Junior Secondary teachers throughout the study. It also describes the classroom settings for each of the participants and reports on teacher classroom observations. This section also provides the basis of further exploration into Research Questions 2 and 3.

5.2 Analysis of classroom observation data

Classroom observations allowed the researcher to observe the interaction between the teachers and their students and supported the interpretation and examination of formative assessment practices as they take place in the teachers' lived experiences.

A brief description of each classroom setting, context and key classroom practices is provided to give a snapshot of each classroom learning environment. The focus here is to provide an insight into each teacher's classroom general pedagogical practice and content pedagogical knowledge and beliefs, and to contribute to our understanding of Research Questions 1 ('What are Junior Secondary teachers' perceptions of formative assessment?'), 2 ('What are Junior Secondary teachers' practices of formative assessment, including what they think enables and/or hinders their practice?') and 3 ('How do the teachers' perceptions of formative assessment align with their practices in the classroom in relation to positive student learning outcomes?').

5.2.1 Cullum

Three observations were conducted in Cullum's Year 8 English class. The students in this class spend six periods a week with Cullum as he teaches them both English and History/Geography. Each subject area is allocated three periods per week; each period is 60 minutes long. Cullum's classroom was located in the building near the school's executive office. The classroom layout consisted of a moderate-sized room with no displays on the walls. The classroom had a whiteboard and noticeboard side by side on the wall at the front of the room (Figure 5.1). The teachers' desk was placed sideways in the front right corner of the room. The classroom had 30 desks—six desks in five rows from the front to the back of the room. During the interview period, when asked whether or not any thought was put into the seating plan to enable collaborative work, Cullum indicated that there was no plan in place and that 'the children's seating plan is by and large with their friends which is also within their ability groups'. Classroom layout allows for very limited student interaction with the exception of interaction with students sitting directly beside or behind one another. The classroom layout restricted Cullum's movement around the class.



Figure 5.1: Cullum's classroom.

Lesson one

The lessons observed with Cullum were part of a wider unit exploring the ways different literary text types (written story and animated film) use various codes and conventions to construct different versions of the same text. This was addressed by studying Rudyard Kipling's *Rikki-Tikki-Tavi*. The unit of work was conducted over seven weeks. In the first classroom observation, which was of the second lesson in the sequence of the unit, Cullum conducted a 'quick write', which is a formative assessment task implemented across the school for Junior Secondary students at the beginning of each term. Quick write tasks involve the students producing an analytical piece of writing on a pre-selected topic that is based on the unit of work being taught in English during that term. Quick write formative assessment tasks are intended to last 20 minutes; ten minutes allocated to writing and ten minutes for students to edit their work. The quick write topic students were given during the observation period was: 'Write a review of any film or book you have seen or read this term'. Once the students finished their quick writes, Cullum asked them to mark some criteria as a whole class before he collected students' papers. Cullum then went over what students learned in the previous lesson and asked students to look at their Venn diagram comparing *Rikki-Tikki-Tavi* the book and the movie and to share some of their ideas as a whole class. Cullum ensured he set the scene and purpose for the unit of work, explaining that the culminating task for the unit was a comparative essay on the movie and the book. Cullum then explained: 'today we will read and understand the story and for the rest of this week and next week we will create a concept map'.

The rest of the lesson was a whole-class reading of the story. Occasionally Cullum stopped and checked students' understanding of the story and language features.

Lesson two

In the second classroom observation, which was lesson eight in the sequence of the unit, Cullum utilised quizzes at the beginning of the lesson to gauge what the students had learned and retained from the previous lesson ('Write down the three ways that author can show meaning in the writing'). Cullum used this information to set the focus of his lessons and inform his emphasis on certain concepts. Throughout the lesson, Cullum engaged the students in learning activities that demonstrated their understanding of the key concepts planned for the lesson. For example, before sharing the learning objective of the lesson with the students, he gave the students a quick quiz in which he asked;

'If you were to write a short story about your weekend, how you would show me an example of a direct or indirect use of the devices of; effect, judgement or appreciation. Show me one of our devices; effect, judgement and appreciation'.

Cullum conducted frequent quizzes during the lesson, which involved students writing in their books answers to shared questions. Cullum shared the key objective of the lesson as a statement to the class, explaining 'Today we are going to look at themes; we have read *Rikki-Tikki-Tavi* and today we are going to look at how Kipling develops key themes in the story'. Cullum then displayed the PowerPoint slide with the learning objective and success criteria for students to copy into their books. Throughout the lesson, the projector overheated and turned itself off; at times, Cullum called out the questions for students to write. Before he started the lesson, Cullum explained to students that they are going to have a quick quiz and put the following task on the board for students.

What are the key themes in each of the following?

- 1) What is the theme for the movie finding Nemo or Dori?
- 2) What is the theme for Man's last Dance?
- 3) Young man working hard to save to buy a house.
- 4) A girl being lectured by her father for breaking curfew.

The students were given five minutes to respond to the questions and then Cullum led a whole-class discussion and asked students to discuss their identified themes. Cullum then introduced

the main activity of the lesson focusing on the key themes identified in *Rikki-Tikki-Tavi*. He projected a question the board asking the students, ‘What are some of the values and morals taught to Victorian children in this story?’. One student answered ‘brave’; Cullum then projected the word ‘courage’ and asked for further suggestions. When no student put their hand up, Cullum offered a students a clue (‘a word that starts with L’); he then projected the words ‘loyalty’, ‘friendship’ and ‘honesty’.

Cullum then engaged the students in an activity in which they had to choose one of the themes of the story and write a PEEL (point, evidence, explain, link) paragraph to show how the author explored this theme in the story. Cullum used the loyalty theme to model how to write a PEEL paragraph, then asked the students to use the scaffold to write their own. Cullum walked around and discussed the work of some students. Cullum asked the students to finish this task at home as there was not enough time for students to finish it in class.

At the end of the second classroom observation, Cullum identified his participation in the research as an opportunity for reflection on practice. He explained, ‘because of this process I was more aware of formative process, of formative assessment throughout my lessons that you were observing’. He added, ‘I think that your appearance in my life is ... I liken it to a good professional development opportunity’.

Lesson three

The third observation was lesson 14 in the sequence of lessons and the second-to-last before students engaged in a three-day in-class exam for this unit of work. Cullum started the lesson explaining,

We will work this lesson with a view towards our three days in class exam for *Rikki-Tikki-Tavi*, I had hoped to start the exam on Wednesday but we are not ready, so we are going to use today and Wednesday to get ready for the exam next week Monday, Tuesday and Wednesday.

The key focus of the lesson was on language features of essays. Cullum instructed the students: ‘Look at your notes from the previous lesson and find noun groups and nominalisation and read your notes as you will have a task to work on with your elbow buddy, you have 45 seconds

to quickly go over your notes'. Cullum then asked students to be teachers and share with their elbow buddy 'What does it mean to write with noun groups, and provide examples'. Cullum then asked students to swap roles and for the teachers to now explain to their elbow buddy what nominalisation is and to give examples. Cullum provided two activities for students to work on, one on noun groups and another on nominalisation. During the second activity on nominalisation, Cullum invited students for a discussion on the topic and asked them to provide examples; however, most of the students were struggling with the concept. Cullum asked the students to put their hands up if they understood nominalisation; few students had their hands up. Cullum stated, 'Many of you are telling me you are not sure what nominalisation means'. Cullum went over what nominalisation meant and provided students with some examples. He then provided students with couple of words and asked them if they know how to change them into nouns; again, few students put their hands up. After looking at who had their hand up, Cullum stated: 'I have a student almost in different sections in the class, if you had your hand up you are now the teacher you need to explain to your elbow buddy what nominalisation means and give examples. Go.' Cullum gave the students time to discuss and then brought them back as a whole class, at which time he provided more examples and put more words on the board for students to turn into nouns.

This classroom episode illustrates how Cullum used the learning evidence to adjust his instruction. He used different strategies to ensure the acquisition of learning, including activating students as resources for one another, whereby the students who understood the concept of nominalisation became teachers for other students to support their learning.

In the three observations, there was an established routine at the beginning of each lesson that set the expectations of learning and outlined the content being taught during the lesson. This process involved Cullum sharing with students the learning objectives and success criteria for each lesson, thus ensuring that students had a clear and shared understanding of the learning for each lesson. PowerPoint presentations were used by Cullum as a key pedagogical tool for delivering the lessons. Throughout the lessons, Cullum outlined links to the skills/content taught in the previous lessons and checked students' learning and understanding.

5.2.2 Rose

Three classroom observations were conducted in Rose's Year 9 English class. The classroom was placed at the back of the school near the English staffroom. The classroom was divided into three sections, the first with two desks together, the middle section with three desks together and the final section with two desks, with all desks facing the front of the room. The teacher's desk faced the students and was located to the left of the students at the front.



Figure 5.2: Rose's classroom.

When asked about the seating plan and classroom layout Rose explained that she

like[s] the idea of student owning the responsibility of choosing where they sit and I think giving them that privilege often makes them reluctant to lose that privilege. So they do tend to do the right thing. I mean, I'm pretty lucky, they're very well behaved class as are most of my classes.

Rose relied heavily on using PowerPoint as a pedagogical tool to share the learning objectives, success criteria and lesson content. Rose was active around the classroom, checking and discussing students' work. In two of the classroom observations with Rose, students were asked to work in pairs and it was evident from student interactions that this was a practice with which they were familiar.

Lesson one

The lessons observed were part of a wider unit on persuasive techniques, which was addressed by examining a number of magazines and identifying targeted audience and persuasive techniques. The first classroom observation took place during the second lesson of the unit sequence. During this observation, students were asked to look at different magazine covers in pairs and were also given flashcards with characteristics of effective magazine covers. The students were then asked to analyse the magazine cover and match their analysis to the flashcards they were given. During this time, Rose constantly walked around the classroom and observed the progress of the students. During the second classroom observation with Rose, students watched a video and were asked to work in pairs to identify the signifiers included in the text and explain what they wanted the audience to believe. Each pair then had to stick their response onto the board, and the teacher read the explanations out loud and classified them on the board (Figure 5.3).

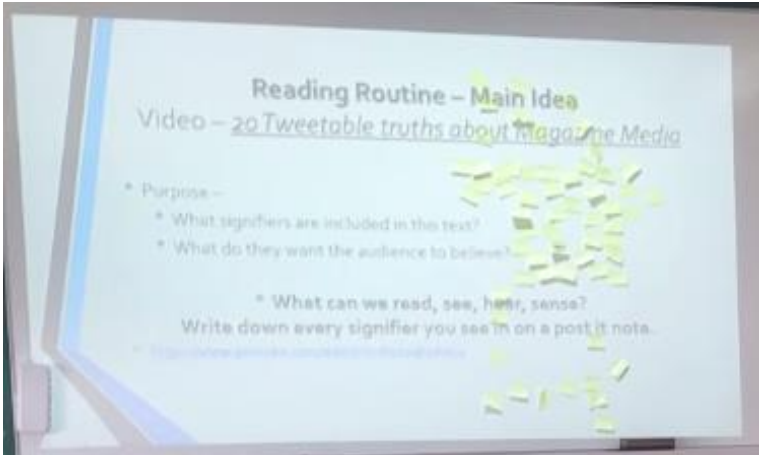


Figure 5.3: Example of strategy used to check students understanding of signifiers.

Lesson two

This was lesson six in the sequence of the unit. The key focus of the lesson was for students to identify persuasive techniques and analyse their use in the text. The students watched a video and were asked to identify the persuasive techniques used and explain how effective they were in persuading the audience. Students were asked to work in pairs and then present to the class. During the lesson, Rose played the video twice. She walked around the class to discuss students' answers and guide their learning.

Lesson three

This was lesson fifteen in the sequence of the unit and the third-to-last lesson before students presented their culminating task for the unit. Rose shared the following learning objective and success criteria for the lesson.

Learning objective: To create an effective PowerPoint to complete your pitch

Success Criteria: A completed PowerPoint presentation

Rose explained:

[In] this lesson you are going to work independently to finish your presentations. On Wednesday I will provide you with a check list and organise for you to present to a partner so you can have a practice and on Thursday you will present to the class.

While Rose had the success criteria up on the board, there were no clear criteria as to what an effective presentation should include. The only measure for success was a completed presentation, without reference to its effectiveness or quality. Rose sat at her desk and made herself available for students to ask any questions. She then walked around the class to observe students' work. After looking around the class, Rose asked the whole class: 'Who would like to view the PowerPoint magazine pitch that was my exemplar again, so that you can see how this student has built these visual representations and pictures of what is going to be appealing?', to which all students said yes.

Students then worked on their presentations. Toward the end of the lesson, Rose wrote on the board, 'For homework, you must finish your PowerPoint presentation'.

5.2.3 Anna

The classroom observation took place in Anna's Year 8 Geography class, which consisted of 29 students. These included two students on individual curriculum plans, one operating at a Year 5/6 level and one at Year 3/4 level, each with individualised learning plans and one receiving support from an individual teacher aide. The classroom was located near the executive building of the school. Considering it was a Junior Secondary classroom, the classroom lacked visual stimuli, was dull and was not stimulating for students. The classroom consisted of six rows of two, three and two desks, while Anna's desk was positioned sideways on the right side of the front of the room (Figure 5.4). The layout of the classroom hindered group work and limited Anna's ability to move around the classroom. When asked about the classroom layout and seating plan, Anna indicated that this was not her classroom and every teacher had their own form class which they were responsible for organising. Anna indicated that in her form class, she put the desks in clusters of four:

[I]t is something that I think the school does try and encourage but I struggle sometimes with how that works in a classroom where we still teach on the front. So, I've got kids who end up with their back to the board and they have to turn around, or they're on their side and they have to turn around because of the position of their desks in the groups. So, I quite like having the lines because it means that they all have a decent view of the board.

The room in which the Geography lessons took place was the form class of a Math teacher who selected this particular layout.



Figure 5.4: Anna's classroom.

Anna relied heavily on PowerPoint presentations to deliver her lessons, and her lessons included several activities for students to complete throughout the the class. Students were engaged in a unit of work that would help them to identify patterns of developing and developed countries and urbanisation. Throughout the duration of the observations, Anna expressed that she is still developing her professional expertise and she is flexible and open to new ideas that will help her do her work better (hence her engagement in this research). She explained, 'I thought, "Yep I'll stick my hand up for this", because this is a perfect way to learn how to improve my practices of it [formative assessment]'.

Lesson one

The lessons observed were part of a wider unit on investigating the changing geography of countries as a result of shifts in population distribution. This was lesson two in the sequence of the unit. Anna shared the learning intention and success criteria for the lesson and started the lesson by guiding a whole-class discussion on pull and push factors for urbanisation. She ensured she shared the learning path of the lesson with students: 'Today we will define urbanisation, what is it? Identify and categorise the causes of urbanisation to see the link between the push and pull factors of urbanisation and at the end explain how these factors cause urbanisation.' Students watched a video highlighting the difference between rural and

urban areas and then, as whole class, the teacher guided a discussion that focused on classifying push and pull factors. For their second activity, students watched a video on cities in China and were required to identify key reasons for urbanisation. For the final activity of the lesson, students were asked to look at the list of factors that cause people to move to urban areas and classify them into social, economic and environmental factors. Anna walked around and looked at students' work, discussing some students' work. At the end of the lesson as a lesson review, Anna projected a slide (Figure 5.5) and asked the students to do the task for homework.

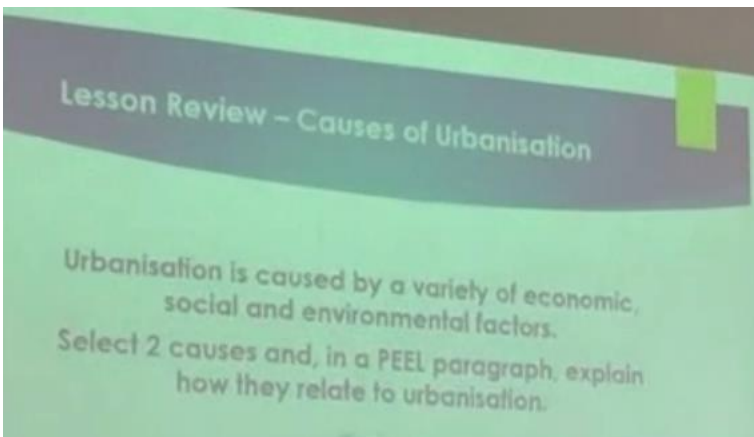


Figure 5.5: Lesson review homework task example.

Lesson two

This was lesson eight in the sequence of the unit. Anna introduced the learning objective and the success criteria for the lesson and briefly revisited learning from previous lesson. Anna started the lesson by getting the students to watch a video. Before she started the video, she instructed the class, 'While watching the video take down three notes that will help you construct a definition of development. Share this with your elbow buddy.'

This task was the only opportunity students had for collaboration during this lesson. After watching the video and allowing students time to discuss with their buddy, Anna checked students' understanding by asking, 'What key things raised in the video about development'. The teacher then invited students who put their hand up to provide a response. Toward the end of the lesson, the teacher asked the students to copy the table on the slide; to write their own definition of developed and developing; to provide a pictorial representation of developing and

developed countries; and to identify the characteristics of developing and developed countries and list names of developing and developed countries (see Figure 5.6)

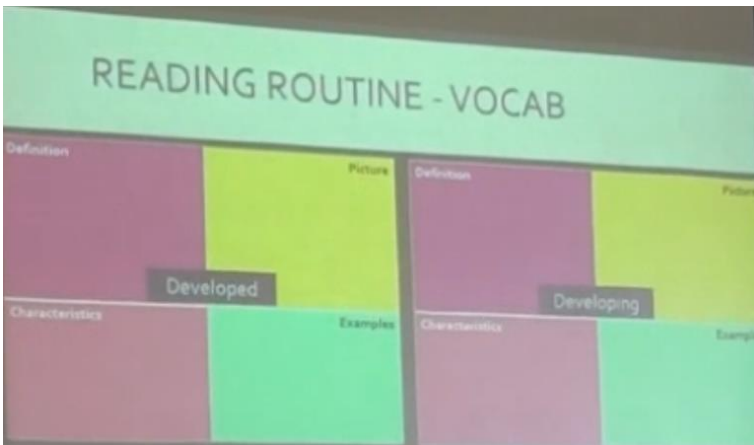


Figure 5.6: Example student learning activity.

The students did not have enough time to finish this activity and the teacher asked the students who had not finished to complete the task for homework. During this lesson, Anna relied on video as a stimulus for her teaching. After students viewed each video, Anna asked general questions about what the students got out of the video and then went over key information from the video.

Lesson three

This was lesson fifteen in the sequence of the unit. In this lesson, the teacher introduced choropleth maps and engaged the students in three activities to support them in applying the new learning. After introducing the lesson objective and success criteria, Anna asked the following question to check students' prior knowledge: 'How do we read a choropleth map?' The teacher then shared a map of the world with the class and guided them to the legend, which provided an opportunity to engage the students in a whole-class discussion (see Box 5.1).

Box 5.1: Classroom vignette of a whole-class discussion

T: have a look at the legend, are there different colours used?

S1: Yes.

T: No, just different shades of the same colour, because it is the main thing about choropleth maps, they only compare one variable. Do you know what this variable is for this map?

S: (no answer)

T: Percentage of people living in urban areas, so it is a scale from 0 to 100%.

T: If we are mapping two variables would we use same colours?

S2: No.

T: That's right, because we are representing different things.

T: What type of data can we represent on a choropleth map?

S3: Population.

T: Population density, how many people live on a country compared to how much land they've got. You could also do the opposite of this, the percentage of people living in rural areas. What would we expect to see if this map was done with rural areas instead of urban?

S4: Swap.

T: They would swap, would it be a direct swap, we have got 1, 2, 3, 4 colours, it would properly be a direct swap. The top and bottom would swap and the middle 2 would swap around. This is a direct swap because the pattern does not change, because it is the opposite of the same variable really. The percentage of people living in urban areas, the remainder of the percentage of people who do not live in urban areas are going to live where?

S4: Rural.

T: Rural areas, correct.

In the above vignette, while Anna asked the students' questions to engage them in a discussion, the questions offered were closed questions that only required one-word answers. The students needed to have the time to interpret the visual information and discuss it with the teacher. The teacher also needed to ask further questions to elicit information.

In each of the three activities, the students were given a map and a set of five questions to answer in their books. While students were working on their tasks, the teacher walked around

the class and had very brief interactions with couple of students; these interactions consisted of couple of closed questions about the task.

At the end of the lesson the teacher asked, ‘Hands up if you feel confident enough to do this again as a test, if I give you a map with some data. Hands up you if you can manage to do this again.’

In all three observed lessons, Anna ensured she engaged students in a number of different activities to give the students the opportunity to demonstrate their learning. Anna made the effort to go around the class and check students’ work or have a discussion with different students during their independent work; however the classroom layout did not support her efforts. Anna’s lessons followed a set routine; in each lesson, students practised using their reading routines template and watched two to three videos, then answered questions or engaged in a class discussion.

5.3 Discussion of classroom observation

Classroom observations helped develop greater understanding of the implications of teachers’ perceived understanding of formative assessment on their classroom practice. The observations allowed for an accurate understanding of each teacher’s use of formative assessment and highlighted the inter-subjectivity in teachers’ perceived understanding of formative assessment and their implementation of its practices in their classrooms. While there were a number of formative assessment practices observed in the classrooms of the three teachers, the approach and the effectiveness of different practices varied from one teacher to the other. This will be further explored in detail in section 5.4. It is, however, important to note two key classroom aspects that were revealed during the classroom observation, especially considering that this study addresses middle years learners and effective formative assessment practices that support their learning engagement and progressions. These two aspects are teaching approach and classroom layout.

The most commonly observed teaching approach across the three classrooms was a form of teacher directed, with the teachers standing at the front of the classroom and presenting a number of slides. Teachers relied heavily on the use of pre-prepared PowerPoint slides. The

most prominent form of cognitive engagement observed in all three classes was receiving and recalling information, where students were in a mode of ‘passive learning’. There were very few instances in which students were asked to contribute their own ideas through desk work, group work or class discussions.

The classroom setup in all three classes, particularly in Cullum’s and Anna’s classrooms, limited the opportunity for students’ effective collaboration. McDonald (2013) and Porter (2007) expound the importance of teachers creating a classroom environment and setup that gives all students the best opportunity to learn. A well-considered classroom setup promotes good learning and raises student expectations, encourages them to participate, and ensures that no student can go unnoticed. Thus, setting up the classroom in ways that maximise student collaboration with peers and allow for effective group work is central to improving students’ engagement with learning and enhancing their social and emotional wellbeing. This, in turn, aligns with and supports how middle years learners learn best; the more opportunities students have to collaborate and interact with peers and teachers, the more likely they will engage in learning and have opportunities to improve learning achievement and develop interpersonal relationships and positive attitudes to learning (Greenberg, 2014).

The classroom observations aimed to document classroom practices and interactions that aligned with formative assessment teaching practices, including the variation in strategies and/or techniques, and link these practices to teachers’ understanding and perceptions of formative assessment. It sought to identify how teachers’ pedagogical practices line up with Heritage’s (2012) and Wiliam and Thomson’s (2008) formative assessment models. To that end, the information collected from the observations was reviewed to gain an in-depth understanding of how the teachers’ formative assessment practice calibrated with the formative assessment models identified in this study.

The next section further unpacks and reports on the three teachers’ teaching practices to answer the second research question- What are Junior Secondary teachers’ classroom practices of formative assessment?- and identify where they aligned with the key formative assessment elements identified in Wiliam and Thompson’s (2008) framework. As such, Wiliam and Thompson’s model was used to structure the analysis of formative assessment conducted in

the classrooms of the participating teachers. The model is underpinned by the key principle of using evidence of student learning to adjust instruction so as to cater for the students' identified learning needs.

5.4 Key elements of formative assessment

This section unpacks the classroom practices observed during the classroom observation against the five key elements identified in Wiliam and Thomas's (2008) framework: clarifying learning intentions and criteria for success; engineering effective classroom discussions that elicit evidence of learning; providing feedback that moves the learning forward; activating students as instructional resources for one another; and activating students as the owners of their own learning.

5.4.1 Clarifying learning intentions and criteria for success

Each of the teachers was well aware of the need to set the lesson goals at the beginning of the teaching segment. While the focus is on the teachers' presentation of the learning goals, it is important to examine whether the goals are appropriate for and accessible to all students, ensuring that students can make connections among lessons within a larger sequence.

In all the observed lessons, the teachers ensured the lesson objectives and success criteria were shared with the students at the beginning of each lesson, and students were asked to write them in their books. All learning activities and tasks observed were related to the learning goal intended for the lessons. In all classes, students were clear about what they needed to do with the task and/or activity presented to them and were able to begin work efficiently.

The learning goals shared with the students at the beginning of each lesson were presented on a PowerPoint slide, and the teachers made verbal reference to it at the start of the lesson. The learning goals shared with students focused on what students should know or understand by the end of the lesson. The content of the learning goal was appropriate for students and was expressed in language accessible to students. It is important to note that it was not observed that the teachers returned to the learning goals throughout the lesson or toward the end of the lesson in a meaningful way that contributed to deepening student understanding and support learning or that summarised progress toward the goals at the end of the lesson.

Box 5.2: Examples of lesson objectives and success criteria

Rose's class

Learning objective: to be able to explain the visual and written features of a magazine cover and identify its target audience.

Success criteria:

- Identify signifiers.
- Identify types of signifiers.
- Annotate a PEEL paragraph.

Anna's class

Learning objective: Understand the causes of urbanisation.

Success criteria:

- Define urbanisation.
- Identify and categorise the causes of urbanisation.
- Explain how these factors cause urbanisation.

Cullum's Class

Learning objective: Identifying the key themes of the story and explain with evidence.

Success Criteria:

- An inductive reasoning table will assist in identifying messages and evidence.
- PEEL paragraph will be written to explain how the theme of the story is explained.

As seen in the examples above, while the learning goals presented to students focus on what students should know by the end of the lesson, the success criteria did not provide students with a method to internalise and use the criteria effectively. This has the potential to limit the ability of students to use the criteria effectively (Wiliam, 2017).

All three teachers addressed the learning goals at the beginning of the lesson. However, none of them referred back to the learning goals and success criteria at the conclusion of the lesson in any of the classroom observations conducted. All three teachers checked for student understanding throughout the lesson by asking students whether they had any questions. Notably, at the end of Anna's lesson she asked students who understood the content to stand

on the left side of the room while asking students who did not understand the content to stand on the right side of the room. All the students stood to the left, but whether that can be attributed to student understanding or students wanting to leave class for lunch is unknown. In essence, the students' understanding was checked by teachers but not in relation to the students' progress toward the learning goals and success criteria. Students were not actively involved in a process to internalise success criteria in order to meaningfully utilise the criteria and apply them to aid their learning.

5.4.2 Engineering effective discussions to elicit evidence of learning

Planning for effective discussions focuses on engineering learning experiences in which students can engage with the learning to develop deeper understanding (Marzano, 2016). Such discussions have potential to produce evidence of student learning and allow teachers to regulate their teaching based on the learning evidence elicited from students (Wiliam, 2015).

Three main forms of eliciting evidence of students' learning were noted during the classroom observations. These were teacher questioning; teacher observing students; and reviewing students' homework. These strategies varied from one class to the other and from one teacher to the other. The following vignette illustrates an example of teacher questioning.

Box 5.3: Rose's classroom extract with one student (Observation 3, Year 9 English)

T: What is your idea?

S: It is a DIY but a little bit different, it is not so much for teens but it can be for teens and young adults. It can be for decorating and in general life hacks.

T: Tell me what information are you going to put on your PowerPoint?

S: Rhetorical questions.

T: How are you going to start to build your PowerPoint, this is obviously your title page. How are you going to go about presenting key information? Are you going to include a picture of your advertisement?

S: Yes.

T: Are you going to annotate that, possibly, because I like to really see that very much?

S: Yes, annotate, then I will put it on the PowerPoint.

T: Okay, great. What are you going to be able to pull out of your feature article? Because I don't need to see all of it, do I?

S: Mmm...

T: What things might interest me?

S: Mmmmm...

T: What are you looking for in the analysis of your feature article?

S: Basically, how this woman renovated her kitchen for \$130.

T: Yes, I remember that, so what bits of that are you going to use to catch the audiences' attention?

S: Renovation is not always pricey.

T: Okay, so perhaps this is something that you need to include in your PowerPoint, if it is important.

Teacher questioning

Asking questions was the most common strategy used by all three teachers. In particular, the teachers used questioning at the beginning of the lesson to check students' understanding from the previous lesson. The following extract illustrates this type of questioning.

Box 5.4: Anna's classroom extract (Observation 1, Year 8 Geography)

Anna's Class: At the beginning of the lesson.

T: Who can tell me what a push factor is?

S1: There is a hazard in the area.

S2: Something that pushes you away.

S3: Push factor is something that's annoying, like the area that you are living in.

T: So we've got couple of things coming up here, we are talking about: things that are existing and then an action that you take as a result. Can you give me an example of push factors?

S1: Lack of jobs.

S2: Diseases.

S3: Danger.

S4: Pollution.

This example represented the most common type of questions used by the teachers, which occurred at the beginning of the lesson. In this example, Anna aimed to elicit information to gauge students' understanding of push and pull factors.

While all teachers used questioning as a strategy, how the strategy was used and for what purpose varied from one class to the other. For example, Rose used questions to ask students to engage with a given text. Cullum, on the other hand, used questions to check understanding while Anna asked students questions to identify their prior knowledge and scaffold the understanding. Using questioning as a strategy to engage students in rich discussions and deep thinking was not observed in any of the classroom. Wragg and Brown (2001) emphasise the importance of using open, higher-level questions to develop students' higher-order thinking skills. They confirm that effective questioning is important to promote thinking. As such questions need to be planned, they should be closely linked to the objectives of the lesson to reflect the progression in cognitive level as the questions go on. Gose (2009) argues that higher-level cognitive questions, such as reasoning, inferential and elaborative questions, contribute greatly to deep understanding and cognitively engage students in learning. This form of questioning facilitates students' learning and ultimately results in higher academic performance.

Another example of teacher questioning was observed in Rose's class, where students were asked to watch a video and then identify the types of signifiers used in the video and why these signifiers were used. The following extract illustrates the type of questioning Rose used to elicit learning evidence.

Box 5.5: Rose's classroom extract (Observation 1, Year 9 English)

T: What was a linguistic or a language signifier that you were able to identify? Something about the language in that video?

S1: How they used numbers.

T: How they used percentages or statistics to show the viewers how many people were reading magazines, yes. What about something visually?

S2: Colour.

T: Colour, what would you like to say about colour?

S2: They were bright.

T: Attention grabbing. What about what we heard?

S3: Fast-paced music.

T: It was upbeat.

S4: It was funky.

T: It was a bit funky wasn't it? Certainly made me want to know what they had to say.

In this example, Rose attempted to elicit students' understanding by posing questions to the whole class. When Rose posed different questions, students who had their hands up or were willing to share were invited to respond to the questions. Cullum stated, 'The most common formative assessment that I use would be day-to-day teacher-to-student questioning or student-to-student questioning'.

All three teachers confirmed that students answer questions in their books. Rose always ensured she moves around the classroom, looking in students' books and conversing with students while they responded to questions. Notably, the questions asked by teachers throughout the lesson did not encourage discussion or urge the involvement of more reserved students, eliciting information only from those willing to volunteer answers.

While it was evident that all teachers were keen to check students' understanding, questioning strategies could have been utilised more effectively to engage students in an effective discussion that provided insight into students' learning progress. For example, toward the end of one of Anna's lessons, she asked students: 'If you understood what we learned about today stand to the left and if you did not understand what we learned about today stand to the right side of the room'. Although Anna tried to gauge students' understanding to elicit evidence of their learning, the way the question was phrased did not reflect or connect students back to the learning goal and lacked specificity. Rose used a different line of questioning with students, asking them to 'write what sort of signifiers you see in this ad and why they are important'. This example illustrates the way in which the teacher attempted to elicit students' knowledge and understanding in the teacher-whole class interaction. The teacher provided students with time to respond to the question and write their response on a sticky note and stick it on the board. This was a good opportunity for the teacher to elicit students' learning, share different responses with the class and provide students with feedback; instead, however, students were then asked to move on to the next activity. Cullum's approach to eliciting students' progress

was to ask students to provide examples; for example, after inviting students who were willing to share, he would then discuss the examples with the rest of the class, highlighting different aspects within the given example. Cullum utilised the information gathered from students' work to inform his teaching and practice by revisiting key concepts with the class. Even though all three teachers asked different questions to elicit evidence of learning, in terms of effective models of formative assessment these practices were lacking in the ability to engage all students within the classroom context.

Teacher–student in-class observations

It was observed that the teachers attempted to observe students' learning to elicit evidence of learning. However, this was not a planned strategy and was hindered by the classroom layout. While students were completing written work—for example, answering questions in their books—the teachers, especially Rose, would occasionally walk around the class and look at students' work. By walking around and looking at their work, Rose interacted with some students and had the opportunity to determine how individual students were getting on with their work.

It is important to note that in some instances in Cullum's and Anna's classrooms, their ability to move around the room effectively and interact with students was limited by the classroom layout. This being said, it is important to note Anna's comment during the interview regarding 'even just like wandering around and checking the student's progress as well. Making sure that they had completed the work and they had completed the work to a successful standard even if they didn't get it 100%.'

Reviewing students' homework

While all three teachers gave students homework that was relevant to their learning, opportunities for teachers to check individual student homework and provide feedback were limited. Cullum explained in Interviews 1 and 2 that students are given weekly homework. He explained, 'the next most common [formative assessment] would probably be the homework tasks ... I have an expectation most days for a student to spend 10 to 20 minutes in a reflection and being able to restate what it is that was the purpose of that lesson'. Cullum used this

strategy to engage students in a peer-review activity wherein students mark each other's homework and provide feedback. For Cullum, a quick review of students' homework provided him with information about students' learning and contributed to the understanding of where each individual student was in their learning. Cullum also identified homework as an opportunity for students to 'speak to their parents about their learning'. Cullum further elaborated on how he provides individual feedback on students' homework:

[I]f it's homework, I use stickers in their homework book. So if it's done well or I see that they've made an effort I put a sticker in their book and their stickers accumulate and we trade them in on what we call a 'tagging system'. So, it's a positive behaviour system that, a reward program at our school. So in my class they can cash in their stickers for, for school tags which puts them in draws for prizes.

While it was observed in Rose's class that she shared a slide setting a homework task ('Collect and read magazines (both oral and online) paying particular attention to the features articles and the advertising techniques. Think about the target audience who is this for?'), no reference or discussion was observed indicates how Rose reviewed or engaged in a discussion with the students regarding their homework. For Anna, giving students homework was important, as she has identified homework as a strategy to help students revisit and consolidate key concepts introduced during the lesson. In her second classroom observation, in which the lesson focused on developing and developed countries, she asked the students to complete the following task for homework: 'Write a PEEL paragraph to discuss the difference between developing and developed countries using examples of what we have used in today's lesson'.

While all teachers attempted to use homework as a strategy to elicit evidence of students' learning, the opportunity to provide students with written or oral feedback on the learning was missed. Cooper (2007) emphasises the importance of teachers providing students with feedback on their homework, explaining that students are more likely to effectively engage with the homework task if they know teachers are keeping track of their progress and giving feedback on errors and areas for improvement.

Table 5.1 indicates the key strategies observed to elicit information about students' learning

Table 5.1: Strategies for eliciting learning evidence

Definition	Teacher strategy	When it was observed
Teacher questioning	Teachers ask questions to elicit information about students' learning.	Generally at the beginning of the lesson and when given a task.
Teacher observing students during the lesson	Teachers observing students while completing written tasks.	When students were completing written task.
Reviewing students' homework	Teachers provide students with a task to engage with learning.	When homework task was given to students.

5.4.3 Feedback on instruction

In the three classroom observed, the teachers provided feedback in varied contexts and with different functions. These included redirecting students, communicating expectations and feeding forward for students' learning. Eliciting the process of teacher feedback was not an easy task, as it was embedded in the classroom social contexts and the teachers' overall classroom practice. However, the feedback model proposed by Hattie and Timperley (2013) provided a base to describe the nature of teacher feedback observed.

Evaluative feedback

This type of feedback was reflected when teachers were correcting students' responses to written or verbal questions. Although this study did not measure the frequency of each type of feedback, evaluative feedback was the most common type observed. This type of feedback was observed when teachers accepted or corrected a given answer in short interactions. These evaluative feedback instances were noted at the beginning of the lesson when the teachers were checking students' understanding from previous lessons and when students were completing a given task.

Descriptive feedback

This type of feedback was not frequently observed in the three classes, being witnessed in only two instances. This feedback was observed when the teachers shared an exemplar with whole

class that exemplified what constituted quality work and when teachers returned drafts to individual students.

The feedback strategies observed were mainly based on the teacher providing individual or pair comments when walking around the classroom. In Rose's class, one student was the initiator of the feedback loop when she identified an area of confusion and prompted discussion by asking a question ('How can the signifiers in advertisement affect the audience?'). The feedback provided by the teachers was mostly in the form of providing support or revising previous learning and was done mainly after students were given a task. Cullum identified different opportunities within the lesson to build on students' responses, clarify students' comments and push for more elaborate answers. At times, he tried to engage students in thinking about the comments and responses of other students. In Anna's and Rose's classes there were a number of missed opportunities that could have been utilised to help build ideas and deepen students' learning through the provision of feedback. While there were opportunities for students to work in pairs in Anna's and Rose's classrooms, during the observed lessons, there were no opportunities afforded to students to participate in peer-assessment and peer feedback. This can be considered a missed opportunity to activate students as learning resources for each other (William, 2017).

The literature reviewed emphasised the formative capacity of feedback as it can specify the way forward and how to improve. This is important as it provides students with a road map to achieve their learning goals and decipher their success criteria, allowing them to clearly identify the steps required for their learning progression (Hattie & McDonoghue, 2016).

5.4.4 Activating students as instructional resources

Opportunities for collaborative work varied from teacher to teacher. Students were mostly asked to work in pairs. From my observation, this was due to the layout of the classrooms, which only facilitated pair work. The layout of Cullum's and Anna's classrooms, in particular, hindered their ability to move around the classroom effectively and interact with students. In the nine lessons observed, there was not one instance where the students were asked to move around the classroom or work in small groups. Rose encouraged students to work in pairs to 'identify the signifiers in pairs and when you're done stick the sticky notes on the board'.

During the lesson, there was no opportunity for students to share their viewpoint with the class; thus, this was a missed opportunity to activate students as learning resources for one another.

In Anna's second observed class she had planned an activity in which students would work together to brainstorm reasons why people move from rural to urban areas (Figure 5.7). During this activity, students could interact with the person sitting next to them.

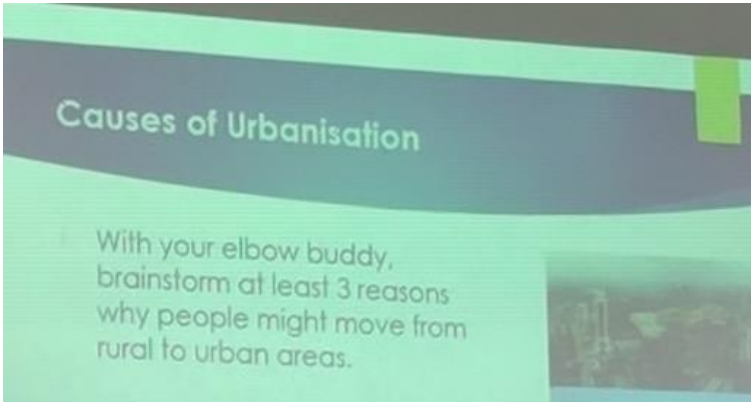


Figure 5.7: Example of pair work.

As Wiliam (2017), Heritage (2010), Timperley, Kaser and Halbert (2014) and Hattie (2016) note, opportunities to work with and review the work of a peer and to provide feedback are very beneficial to the student providing the feedback, as well as to the student receiving the feedback. Effective planning for opportunities for students to review each other's work and provide feedback would support students and improve the quality of their work. Additionally, the more often teachers structured opportunities to activate students as instructional resources for one another, the more engaged students are in their own learning (Wiliam, 2013).

5.4.5 Activating students as owners of their learning

Students' active involvement in their own learning process through self-assessment is important for the improvement of their learning. As Wiliam states, 'reflecting critically on one's own learning is emotionally charged, which is why developing such skills takes time, especially with students who are accustomed to failure.' (2011, p. 158).

Although in all the observations the teachers shared the learning goals and success criteria at the beginning of each lesson, there were no observations of teachers engaging students in a meaningful opportunity to evaluate and review their own progress toward the learning goals.

The only obvious student self-assessment was observed in Rose's class during the second classroom observation, when she briefly shared the unit's proficiency scales and asked the students to reflect on their learning using those scales. In order for self-assessment to promote and enhance formative assessment, it is important to evaluate the extent to which the identified proficiency scale and/or success criteria reflect the key learning objectives.

To understand the extent to which teachers engage in authentic formative assessment practices based on formative data to inform their instruction, it was important to align classroom practice to the five domains drawn from literature on effective formative assessment. This, in turn, has highlighted that although teachers use some type of formative assessment strategies, on the whole they need more practice and support to improve their implementation, particularly in areas that invite more student participation and ownership of their learning.

5.5 Key findings from the classroom observations

The classroom observations helped explore teachers' implementation of formative assessment practices and shed light on the classroom as learning space. The previous section illustrated the teachers' formative assessment classroom practices and responded to research question two: What are Junior Secondary teachers' classroom practices of formative assessment? It illustrated and unpacked the teacher's formative assessment pedagogical approaches against Wiliam and Thompson's model (2018). Exploration and identification of teachers' classroom practices against the model contributed to answering research questions one and three.

In regards to research question one (What are Junior Secondary teachers' perceived understanding of formative assessment?), two key findings were drawn from the classroom observation. The first finding is that teachers' perceptions of formative assessment were developing and this is reflected in their classroom practices, where their implementation of formative assessment and their practices were also still developing. As such, the classroom observation revealed an alignment between the teacher's understanding and their practice, and this is supported by the interview and focus group data. Teachers expressed their understanding of formative assessment as a process that commences at the beginning of a unit and continues until the conclusion of the unit to ensure the progression of student learning against targeted learning goals. The second major finding of the classroom observation was that despite

teacher's expressing this understanding, it was not reflected or observed during the classroom observation. In fact, formative assessment practices were observed as being incidental and limited strictly to checking students understanding in the present moment. The data collected from these incidental moments of assessment was not observed to be acted upon to address students' needs or to inform planning in the following observed lessons.

The classroom observations shed light on teachers' practices and this in turn helped answer research question three (How do the Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?). It was observed that while teachers identified a number of formative assessment practices, there was a misalignment between what they identified as effective practice and their actual classroom practices. For instance, teachers' pedagogical approaches—such as activating students as learning resources for each other—were not consistently implemented and when implemented needed to be planned to be effective. This was evident in the lack of group work, with student interactions limited to discussion between neighbouring students; this was also a product of a restrictive classroom layout. The classroom layout in all classes limited students' interactions and only allowed for pair work, with no opportunity for group work; thus, it did not support the key domain of activating students as resources for one another. Additionally, the classroom layout (particularly in Cullum's and Anna's classes) limited teacher interactions with students; for the majority of the time, they only interacted with the students sitting at the edge of the row. Marx, Futhrer and Hartig (2006), Kaya and Burgess (2007) and Martin (2002) suggest that seating and/or desk arrangement influences how comfortable students feel and the amount of interaction with other students and with the teacher. They explain that students tend to ask more questions and interact with other students when they are seated in group arrangement than in row and column arrangement. Furthermore, Sommer explains that 'the teacher's educational philosophy will be reflected in the layout of the classroom. The teacher should be able to justify the arrangement of desks and chairs on the basis of certain educational goals' (1977, p.13). As such, it is important that teachers design the classroom and manipulate the space to fit the instructional needs and maximise students' achievement. Wannarka and Ruhl (2008) suggest that task demands and learning goals are relevant considerations in selecting optimum seating arrangements.

Additionally, it was noted that while all teachers used some form of formative assessment strategies effectively. However, they collectively need more practice and professional development in order to improve their implementation of formative assessment, particularly in areas that invite increased student participation, encourage students to take ownership of their learning and activate students as resources for one another. All teachers identified the learning goals that reflected the sequence of lessons. The purposeful sequencing of lessons provides evidence that teachers are planning effectively to demonstrate learning progression during the unit. The learning goals were accompanied by the success criteria, the intended goal of which was to ensure the accomplishment of the learning goals by students at the end of each lesson. However, the success criteria were not utilised effectively to guide learning as students engaged in learning tasks, students were not observed to have reflected on their learning and the achievement of the identified learning objectives against the success criteria at the conclusion of each lesson. Teachers mainly used the following strategies.

Box 5.6: Examples of formative assessment strategies

- Observing and monitoring students' work
- Questioning
- Class discussions
- Post-it notes
- Teach a friend
- Venn diagrams and comparison tables
- Check for understanding
- Homework tasks

While there was an attempt by teachers to elicit evidence of students' learning, this practice could have been improved to include the responses of all students within the class, rather than solely engaging proactive students. Two teachers missed opportunities to examine evidence of students' understanding against the success criteria. These missed opportunities meant that students will not receive information about their learning as provided through the success criteria. Thus, students will have no information upon which to formulate their own personal learning goals, which subsequently hinders their learning progression. Furthermore, success criteria provide language for feedback to the students about the status of their learning, which enables self-monitoring and the provision of peer feedback. The process of utilising success

criteria was inefficient and, consequently, the feedback process conducted by teachers lacked sufficient detail to facilitate students' learning progression.

It was evident from the classroom observations that all three teachers regularly used some form of formative assessment but the actual implementation as well as the range of formative assessment strategies used varied from one teacher to the other. Generally, the classroom observations revealed that application of the formative assessment process and practices as presented in Wiliam and Thompson's (2008) and Heritage's (2010) models was inconsistent and ineffective at times.

It is important to note that not all classroom lessons for the units of work were observed and it is reasonable to believe that teachers may implement the above strategies (and/or other strategies) effectively in other lessons.

The classroom observations shed light on how the Junior Secondary teachers involved in this study experience particular methods of formative assessment. The classroom observation phase of this study allowed for a deeper understanding of the effectiveness of formative assessment practices implemented by the teachers in relation to the key elements identified in the formative assessment framework proposed by Dylan and Thompson (2008). The classroom observation data were further supported by the findings of the teachers' interviews and focus group discussion. The next section provides the findings in relation to each research question, supported by a within-case analysis using the information provided by the participants during the focus group, interviews and classroom observations.

5.6 The research questions

This section presents the findings for each of the three research questions. The following three questions guided the study and informed the main conclusion and recommendations for ways forward in terms of effective implementations of formative assessment.

- 1) What are Junior Secondary teachers' perceived understandings of formative assessment?
- 2) What are Junior Secondary teachers' classroom practices of formative assessment?

- 3) How do the Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?

Question one: What are Junior Secondary teachers' perceived understandings of formative assessment?

The three Junior Secondary teachers in the study acknowledged the important role formative assessment practices play in identifying where their students are in their learning. Their understanding of the importance of formative assessment in supporting students' learning was the impetus for their implementation of formative assessment practices in the classroom. All teachers talked enthusiastically about formative assessment practices and provided examples of how they use some of these practices in their classroom; however, they made no reference to formative assessment as an iterative process that supports teaching and learning. The teachers indicated that formative assessment enables them to ascertain the gaps in students' learning and provide students with feedback to move their learning forward. The three teachers described the importance of knowing the students as learners to ensure the success of all their students. They indicated that, for this to happen, it was important to gauge where students are at in their learning, identify the next steps to take and how they are going to help students achieve their learning goal. At the same time, the teachers' comments and reflections on the definition of formative assessment indicated that, while they are still developing a common language of what formative assessment is and the implications it has for their practice, they understand the importance of collaborating as a team. They also acknowledged the importance of having a whole-of-school approach to ensure effective and consistent implementation of formative assessment as a pedagogical instructional tool.

All three teachers were implementing formative assessment in their classrooms for a variety of reasons. However, they had different understandings on how to use information collected from formative assessment and how to plan for future instruction for whole-class and/or individual students. The teachers' discussion of formative assessment centred solely on how it can be utilised to identify low-achieving students and encourage these students to perform at a satisfactory level. This deficit-oriented view misses the opportunity to use formative

assessment is a teaching tool to identify students at all achievement levels, including high-achievers, and to assist all students in reaching their full learning potential, whether that is above or below the expected standard.

Additionally, teachers indicated that time and curriculum demands are two key factors that hinder their implementation of formative assessment. The teachers explained that they had limited time to plan, to assess student understanding and to adjust instruction accordingly. In part, the teachers' sense of limited time stemmed from curriculum expectations that then created pressure to ensure students were ready for term assessments. That is, the focus was on the outcome rather than the process. Teachers also cited lack of time to act on all the data they were expected to collect. Teachers' feelings of struggling with time and with the different students' data sets is indicative of their need for support in determining how to successfully track the appropriate data on student achievement of set learning objectives.

Question two: What are Junior Secondary teachers' classroom practices of formative assessment?

Although all three teachers regularly used some formative assessment strategies, it was clear that teachers require more practice and support to enhance the effective implementation of formative assessment practices, particularly in areas that invite student collaboration and encourage students to take ownership of their learning. It was also evident from the classroom observations, as well as the teachers' responses to the interview questions and focus group discussion, that teachers are developing an understanding of formative assessment as a process that is essential and authentic to the teaching and learning practice. Developing deeper conceptual interpretations of what defines formative assessment and its key elements will, in turn, enhance teachers' effective implementation of teaching practices. An overarching issue identified during the study was the general concept of clarifying the key roles that both teacher and student play in formative assessment. While the current formative assessment practices used by the three teachers included mini-quizzes, questioning, and classroom discussions to gauge students' understanding and provide feedback, these practices need to be implemented more consistently and effectively to support the development of both the teachers' practice and the students' learning. Moreover, teachers also need further support to identify

opportunities to make professional decisions around adjusting their practice to better suit students' progress and allow students to take ownership of their learning. Thus, teachers need to develop an understanding that their role is not limited to gauging where students are in their learning but also includes providing feedback to students and adjusting instructional practices to move learning forward. Despite talking about their feedback practices, teachers provided more evaluative than descriptive feedback. Hence, the formative assessment feedback practices of teachers need to be adjusted in order to better provide students with feedback that informs their learning and enables students to take control and self-regulate their learning. From here, focus also needs to be put on student-centred approaches in which students have the opportunity to work in a meaningful collaborative setting wherein they can self- and peer-assess their own and others' learning and be activated as resources for one another. Teachers' current formative assessment practices are symptomatic of the changes that need to take place to reflect the dynamic student–teacher relationship within the formative assessment process.

Question three: How do the Junior Secondary teachers' perceptions of formative assessment influence their practices in the classroom in relation to positive student learning outcomes?

All three teachers stated in the interviews and focus group that the reason they implemented formative assessment was that they wanted to help students reach their full learning potential. They agreed that formative assessment offers an effective framework to understand and support students' learning. At times, teachers' perceived understanding of the key formative assessment elements aligned with their classroom practice, but at other times there was misalignment. For example, where teachers' understanding of the formative assessment elements was evolving and taking shape, their practices were also developing. In elements of formative assessment the teachers indicated having a greater understanding of, this understanding was not reflected in their practice. The teachers contributed this misalignment to varying student levels, time constraints, high curriculum demands and lack of shared expectations between teachers and students.

The findings from the classroom observations indicated that teachers can be further supported in classroom practices related to activating students as learning resources for one another, engineering effective learning experiences that elicit evidence of learning and activating

students as owners of their own learning. This was very much reflected in teachers' responses to the interviews and comments during the focus group discussions. All teachers acknowledged the significance of knowing the students as learners. It was evident that teachers understand that it is important to consider each student holistically to fully understand where they are in their learning, and identify the strengths and weaknesses in their learning. Variations in student learning meant that there was a need for teachers to differentiate their instruction, which proved difficult due to time constraints, curriculum demands and the teachers' need for professional development in differentiating the learning.

The variation in the implementation of effective formative assessment practices also meant that formative assessment practices to support students as autonomous learners were inconsistently implemented. There was a lack of evidence of teaching practices aimed at promoting metacognition and self-regulation to enhance students' autonomous learning. Teachers' understanding of students' involvement in the teaching and learning process allows students to become autonomous learners vested in their own learning experience and focused on the learning goals and objectives. Hence, effective implementation of practices that support student engagement in the learning process and understanding of where they are in this process will be the springboard for students to take control of their learning and for teachers to align their instruction with their learners' needs.

Additionally, while teachers' comments confirmed their understanding of the important role feedback plays in moving the learning forward, the classroom observations, interviews and focus group discussion provided some insights on the limits to how teachers utilise feedback to address students learning. All three teachers' frustration with time indicated that it was difficult to identify opportunities to give students timely feedback. For example, Rose had to plan a time to share the learning proficiencies with the whole class and indicate where the class was at in a given point in time and where they are heading. Time limitations and curriculum demands made it difficult at times to provide individual students and/or groups with timely targeted feedback.

Teachers need to develop a clear understanding of the purpose and goals of formative assessment. This is essential in enabling teachers to design learning experiences and engineer

classroom discussions that are targeted at gaining insight into their students' progress and learning needs. The notion of developing clarity around the purpose of assessment corresponds with the literature explored in Chapter Two (Bennett, 2011; Carless, 2007; Masters, 2018; Wiliam, 2017). Teachers' evolving conceptual understanding of formative assessment and the ways of embedding its practices effectively, as well as their reported lack of time, means that teachers need technical support in helping students to acquire the skills and knowledge to plan and evaluate their own learning.

As proposed in the literature review (Chapter 2), formative assessment provides an interpretation of educational aims such as 'personalisation of learning' and 'inclusion', reflecting the spirit of junior secondary reform. Given the finding that teachers require development of their formative assessment practices, it is clear that the practices that best address the needs of junior secondary students have not yet been refined to cater for their needs. There needs to be provision for ensuring that middle-years teachers, through effective evidence-based practices such as effective formative assessment practices, meet the needs of junior secondary students.

The global narrative suggests a concrete direction for middle years teachers to employ quality evidence-based practices that focus on the needs of young adolescents. With this imperative, middle years teachers need to be supported in understanding what effective formative assessment looks like in the classroom. Only then can the junior secondary reform fulfill its initial promise of meeting the unique needs of students in this distinct phase of their learning journey and ensure the success of every adolescent.

5.7 Summary

The data analysis from the focus group, interviews and classroom observations indicated that the three junior secondary teachers' formative assessment practices reflected their developing understanding of formative assessment as ongoing process and depended on what they interpreted as effective formative assessment. The teachers' main concern in implementing effective formative assessment practices was to meet what they perceived as the needs in the ongoing classroom situation including; varying students' levels, curriculum and planning expectations and time. The next chapter (Chapter 6) will draw the conclusion and present the

recommendations of this research study using the information obtained during the focus group, interviews and classroom observations. The chapter will summarise the major finding of the study, discuss the implications for practice and offers recommendation for future research.

CHAPTER 6

Conclusion and Recommendations

6.1 Introduction

The key aim of this study was to examine Junior Secondary teachers' perceived understanding of formative assessment and how it influences teachers' pedagogical choices and practices in the classroom. In doing so, the study explored the formative assessment lived experiences of three Junior Secondary classroom teachers in Brisbane, Queensland, through purposive voluntary sampling. The overarching objective of this study was to identify and examine the current formative assessment perceptions of Junior Secondary teachers and the implications on their classroom practices.

In order to investigate the formative assessment perceptions and practices of Junior Secondary teachers at one school, three data collection tools were utilised: semi-structured individual interviews, a focus group discussion, and classroom observations. The data were then analysed using phenomenological analysis principles (Smith, Jarman & Osborn, 1999). Thematic analysis techniques, such as importing transcribed conversations into NVivo 11 software, provided the digital tool for coding and theme identification to capture the participants' shared experiences with the phenomenon of formative assessment. Important understandings of teachers' views and practices in formative assessment were gained throughout this research.

The findings of this study do not generalise claims beyond the three Junior Secondary teachers of this study. However, the findings pertinent to how Junior Secondary teachers implement formative assessment and its impact on instructional practice could inform policy-makers' and teachers' educational and professional development.

This chapter presents the conclusion and recommendations of this research study using the information obtained during the focus group, interviews and classroom observations. The chapter summarises the major findings of the study, discusses the implications for practice and offers recommendations for further research.

6.2 Outline of major findings

The following outlines the major findings from this study.

Major finding 1: Teachers' perceptions of formative assessment is a developing process

A major finding from this study is that the three teachers' perceived understanding of formative assessment is developing over the course of time. Though this was not an intervention study, the participants' engagement in this study provided them with an opportunity to reflect on their teaching and practice. This was evident in their responses to the definition question at the beginning of the study and then again at the end. Further evidence was provided in the focus group discussion, where Cullum stated that 'being part of this study made [him] more aware of formative process and the importance of formative assessment and how it can inform my teaching methods'. The teachers were able to reflect on their formative assessment practices and, therefore, think more deeply about these practices. Their reflections showed some change in their perspectives about formative assessment.

Additionally, the teachers' involvement in the school's formative assessment Professional Learning Community (PLC), which was led by Rose, meant that the three teachers were discussing formative assessment strategies and practices with their colleagues. The PLC helped teachers build their knowledge, understanding and skills in formative assessment and share resources for best practice. While it was evident that the school provided general support for formative assessment practice in the classroom, there was no agreement on a common definition of formative assessment.

It is important to note that the teachers indicated that, because the PLC was managed by teachers within the school, support for formative assessment was not necessarily targeted consistently and clearly. This might be because the teaching staff leading the PLC are not necessarily experts on the topic. Thus, it is recommended that further training is provided for leaders.

Major finding 2: Teachers' perceptions of formative assessment were not necessarily aligned with their practices

Another key finding from this study was that there were discrepancies between the teachers' responses to the interview questions and the actual classroom practice. This might be a reflection of, and a contingency point between, the teachers' knowing and doing. The teachers know and can identify what best practice strategies relate to formative assessment but, when implementing strategies, this understanding is not always effective. This could be because they do not know how to implement these strategies effectively or how these strategies work in their specific classroom context. As such, it is recommended that teachers be supported through coaching and mentoring in identifying ways to effectively implement formative assessment strategies.

Major finding 3: Teachers' formative assessment practices tend to be surface level and random

Although the three teachers implemented some formative assessment strategies, at times the classroom formative assessment practices tended to be superficial and somewhat inconsistent. For example, teachers may have used questioning as a technique to check for understanding, or other strategies such as exit tickets, but they did not have comprehensive plans for a range of formative assessment practices, as the research recommends. Accordingly, it is recommended that teachers need more practice and support to improve their implementation. In particular, formative assessment approaches that invite more student participation and ownership of their learning and are thus aligned with best practice for middle years students is highly recommended. Effective implementation of formative assessment practices depends on teachers having a deep understanding of formative assessment and the implementation of its practices in the classrooms. Thus, teachers need professional support to develop their conceptual understanding of formative assessment and to establish formative assessment as an overall framework for teaching. Using formative assessment as a framework will support the changes in teachers' pedagogical approaches to teaching—in their interactions with students, the way they set up learning situations and guide students toward learning goals—even the way they think about student success.

The highly individual nature of each young adolescent demands a student-centred approach to teaching and learning across the junior secondary years to ensure all students are productively engaged in learning. Formative assessment practices offer the foundational bases for a student-centred approach to teaching and learning in the junior secondary phase. It becomes crucial to support middle years teachers to purposefully and effectively plan and implement formative assessment practices that engage students in reviewing their performance and planning for future success, and thus contribute to students' social, emotional and personal wellbeing.

Major finding 4: Obstacles to implementing effective formative assessment

The key obstacles to implementing effective formative assessment practice reflect common structural and attitudinal challenges that accompany fundamental changes to education systems and instructional practice. These include curriculum demands, assessment schedules and school professional learning agendas. It is recommended that a connection between systemic, school and classroom approaches to assessment and evaluation of student learning be prioritised. Teachers know that the information gathered in the classroom is seen as irrelevant to policy-makers and also to the students. They believe that what counts is the grade students receive on their final reports. This is indicative of the persistent tension between classroom-based formative assessments and the dominance of summative assessment.

6.4 Discussion of the findings

This section discusses the findings and addresses the relationship between the findings of the study and the empirical research and the theoretical frameworks that underpinned the study. The five identified themes from this study (*Developing understanding, Embedding effective practices, Differentiation, Shared expectations and Time*) guide this section and focus the attention on the central elements of this research study.

Developing understanding

The participants in this study provided feedback on the definition of formative assessment and reflected on formative assessment practices on three different occasions during the data collection stage, including the initial individual interviews, post-classroom observation interviews and focus group discussion

The literature suggests that formative assessment is an ongoing process and defines formative assessment practices used by teachers as assessment for learning, a learning check-up during the learning process that informs teachers' decisions about the future instruction (Bailey & Jakicic, 2015; Marzano, 2017). This definition incorporated aspects of empirical research.

Embedding effective practices

Effective embedding of formative assessment practices depends on improving the pedagogy and practice of teachers (Fullen, 2006; Wiliam, 2016). Effective implementation of formative assessment practices is developed over time with teachers' consistent practice and reflections on the process.

In this study, the teachers' implementation of formative assessment practices sat on a continuum, with some practices needing further support. In particular, the teachers needed support in the areas that invite more student participation and ownership of their learning. A brief summary of the findings of teachers' practices in relation to the five key elements identified by Wiliam and Thompson's (2008) formative assessment framework is presented below.

Learning objectives and success criteria

Learning objectives and success criteria were a key strategy used by all three teachers at the beginning of each lesson, through sharing the learning intention and success criteria with the students. The learning intention for each lesson varied from class to class and from lesson to lesson, with from one to three learning intentions per lesson. The teachers controlled and managed the learning intention and success criteria identification, which meant that students had very little freedom to set their own success criteria.

Engineering effective discussions to elicit evidence of learning

In all classrooms, classroom discussions consisted of lower-order questions such as closed questions, yes/no questions and short-response questions to check for understanding. These questions were answered by a few motivated students. While these questions have their place in the classroom, they may not provide enough detailed information about student learning and

the way the questions are asked may not allow for responses to be systematically collected from all students in the class. This aligns with statistics from Wiliam's (2016) research about questioning in classrooms, which found that 54 per cent of teachers' questions were managerial, 38 per cent involved lower-order thinking and only eight per cent required higher-order thinking. Wiliam (2016) emphasises using classroom instructional techniques that require all students in the class to engage deeply with the learning. For example, asking higher-order questions and collecting responses simultaneously from all students will help elicit evidence of student learning. These techniques increase the engagement of all students, rather than just those who typically raise their hands, and provide the teacher the evidence and information needed to adjust instruction and differentiate the learning to cater for individual students' learning needs.

Feedback

Teacher feedback is a critical component of formative assessment. Hattie (2016) emphasises that the key function of feedback is to give direction for future learning and to enable development toward the desired learning outcomes.

All three teachers explained that feedback could have a profound effect on the quality of learning if it provided students with specific information on how to improve their learning. Teachers' perceptions of feedback for learning were grounded in their pedagogical beliefs. For example, Cullum expressed the importance of preserving students' self-esteem and drawing on their experiences rather than exclusively on the use of guidance materials or research literature of what constitutes good assessment feedback (Cooper & McIntyre, 1996). Teachers' feedback appeared to be related to the proficiency scales and assessment criteria that were planned and facilitated through their own devised assessment record sheets and checklists. In class, feedback appeared to be more ad hoc and based on teachers' perceptions of students' emergent needs.

Teachers reported the use of various feedback strategies, which ranged from descriptive to evaluative as identified by Hattie (2016) and Tunstall and Gipps (2012). Teachers identified different feedback strategies for their oral and written feedback. They attached descriptive functions to written feedback more than to their oral feedback. Oral feedback was delivered

more frequently than written feedback and, for teachers, it provided more opportunities to provide positive affirmation on students' effort. The observational findings also confirmed that there may be potential for oral feedback to give students guidance for future learning development. However, teachers emphasised that there were time and resource constraints on individual feedback.

Teachers' individual feedback in written form tended to be more standardised as it was based on predetermined, level-driven criteria. A consequence of this standardised and routinised approach to assessment using criteria directly related to the level descriptions was that only limited evidence of students' learning was elicited (i.e. the items appearing in the assessment checklists and sheets). There could have been a loss of other evidence of students' learning, which otherwise could have been acted upon.

Teachers' written feedback took the form of brief comments and grades. These were attached to small items of written work within an assessment task as well as at the end of tasks. Teachers suggested that providing detailed written comments was not manageable with their high workload, since they dealt with a large number of students with limited resources. Furthermore, the evidence from this research suggested that teachers' use of feedback lacked detailed comments. This is consistent with Black and Wiliam's (1998b) major meta-review of formative assessment, which suggested that feedback generally appears to be unfocused and lacking specific information on how students' learning could be improved. This aligns with Butler's evidence that comments, rather than grades, are necessary to improve students' learning (Butler & Winne, 1995).

Effective feedback depends on the elicitation of evidence of students' learning as they complete formative assessment tasks. In this study, it was observed that more emphasis appeared to be placed on the assessment of the final product than on how students approached the task (process). There was also evidence from both the teacher interviews and the observations that teachers' fundamental beliefs about students' self-esteem could inhibit the effectiveness of feedback, a point consistent with the findings of Herman et al. (2015). This research suggests that teachers tend to over-emphasise the strengths of 'low-achieving' students in order to promote their self-esteem. This concern to provide positive reinforcement

could detract from the quality of formative assessment feedback by omitting to communicate students' learning weaknesses. There was also evidence that the concern of teachers to maintain a high level of student engagement can also work against effective feedback. The observational findings revealed that concerns about classroom layout and structure can work against the objectives of formative assessment.

Activating students as instructional resources

Wiliam (2017) highlights the importance of collaborative learning that encourages group goals and individual accountability than just having students work on a task in a group. He suggests that 'peer tutoring can actually be more effective than one-on-one instruction from a teacher' (2011, p.134).

The teachers' interviews and the classroom observation reflected the teachers' perceptions of group work and how that influenced the utilisation of group work as a strategy for activating students as instructional resources. While teachers identified group and peer work as an effective strategy during the interviews, they were cautious about the implementation of the strategy, expressing concerns about best ways to group students in regard to their learning abilities. In line with these concerns, classroom observations showed that there were few occasions when students were engaged in group work (it is, however, important to note that the researcher observed only three lessons for each of the teachers). The most common approach used by all teachers was pair work. It is worth noting that the classroom layout did not support cooperative group work and the only opportunities available for students was to work with the student sitting next to or behind them.

Activating students as instructional resources for each other supports students' learning as it addresses their immediate questions and provides feedback, both of which provide immediate support for learning. At its core, activation of students as learning resources supports middle years learners. It provides the students with opportunities to cooperate with one another, developing their interest and motivation to support other students and building social capital. Wiliam (2017) stresses the value of student collaboration and explains that it helps students to better understand: the more able students improve by having to teach and the developing student improve as they have a second teacher. Similarly, students' cooperative learning

encourages differentiated and personalised learning, as the support provided by peers is specific and targeted to the individual student learning needs.

Activating students as owners of their learning

It was well established in the literature review that one of the principles of formative assessment—and a key aspect in addressing the unique characteristics of middle years learners—is that students understand the criteria by which they are being evaluated (Sadler, 1989; Wiliam, 2015, Marzano, 2017). Students' self- and peer-assessment are acknowledged as being important for developing their understanding, with the research (Wiliam, 2011; Masters, 2016) suggesting that these approaches encourage and motivate students to engage with and think about their learning and to develop metacognitive skills.

The teacher interviews and classroom observations revealed that the main variations which occurred in teacher practice related to the nature and frequency of student self- and peer-assessment. One teacher used proficiency scales to guide student self-assessment. The other two teachers followed a less formalised pattern and occasionally used the success criteria shared at the beginning of the lesson as a checklist for guiding students' self-assessment.

Students' peer-assessment was also less prominent but was occasionally used with group work. Identified approaches for engaging students in an authentic experience, where they can evaluate their own learning and set their own learning targets to achieve the learning goals, were scarce. Similarly, the group work was limited to students working together with the purpose of supporting one another in a given task that they can share with the class at the conclusion of the activity. This was an effective way to activate students as resources for one another; however, it could be considered as a missed opportunity for students to provide feedback on each other's work against the criteria. Hence, students can engage in a deep conversation about what the quality of the work against the identified criteria and provide feedback that can progress the learning forward. Wiliam (2015) asserts that when students engage in the process of evaluating their peers' work, they gain insight into other students' identified approaches and strategies, which they would not have done otherwise.

Students' self- and peer- assessment not only benefits students' learning, it also contributes to developing self-reflecting, autonomous learners who know themselves and are capable of regulating their own learning. This is in line with the literature reviewed on middle years learners, which identified the value of self-reflection and self-regulation in equipping middle years students with the skills to evaluate their own learning (Klenowski, 2012).

In the teacher interviews and focus group discussion, teachers stated that they valued interactive discussions with students as it enabled their students to develop a better understanding. Despite recognising the benefits of students' self- and peer-assessment, teachers in general did not make extensive use of self-assessment and their use of peer-assessment was also rare. This was essentially related to two factors: teachers' perceptions of the ability of their students to engage effectively in group work, and the difficulty of finding time for self- and peer-assessment when there was a perceived need to meet the requirements of the national curriculum.

Teachers were skeptical about students' ability to work effectively in groups. In particular, they felt that the classroom layout, group composition and dynamic can sometimes present challenges that hinder effective group work. Although teachers recognised the merits of students' self and peer-assessment, they were concerned about its feasibility in the reality of the classroom situation. Overall, the research revealed that both teachers and students would benefit from developing approaches to effectively engage students with self-assessment and peer-assessment. This is consistent with Gibbs and Poskitt's (2010) 'academic self-regulation', one of the eight factors they identified to describe middle years learners' engagement in learning. Academic self-regulation enables students to be proactive and take ownership of their learning; it involves regulation and cultivates the skills necessary to become lifelong learners. In this research, student self- and peer-assessment appeared to be very basic and limited in focus, which left little scope for students to reflect back on their overall learning experience. As a consequence, students' engagement in thinking about their own learning was very much teacher-directed and lacked critical dialogue between teachers and students as a vehicle for further development. Overall, students' self- and peer-assessment were not generally a priority for teachers and were not proactively planned for.

Differentiation

This study has identified that while teachers are aware of varying students' levels within their classrooms, they find it difficult to differentiate learning to meet all students' learning needs. According to the teachers, this was due to lack of time, which directly impacts on the teachers' ability to treat students as individuals and to develop the professional capability to identify effective strategies to differentiate learning in different subject areas. Teachers' comments about time corroborate Tomlinson's (2016) suggestion that differentiated instruction requires more planning time, more analysis time, and more re-teaching time.

Wiliam (2017) asserts that effective implementation of formative assessment practices leads to differentiation as it helps meet the needs of all students. Formative assessment sets out to adjust the focus from teaching to learning by addressing differentiation for individual learning needs. This, in turn, aligns with the themes of *Developing understanding* and *Embedding effective practices*. Deep understanding of formative assessment and effective ways to implement its practices will lead to effective differentiation.

Shared expectations

It is essential to recognise the critical role of the school's leadership team in establishing shared expectations to foster learning with understanding (Masters, 2012). The impact of not having a shared expectation affects the degree to which teachers can enact the curriculum, instruction and assessment to promote learning (National Research Council, 2000b).

The teachers in this study expressed frustration with competing expectations. All teachers felt pressured to follow the national curriculum mandate and to cover content. The key obstacles to implementing effective formative assessment practice reflected common structural and attitudinal challenges. It is important to develop strong connections between systemic, school and classroom approaches to curriculum demands, formative assessment and evaluation of student learning. Morrisette argues that teachers' shared understanding and expectations become well-developed as a set of 'conventions of the teachers' culture, as practices ... that enable them to engage in their day-to-day activities of supporting their students' learning' (2011, p.256).

Time

All three teachers confirmed that time is key constraint on the implementation of effective formative assessment practices. They emphasised that time constraints limit their ability to provide feedback to all students, particularly as they each have from three to four classes across different year levels and different subjects per day.

Time is a common thread that runs through all emerging themes. Teachers need time for professional training to develop deeper conceptual understanding of formative assessment and the effective ways in which to implement the related pedagogical practices. Having this time will allow teachers to plan for rich, engaging discussion, to make provision for eliciting information about students' learning and to differentiate the learning based on individual students' learning needs.

6.5 Recommendations for educational practice

The recommendations presented here emerged from and respond to the findings of this study. These findings point to ways to inform educational practices in the middle years. These recommendations encompass (1) recommendations for schools and teachers, (2) recommendations for teacher professional development, (3) recommendations for policy-makers, and (4) implications for theory.

6.5.1 Recommendations for school leaders and teachers

Formative assessment provides schools and middle years teachers with excellent support in meeting the needs of young adolescents at this critical juncture of their schooling. It provides them with strategies that help develop students' skills to meet the increasing academic expectations throughout secondary school. The junior secondary reform is underpinned by six guiding principles. These principles provide the foundation on which schools and middle years teachers can develop strategies, policies and processes that will engage students during these critical years of academic, social, emotional and physical development. The guiding principles allows opportunities for appropriate and effective formative assessment methods to enable optimal learning for junior secondary students.

6.5.1.1 Implementation of formative assessment as a teaching framework

Implementing formative assessment as a teaching framework will offer school leaders and teachers a flexible and balanced teaching structure. The utilisation of formative assessment as a framework will help establish guidelines and well-designed tools, providing much-needed structure and support for teachers to be more systematic in their practice. Additionally, teachers need flexibility in order to adapt to the teaching context as well as to the needs of diverse learners. Formative assessment as a teaching framework can provide the right balance of structure and flexibility. Teachers' use of the tools and techniques of formative assessment will help identify students' understanding and progress toward their learning goals. They can then adapt teaching to meet identified needs, drawing upon a repertoire of learning tasks and challenges to help students address learning needs. This interactive approach to assessment and adaptation of the teaching and learning process will support teachers in engaging students with learning to build skills, knowledge and understanding. School leaders can develop procedures to enact formative assessment as a teaching framework, thus helping structure classroom practices. They can help develop guidelines that provide insight into the formative assessment process, as well as the principles of formative assessment. In fact, in doing so, they would be establishing a school and classroom culture that supports and encourages the implementation of formative assessment.

6.5.1.2 Establishment of a classroom culture that encourages students' interaction and the use of formative assessment tools

Formative assessment is a central element in the teaching and learning process, and thus it is important to ensure that it is integrated into every lesson of every subject. Establishing a classroom culture that encourages interaction and use of formative assessment tools will support students' learning and encourage them to feel safe, take risks and make mistakes in the classroom. Students who feel safe to take risks are more likely to reveal what they do and do not understand, which is an essential feature of the formative process.

Developing a classroom culture that normalises formative assessment practices as an everyday classroom process will support students to continuously engage with their learning and focus their attention on mastering tasks and developing emotional capabilities. Emotional

competencies, such as self-awareness, self-control, compassion, cooperation, flexibility and the ability to make judgements on the value of information serve students well in school and throughout their lives (OECD, 2002). Emotions also affect students' self-esteem, motivation and ability to regulate their own learning. This is very important for developing the middle years learners' social and emotional capabilities. Therefore, it is important for school leaders to support teachers' training and professional development for formative assessment to help teachers develop effective skills for guiding classroom interactions.

6.5.2 Recommendations for teacher professional development

Harlen (2007) explains that when teachers use formative assessment mechanically, without a deep understanding of its meaning or purpose, it can have negative impact. In light of this study, teachers need significant support to develop a deeper conceptual understanding of formative assessment and how to identify and implement effective and meaningful formative assessment practices to address individual learning needs. In the context of this study, and in response to the findings, it is recommended that teachers are provided with professional development in two targeted and focused areas. These are developing deeper conceptual understanding of formative assessment as a teaching framework, and developing pedagogical repertoires to meet identified students learning needs, emphasising the importance of using varied instructional methods to meet diverse students' learning needs and developing approaches to strengthen student-centred learning.

6.5.2.1 Developing formative assessment conceptual understanding

Teachers' interpretations of formative assessment will have implications for their teaching practices (William & Thomson, 2010). It is critical to ensure that teachers develop a deep and common conceptual understanding of formative assessment. While the teachers in this study were engaged in a school-based professional learning community focused on formative assessment, the findings from this study confirmed that the teachers would benefit from further professional learning that focused on supporting them to assess their own assumptions about formative assessment, its definition and key characteristics, with a view to informing and shaping new understandings of its use and potential for enhancing student learning.

Developing a deep and common conceptual understanding among teachers will allow them to identify formative assessment and teaching as part of the same process to support student learning. It will establish common grounds whereby by teachers use a common language and common practices. This will create a professional atmosphere wherein teachers can monitor instructional practices and furnish them with increased opportunity to provide one another with feedback that they can relate to and understand.

6.5.2.2. Developing pedagogical repertoire to meet identified student needs.

The quality of formative assessment practices is dependent on the quality of teaching. Hence, effective teaching and formative assessment practices are intertwined and complement one another. Teachers need to build a rich repertoire of approaches that allow them to design engaging learning experiences and differentiate teaching to suit students' learning needs.

Developing a bank of strategies and teaching approaches will support teachers in engineering learning situations that will encourage students to collaborate with each other and engage in rich and deep classroom discussions. The formative assessment process is an iterative process (William, 2017) that requires frequent reflection on the teaching and learning. This is ideal for teachers to investigate the process of teaching and learning in their classrooms and how they can change, adjust and further develop their teaching approaches to ensure that students are engaged in the learning and interacting with one another in a meaningful and authentic way. Student self- and peer-assessment is an essential component of formative assessment and promises a number of benefits, as identified in the literature review.

Promoting student-centred approaches supports teachers in enhancing the learning experience for students and encourages students to be active learners who are engaged in the learning process. It encourages students to actively engage in the learning experience and allows them to self-assess their own, and peer-assess others', learning. Teachers' use of student-centred approaches will allow them to focus on designing learning experiences that recognise and respond to the individual needs of each student (Yonezawa, McClure & Jones, 2012).

William (2017) defines students' self- and peer-assessment as 'skills', a competency that can be developed through time and experience. Thus, improvement in this area could be achieved

if teachers are trained in how to plan in advance for student-centred learning experiences and how to maintain the frequency of these experiences.

It is important that teachers learn how to design learning experiences that address the needs of the student. Black (2006) explains that student-centred approaches are underpinned by the assumption that teaching and learning is personalised to meet individual student needs. He proposes that the common characteristics of student-centred approaches include putting greater emphasis on building meaning and understanding; engaging students in a challenging curriculum that is connected to their lives; enabling active student participation in their learning; encouraging cooperation between students; and connecting learning to the wider community.

6.5.3 Recommendations for policy-makers

Education policy-makers are committed to ensuring that all students are entitled to an education that meets their learning needs, and prepares them for active participation in the creation of a socially just and democratic global society. At a system level, making a conscious decision to develop a strong evaluation culture that warrants every student's success is vital. Consequently, policy-makers should ensure that assessment is part of an ongoing process in which progress is monitored over time, providing evidence that students' current understanding is a suitable basis for future learning. Formative assessment offers an auspicious process for engaging in professional conversations on addressing students' learning needs. Thus, directing investments in training and support for schools, teachers and to set broad priorities for education.

6.5.3.1 Formative assessment a promising practice in the middle years in unleashing learning potential: Recommendations for the six guiding principles

The transition from primary to secondary school requires students to adjust to the more complex nature of the secondary context, while also moving through the most crucial stage in their psychological development. Dinham and Rowe (2008a) indicate that when the wellbeing and learning needs of students are not met, student engagement and performance can decline. The six guiding principles outlined by the Queensland Department of Education, discussed in

the literature review, provide a foundation on which schools and teachers can develop strategies, policies and processes to engage students during these critical years of academic, social, emotional and physical development. The principles also provide an evidence-based approach to teaching and learning practices that meet the needs of students in early adolescence, and support schools in ensuring a smoother transition between primary and secondary school (Pendergast et al., 2015).

At its core, formative assessment aligns with the Junior Secondary Guiding Principles and provides a teaching framework that supports teachers and students alike. The alignment of the Junior Secondary Guiding Principles and formative assessment has significant implications for the practice of Junior Secondary teachers. Formative assessment provides teachers with excellent support in meeting the needs of young adolescents at this critical juncture in their schooling. It provides them with strategies to help develop students' skills to meet the increasing academic expectations of secondary school (Barton & Woolley, 2017).

Educators are faced with the hard task of balancing two equally significant national agendas: the mandate of assessment and the notion that assessment is an integral part of teaching and learning, as promoted by the Australian Curriculum, Assessment and Reporting Authority (ACARA); and the Queensland Curriculum and Assessment Authority (QCAA) as the basis for the assessment arrangement for the national curriculum and enhancing Junior Secondary students' development. The Melbourne Declaration (2008) specifically identifies that middle years students' engagement in learning is positively 'influenced by tailoring approaches to teaching, with learning activities that specifically consider the needs of middle years students. Focusing on student engagement and converting this into learning can have a significant impact on student outcomes' (p.12). Formative assessment as a teaching framework both caters for the assessment mandates and accommodates the middle years learning approaches. It emphasises the key message that assessment can improve learning, provided that weaknesses in classroom practice are addressed (Wiliam, 2015). It also engages middle years learners in their own learning, as they start to identify where they are in their learning journey, where they are heading and, most importantly, how to get there. The proposed alignment between the six guiding principles and formative assessment places formative assessment firmly on the policy-makers' agenda.

Policy-makers need to endorse policies to promote formative assessment as a broader practice. These can include legislation promoting and supporting the practice of formative assessment and establishing it as a priority. It is important to develop guidelines on how formative assessment could be embedded in the national curriculum and the use of summative data for formative purposes. Equally important is investing in teacher education and professional development, as this will build teachers' capabilities to incorporate formative assessment in their teaching practice

6.6 Implications for theoretical advancement

At the heart of formative assessment theory is the key element of formative feedback, feedback that informs the teaching and moves learning forward. While a majority of the research focuses on formative feedback as a key approach to inform classroom instruction, Taras (2010), Bailey and Jakicic (2012), Black and Wiliam (2009) and Clark (2010) posit that teachers can equally benefit from formative feedback. The teachers in this study would have benefited from formative feedback as it relates to instructional coaching and professional growth. This, in turn, could suggest the expansion of the formative assessment theory to include the actor (the teacher) and the acted upon (student) as beneficiaries of formative feedback—thus authentically reflecting Black and Wiliam's statement that 'the responsibility of learning rests with both the teacher and the learner' (2009, p. 7).

6.7 Limitations

This section addresses the limitations of this research study with an emphasis on the methodological limitations. The findings in this research are mainly developed on the basis of teacher interviews and classroom observations. This was a methodological decision prior to the study and the researcher set out to explore teachers' perceptions and interpretations of formative assessment and make meaning of how they had used formative assessment practices by observing what happened in the classrooms. Throughout the interviews, the need for a documentary analysis became evident, as teachers had to reflect on their assessment tasks and marked pieces of work, many of which were not available during the interviews. A documentary analysis would have been beneficial for this study, not only to enrich the

understanding of assessment tasks and teacher feedback by exemplifying them but also in complementing teacher interview data for methodological triangulation.

While all steps were taken to ensure the study was conducted robustly, there are always some limitations that need to be highlighted. For example, given this study involved three Junior Secondary teachers in one school, it is important to note that the situation and participants studied are not time- or context-free; consequently, it is difficult to assess whether the same findings would be revealed at a different site. But, as stated above, all care was taken with the methodological approach to ensure transferability to other contexts.

6.8 Suggestions for future research

This research study suggested that understanding of formative assessment continues to develop. In order to contribute to the debate, this research has provided insights into the current practice of formative assessment in three Junior Secondary classrooms. However, it also acknowledges that it provides a partial view of formative assessment. In light of the research data, it appears teachers require support to implement formative assessment more consistently and effectively. Future research agendas, therefore, should focus on and seek to address the success and effectiveness of targeted initiatives with middle school teachers in order to understand which can influence the consistent and effective use of formative assessment.

Effective education leadership has positive impacts on student's learning. School leaders, instructional coaches and educational policy makers play a vital role in driving and promoting optimal learning experiences for all students. As such, it would be beneficial for future studies to examine the perceptions of these leaders and the needs they may have related to the implementation of effective formative assessment. All current school reform efforts aim to improve teaching and learning, therefore, it is important to target educational leaders as they are the catalysts driving institutional change. It would be valuable if teachers' training institutions and organisations were to also be involved in the discussion to explore the kind of instructional knowledge teachers need to support effective implementation of formative assessment. Further exploration of these areas will allow for the examination of misalignments between the perceptions of school leaders, instructional coaches and policy makers and those of teachers. Additionally, steps can then be taken to realign these views where needed, to

achieve optimal student learning outcomes. Future research may also study how teachers interpret and act appropriately on evidence from formative assessment and explore the alignment of the curriculum and the current instructional expectations related to formative assessment to ensure the success of every student. Every step taken towards a better understanding of how educational leaders and teachers implement formative assessment will provide us with a fine-grained appreciation of how formative assessment practices seep into the fabric of the education system, improving its overall quality and adding value to students learning.

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APPENDICES

Appendix A – Human Research Ethics Approval



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To Whom It May Concern

Human Research Ethics Approval
"Advancing student learning through formative assessment:
A case study of middle school practices"
(Ref: 2016/540)

I am pleased to advise that this research was issued approval to commence from the Griffith University Human Research Ethics Committee, a committee established and operating in accordance with the standards and principles of the Australian National Statement on Ethical Conduct in Human Research (2007) and Griffith University policy.

The decision to approve was dated 14 July 2016 and covered the period 14 July 2016 to 31 December 2018.

For any queries regarding this ethical approval please contact the Committee Secretary on tel: 07 3735 4375 or research-ethics@griffith.edu.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Amanda".

Dr Amanda Fernie
Secretary to the Griffith University
Human Research Ethics Committee and
Manager, Research Ethics and Integrity
Office for Research
Griffith University
Nathan Qld 4111 Australia

16 April 2019

Appendix B – Introduction of Study to Participants



TEACHER INFORMATION SHEET

Study Title: *Teachers' perceived understanding of formative assessment and how it impacts their classroom practice: A case-study investigation.*

Ethics Reference: *Gu ref no:2016/540*

Researcher: Hind Hegazy a doctoral candidate in the School of Education at Griffith University

Supervisors: Associate Professor Judith Kearney, Dr Georgina Barton (07) 37353457

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

Background Information

It is the intention to present this research in the form of a thesis as part fulfilment of a Doctorate degree. The purpose of this research is to explore how teachers regulate the learning process. The regulation of learning concerns the adjustments that teachers make to keep the learning of their students on track. One aspect of the regulation of learning is formative assessment (also referred to as assessment for learning) which has come to be identified with four procedures: rich questioning, goal setting, feedback and peer- and self-assessment.

This research will attempt to answer three main questions. First, it asks what are the current formative assessment perceptions and procedures teachers employ in the classroom. Second, it asks what, apart from these procedures, teachers say and do in the classroom to regulate the learning process. Third, it asks about the how teachers can improve formative assessment practices to improve students' learning outcomes.

Procedures

With your agreement, I would like to make three visits to your school. The first would be to carry out some classroom observations (between 3 and 4) by filming these classes; and the second would be to conduct an interview with you (between 3 and 4) (lasting from 30 to 60 minutes); and the third would be to conduct a focus group discussion consisting of 4 teachers from your school including collection of planning documents and student samples of work. Three methods of data collection will therefore be used: filmed classroom observation, semi-structured interviews and focus group interview with collection of teaching planning documents and student samples of work.

During the classroom observations, I hope to record the spoken interactions that take place between you and your students using an audio voice and/or video recorder. I would also expect to be making written notes that describe the classroom context, the activities on which the students are engaged and the actions of both teacher and students. For each lesson observed, a transcript will be produced that features the words and behaviour of teacher and students, together with a description of the classroom context.

On the second visit, I would like to conduct an interview with you which will be based on the transcript from the classroom observations carried out during the first visit. The purpose of this interview will be

to identify the moments when you have been engaged in regulating the learning of your students. It is important in this research that you are involved in the identification of these regulation events' as it is not my intention to confer meaning on observed interactions without the direct participation of you as the principal actor. Again, it would help me very much if you would agree to the interview being recorded using an audio voice recorder.

All audio-visual recordings will be erased after transcription. However, other research data (interview transcripts, observational notes, student work samples, teaching plans/documents, and analysis) will be retained in a locked cabinet and/or a password protected electronic file at Griffith University for a period of five years before being destroyed.

The results will be shared with the participating school and teachers. A summary of the results in the form of a newsletter will be available via email request.

Risks and Benefits of being in the Study

There is currently a need to better understand the complexity of classroom teaching and learning in general and of formative assessment in particular. This research will add to current knowledge in this area through the detailed description of classroom practice.

As teachers, we are continually aware of the need to be reflective practitioners as we strive to do the very best for our students. This research may offer you a window from which you are able to reflect on your practice in ways that are beneficial.

There are no foreseeable risks associated with participation in this research

Confidentiality

Neither you, your school nor any students will be identified in the research. Your participation will be anonymous; pseudonyms will be used at all times. Lesson observations and interviews will be transcribed and stored on a password protected computer.

The conduct of this research involves the collection, access and/ or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at <http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan> or telephone (07) 3735 4375

Voluntary Nature of the Study

You have the right to withdraw your participation at any time without giving any reason and without any consequence. Furthermore, I will not use either the lesson observation or the interview data if you do not give your consent now or you withdraw your consent at any point up to the final publication of my thesis.

Contacts and Questions

If you have any questions or concerns about this research, please contact me directly by email at hind.hegazy@griffithuni.edu.au. Alternatively, you may contact my supervisor Dr Georgina Barton at (07) 37353457 (07) 373 55682. Regarding the ethical issues related to this study, you can contact the Manager, Research Ethics, Griffith University on 07 37354375 or research-ethics@griffith.edu.au.

Appendix C – Participant consent form



TEACHER CONSENT FORM

Who is conducting the research	<p>Hind Hegazy</p> <p>EdD candidate</p> <p>Associate Judith Kearney (Principal Supervisor)</p> <p>Dr Georgina Barton</p> <p>School of Education and Professional Studies</p> <p>(07) 37353457 (07) 373 55682</p> <p>g.barton@griffith.edu.au</p>
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Statement of Consent:

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

I understand that my involvement in this research will include e.g. classroom observations that will be filmed, participation in up to 3-4 individual interviews (approximately 1 hour in length) and one focus group, and collection of planning documents and student samples of work;

I have had any questions answered to my satisfaction;

I understand the risks involved;

I understand that there will be limited direct benefit to me from my participation in this research;

I understand that my participation in this research is voluntary;

I understand that if I have any additional questions I can contact the research team;

I understand that I am free to withdraw at any time, without comment or penalty;

I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on (07) 3735 4375 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and I agree to participate in the project.

Signature: _____ Date: _____
 Signature of Investigator: _____ Date: _____

Appendix D – Parent/Student information Sheet



PARENT/STUDENT INFORMATION SHEET

Study Title: *Teachers' perceived understanding of formative assessment and how it impacts their classroom practice: A case-study investigation.*

Ethics Reference: *Gu ref no:2016/540*

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Supervisors: Associate Professor Judith Kearney, Dr Georgina Barton (07) 37353457

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

Background Information

It is the intention to present this research in the form of a thesis as part fulfilment of a Doctorate degree. The purpose of this research is to explore how teachers regulate the learning process. The regulation of learning concerns the adjustments that teachers make to keep the learning of their students on track. One aspect of the regulation of learning is formative assessment (also referred to as assessment for learning) which has come to be identified with four procedures: rich questioning, goal setting, feedback and peer- and self-assessment.

This research will attempt to answer three main questions. First, it asks what are the current formative assessment perceptions and procedures teachers employ in the classroom. Second, it asks what, apart from these procedures, teachers say and do in the classroom to regulate the learning process. Third, it asks about the how teachers can improve formative assessment practices to improve students' learning outcomes.

Procedures

As follows is an overview of the research activities in which students are invited to participate. With your agreement, I would like to make three visits to your school. The first would be to carry out some classroom observations (between 3 and 4) and the second would be to conduct a focus group with you (between 3 and 4) (lasting from 30 to 60 minutes).The third would be to collect some student samples of work.

During the classroom observations, I hope to record the spoken interactions that take place between your teacher and their students using an audio voice and/or video recorder. I would also expect to be making written notes that describe the classroom context, the activities on which the students are engaged and the actions of both teacher and students. For each lesson observed, a transcript will be produced that features the words and behaviour of teacher and students, together with a description of the classroom context.

On the second visit, I would like to conduct an interview with the classroom teacher which will be based on the transcript from the classroom observations carried out during the first visit. The purpose of this

interview will be to identify the moments when teachers are engaged in regulating the learning of your students.

All audio-visual recordings will be erased after transcription. However, other research data (interview transcripts, observational notes, student work samples, teaching plans/documents, and analysis) will be retained in a locked cabinet and/or a password protected electronic file at Griffith University for a period of five years before being destroyed.

The results will be shared with the participating school and teachers. A summary of the results in the form of a newsletter will be available via email request.

Risks and Benefits of being in the Study

There is currently a need to better understand the complexity of classroom teaching and learning in general and of formative assessment in particular. This research will add to current knowledge in this area through the detailed description of classroom practice.

As teachers, we are continually aware of the need to be reflective practitioners as we strive to do the very best for our students.

Confidentiality

Neither you, your school nor any students will be identified in the research. Your participation will be anonymous; pseudonyms will be used at all times. Lesson observations and interviews will be transcribed and stored on a password protected computer.

The conduct of this research involves the collection, access and/ or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at <http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan> or telephone (07) 3735 4375

Voluntary Nature of the Study

You have the right to withdraw your participation at any time without giving any reason and without any consequence. Furthermore, I will not use either the lesson observation or the interview data if you do not give your consent now or you withdraw your consent at any point up to the final publication of my thesis.

Contacts and Questions

If you have any questions or concerns about this research, please contact me directly by email at hind.hegazy@griffithuni.edu.au. Alternatively, you may contact my supervisor Dr Georgina Barton at (07) 37353457 (07) 373 55682. Regarding the ethical issues related to this study, you can contact the Manager, Research Ethics, Griffith University on 07 37354375 or research-ethics@griffith.edu.au.

Appendix G – Individual Interview Questions

Sample Individual Interview questions

1. Consider the following definition. Formative assessment practices are generally defined as those assessment practices used by teachers as assessment for learning a learning check-up during the learning process that informs teachers' decisions about future instructions (Bailey & Jackicic, 2012; Marzano, 2010). What, if anything, would you change or add to this definition?
2. From your experience, how do you think formative assessment impacts on student learning?
3. Please describe the types of formative assessment you tend to use frequently. What do you find most beneficial from these formative assessment practices?
4. What kind/s of feedback do you provide to your students?
5. How often do you use formative assessment in your classroom?
6. Do you use formative assessment more often or less often now than the past? If so, what has contributed to this change?
7. Please tell me about an experience you have had as a teacher with using formative assessment. Be as specific and detailed as you can including the year level and the content area you were teaching.
8. What influences have your understandings of formative assessment had on your teaching and overall assessment practices?
9. What -do you see- as the alignment between formative assessment and what happens in the classroom?
10. Describe a time when formative assessment practices have been successful/unsuccessful with your students. What do you think made them successful or unsuccessful?
11. What are some challenges, if any, that keep you from effectively using formative assessment strategies in your classroom?
12. Please describe an instructional situation where you would and would not use formative assessment practices, and why.

13. What strategies do you use to move from data gathered and reviewed about students' learning to addressing students' needs and adjusting instruction?
14. Describe any experience you have had with professional learning related to formative assessment practices. Did this experience help you implement formative assessment practices more consistently? Why or why not?
15. What other information could you tell me that might be helpful in understanding your experiences as a junior secondary teacher implementing formative assessment practices?

Appendix E – Parent/Student Consent Form



PARENT/STUDENT CONSENT FORM

Who is conducting the research	<p>Hind Hegazy</p> <p>EdD candidate</p> <p>Associate Judith Kearney (Principal Supervisor)</p> <p>Dr Georgina Barton</p> <p>School of Education and Professional Studies</p> <p>(07) 373 53457 (07) 373 55682</p> <p>g.barton@griffith.edu.au</p>
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Statement of Consent:

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

I understand that my involvement in this research will include e.g. classroom observations via video recording, and potentially participation in a focus group with your peers (approximately 1 hour in length); and collection of student samples of work;

I have had any questions answered to my satisfaction;

I understand the risks involved;

I understand that there will be limited direct benefit to me from my participation in this research;

I understand that my participation in this research is voluntary;

I understand that if I have any additional questions I can contact the research team;

I understand that I am free to withdraw at any time, without comment or penalty;

I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on (07) 3735 4375 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and I agree to participate in the project.

Signature of student: _____ Date: _____

Signature of Parent: _____ Date: _____

Appendix F – Demographics Tool

Demographic Tool

Thank you for consenting to participate in this study to understand the factors that contribute to teachers' implementation of formative assessment practices in junior secondary classes at your school. Please read the instruction section below before answering the questions.

Instructions

The questions below will take approximately 10 minutes to complete. Please respond to the questions based on your personal history and experiences. Please note that some questions require a specific response, some offer more than one selection. I will protect your confidentiality through the use of pseudonyms, for your name, position and the location of the study.

Questions

- 1. What is your name (first and last)? I will change this information to pseudonym for the study**

First name:
Sur name:

- 2. What year level (7, 8, or 9) in junior secondary do you primarily teach?**

Year level:

- 3. How many years have you taught this year level in junior school?**

Years taught in this junior secondary year level:

- 4. How many total years have you taught in junior secondary school?**

Total years taught in junior secondary school:

5. Not including junior secondary school, how many total years have you taught at other levels?

Total years:

6. Were the years you taught other than junior secondary primarily at primary or secondary schools?

7. What academic content area do you primarily teach in middle years?

- a) English
- b) Mathematics
- c) Science
- d) History/geography
- e) Arts/ music

8. How many years have you taught this academic content area in junior secondary school?

Appendix H – Post Observations Interview Questions

Post- observation interview questions

1. How do you think the class went? What do you think worked very well in this class? Why?
2. How do you think students responded to the learning during the lesson? Did the students respond as you had expected? Why/Why not? Were you satisfied with the student response? Why/Why not?
3. Your learning goal for the lesson was (state the LI for different teachers). Did the students achieve that goal? How do you know? Perhaps they only met some elements of the goal? What do you think?
4. What evidence of students' learning was collected? What is the next step?
5. How are you going to use the evidence of students' learning to inform your instruction?
6. What would you do if you felt half way through the lesson that students have very good understanding of the concepts/skills that you intended for the whole lesson?
7. What are your thoughts on the students' seating plan? Why?
8. How do you activate students as resources to each other?
9. Please describe how students give and receive feedback to and from each other?
10. How do you plan for formative assessment in your unit of work?
11. Have a look at this model by Wiliam and Thompson, In what ways can you identify with this framework? Why?

	Where the learner is going	Where the learner is right now	How to get there
Teacher	Clarifying learning intentions and sharing and criteria for success (1)	Engineering effective classroom discussions, activities and tasks that elicit evidence of learning (2)	Providing feedback that moves learners forward (3)
Peer	Understanding and sharing learning intentions and criteria for success (1)	Activating students as instructional resources for one another (4)	
Learner	Understanding learning intentions and criteria for success (1)	Activating students as the owners of their own learning (5)	

Questions specific to Cullum

1 After my first classroom observation, you said, “having you in the classroom, formative assessment is on my forefront” can you elaborate on that?

2 With the writing task, how do you go about ensuring students’ progression after your feedback? What do you do if student’s writing is not improving?

Questions specific to Rose

1 In the first-class observation, you have used post-it notes for students to share their idea? How do you understand the learning to work with this type of activity? Did you meet your objectives for the activity?

Questions specific to Anna

1 In my first observation, you mentioned that you plan the unit of work as a group of teachers, and then each teacher is assigned a lesson to plan.

How do the lessons usually progress? What happens if you feel that the students haven’t quite grasped the concept of the lesson?

In the first lesson you have used the right and left strategy as an exit strategy to check students’ understanding. What would you do to follow this up?

You explained that the assessment for this unit of work is staged? What do you think of a staged assessment? What are the advantages and disadvantages and why?

Appendix I – Focus Group Discussion

Focus Group discussion

1. In the first interview you have looked at this definition of formative assessment. Can I ask you to read of the definition again and tell me your thoughts or share any comments?
2. I have two different scenarios here for you to read, I am going to give you each scenario one at a time and then we can discuss your thoughts of each scenario and whether you think it is a type of formative assessment or not. Just your general thought, if it should become a formative assessment what should it look like or what would it need to do.

Scenario one

A school tests students twice a year to predict which students are “on course” for meeting the NBM in NAPLAN.

Scenario two

A junior secondary science teacher is teaching about mass and weight. At the end of the class period she gives the students each an index card and they have to write the difference between mass and weight on the card and hand it to her on their way out. She reads through the cards and tosses them in the trash. She will plan the next day’s lesson based on what she read.

3. What steps do you think need to occur to implement formative assessment practices regularly? And why?
4. Describe one or more experiences where you used data from formative assessment to adjust instructions? What was the context? How did you use this information and why?
5. In what ways did the Professional learning team (PLT) impact on your professional learning, particularly in regards to formative assessment