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**AN INVESTIGATION INTO CLASSROOM
TEACHERS' PERCEPTIONS OF THE VALUE OF ASSESSMENT FOR
FORMATIVE PURPOSES IN SECONDARY SCHOOLS
IN SOLOMON ISLANDS**

A thesis in partial fulfilment of the requirements for the

degree

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Abstract

A key purpose of this qualitative study was to gain an understanding of classroom teachers' perceptions of the value and impact of formative assessment in secondary schools in Solomon Islands. The process of data collection included initial interviews with five classroom teachers selected from four secondary schools in Honiara, Solomon Islands. The interviews were conducted using semi-structured interviews with each of the teachers and ended with a focus group conversation. The findings of this study indicated that formative assessment, as a classroom strategy, does have a place in secondary schools in Solomon Islands. Assessment for learning (AfL) is currently employed by these teachers, but the form of formative assessment as reported being used in Solomon Islands secondary school classrooms is limited by policies, systems and methods employed by schools.

This study suggests that if classroom teachers are to become effective '*mediators of learning*' they must have a better theoretical understanding of social constructivism and metacognition. Otherwise, assessment will always sit outside the process of learning, and classroom teachers and learners will always play traditional rather than contemporary roles in the learning and teaching (and assessment) process. For improvements to be made in areas highlighted in this study, focus must be on teacher knowledge and ability and the policies and practices of schools. Unless teachers, students, parents and policymakers see and value the potential of formative assessment, it will continue to be under-emphasized, under-valued and under-used.

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Chapter One

INTRODUCTION

1.1 An overview of Chapter One.

This chapter provides an overview of the thesis. It begins with a brief description of the need for this study, followed by my interest into formative assessment, the purpose of this study, the research questions and a description of the significance of the study. A brief description of the context of the present study follows. The chapter concludes with the organizational structure of the thesis. A list of common terms used in this study can be viewed in appendix G.

1.2 The need for this study

A review of the education system in Solomon Islands (Ministry of Education, 2004) found assessment for selection, certification, qualification and accountability dominated the way students were assessed in secondary schools in Solomon Islands. Where selection is a predominant factor in assessment, it results in a narrow approach to teaching, learning and curriculum as well as policy setting (Ministry of Education, 2004; Pongi, 2004). While accountability for learning is crucial, many, including teachers, educational leaders, research scholars and parents worldwide are concerned about the motivational and harmful effects it has on the self-esteem of low achievers. Studies by the Assessment Reform Group (1999, 2002, 2006), Black and Wiliam (1998b), and Madaus and Clarke (1999) and others highlighted that high-stakes exams:

- have a negative impact on teaching and student learning
- demotivate or demoralise low achievers
- increase dropout rates, particularly among minority student population.

Studies by the UK Assessment Reform Group (1999) and Pongi (2004) further highlighted that increasing the amount of testing will not enhance student learning.

Indeed, there needs to be a change in emphasis in assessment. In a seminal paper presented for the Pacific Island Forum Secretariat, during the Education Ministers' Meeting in Apia, Samoa, Dr. Pongi, Director of the South Pacific

Board for Educational Assessment (SPBEA), signalled that it is time for Pacific Island countries (PIC) including Solomon Islands to alter the emphasis on assessment practices executed in their schools. That is to try and look beyond the performances of students in the high-stakes assessments and their relative ranking in such assessment and rather, focus more on the level of achievements of students. To use his words:

The education authorities in each PIC need to put in place strategies that would promote “assessment for learning” instead of “assessment for ranking” if the quality of education is to improve. (p. 33)

In other words, assessment should be designed to be responsive to students’ needs in order to ascertain what students can do and what their strengths and weaknesses are - not to terminate or eliminate students, as is still the case with the current systems in most PIC, including Solomon Islands. Toward this end, Pongi (2004) proposed that each PIC including Solomon Islands should develop an assessment framework in line with its curriculum framework, one which emphasizes the role of assessment as one of promoting teaching and learning.

Formative assessment, which was reported by research to have a positive effect on teaching and student learning, is a recent phenomenon in Solomon Islands (Pongi, 2004). Significantly, efforts made in recent years to implement formative assessment in secondary schools in PICs including Solomon Islands “were being hampered by the over-arching influence of the high-stakes examinations that for so long have cast a spell on any initiative that may have led to improvements in quality learning” (Pongi, 2004, p. 17).

Recent developments in Solomon Islands have supported the trend towards the adoption of formative assessment. The initiation phase of basic education (BE) for all children from Standard 1 to Form 3 (SI Ministry of Education, 2004) has emphasized the importance of formative assessment through the use of school-based assessment (SBA) in all private and government owned schools operating in the country. The new curriculum framework documents (which are outcome based) (SI Ministry of Education, 2004, 2005) emphasize the importance of

interactive, individualized, problem-solving and holistic learning which is highly formative in nature.

The issues discussed above have suggested that there is a need to pursue this study. Put simply, this study may be needed in the Solomon Islands for two reasons: First, for historical purposes it is advantageous to document secondary classroom teachers' perceptions of formative assessment. Second, to assist in future assessment reforms and formative assessment awareness programmes, there is a need to explore the differing views of teachers' understanding of the value and impact of formative assessment.

1.3 My interest into formative assessment

The motivation to carry out this research came from my background as a parent and a classroom teacher. My interest in classroom assessment emerged when I took teaching as a career in 1992. As a classroom teacher, I am directly involved in both assessment for formative and summative purposes.

My interest was further enhanced when I assumed responsibility with the School of Education (SOE), Solomon Islands College of Higher Education (SICHE), a teacher training institution, in Solomon Islands in 2004. During these years of teaching experiences, I have witnessed how external summative assessment influenced teachers' assessments in an effort to meet school expectations and social, political and educational demands and pressures (Aitken, 2000; Hill, 2000; Pongi, 2004). Against these pressures, "the commitment to formative assessment can become marginalised" (Aitken, 2000, p. 15). As I pondered over these issues, I began to ask myself, if these pressures exist then, what are teachers' attitudes towards formative assessment? Is it implemented in Solomon Islands secondary schools? and in what form? If formative assessment is regarded as one of the most critical assessment practices and a vehicle to improve student learning, as reported by research (see Black & Wiliam, 1998b), is it well understood and valued by teachers in secondary schools in Solomon Islands? In seeking solutions to these questions, I thought it would be best to establish an understanding of how current classroom teachers perceive formative assessment since they are primarily responsible for evaluating instruction and student learning. Furthermore, the extensive literature documented on this topic by researchers from the assessment community in many western and developed countries such as the United States,

United Kingdom, Australia and New Zealand have further boosted my interest to pursue this study.

1.4 The purpose of the study

This study sought to investigate Solomon Islands secondary school teachers' perceptions of the value of formative assessment. The purpose of the study is to gain an understanding of teachers' perceptions of the value and impact of formative assessment as a classroom strategy, since they are charged with the primary responsibility of evaluating instruction and assessing students' learning.

Assessment as central to social life has long been an area of debate in the assessment community regarding which assessment strategy will best meet the diverse needs of our children in schools - in promoting learning and equipping students for lifelong learning. Recently, Pacific Island countries (PIC) including Solomon Islands have been urged to reconsider their emphasis on assessment to incorporate assessment for learning (AfL) in their schools rather than assessment for selection or ranking (Pongi, 2004). This call was made following reports by Black and Wiliam (1998b) and others that formative assessment, effectively implemented, can indeed raise students' achievements, while excessive summative assessment can have a harmful effect on student learning. Indeed, it has been widely accepted that formative assessment is a valuable assessment practice in improving the involvement and attainment of students. While formative assessment has been well established internationally, it is a recent phenomenon in Solomon Islands. If the primary purpose of assessment is to acquire high quality learning, then formative assessment ought to be understood by classroom teachers, educational leaders, parents and policy makers in Solomon Islands as the most critical assessment practice.

1.5 The research Questions

The purpose of this research is to investigate classroom teachers' perceptions of the value of assessment for formative purposes in secondary schools in Solomon Islands. In particular, the questions this research set out to answer were:

- What are the teachers' understandings of assessment for formative purposes and how do they link it to their understanding of learning?

- What is the perceived value and impact of assessment for formative purposes to secondary school students' learning?

1.6 The significance of the study

The findings of this study may be valuable to Solomon Islands school teachers (secondary/primary), educational leaders, parents and to the Solomon Islands College of Higher Education (SICHE). The study offers a detailed insight into the purposes, benefits and impact of formative assessment in promoting effective teaching and learning, by contributing theoretical knowledge to formative assessment in Solomon Islands. This should enable classroom teachers, educational leaders and parents to have a clear understanding of the benefits, value and impact of formative assessment, identify barriers or problems in learning and be able to evaluate teaching practices. This in turn may help teachers to develop their classroom assessment practices and have a much improved attitude towards this concept.

Second, the results from the findings may be valuable to policy makers such as the Ministry of Education in the promotion of formative assessment in Solomon Islands. There is information that could help with the formulation of policy frameworks in assessment practice to guide schools in formulating their own assessment policies to guide teachers' classroom assessment practices for formative purposes in secondary schools operating in the country.

1.7 Context of the study - Solomon Islands in brief

1.7.1 Geographical and physical features

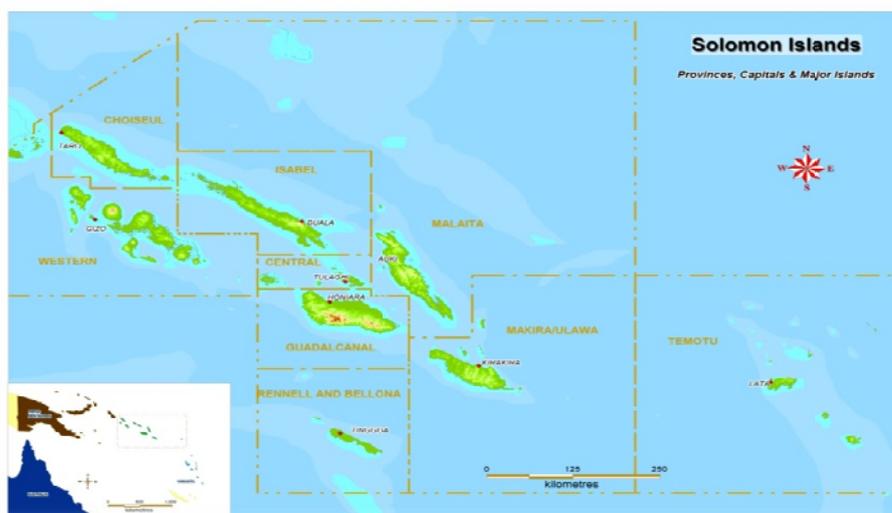
The Solomon Islands are situated in the southwest Pacific, stretching in a double chain 1,400 kilometres in a southeast direction from Bouganville in Papua New Guinea to the northwest border of the Republic of Vanuatu (Ministry of Education, 2000).

Figure 1.1: Location of Solomon Islands



The Solomon Islands consists of 922 islands, of which 347 are inhabited. Being the second largest in the Melanesian chain, the Solomon Islands archipelago covers approximately 1,632,964 square kilometres of ocean and includes a landmass of some 28,370 square kilometres (Kabutaulako, 1993). The largest of the 922 islands is Guadalcanal with 5,340 square kilometres, while the smallest include the artificial islands in the Lau lagoon of less than one hectare. There are six main islands: Choiseul, Guadalcanal, Malaita, Makira (San Christobal), New Georgia and Santa Isabel.

Figure 1.2: Map of the main provinces of the Solomon Islands



Solomon Islands has a total population of 496,000 people with a high proportion of young people, i.e. about 45 percent (45%) under the age of 14 years old; the annual population growth rate is 3.5 percent (Solomon Islands National Census, 1999). The ethnic group making up the population of the Solomon Islands includes, the Melanesians (93%), Polynesians (4%), Micronesians (1.5%) and other groups (1.5%). Melanesians occupy the larger islands while Polynesians are concentrated in the smaller outer islands. The Micronesians are mostly settlers from Kiribati who migrated to the Solomon Islands during the colonial rule while the 'other' category of the people constitutes mostly Chinese and European settlers (Kabutaulako, 1993).

1.7.2 Socio – cultural context

The Solomon Islands depict wide diversities in terms of culture, language and customs. About 83 vernaculars are spoken throughout the country. Most people reside in small, widely dispersed settlements along the coasts. Sixty percent live in sparsely populated areas, i.e. in localities with fewer than 200 persons, and only 11 percent reside in urban areas. The capital city, Honiara, situated on Guadalcanal, is the largest island with over 30,000 inhabitants (Malasa, 2007).

The chief characteristics of the traditional Melanesian social structure are: the practice of subsistence economy, the recognition of bonds of kinship with important obligations extending beyond the immediate family group and generally egalitarian relationships, emphasizing acquired, rather than inherited, status and a strong attachment of the people to the land. Most Solomon Islanders maintain this traditional social structure and find their roots in village life (Kabutaulako, 1993; Malasa, 2007).

1.7.3 The Education System

The education system in the Solomon Islands is governed by the Education Act of 1978 (Solomon Islands Education Act, 29th September 1978). The Act sets the law and provisions that regulate the decentralization and administration of schools (primary/secondary) as well as nationwide and national assessment procedures (i.e. examinations/selection rules). The government, through the Ministry of Education, is responsible for the production and effective delivery of available

learning materials and equipment, teacher training and professional development (Ministry of Education, 2004).

The formal education of Solomon Islands was introduced in the late 19th century with the advent of Christian Religious Groups for the purpose of learning and reading the Bible (SI Ministry of Education, 2000, 2004). Christian religious groups continued to be the sole local source of schooling until World War II (Wasuka, 1989). From World War II until the 1960s, there was a steady increase in government involvement in education (Wasuka, 1989) with the hope that this would improve the quality of education, groom leaders for the future and help provide people with skills to resource the emerging private sector (Bennett, 1987; Ministry of Education, 2004; Wasuka, 1989). In the late 1960s, two schools (one a government school and the other Anglican) provided the first local opportunity for secondary education; before that, secondary education was only available overseas (Potter, 2005). With the support of other Christian denominations, the number of secondary schools soon expanded to nine, which became the National Secondary Schools of today (Potter, 2005). Nine National Secondary Schools were, and still are, boarding schools taking students from any province (depending on student choices and academic criteria). However, five of them are either in, or very close to Honiara on the island of Guadalcanal. Today, the central government still runs only two secondary schools, with the expanding remainder supported by the Honiara City Council or provincial authorities, Christian denominations and local communities (Potter, 2005).

1.7.4 The secondary education system

Secondary school education refers to that full program of education provided in accordance with Government-approved curricula and availed to students who have completed primary education (Ministry of Education, 1997, 2004). The Solomon Islands Ministry of Education Annual Report (2004) documented 135 secondary schools in three categories with a total enrolment of 26,459 in 2004. The schools are spread all over the country and are built as the need arises.

The three types of secondary schools operating within the Solomon Islands education system are Community High Schools (CHS), Provincial Secondary Schools (PSS) and the National Secondary Schools (NSS) (Ministry of Education,

2004). All students enrolled in these schools follow the one academic national curriculum, which Treadaway (1996) described as a localised version of the Cambridge Curriculum. This curriculum is guided by the Education Act 1978 which sets the law and provisions regulating its uses. The regulations outlined in the Act are mandatory for all schools throughout Solomon Islands. (Ministry of Education, 2004, 2005).

The CHS, mostly rural and community-based, are administered by the churches and provincial education authorities. Most are extensions of existing primary schools and enrol students up to Form 3 (age 13), although some schools go up to Form 6 (age 16) (Malasa, 2007; Ministry of Education, 2004). There are about 116 community high schools operating in various provinces in Solomon Islands (Ministry of Education Annual Report, 2004).

The PSS are located in the country's nine provinces (see Figure 1.2) administered by their host provincial governments, including the Honiara City Council (Malasa, 2007). There are currently sixteen provincial secondary schools throughout the country with a total enrolment of 5,536 in 2004. These schools enrol students from Forms 1- 6 (ages 11 to 16), with the majority of the students taken from the host province (Malasa, 2007; Ministry of Education, 2004). PSSs were established in the 1980s to expand the number of junior secondary school places and emphasize the need for acquiring practical subjects (Ministry of Education, 2004).

The NSS are administered by national government through the Ministry of Education or the churches. Being national schools, they enrol students from all over the country from Forms one to seven (ages 11 to 17). There are currently nine National Secondary Schools throughout the country (Ministry of Education, 2004; Potter, 2005). Teachers of these schools are predominantly Solomon Islanders with a few expatriates (especially from England, USA, Canada, India, Australia, New Zealand and Japan). To teach in any one of the above secondary schools, a teacher must have a certificate, diploma or a master's degree in teaching.

1.7.5 The assessment system

Assessment is compulsory at all entry levels in secondary schools in Solomon Islands. All students must take four external examinations as they pass through the formal education system (Ministry of Education, 2004). The first three (*e.g. Solomon Islands Secondary Entrance Examination – SISEE, National Form Three Examination – NF3E, Solomon Islands School Certificate – SISC*) are organised by the National Examinations and Standards Unit (NESU) under a delegation from the Minister of Education. The fourth one (*e.g. The Pacific Senior Secondary certificate – PSSC*) is administered by the South Pacific Board for Educational Assessment (SPBEA) based in Fiji (Ministry of Education, 2004).

Such a highly examination driven system, according to writers can:

- distort curriculum writers/decision makers and well-intended teachers (SI Ministry of Education, 2004).
- result in loss of talents and undermine student interest (Kings & Nabobo, 2000).
- narrow or restrict teachers' classroom instructions and students' learning (ARG, 2006; Harlen, 2005; Pongi, 2004; SI Ministry of Education, 2004)
- reduce the self-esteem of low achieving students (ARG, 2006; Harlen, 2005; Kings & Nabobo, 2000)
- demoralise some students and increase the gap between higher and lower achieving students (ARG, 2006; Harlen, 2005)

1.8 The organizational structure of the thesis

The five chapters of this thesis systematically investigate the issue of teachers' perceptions of the value of formative assessment in secondary schools in Solomon Islands. The structure of this thesis is set out as follows:

Chapter one provides an overview of the thesis and defines the common terms used in this study (*see appendix G for glossary of terms*). It also discusses the need for this study, my interest in formative assessment, purpose, significance, and outlines the setting for the study.

Chapter two examines selected literature on formative assessment synthesized from both national and international literature on formative assessment. It also

discusses the learning theories which provide a framework in which formative assessment can exist.

Chapter three describes the research methodology, methodological framework adopted for the study, research design, method of data collection and data analysis process.

Chapter four presents the main findings derived from the study, which are discussed in chapter five. It also discusses the implications and the conclusions of the present study including the emerging professional development needs, suggestions to improve formative assessment and recommendations on areas for future studies.

The next chapter, chapter two, reviews the literature on formative assessment which has been synthesized from both national and international literatures on formative assessment. In particular, it reviews literatures on the concept of formative assessment, key characteristics of good quality formative assessment, environment to incorporate formative assessment, values, and challenges to formative assessment. This is followed by a review of literature on theories of learning which seem to provide an explanatory framework where formative assessment can exist. These include constructivism, cognitive constructivism and social constructivism.

Chapter Two

LITERATURE REVIEW

2.1 Introduction

Formative assessment (also known as assessment for formative purposes or assessment for learning) has attracted increasing attention from both practitioners and scholars over the last decade (Pryor & Crossouard, 2007) following the report by Black and Wiliam (1998) that formative assessment, if properly implemented, can indeed raise students' achievement. The value of formative assessment has led to considerable research and development efforts to enhance teacher capacity to use formative assessment as a means to improve student learning in their classrooms (Pryor & Crossouard, 2007; Torrance & Pryor, 2001). These developments have led to reforms to accommodate and promote assessment for formative purposes in most secondary schools internationally (Clarke, 2005). In their examination of current reform agendas internationally, Kennedy, Sang, Wai-ming, and Fok (2006) found considerable support for formative assessment (see for example, Curriculum Development Council, 2001; Department of Education and the Arts, 2005; Educational Institute of Scotland, 2002; Learning and Teaching Scotland, 2006; New Zealand Educational Gazette, 2002; OECD, 2005; Saskatchewan Learning, 1993; Scottish Executive, 2003).

Despite this increasing support by policy-makers and attention by practitioners, researchers and scholars in current literature for formative assessment internationally, much is yet to be explored about classroom assessment for formative purposes in Pacific Island Countries (PIC) including the Solomon Islands. Most of the research mentioned above is carried out in developed countries such as the United Kingdom, United States, New Zealand, Australia and other European countries (Dimmock & Walker, 2002, in Malasa, 2007), so it lacks contextual specificity and relevance as most of its findings are based mainly on Euro-centric or Anglo-American theories, values and beliefs (cited in Malasa, 2007).

There are also questions whether educational leaders such as the principal and teachers in developing countries such as the Solomon Islands would have the capacity and resources to implement assessment for formative purposes as

identified in this research literature. Studies by Aiken (2000), Hill (2000) and Pongi (2004) found that assessment practices in schools are very much a product of socio-economic and political factors related to national and local context as well as the skills and dispositions of individuals, and are very much influenced by the demands and expectations of the local school communities. As Aitken (2000), Hill (2000), Davis (1994) and Malasa (2007) further illustrated, the economy and cultural/social constraints of developing countries can influence how school principals and classroom teachers approach their leadership and assessment roles in their schools.

Moreover, there is a dearth of evidence to prove that formative assessment is being practiced in Solomon Islands. The Ministry of Education (2004) reported that many secondary schools use continuous testing for the purpose of obtaining the school's component of the final scores for grading, ranking, selection, promotion and the certification of their students. Despite the above arguments, "there is also growing 'internationalization' of education, reinforced by a belief that education models are transferable, regardless of the context" (MacBeath & Riley, 2004, in Malasa, 2007, p. 9). This, as MacBeath and Riley claim, has shaped the philosophy of policy-makers in both developed and developing countries including Solomon Islands. This present study will present a thematic description of formative assessment practices in these developed countries and where possible, relate them to the situations in the Solomon Islands.

This chapter reviews the relevant literature which has been synthesized from both national and international literature on formative assessment. First, it discusses the concept of formative assessment and the key characteristics of good quality formative assessment and how it can be utilized to enhance students' learning. Then it considers concepts of learning and learning theories which provide an explanatory framework for formative assessment and their relationship to formative assessment. Thirdly, it discusses the classroom culture appropriate for formative assessment, followed by a description of the values and challenges of formative assessment. The chapter concludes with a brief summary.

2.2 The concept of formative assessment

Formative assessment is a crucial aspect of classroom practice, the sub-routines of which focus on: the quality of learning, the provision of advice and feedback for improvement and a strong emphasis on cooperative learning and effective learning interactions in the classroom (Clark, 2006). There are many definitions of formative assessment (Bell & Cowie, 1996). They all share a common purpose, that of improving and informing teaching and students' learning. According to Black and Wiliam (1998a), formative assessment, refers to:

all those activities undertaken by teachers, and by the students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they engaged. Such assessment becomes formative when the evidence is actually used to adapt the teaching to meet needs. (p. 2)

In recent years, after reviewing Black and Wiliam's (1998) definition, Black, Harrison, Lee, Marshall and Wiliam (2002), define formative assessment as:

Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting pupil's learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence.

An assessment activity can help learning if it provides information to be used as feedback, by teachers, and by their pupils in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged. Such assessment becomes 'formative assessment' when the evidence is actually used to adapt the teaching work to meet learning needs. (pp. 2-3)

I suggest that Cowie and Bell (1999), Crooks (2001), Gipps (1994), Popham (2006) and Sadler (1989) have similar sentiments.

As the definition above suggests, formative assessments are intended to support learning and help target instruction through feedback that informs teachers about students' progress toward valued learning goals (Sadler, 1989). This means formative assessment is an integral part of the teaching and learning process and is not intended for assigning summative or end of unit or course grades (Wiggins,

1998). Similarly, Chappuis and Chappuis (2007/2008) suggest that “when teachers assess students learning for purely formative purposes, there is no final mark on the paper and no summative grade in the grade book. Rather, assessment serves as practice for students, just like a meaningful homework assignment does” (p. 17). Thus summative assessment, which evaluates learning at the end of a particular topic/unit, term or semester, cannot be formative in nature because it is administered after the learning has taken place (Black et al., 2004; Black & Wiliam, 1998a). Even ‘on-going’ or ‘continuous’ assessment does not necessarily mean that the information is used to help learning, for in reality much of this assessment takes the form of a series of short summative tests rather than being an integral part of the teaching and learning process (Black et al., 2004; Black & Wiliam, 1998a; Harlen, 1998; Sadler, 1989). Although the processes of both summative and formative assessment were essentially the same (e.g. both can be utilized to obtain information about students’ capabilities on a particular topic), Harlen (1998) and Sadler (1989) argue that their purposes differ. Such assessment according to Harlen, (1998, p. 110),

is not formative because it fails to identify what needs to be done to make progress towards further learning. It also fails to recognize that the learners must be ultimately responsible for their learning since no-one else can do it for them and so they should share in the decisions about it.

Similarly, Black et al. (2004) point out that any test or assessment at the end of a piece of learning is too late for formative purposes. There will be no opportunity to use its results to improve performance of pupils involved. Unless formative assessment leads to enhanced student learning, it cannot be regarded as being formative. For assessment to be formative, it must be frequent, individualized, carefully targeted and offer substantive feedback to guide subsequent efforts to improve (Editorial, 1997, cited in Pucko, 1998). If formative assessment is to be effective, then it must be considered as momentary and progressive (Ussher, 2001), dialogic and interactive (Cowie & Bell, 1999) and must involve students (Cowie, 2005, as cited in Carless, 2007).

2.2.1 The key characteristics of good quality formative assessment

All assessments are created to serve some purpose, whether to analyse a learning barrier, to identify a student who needs scaffolding, to provide feedback to move student learning forward or to help students monitor, plan and take the next steps in the learning process.

Numerous studies (see for example, Black et al., 2002; Black & Wiliam, 1998b; Clarke, 2005; NZCER, 2006; Sadler, 1989; Wiggins, 1998) identified learning gains and forward feedback as critical components of formative assessment. They claimed that assessment is of no value unless it is designed to be purposeful and is seen to be an integral part of the teaching and learning process. In other words, assessment should provide a clear direction to the students on what to do to enhance learning and understanding (Faleye & Dibu-Ojerinde, 2005). As the Western and Northern Canadian Protocol for Collaboration in Education (WNCP) put it:

when learning is the goal, teachers and students collaborate and use ongoing assessment and pertinent feedback to move learning forward. When classroom assessment is frequent and varied, teachers can learn a great deal about their students. They can gain an understanding of students' existing beliefs and knowledge, and can identify incomplete understandings, false beliefs, and naïve interpretations of concepts that may influence or distort learning. (2006, p. 5)

In a similar vein, Atkin, Black and Coffey (2001) proposed that for a learning endeavour to be successful, the learner must have answers to basic questions: *Where am I going? Where am I now? and How can I close the gap?* When students better understand their learning goals, recognize their own skill level in relation to the goals, and take responsibility for reaching the goals, they become active partners in improving their learning (Atkin et al., 2001). In view of such questions, it is requisite to establish principles that will guide assessment implementation designed to promote learning. Towards this end, the Assessment Reform Group (1999, p. 4) proposed that improving learning through assessment depends on five, deceptively simple, key factors, all underpinned by action:

- providing effective feedback to pupils

- actively involving pupils in their learning;
- adjusting teaching to take account of the results of assessment;
- recognizing the profound influence assessment has on the motivation and self-esteem of pupils, both of which are crucial influences on learning;
- the ability for pupils to be able to assess themselves and understand how to improve.

The section below briefly discusses these five key factors of formative assessment synthesized from both national and international literature.

2.2.1.1 Providing effective feedback to students

Feedback has long been recognized as a crucial feature of the teaching – learning process; see for example, Bennett’s (1982) and Bloom’s (1976) models where the former included teacher feedback, while the latter included feedback, correctives and reinforcements (such as praise, blame, encouragement and other rewards and punishments).

More recently, research on formative assessment and feedback (see for example, Nicol & Macfarlane-Dick, 2006) focused attention on learning as a more conceptualised process where students actively construct their own knowledge and skills and take responsibility for the management of learning (Lea et al., 2003). This view of learning suggested that teaching, assessment and learning should be student-centred (NZ Ministry of Education, 2000).

A collaborative relationship is critical to feedback and is central to effective assessment practice. When students receive feedback, they receive it in the context of their relationship with their teacher. In her key note presentation, Chamberlain (in NZ Ministry of Education, 2000) highlighted that the relationship between the teacher and student is critical. Therefore, knowing the students well and how well they are likely to interpret, understand and act on feedback is crucial.

While Black and Wiliam (1998a), Crooks (2001) and Hattie (1999) claimed that feedback, as central to formative assessment, can produce a powerful effect on

achievement, Biggs (1998) argued that the effectiveness of formative assessment is dependent upon the student's accurate perception of the gap, as well as the motivation to address it. This argument, according to Rushton (2005), is facilitated by a constructivist perspective that views the student's involvement in the process as essential, and therefore advocates the use of strategies such as self-assessment. While formative assessment provides a teacher with a bridge between assessment and teaching, it is essentially a way of creating independent, reflective learners who can plan and assess their own progress (Young, 2005). To construct a way forward for the learner, Sadler (1998, p. 84) suggested that feedback must:

- be accessible to and understood by the learner;
- have a catalytic and coaching value which will inspire confidence and hope in the learner;
- enable the learner to identify gaps between current and desired performance, and to take some action to close that gap.

Numerous studies have suggested that the most helpful feedback, producing the greatest gains, is that which helps students become aware of gaps that exist between the learning goal and current knowledge, understanding or skills through specific, carefully focused feedback (Ames & Ames, 1984; Bangert-Drowns, Kulik, Kulik & Morgan, 1991; Black & Wiliam, 1998a; Butler, 1988; Clark et al., 2003; Crooks, 1988; Leahy et al., 2005; Sadler, 1989; Wiliam, 2007/2008). When students know about the learning intentions of a particular task, they become more motivated and task-oriented. Low achievement is often the result of students failing to understand what the teacher requires of them (Black & Wiliam, 1998b; Gray & Tall, 1994) for example, not understanding the academic feedback.

While feedback generally originates from a teacher, learners can also play an important role in formative assessment. McCallum et al. (2000) pointed out that,

In formative assessment, both the teacher and pupil make judgements of the pupil's work and learning strategies against learning objectives. Both can give feedback about what is successful and the teacher takes the lead in deciding what is needed to close the gap. (p. 1)

Feedback should be tailored to specific needs and encouraging. Research (see for example, Brookhart, 2007/2008; Guskey, 2007/2008; Ovando, 1994) shows that effective feedback is: corrective in nature and confirms that students are on the right track, timely, dialogic (written or verbal feedback) and specific to the criteria. Evidence from research shows students who understand the learning goals and the assessment criteria, and have opportunities to discuss and/or reflect on their work, show greater progress than those who do not (Fontana & Fernandes, 1994; Frederickson & White, 1997; Leahy et al., 2005).

When communicating academic feedback, most research scholars valued the importance of dialogue through oral and written feedback (Clarke, 2003). Black and Wiliam (1998a) and Leahy et al. (2005) cautioned that any dialogue between students and the teacher should be thoughtful, reflective, focused to evoke and explore understanding so that all students have an opportunity to think and to express their ideas. Black and Wiliam add that any feedback given should be about the particular qualities of student's work, with advice on what he/she can do to improve, and should avoid comparisons with other pupils. The quality of the feedback, rather than its quantity, determines its effectiveness (Bangert-Downs, Kulik, Kulik & Morgan, 1991; Sadler, 1989).

In recent years, Gipps and Tunstall (1996) identified two types of feedback: evaluative feedback and descriptive feedback. Evaluative feedback involves a judgement by the teacher based on implicit and explicit norms. It promotes self-management and independence. Descriptive feedback on the other hand focuses on identified learning outcomes and makes specific references to the student's achievement. To improve formative assessment, Black and Wiliam (1998b) suggest classroom teachers should put more emphasis on descriptive than evaluative feedback. When feedback is given as rewards or grades, it increases ego rather than task involvement. Such feedback focuses students' attention on their 'ability' rather than on the importance of their effort, lowering the self-esteem of low achievers (Black et al., 2004; Black & Wiliam, 1998b). Specific, descriptive feedback focusing on success, points the way to improvement and has a positive effect (Osmond, Mery, & Reiling, 2002). As Chappuis and Chappuis (2007/2008) highlighted,

Effective descriptive feedback focuses on the intended learning, identifies specific strengths, points to areas needing improvement, suggest a route of action student can take to close the gap between where they are now and where they need to be, takes into account the amount of corrective feedback the learner can act on at one time and model the kind of thinking students will engage in when they self-assess. (p. 17)

To achieve this, the AAIA (2003), Black and Wiliam (1998b), Chappuis and Chappuis (2007/2008) and Chappuis and Stiggin (2002) suggested that a culture of success should be promoted in which every student can make achievements, by building on their previous performance rather than being compared with others. This is based on informing students about the strengths and weaknesses demonstrated in their work and giving feedback about what their next steps should be, identifying problems and potential solutions.

2.2.1.2 Actively involving pupils in their learning

Research (see for example, Herman, 1992; Peating, 2000; Shepard, 2000) suggested that good assessment is built on current theories of learning. Indeed, students are no longer viewed as empty vessels to be filled, but are seen as active participants in the learning process. A number of studies in constructivist learning theory revealed that meaningful learning occurs when learners are actively engaged in constructing and expanding their knowledge, and in working out how to apply their knowledge to solve problems (see Ashbacher, 1997; Barker, 2001; Clarke, 2005; Ferrara & McTighe, 1992; Herman, 1997; James, 2006; Shepard, 2005; Windschitl, 2002). Many writers (see Bransford & Vye, 1989; Davis & Maher, 1990; Herman, 1992; Janssen et al., 2003; Marzano et al., 1988; Wittrock, 1991; Windschitl, 2002) concur that meaningful learning is *active* (manipulative-observant), *constructive* (articulative-reflective), *cooperative* (collaborative-conversational), *authentic* (complex-contextualized), and *intentional* (reflective-regulatory). In this situation, the teacher and students are in a delivery and recipient relationship as well as being partners in pursuit of a shared goal (Black et al., 2004).

At its heart, formative assessment is a way of informing and involving the students themselves in the process of assessment and learning (Black & Wiliam,

1998b). As Chappuis and Stiggins (2002) pointed out, when students are involved in assessment, they learn to use assessment information to manage their own learning “so that they understand how they learn best, know exactly where they are in relation to the defined learning targets, and plan and take the next steps in their learning” (p. 41).

Student involvement in the learning process is critical. Considerable evidence from research (see for example, Black & Wiliam, 1998b; Black et al., 2003, 2004) revealed that students will achieve more if they are fully engaged in their own learning process. They argue that if students know what they need to learn and why, and then actively assess their understanding, gaps in their own knowledge and areas they need to work on, they will achieve more than if they sit passively in a classroom working through exercises with no real comprehension either of the learning intention of the exercise or of why it might be important. Classroom assessment that involves students in the assessment process will not only improve learning but can also assist students to become self-regulated learners (Black & Wiliam, 1998b; Nicol & Macfarlane-Dick, 2006).

2.2.1.3 Adjusting teaching to take account of the results of assessment

Formative assessment plays a significant role in informing the teacher about students’ progress as well as about the effectiveness of teachers’ classroom instructions (Black & Wiliam, 1998b) and the effectiveness of the curriculum materials being used in the classroom (Davies & Singh, 1997). Boston (2002) suggested that employing formative assessment techniques such as teacher observation, classroom discussions, homework and the analysis of tests, can help the classroom teacher gain an understanding of what the students know or don’t know.

When teachers know how students are progressing and where they are having difficulties, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice (Boston, 2002; Guskey, 2007/2008; Brookhart, 2007/2008).

Research (see for example, Dixon & William, 2003b), indicates that incorporating formative assessment as an integral part of the teaching and learning process implies a more dynamic, interactive, dialogic and challenging role for teachers as they are charged with the responsibility of being responsive to students' needs, intervening where necessary during the learning process.

2.2.1.4 Recognizing the profound influence assessment has on the motivation and self-esteem of pupils, both of which are crucial influences on learning.

A classroom is composed of students with diverse needs, background and skills therefore the assessment strategies employed by teachers in the classroom are critical. The type of assessment strategy a teacher employs in his/her classroom can have a huge effect on students' intrinsic interest and attitude to learn (Clarke et al., 2003). Research in this area (see for example, Black et al., 2004; Clarke et al., 2003; WNCP, 2006) shows that students are motivated to learn through success and competence, and that they are more likely to invest time and energy when they feel ownership and have choices in their learning.

Motivation and self-esteem play a significant role in learning and assessment (Nicol & Macfarlane-Dick, 2006). Study by Dweck (1999) showed that, depending on students' belief about learning, students possess qualitatively different motivational frameworks. According to Dweck, these frameworks affect both students' responses to external feedback and self-regulation of learning. As such, frequent high-stakes assessments (where marks or grades are given) have a negative effect on motivation for learning, damaging the self-esteem of low achievers and leading to problems of 'learner helplessness' (Dweck, 1986). Such assessment feedback according to Black and Wiliam (1998b, p. 4), "teaches low achieving students that they lack 'ability', causing them to come to believe that they cannot learn". Studies (Butler, 1988) also show that when students receive a grade and a comment, they ignore the comment.

The type of feedback given to students is critical. "If a learning exercise is seen as a competition, then everyone is aware that there will be losers as well as winners:

those who have a track record as losers will see little point in trying” (Black et al., 2004, p. 12). Study by Black and Wiliam (1998b) highlighted that

when a classroom culture focuses on rewards, ‘gold stars’, grades, or class ranking, pupils look for ways to obtain the best marks rather than to improve their learning. They also spend time and energy looking for clues to the ‘right answer’.
(p. 5)

Indeed, students are more likely to become enthusiastic and lifelong learners if they are provided with an engaging curriculum, a safe and caring environment (where they can freely discover, create and interact with others) and a significant degree of choice about what (and how and why) they are learning (Black & Wiliam, 1998b; Kohn, 1994).

2.2.1.5 The ability for pupils to be able to assess themselves and understand how to improve

A number of studies (Black et al., 2004; Black & Wiliam, 1998b; Boud, 1995; Chappuis & Chappuis, 2007/2008; Clarke, 2005; Gregory, Cameron, & Davis, 2000; Hill, 1995; Falchikvo, 1995; Noonan & Duncan, 2005 and others) have expressed the importance of involving students in their own learning through peer and self-assessment as strategies for operationalizing the principles of formative assessment. This section briefly discusses peer and self-assessment and how it can be utilized to improve student learning.

2.2.1.5.1 Peer and Self – Assessment

Peer and self-assessment are critical components of formative assessment. Considerable evidence from research (for example, Black & Wiliam, 1998b; Black et al., 2003, 2004; Sadler, 1989) shows that students will achieve more if they are fully engaged in their own learning process, aware of what they need to learn and why, and what they need to do to reach it. While this is undisputable, Black et al. (2004) cautioned teachers that peer and self-assessment can only be meaningful in the classroom if it is used to assist students, especially low-achievers, to develop the knowledge and skills of assessment (e.g. goals, criteria and interpretation).

2.2.1.5.2 Peer – Assessment

Peer assessment, as complementary to self-assessment (Black et al., 2004), is generally recognized as an integral component of formative assessment (Noonan & Duncan, 2005). Although the definition for peer assessment varies, assessors and evaluators generally agree that peer-assessment involves “*one student’s assessment of the performance or success of another student*” (Noonan & Duncan, 2005, p. 2). This process may involve various types of activities such as peer feedback and peer learning (Falchikov, 1995).

A central purpose of peer assessment is to enhance students’ understandings in the cognitive and meta-cognitive process so that one’s social and transferable skills are developed (Brown, Bull & Pendlebury, 1997; Rubin, 2002; Stobart & Gipps, 1996; WNCP, 2006).

Peer assessment, a formative strategy, is critical to students’ interaction, understanding and learning gains (Anthony & Lewis, 2008). It enables students to take control over their own learning and to gain insight into their own performance (Heywood, 2000). A number of studies in this area (Butler & Hodge, 2001; Falchikov, 2005; LeMare & Rubin, 1987; McGourty, 2000; Sluijsmans et al., 1999, all cited in Anthony & Lewis, 2008) found that peer assessment increases student-student and student-teacher interactions and student understandings about other students’ ideas during the learning experience.

While peer assessment is critical to formative assessment, Black and Wiliam (1998b) cautioned that it must be managed carefully. It is not for the purpose of ranking because if students compare themselves with others rather than their own previous attainment, those performing better than their peers will not be challenged and those performing at a lower level will be demotivated or demoralised.

For peer assessment to be successfully implemented in the classroom, Dochy and Segers (1999) suggested that peer assessment criteria must be made beforehand and presented in operational terms with which all students are familiar. Dochy and

Segers further argue that peer assessment works well when these criteria are determined jointly by teachers and students.

For peer assessment outcomes to be reliable and valid, Falchikov and Magin (1997, in Anthony & Lewis, 2008, p. 3) suggested that students must:

- be committed and fully understand the educational purpose of peer assessment.
- be involved in determining the criteria and agreeing on a grading scale and assessment procedure.
- receive feedback on peer assessment scores, both in relation to their own performance and to the overall pattern of scores.

2.2.1.5.3 Self – Assessment

Self-assessment is a complementary component of formative assessment (Black and Wiliam, 1998b) and provides a fundamental link with learning (Boud, 1995; Crooks, 2001). According to Boud (1995), self-assessment is concerned with learners valuing their own learning and achievements on the basis of evidence from themselves and from others and being encouraged to take responsibility, especially when they are involved in considering criteria which are meaningful to them. It is a means by which students take responsibility over their own learning.

A number of studies have investigated self-assessment and have provided descriptions of what it might look like in practice (Black et al., 2002; Black & Wiliam, 1998b; Clarke, 2001; Hill, 1995; McDonald & Boud, 2003; Stobart & Gipps, 1997; Suffolk Advisory Service, 2000; Sutton, 1995; Taras, 2005). They concluded that self-assessment, suitably organised, can lead to a significant increase in learning and achievement.

Developing effective self - assessment is a critical component of managing one's own learning. It requires students to have a clear picture of the learning targets, an understanding of what could count as good quality work that meets these targets, an idea of where one stands in relation to those targets and a means to achieve them (Black & Jones, 2006; Hill, 1995). Research (for example, Lee et al., 1998) showed that students who lack this clear picture (not aware of the rationale behind specific tasks), often find it difficult to attain individual targets. Because of this,

Black and Wiliam (1998b), McDonald and Boud (2003) and Ross (2006) suggest training students in how to assess their work may have a positive effect on students' performance. Once students understand how to assess their current knowledge and the gaps in it, they will have a clearer idea of how they can help themselves progress.

Self - assessment as an essential component of assessment for learning is beneficial to both the student and the teacher. In their longitudinal study on pupil self - assessment, the AAIA (2003) found that self - assessment can help students in several ways to:

- become responsible for their own learning
- raise self-esteem and become more positive
- be actively involved in the learning process (partner not recipient)
- become more independent and motivated
- recognise next steps in learning

Self - assessment is an important tool for teachers. Gregory, Cameron and Davies (2000) highlighted that when teachers employ self - assessment in their classroom, they were able to view the gaps between what they have taught and what students have learned. This gave students time to process new information. Both the teacher and students can set targets relating to specific goals rather than to national curriculum levels. The students will then be able to guide their own learning, with the teacher providing help where necessary or appropriate.

2.3 Formative assessment as integral to learning

The word assessment traces its roots back to Latin "*assidere*" (Hancock, 1992, as cited in Hill, 1995), meaning "to sit beside or with" (Wiggins, 1993). This conjures an image of a teacher (or peer or parent) sitting and talking with pupils about their learning in an attempt to really understand what is happening as they are learning (NZCER, 2006). This view of assessment during learning underpins formative assessment which embraces teacher – student interactions (Hill, 1995). In this situation, the teachers and students are in a delivery and recipient relationship as well as being partners in pursuit of a shared goal (Black et al., 2004). Studies by Black and Wiliam (1998b) have shown that formative

assessment is an important aspect of teachers' classroom work and that attention to improving practice can enhance the learners' achievements. Studies undertaken by Mazano, McTighe and Pickering (1993) confirm that, assessment directly affects learning by providing the necessary feedback for effective learning. Black and Wiliam (1998b), Black et al. (2002) and the NZ Ministry of Education (1994) also made it clear to us that 'formative assessment' is an integral part of the teaching and learning process. It is used to provide the students with feedback to enhance learning and to help the teacher understand students' learning. It helps build a picture of a student's progress, and informs decisions about the next steps in teaching and learning. It can take a variety of forms, such as comment on a presentation, conferencing or interview, or the analysis of test results. Black and Wiliam (1998b) further highlighted that formative assessment occurs when teachers feed information back to students in ways that enable the student to learn better, or when students are able to engage in a similar, self-reflective process. They further contended that if the primary purpose of assessment is to support high-quality learning, then formative assessment ought to be understood as the most important assessment practice. The integral role of formative assessment in the learning process is seen as a key feature in the quality of teaching and learning (Black & Wiliam, 1998b; Neesom, 2000).

2.3.1 What is learning?

'Learning' is the most critical outcome of schools (Jonassen, Howland, Moore, & Marra, (2003), yet is an extremely difficult concept to define. Based on their experiences and beliefs, people have come up with many different definitions of the concept of learning. For Claxton (1999, as cited in Barker, 2001), "Learning is what you do when you don't know what to do" (p. 36). From the psychologist's view point, Hergenhahn and Olson, (2005), after reviewing Kimble's (1961) definition of learning, define learning as a "relatively permanent change in behaviour or in behavioural potentiality that results from experience and cannot be attributed to temporary body states such as those induced by illness, fatigue or drugs" (p. 8). From these definitions, learning can be viewed as developing new knowledge, skills and attitudes through instructions, study, observation and experience.

It remains true that human beings learn in different ways at different times. In practice, we all plan and create the conditions in which children learn and grow (e.g. at school, playground, home, media, the peer-culture, the neighbourhood, etc). Such learning experiences can be a combination of all three learning domains: cognitive, affective and psychomotor (Bloom, Engelhart, Furst, Hill & Krathwohl, 1965; Gagne, Briggs & Wager, 1992, all cited in Barker, 2001). The cognitive domain refers to the learning of symbols, concepts, language, facts, relations, etc. Affective domain refers to the learning of feelings, values and attitudes, and the psychomotor domain is the learning of fine and gross motor skills and eye-hand coordination. Barker (2001) cautioned that such analysis can disadvantage our students if teachers tended to favour one domain over another. When it comes to assessment, imbalances may be further accentuated. Indeed, learning is an extremely complex activity. Thus, teachers, parents and the society at large need to have a clear and sound understanding of factors constituting learning processes.

2.3.2 Learning as a process

Learning, according to Earl (2006), is an interactive process by which learners try to make sense of new information and integrate it into what they already know. This means making students' thinking visible and understanding the images and patterns that they have constructed in order to make sense of the world from their perspective. However, for many teachers the concept of learning is implicit and assumed (West-Burnham, 2005). In some usages it implies what the learner does in response to teaching 'if you don't pay attention to me you won't learn this'. A common usage equates learning with short-term memorization 'I want you to learn this for a test tomorrow'. Others learn by *drill and practice*, while still others by *building on prior experiences* (Boubee-Hill, 1998). As a result of how people seem to learn, different theories of learning have developed.

2.3.3 Learning Theories

There are many different theories of how people learn. However, learning theories that seem to provide an explanatory framework for assessment for formative purposes in secondary education - and in particular tend to underpin the way

teachers currently assess learning in secondary schools in the education community are behaviourism and constructivism.

2.3.3.1 Behaviourist theories of learning

Behaviourists contend that learning is brought about through external stimuli, response and reward (e.g. praise and encouragement) (Ayas, 2006; Krause, Bochner & Duchesne, 2003; Underhill, 2006) - a form of conditioning process. Studies by Boubee-Hill (1998) and Underhill (2006) revealed that behaviourists also take the view that complex wholes are assembled out of parts, so learning is best accomplished when complex performances are deconstructed and when each element is practised, reinforced and subsequently built upon. In such a learning climate, James (2006) pointed out that achievement in learning is often equated with the accumulation of skills, and the memorization of information (facts) in a given domain, demonstrated in the formation of habits that allow speedy performance.

Numerous studies in this area show that the traditional and /or behaviourist pedagogies claimed that learning is transmitted knowledge and teaching should be teacher-centred, systematic and structured (Ayas, 2006; Boyer & Semrau, 1995; Damarin, 2004; Doolittle & Hicks, 2003; Fosnot, 1996; Jadallah, 2000; Janssen et al., 2003; Rice & Wilison, 1999; Windschitl, 2002).

Implications for assessment are that progress is measured through unseen timed tests with items taken from progressive levels in a skill hierarchy (James, 2006). According to James, performance, in such learning practices, is usually interpreted as either correct or incorrect and poor performance is scaffolded by repeated practice in the incorrect items, sometimes by deconstructing them further and going back to even more basic skills.

2.3.3.2 Behaviourism and assessment

Studies in behaviourist theories of learning (Ayas, 2006; Burton, 1991; Krause et al., 2003; Underhill, 2006) revealed that assessments that tend to follow the principles of behaviourism are those that test specific objectives, define skills and promote the ability to reproduce content. Such assessment practices focus on the

product and tend to ignore the process. While the general principles of behaviourism are critical for teachers to apply in the classroom, these methods were criticised for “neglecting the influence of cognition and cognitive skills, such as self-assessment and self-monitoring, on the learning processes” (Krause et al., 2003, p. 128). Many concur that the behaviourist approach to testing and assessment have had the effect of sustaining the gap between knowing and doing, and the decontextualisation of learning (Brown, Collins & Duguid, 1989; Harrington & Oliver, 2000; Harrington, Reeves, Oliver & Woo, 2004; Kings, 1994; Laurillard, 1993; Ramsden, 1992) (see also Neyland, 1994; Nightingale, 1994; Peddie & Tuck, 1995; Willis, 1994).

While the behaviourists view learning as a linear process involving the acquisition of discrete-determined pieces of information or clearly defined skills, several research scholars (Black and Wiliam, 1998b; Clarke, 2005; Cornu & Peters, 2005; James, 2006; Jonassen et al., 2003; Shepard, 2000; Windshittl, 2002) argue that learning is a very complex, socially mediated activity, and can only have meaning within a constructivist view of learning (Black et al., 2006). As a result of this belief, the constructivist approach to teaching, learning and assessing was promoted in the classroom environment.

2.3.3.3 Constructivism

Research (Ayas, 2006) showed that there has been a visible paradigm shift from the behavioural to constructivist theories. Constructivism entered the mainstream educational thought and research in the 1970’s through the work of followers of Piaget and Vygotsky (Damarin, 2004; Roblyer & Edwards, 2000; Windschittl, 2002). Several writers including Duffy and Cunningham (1996) and Windshittl (2002) reported that constructivism is a response to the perceived lack of recognition by the behaviourist learning theorist of the unique learning characteristics of individuals and of the social nature of learning.

Unlike the traditional and/or behaviourist theories of learning, the constructivists promote learning by creating environments where pupils can actively construct new ideas from prior experiences (Ayas, 2006; Boubée-Hill, 1998; Boyer & Semrau, 1995; Damarin, 2004; Doolittle & Hicks, 2003; Education Online, 2004;

Fosnot, 1996; Jadallah, 2000; Jonassen et al., 2003; Rice & Wilson, 1999; Roblyer & Edwards, 2000; Sunal & Hass, 2002; Windschitl, 2002;). Prior knowledge is regarded as a powerful determinant of a student's capacity to learn new material [knowledge and skills] (Clarke, 2005; Growther, 1997; James, 2006).

The constructivist pedagogies claim that learning is constructed knowledge and teaching should be student-centered and meaningful so that learners can construct their own knowledge (Boyer & Semrau, 1995; Damarin, 2004; Doolittle & Hicks, 2003; Fosnot, 1996; Jadallah, 2000; Jonassen et al., 2003; Rice & Wilson, 1999; Roblyer & Edwards, Sunal & Hass, 2002, all cited in Windschitl, 2002). In other words, the idea that knowledge is not transmitted from teacher to student but actively constructed by each student or group of students is central to constructivism, which is perhaps the most current psychology regarding learning.

The concept of constructivism has roots in classical antiquity, going back to Socrates and his followers (Growther, 1997). Among these, are the works of Plato, and Aristotle (470 - 320 B.C), who speak of the formation of knowledge; Saint Augustine (Mid 300's A.D.), who taught that people, in searching for the truth, must depend upon sensory experience; John Locke (17th -18th centuries), who taught that no man's knowledge can go beyond his/her experiences; and Kant (late 18th to early 19th centuries), who explained that 'logical analysis of actions and objects lead to the growth of knowledge and the view that one's individual experiences generate new knowledge" (Brooks and Brooks, 1993, as cited in Growther, 1997). Socrates asserted that learning is an inner experience and that why we learned was more important than what was learned (Warrick, 2000). Von Glasersfeld (1989) also cites Vico as an original source of constructivism. Vico, in 1710, wrote "the human mind can only know what the human mind can make" (p. 3). In other words a person learns only what they have constructed in their own mind. While Vico is credited with coining the term 'constructivist', Piaget (1896-1980) is seen as the original constructivist (Growther, 1997; James, 2006; Warrick, 2000). Constructivism assumes that learners are not empty vessels to be filled with knowledge (Peating, 2000; Warrick, 2000). Instead, learners are actively attempting to create meaning. Constructivism focuses on how people construct meaning and make sense of the

world through organizing structures, concepts and principles in schema (mental models). They emphasise ‘understanding’ (and eliminating misunderstanding) and problem solving is seen as the context for knowledge construction (James, 2006; Black et al., 2006; Windschitl, 2002).

There are varying conceptions of constructivism, depending on whether the emphasis is on individual cognitive processes or the social co-construction of knowledge (Cornu & Peters, 2005; Windschitl, 2002). However, many educators concur that the most popular paradigms which have a close link to formative assessment are the cognitive constructivism and social constructivism paradigms, where learning is personally constructed and socially mediated (Driver, Asoko, Leach, Mortimer & Scott, 1994; Fosnot, 1996; Tobins & Trippins, 1993, all cited in Windschitl, 2002). (see also Ayas, 2006; Black & Wiliam, 1998b; Cornu & Peters, 2005; Shepard, 2000).

2.3.3.3.1 Cognitive constructivism

Cognitive constructivism, according to Piaget (1971), is “a system of explanations of how learners as individuals adapt and refine knowledge” (in Windschitl, 2002, p. 140). Piaget claimed that children’s intellectual development progressed through various distinct stages and that learning was a process of transitioning through these stages along with building on personal experience and social interactions (Leder and Forgasz, 1992; Wheatley, 1991; Cobb, Yackel and Wood, 1990, all cited in Boubée –Hill, 1998). That has been interpreted to mean that the teacher creates a learning environment and of hands-on exploration and discovery that allows students to make connections between any new subject matter and their prior knowledge (Jadallah, 2000, cited in Ayas, 2006).

While the cognitive constructivists focus on how individuals create more sophisticated mental presentations and problem-solving abilities by using tools, information resources and input from other individuals, social constructivists view knowledge as having both individual and social components and hold that these cannot be viewed as separate in any meaningful way (Cobb, 1994; Cobb, Wood, & Yackel, 1990; Saxe, 1992, all cited in Windschitl, 2002). The social constructivists view learning as enhancing one’s ability to participate with others

in meaningful activities (Wilson, 1996, in Windschitl, 2002). Indeed, studies by Duffy and Cunningham (1996) and Windshitl (2002) show that the cognitive learning theorist fails to recognise the unique learning characteristics of individuals and of the social nature of learning.

2.3.3.3.2 Social constructivism

Social constructivism theory implies that people learn by being subject to social influence or through social interactions (James, 2006; Shepard, 2005; Windshitl, 2002). They claim that knowledge construction takes place and is enhanced by social interaction (Warrick, 2000; Windshitl, 2002). Von Glasersfeld (1995) identified Vygotsky as the ‘founding father’ of social constructivism. Vygotsky perceives that thought evolved from both experiences and maturation processes of an individual (Manus, 1996). He also suggests that constructs have social origins and that they are learned through interaction with others (Oxford, 1997). While both Piaget and Vygotsky concur that learning occurs in the activities and experiences of the learner, Vygotsky places emphasis on the interaction with social groups. As Manus writes, “[Vygotsky perceives] an individual’s consciousness evolved from mediated activities that would then be internalized into higher forms of cognitive functions” (1996). This notion, that learning is a mediated activity, was also noted by James (2006), claiming that cultural artefacts have a crucial role. These can be physical artefacts such as books and equipment but they can also be symbolic artefacts such as language. Since language, central to our capacity to think, is developed in relationships with people, social relationships are necessary for, and precede, learning. Thus learning is by definition a social and collaborative activity in which people develop their thinking together (James, 2006; Earl, 2006). This means teachers must create an environment in which people can be stimulated to think and act in authentic tasks beyond their current level of competence, but in what Vygotsky’s (1978) calls their ‘zone of proximal development’. Such classroom climate encourages collaborative and active learning, creative thinking, and one that encourages students to learn how to learn together (Black et al., 2006). Therefore, social interactions with the teacher and other students become a critical component of the learning processes (Ayas, 2006).

2.3.4 Constructivism and the role of “teacher”

In social constructivism any significant others can assume the role of ‘teacher’ (for example, classroom teachers, peers, or parents). However, in this section the focus will be on the classroom teacher. The role of a classroom teacher who supports the principles of constructivism is not well defined (cited in Boubee-Hill, 1998). Classroom teachers, who support the theories of constructivism, would believe that the information and knowledge the child gains from schooling must come from the experiences that the child has (prior knowledge) rather than have the teacher give the students facts and concepts concerning a particular topic and expect the students to memorize or in some way internalize that information (Black & Wiliam, 1998b; James, 2006; Shepard, 2005). Classroom teachers would be more likely to provide the student with learning experiences designed to allow the students to discover the desired information. They will also need to provide their students with stimulating opportunities to build new concepts from prior experiences and interact with others in none threatening and meaningful ways. Such a role would include recognizing that:

- Learning goals are understood and shared by both the teacher and student.
- students understand and recognise the desired standards
- students should be active participants in the learning process through peer and self-assessment
- students should be encouraged to build, within themselves, the confidence that they can all improve their work
- teachers should provide feedback that help students to recognise the next steps and how to take them (Crooks, 2001).

Mousley et al. (in Boubee-Hill, 1998) assert that teachers who support the principles of constructivism place less emphasis on traditional practices (e.g. rote learning, drill and practice or simply copying notes from the board) and place more emphasis on creating a learning environment that promotes creativity, discovery learning and collaborative enquiries, where students can interact with others, critically analyse concepts and ideas and make decisions about them from their perspectives.

2.3.5 Constructivism and formative assessment

The constructivist view of teaching and learning has important implications for assessment. It means shifting away from the 'empirical-analytic' paradigm which embraces the traditional standardized approach to assessment and evaluation to an 'interpretive' paradigm embracing issues of formative assessment and 'a critical-theoretic' paradigm which promotes issues of equity and student empowerment (Aikenhead, 1997). This can include shifting from a testing and examination to an assessment culture (Gipps, 1994) or moving away from teaching-centred to a learning-centred approach to teaching and learning or from the behaviourist to a more constructivist view of learning.

A number of studies claim formative assessment is strongly linked with the constructivist model, suggesting learning is an active process, building on previous knowledge, experience, skills and interests (Clarke, 2005; Harlen, 1998; James, 2006; Shepard, 2000). Since learning is highly individualised, constructivism recognises that teaching must be adaptive to the context, involving complex decision-making, and requiring that a teacher draw upon a repertoire of techniques (Giebelhaus & Bowman, 2002).

In view of the importance of prior learning as an influence in new learning, formative assessment emerges as an important integral element of pedagogic practice because it is necessary to elicit students' mental models (through, for example, classroom dialogue, open-ended assignments, thinking-aloud protocols and concept mapping) in order to scaffold their understanding of knowledge structures and to provide them with opportunities to apply concepts and strategies in novel situations (Black & Wilam, 1998b; James, 2006; Roos & Hamilton, 2005). In this context, James (2006) pointed out that teaching and assessment are blended towards the goals of learning, particularly the goal of closing the gap between current understanding and the new understanding sought. Torrance and Pryor (1998), in their two heuristic models of 'convergent' and 'divergent' assessment, claim that divergent assessment is characterized by a constructivist approach with an adaptable process placing emphasis on the student (student-centred). The aim of this model is to teach in the zone of proximal development (Vygotsky, 1978), contributing to a joint process between the teacher and student

(Pryor & Torrance, 1996, cited in Rushton, 2005); arguing that formative assessment taking place in the zone between student and teacher facilitates the best performance. In translating the constructivist approach into activity in a classroom, the emphasis shifts towards key issues of teacher – student interaction, understanding the effect of the process on the student, the scaffolding of learning to progress task, collaboration and being forward focused, as well as the ‘appropriation’ of learning (Gipps, 1994; Torrance & Pryor, 1998, as cited in Rushton, 2005). In this context, formative assessment can now be seen as a dynamic, interactive and evolving process with emphasis on its complexity (Lidz, 1995, cited in Rushton, 2005), with the teacher as a facilitator. Cowie and Bell (1999) classified formative assessment as planned and interactive, with interactive being formative assessment that occurs spontaneously in a classroom in an unplanned way. Using a combination of observation, interview and survey, the authors described how the teachers used planned formative assessment to assess progress of the whole class, and interactive formative assessment to mediate learning. The dimensions of the interactive model were all influenced by teachers’ previous experiences and pedagogical approaches.

2.4 Changing classroom practice to incorporate formative assessment

While Black et al. (2004) argued that there are no recipes to follow, Leahy et al. (2005), James and Pedder (2006), OECD (2005) and Wiliam (2007/2008) suggested otherwise. The first point argued by all is that classroom culture must change. James and Pedder highlighted two aspects here in understanding and perspectives. First, new understandings and perspectives need to be developed among teachers and students about each other and about the nature of teaching and learning. Second, new attitudes to and practices of learning and teaching, shaped by explicit and critically reflective modes of participation, need to be acquired and implemented.

The OECD (2005), Leahy et al. (2005) and Wiliam (2007/2008) highlighted five non-negotiable elements for a successful use of formative assessment in secondary schools: clarifying and sharing learning intentions and criteria for success; engineering effective classroom discussions and learning tasks; providing

feedback that moves learners forward; activating students as the owners of their own learning; and activating students as instructional resources for one another.

The AAIA (2003) highlighted that teachers must provide a classroom climate that is safe and secure and is conducive to effective learning. For students to learn, the fear of failure has to be removed in order to encourage honesty and openness. Moreover, students must be provided with support, by being able to try out techniques in a safe and secure place.

2.5 The values of formative assessment

Although all classroom assessment practices have the potential to increase student learning, Chappuis and Chappuis (2007/2008, p. 18) suggested that formative assessment in the classroom offers a number of distinct benefits:

- The timeliness of results enables teachers to adjust instruction quickly, while learning is in progress. Teachers can adapt instruction on the basis of evidence, making changes and improvements that will yield immediate benefits to student learning.
- The students who are assessed are the ones who benefit from the adjustment.
- The students can use the results to adjust and improve their own learning. Students can use evidence of their current progress to actively manage and adjust their own learning.
- Allows for the identification of conceptual errors; and
- Encourages feedback which enhances learning.

Chappuis and Chappuis further suggested that “the greatest value in formative assessment lies in teachers and students making use of results to improve real-time teaching and learning at every turn” (p. 18).

Formative assessment is one of the most important purposes of assessment (ARG, 2002). A review of research into classroom assessment (Black and Wiliam, 1998b) has shown that assessment for learning is one of the most powerful ways of improving learning and raising standards and students’ achievements. Indeed,

“we know of no other way of raising standards for which such a strong prima facie case can be made” (p. 1). Current research is adding further evidence in support of this claim and the empirical evidence is underpinned by theory from the psychology of learning and studies of learning motivation (ARG, 2002).

Black and Wiliam (1998b) concluded that use of formative assessment results in significant increase in learning as measured by test scores and helps low-achieving students to a greater degree than other students. Furthermore, study undertaken by observers of the Organization for Economic Co-operation and Development (OECD) on the use of formative assessment in eight educational systems (Australia - Queensland, Canada, Denmark, England, Finland, Italy, New Zealand and Scotland) has further proven that formative assessment is highly effective in raising the level of student attainment, increasing equity of student outcomes and improving students’ ability to learn (OECD, 2005). Other studies by the Assessment Reform Group (1999), Bangert-Drowns et al. (1991), Clarke (2005), Cowie and Bell (1999), Crooks (2001), Fuchs and Fuchs (1986), Gipps, McCallum & Hargreaves (2000), Kluger & DeNisi, (1996), Nyquist (2003), Sadler (1989, cited in Carol, 2002) and Torrance & Pryor (1998) have also demonstrated how formative assessment successfully enhances student learning. While much of the work is based on good practice in primary teaching the messages are transferable to secondary teaching.

2.6 Challenges to formative assessment

While formative assessment is deemed to be an accepted concept in the assessment community in promoting student learning and achievement, studies by Aitken (2000) and Daws and Singh (1999) show that teachers found it hard to develop formative assessment strategies in the face of pressures from summative examinations; were unsure of formative assessment strategies, and would not welcome the support for developing formative assessment approaches. Some teachers claim that formative assessment is ‘time consuming’ for them to provide effective feedback and may not be practical for large classes (Neesom, 2000). Black and Wiliam (1998b) identified two basic dilemmas here in changing to a system of formative assessment. The first is the nature of each teacher’s beliefs about learning. They pointed out that if teachers assumed that knowledge is to be

transmitted and learned, that understanding will develop later, and that clarity of exposition accompanied by rewards for patient reception are the essentials of good teaching, then formative assessment is hardly necessary. The second relates to the beliefs teachers held about the potential of all pupils for learning; a belief that each pupil has a fixed, inherited intelligence that cannot be altered much by schooling, and the assumption that so-called ability is a complexity of skills that can be learned.

Heritage (2007) identified teachers' 'attitudes' as another dilemma to formative assessment. She argued that even if teachers have all the required knowledge and skills for formative assessment, without the appropriate attitudes toward the role formative assessment can play in learning, their knowledge and skills will lie dormant.

Black and Wiliam also identified some inhibiting factors to formative assessment and include: "a tendency for teachers to assess quantity of work and presentation rather than the quality of learning; greater attention given to marking and grading, much of it tending to lower the self-esteem of pupils, rather than to provide advice for improvement; a strong emphasis on comparing pupils with each other, which demoralizes the less successful learners; and teachers' feedback to pupils often serves managerial and social purposes rather than helping them to learn more effectively" (Assessment Reform Group, 1999, cited in Clarke et al., 2003, p. 13).

2.7 Summary

In this chapter I have discussed the notion of assessment for formative purposes and how it can be utilized to enhance learning. It was clear in the literature that assessment for learning was seen as a powerful tool for promoting students' achievement and that it is strongly linked with the constructivist view of learning.

The different learning theories were identified and narrated in order to establish an explanatory framework in which assessment for learning can exist. The different beliefs teachers, assessors, policy-makers hold about which assessment approach is important, can cause tensions between the importance attributed to formal written assessment (often behaviourist in nature) and other assessments (often constructivist in nature) (Crooks, 2001). This tension can be attributed to: underlying beliefs about how students learn (Black & Wiliam, 1998b), the purpose of assessment and how the results of assessment are used (Boubee-Hill,

1998; Chappuis & Chappuis, 2007/2008; Harlen, 1998), and the attitudes teachers hold towards the role formative assessment can play (Heritage, 2007).

Both the concept of formative assessment and learning theories were discussed together in this chapter in order to lay the foundations for the current research which was to explore the Solomon Islands secondary school teachers' perceptions of the value of formative assessment.

While the concept of assessment for formative purposes is deemed as being a much more accepted concept in the education community internationally, it has been suggested that its success lies in attitudes, beliefs and understanding that teachers, educators, and policymakers hold towards the concept (Assessment Reform Group, 1999).

The following chapter describes the research methodology. It focuses on the methodological framework that will be adapted for the research, followed by the research design; methods of data collection, ethical considerations, data analysis strategies that were used, as well as a description of the issues of strengths and limitations of the study.

Chapter 3

RESEARCH METHODOLOGY

3.1 Brief overview of the chapter

This chapter provides an explanation of the methodological basis for the research. First, it begins with an outline of the research questions, then, it goes on to explain the theoretical framework that guided the research. This will be followed by a description of the research design, methods that were used in data collection, ethical considerations and the analysis. The chapter concludes with a summary.

3.2 Introduction

This section provides a methodological basis for the strategies employed by the researcher in gaining knowledge in educational research in order to gather and analyse and interpret results of the data. Cohen et al. (2000) pointed out that the aim of any research methodology is to help us understand the research process itself. Therefore, understanding and justifying the methodology is essential, especially when the subjects to be investigated are human beings.

According to Cohen et al. (2007), researchers appear to have their own different worldview about the nature of knowledge and reality based on their philosophical orientation. Connecting research and philosophical traditions or schools of thought helps elucidate a researcher's theoretical frameworks (Cohen et al., 2000). In this chapter the two main worldviews in research will be discussed and the author will suggest which research method of data collection and interpretation is more appropriate, that is which will provide the best solution for the research questions this present study is addressing.

For the first part of this chapter, the two research paradigms namely the quantitative (positivist/scientific) and qualitative (post-positivist/interpretive) inquiries will be carefully weighed to determine the theoretical framework of this study, followed by an explanation of the research design. The latter part of this chapter discusses the practical aspects of this study including ethical considerations, data collection and data analysis process.

3.3 Research Questions

The aim of this study is to investigate teachers' perceptions of the value of classroom assessment for formative purposes in Solomon Island's secondary schools. In particular, the key questions that this research set out to answer were:

- What are the teachers' understandings of assessment for formative purposes and how do they link it to their understanding of learning?
- What is the perceived value and impact of assessment for formative purposes to secondary school students' learning?

3.4 Methodological framework

Developing a methodological framework helped provide a lens for deciding what data to collect from whom and making sense of and understanding the data collected in the field (Bishop & Glynn, 1999; Bishop, 2005). According to Cohen et al. (2000), a methodological framework or paradigm is a context which provides the basis on which to generate, analyse and interpret data. The key frameworks employed by educational researchers include the quantitative (positivist/scientific/normative) approach, qualitative (post-positivist/naturalist/interpretive) approach and the critical approach (Bell, 1993; Johnson & Onwuegbuzie, 2004; Cohen et al., 2000; Denzin, Lincoln & Giardina, 2006; Donmoyer, 2006; Guba & Lincoln, 1989; Lincoln & Guba, 2000; Schwandt, 2000).

Before discussing the different lenses researchers use in viewing the world in educational research, one needs to first define what a paradigm is. Paradigms are research positions through which reality is viewed, a set of assumptions about what knowledge is and how it can be researched. It is like a mental window through which the researcher views the world (Cohen et al., 2000). Based on this definition, a research paradigm chosen by individual researchers appears to be dependent on their perceptions of 'what real world truth is' and 'how they know it to be real truth' (Cohen et al., 2000). A researcher's decision on which research approach is appropriate can also be determined by the problem of interest, time, expense and resources available.

The quantitative paradigm tended to dominate and influence research in social

science over the past centuries, in an attempt to understand social reality as viewed by others to demonstrate how their views shape their action which they take within that reality (Beck, 1979, in Cohen et al., 2000). Positivism, associated with the work of early philosophers (e.g. Auguste Comte) in the nineteenth century, was believed to be based on observation and verification of facts (Cohen et al., 2000). Indeed, they hold the view that ‘truth’ and ‘knowledge’ are fixed (Burns, 1997, p. 291). The positivist or scientific research paradigm is quantitative and value observable phenomena associated with “objectivity, reliability, predictability, controllability, measurability, patterning, the constructions of laws and rules of behaviour and the ascription of causality” (Cohen et al., 2000, P, 28). Bassey (1995) and Mutch (2005) observed that most researchers holding a positivist view of the social world, often position the observer outside the phenomena being investigated and the researcher tends to rely upon instruments such as devices for collecting, analysing and validating. Moreover, a positivist approach places emphasis on selecting, testing of theory and producing numerical data which can be analysed statistically. Researchers (for example, Cohen et al., 2000; Creswell, 2003) identified methods of enquiry that are commonly associated with the quantitative paradigm. They include most scientific experiments, surveys, cross sectional and longitudinal studies using questionnaires or structural interviews.

In contrast, the qualitative or the interpretive approach holds that reality is socially constructed through individuals or collective definitions of the situation (Cohen et al., 2000; Mutch, 2005). The qualitative or interpretive paradigm is more “concerned with understanding the phenomena from the actors’ perspectives through participation in the life of those actors (Taylor & Bogdan, 1984, in William, 1986, p. 5). This is achieved through ‘ethnographic’ and ‘ethnomethodology’ studies and descriptive reporting (Mutch, 2005), to help the reader understand the definitions of the situation of those studied and their perceptions of the world (Burns, 1997). Unlike the positivist or scientific approach, which is ‘detached’ to avoid bias, the post-positivist or interpretive research paradigm becomes ‘immersed’ in the phenomenon of interest (Cohen et al., 2000; William, 1986).

Despite the widespread recognition of the quantitative research approach in many areas of inquiry, it has been criticised for neglecting important aspects of human

lives (McCracken, 1988, cited in Fink, 2000). For instance, structures characterising our social reality, which do not have duplicates in nature cannot be considered in an appropriate way when using a quantitative method (Fink, 2000). Secondly, as Sikua (2002) identified in Vuliamy (1984), the scientific methodology is outcome-oriented and does not take into account the contributions of the participants and the context in which the study is conducted. Based on the above findings, the positivist/scientific research approach is considered inappropriate for my research project. This present study was designed to allow research participants to freely express in their own words their perceptions, opinions, point of views and understanding of the value of assessment for formative purposes.

Despite the criticism levelled at the positivist approach, Palmer (1998, in Mtaita, 2007) suggested that the significant, ongoing role and the contributions of studies aligned to this method so far in the field, must not be neglected. Rather, there has been a shift to the post-positivist or naturalist interpretive paradigms that focus on human interaction and the description of patterns of conduct and meaning (Cohen et al., 2000; Malasa, 2007). Whilst positivism views reality as external to the individual, the naturalist interpretive paradigm views it as internally constructed (Bell, 1993; Cohen et al., 2000). Within the interpretive approach, more attention should be directed toward investigating how teachers and students conceptualise the learning culture, how students develop meaning to learning and cultural concepts and individual reflection and experiences related to how students can improve learning (Black & Wiliam, 1998b).

The qualitative researchers (post-positivist) believe that because behaviour is uniquely connected to a situation and an individual, there is no room for the researcher to make predictions or generalisations (Cohen et al., 2000). Researchers operating within this context rely on the transferability principles and themes, rather than replicability and generalisation. Alternatively, “advocates of the critical paradigm argued that our subjective views are not only internally constructed but also influenced by persuasive social forces, thus individuals or groups cannot be considered separately from their social context” (Palmer & Birch, 2005, cited in Mtaita, 2007, p. 51).

Cohen et al. (2000) maintained that although these paradigms differ in perspective, all strive for the same purpose, 'the search for truth'. In this sense, they propose that the guiding principle when considering the research paradigm should be 'fitness for purpose'. A decision has to be made about which approach and method is appropriate for particular research intent. The nature of inquiry in my research indicated use of a qualitative or interpretive paradigm. The approach is thus based on an investigation of the participants' views of reality about teachers' perceptions of the value and impact of formative assessment, rather than any external reality.

In the next section, I shall make justifications as to why the qualitative research methodology is much more suitable for this present study.

The desire to have a descriptive investigation of the teachers' perceptions and understanding of the value of formative assessment enabled me to engage in conversation with a range of practicing teachers, explore the meaning gained by the teachers through their interactions with formative assessment and to indicate the current state of formative assessment as it is implemented in secondary schools in Solomon Islands.

To be able to get to the heart of the participants, Ussher (2001, p. 90) suggested that "it is important to be able to create a safe environment, one in which each participating teacher felt they could talk with me in confidence, to trust that personal and frank thoughts shared would indeed remain anonymous or unused". Qualitative research seeks to tell the story as it is, not to judge or deliberately make changes (Bassey, 1999).

3.4.1 Qualitative Research Methodology

Qualitative research is used by researchers in the field of social science and is often associated with the post - positivist or interpretive paradigm where the researcher examines people's narrations and actions closely because these are thoughts to represent the situations as experienced by the participants. Ussher (2001, p. 92) concurs that "while quantitative researchers do not consider themselves as significant variables in the research, qualitative research demands a researcher be in the field, observing, judging, analyzing, synthesizing,

acknowledging their own consciousness”. Data collected through this process has often being termed “soft”, because it is rich in description of people, places and conversation and cannot be easily handled by statistical procedures (Biklen, 1992; Denzin & Lincoln, 1998; Ussher, 2001) where the interview responses from the participants are audio taped and transcribed (Druage, 2007). Moreover, the research is not controlled but is intuitive and holistic in manner. Those rich descriptions should provide the researcher with enough information to determine whether the findings of the study can be applied or transferred to other people or settings (Burns, 2000; Cohen, Manion & Morrison, 2000; Maykut & Morehouse, 1994) without being generalized.

Qualitative research involves an interpretive, naturalistic (Denzin & Lincoln, 1994, 1998; Fink, 2000; Johnson & Onwuegbuzie, 2004; and humanistic (Bell, 1993; Johnson & Onwuegbuzie, 2004) approach to the subject matter, where the entity to be studied is the life world of human beings as it is experienced individually. Denzin and Lincoln (in Singh, 2008) concur that qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and the subject, and the situational constraints that shape inquiry. This process has been termed as naturalistic/humanistic in nature because the researcher works where the events naturally occur. Qualitative data is “gathered by people engaging in natural behaviour: talking, working, and so on” (Ussher, 2001, p. 92).

As a qualitative researcher I gathered data that explains perceptions, beliefs, opinions and meanings for a group of individuals, and I offer an interpretation for readers to evaluate and assimilate as appropriate to their meaning and to enhance learning and practice (Ussher, 2001).

Qualitative educational research focuses on the everyday concerns of people within their natural settings such as classroom or school. This study has the natural setting of the ‘classroom teacher’ as the direct source of data (Bassey, 1999; Burns, 1997). I have chosen this particular setting because of my concern with the context and knowing that human behaviour is significantly influenced by the setting in which it occurs (Ussher, 2001). Knowledge constructed by the participants has been of essential concern to this present study. This knowledge is unique and valuable because it was derived from people’s descriptive experiences,

word and action on how they perceive the world (Burns, 2000; Cohen, Manion & Morrison, 2000; Maykut & Morehouse, 1994). This would mean that in collecting and analyzing the data, participants' responses could be represented as data depending on what they say and the meanings they make of their experiences (Druage, 2007).

Although naturalistic/humanistic research such as this present study often uses information-gathering strategies that involve the researcher directly observing the participants' behaviour (Colon, Taylor, and Willis, 2000; Labuschagne, 2003, Ussher, 2001), it was not the practice behaviours that I wished to observe. Rather I wished to explore the "teachers' perceptions, knowledge and understanding of the value of formative assessment in secondary schools". The methods of data collections used in this present study were interviews (or conversations) and some document reviews. Participant observations were not used. The use of the semi-structured interviews and the focus group conversation allowed me to explore issues as they arose and modify questions to suit individual perceptions and understanding of classroom formative assessment. This has led to the emergence of the naturalist interpretive paradigm that focuses on human interaction and the description of patterns of conduct and meaning. Researchers operating within this paradigm favour a qualitative approach which depends upon conversation to describe "multi-faceted images of human behaviour as varied as the situations and contexts supporting them" (Cohen et al., 2000, p. 23).

3.4.2 A case study approach

A case study (qualitative in nature), such as this present study, provides a unique example of real people in real situations (Stake, 1995; Yin, 2003), easily understood, directly interpreted and is good for investigating issues in depth (Bassegy, 1999; Burns, 1997; Merriam, 1998).

A case study was suitable for this study as it allows for the gathering of data in a real context, and it takes into account the political and ideological context within which the research is situated (Cohen et al., 2003, in Lunn, 2006). It is an intensive description and analysis of a bounded system (Bassegy, 1999; Merriam 1998: Stake, 1994) used to gain an in-depth understanding of the situation and meaning for those involved. As the study was carried out in four secondary

schools in Solomon Islands, the data were used together to form one case. Several research scholars including Bassey (1999), Merriam (1998) and Yin (2003) consider that case studies are particularistic, descriptive and heuristic and are particular to a certain context and have a more human face than other research methods, as it is strong on reality and context which enables 'thick' description. Hence, gaining the teachers' descriptions was a crucial part of this study. Thick description in this context denotes a commitment to catch the diversity, variability, creativity, individuality, uniqueness and spontaneity of social interactions (Cohen et al., 2003, in Lunn, 2006).

As this case study focused on the views of the teachers surrounding classroom formative assessment in four schools, it was a bounded study and particularistic (Bassey, 1999; Lunn, 2006; Yin, 2003). It was particular to the specific context of the teachers in four Solomon Islands secondary schools. I used the teachers' self reports to gather information regarding their understanding of the value and impact of formative assessment. This formed the boundary of this case study. An instrumental case study is defined as one where a particular case is examined to provide insight into an issue (Bassey, 1999; Yin, 2003; Lunn, 2006) which, in this study, was teachers' classroom formative assessment.

3.5 Research design

A research design according to Burns (1997) and Cohen, Manion and Morrison (2000), is essentially a plan illustrating the strategy of investigation by the researcher. In this plan, the kind of data needed, the method used for the data collection, the procedures for obtaining data, and data analysis procedures were clearly outlined.

Cohen et al. (2000) suggest that selecting a research design depends on the aim of the research under study. This helps the researcher to arrive at the type of questions to be explored or investigated, look at available resources (monetary), available time, and the breadth and depth of the much needed information.

This study uses semi-structured and focus group conversations which mostly allow the generation of qualitative data. Qualitative research, through an interpretive paradigm, allow for in-depth understanding on the part of the

interviewer with the issues under investigation (Cohen et al., 2000). These approaches enabled the researcher to obtain information such as points of view, opinions, understanding, attitudes, values and perceptions of participants involved in this study.

3.5.1 Context of the study

The focus of this study was secondary schools in Honiara, the capital city of Solomon Islands, located on Guadalcanal Island (see Figure 1.1). The research was conducted in this city for two reasons. First, Honiara is where diverse communities could be reached and different systems operate. It is where the Ministry of Education and other education divisions such as the National Examination Standards Units (NESU) and the Curriculum Development Centre (CDC) are located. In addition, the city has a number of secondary schools where the researcher had easy access to classroom teachers. Second, the choice of the study area was limited to the geographical setting of the country, available funds and the limited time scheduled for data collection.

3.5.2 Procedure used for selecting participants

Sandelowski (1995, p. 3) suggests that “determining adequate sample size in qualitative research is ultimately a matter of judgement and experience in evaluating the quality of the information collected against the users to which it will be put, the particular research method and purposeful sampling strategy employed, and the research participants desired”. Several writers including Cohen et al. (2000), Morse (1994) and Sandelowski (1995) suggested that the sample size in a qualitative research is small (depending on the phenomenon being investigated) and purposive. In this study, I wanted to interview teachers who are experienced and have some knowledge in the phenomenon being investigated. Having this at the back of my mind, I began my selection of participants by identifying secondary schools that I knew would provide me with candidates with such qualities. This section provides a brief description of the population under study, the sample size, how the participants in this study were chosen and how the researcher has access to the participants.

3.5.3 Targeted population

According to Cohen et al. (2000), a targeted population is a group of respondents from whom the researcher is interested in collecting information and drawing conclusions. In this present study, the targeted population comprised all trained and experienced secondary teachers in both private and government owned schools in Honiara, Solomon Islands. From this population, a representative sample was obtained to serve as the researcher's sample.

3.5.4 Sample size

Given the constraints of time, expense, accessibility and the size of the focused population which is too large to work with (Mtaita, 2007), the researcher was limited to a small sample. In this study, the researcher employed purposeful sampling. According to Cohen et al. (2000), a purposive sampling entails one that deliberately selects cases on the basis of the specific qualities they illustrate. Cohen et al. (2000) proposed that a right sample size is one that fulfils the requirements of the study. The sample for this study comprised four schools and five classroom teachers.

3.5.5 Research participants

In this present study, I chose to interview five teachers from different secondary schools in Honiara, Solomon Islands. The criterion used to select teacher participants was based on their level of qualification, teacher training, teaching experience, gender, ethnicity and cultural backgrounds. The schools range from Community High School (CHS) teaching years 7 to 11 to the Senior National Secondary Schools (NSS) with years 7 to 13. Participants were both male and female and were all of Melanesian descent but with varying cultural backgrounds; Malaita, Ysabel and Western. Two had less than 10 years in the teaching profession while three had over 12 years of teaching practice. Table 3.1 shows the profile of the participants in the study. This was generated from information gathered during each individual interview.

Table 3.1: Profile of the participants in this study

Participant	Gender	Qualification	Experience	School Type	Subjects
T 1	F	Dip	>12	CHS	English/S. Science
T 2	F	BED	>12	CHS	English/S. Science
T 3	F	BSC	<10	NSS	Mathematics
T 4	M	BSC	<10	CHS	Science
T 5	M	BSC	>12	NSS	Mathematics

3.5.6 Access to research participants

Following the approval of my ethics application by the University of Waikato, School of Education Ethics Committee (see appendix A), a letter was sent to the principals of four secondary schools in Honiara (see appendix B) seeking their permission and approval to allow access to their schools and to interview one of their teachers. Initially each principal was asked to nominate three or four suitable participants. This was done purposely to maintain anonymity of teacher participants and to minimise conflict of interest potential between principal and teacher. From these nominations one teacher from each school was selected and invited to be a participant, based on their qualifications and experience. This purposive selection was done confidentially by the researcher. This was followed by a telephone conversation with the principals concerned to confirm understanding and the school's willingness to be involved in the research project. Finally, a letter (*see appendix C*) was sent to the five selected teachers, one from each secondary school, inviting them to participate in the research project. The letter clearly stated that there was no compulsion to participate. In the event that the invitees declined to participate, further invitations would be sent to potential participants from the pool of teachers nominated by the principals until five agreed to participate. Copies of the principals' letter were also sent to respective Education Authorities to inform them of my intention to carry out my research project in the schools under their authority. An information sheet (*see appendix F*) and consent form (*see appendix D*) were also sent to the participants before they could participate in the research project.

3.6 Data Collection Method

As stated previously, this study used both semi-structured and focus group conversations to gather data. The strategies used for collecting information such

as interviews provided a naturalistic setting where ideas could be shared safely, by both the participant and researcher (Ussher, 2001).

3.6.1 Interviews

This study used interviews as a strategy for collecting information from the participants because literature (see for example, Kvale, 1996) indicated that it is an integral part of recent developments in educational qualitative research, focusing on interrelations, social construction of reality, knowledge, language, conversation, context and emphasising narratives.

The interview “provides access to what is inside a person’s head, makes it possible to measure what a person knows (knowledge or information), what a person likes or dislikes (value and preferences) and what a person thinks (attitude and beliefs)” (Tuckman, 1972, cited in Cohen et al., 2000, p. 268). Interviews enabled participants to tell their stories of the world in which they live (Cohen et al., 2000)

Interviews range from totally unstructured interactions, through semi structured situations to highly formal interaction with the respondents. Cannell and Kahn (1968, in Cohen, Manion & Morrison, 2000, p. 269) defined an interview as “a two person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information”. Similarly, Bishop (1997) describes interviews as “the development of collaborative storytelling by means of sequential, semi-structured, in depth interviews as conversation, conducted in a dialogic reflective manner that facilitates ongoing collaborative analysis and construction of meaning and explanations about the lived experiences of the research participants” (p. 29)..

In this study, the semi-structured and focus group approach was chosen because of the qualitative nature of the inquiry (Mtaita, 2007). Semi-structured and focus group interview guides were developed for the study (*see Appendix E*) and were focused on the research objectives of teachers’ perceptions of the value of formative assessment in Solomon Island’s secondary schools.

3.6.2 Semi-structured interview

The semi-structured interview is a combination of the structured and unstructured interview (Boubee-Hill, 1998). With this approach, Burns (1997, p. 330) suggested that “an interview guide be developed for some parts of the study in which, without fixed wording or fixed ordering of questions, a direction is given to the interview so that the content focuses on the crucial issues of the study”. Semi-structured interviews seem appropriate for this research project because of the face-to-face nature and emphasis on conversation. In this study, the interview process involved one face-to-face conversation with each participant lasting approximately an hour. All five interviews were conducted using a semi-structured format in Solomon Islands pidgin and were audio recorded. The use of audio recording is considered appropriate for my research project, as the raw data remains for later reference. The audio recording of interviews was referred to in the initial letter of invitation sent out to prospective participants as a condition of participation (*see Appendix C*).

The semi-structured interviews were guided by a schedule that listed key questions to be covered (Ussher, 2001). From the interview guide (*see Appendix E*), the researcher may ask both closed and open questions. Closed questions in this context denote questions, specific and restricted the options available to the respondent. Open questions on the other hand, refer to questions asking for broad or general information. Using open ended question was important because it allowed me to probe and go into more depth when I chose. Moreover, through open ended questions, I felt I may be in a better position to clear up any misunderstandings, whilst at the same time test the limits of the respondent's knowledge and help establish rapport with them, hence enabling me to make a truer assessment of what the respondent really perceives (Cohen et al., 2000; O'Leary 2004).

In other words, semi-structured interviews are “neither fully fixed nor fully free” (O'Leary, 2004), but best seen as flexible. This flexibility, as Scott and Usher (1999) and Ussher (2001) note, gives the interviewer opportunities to frame and re-frame the questions so he/she can be more certain that they are understood in the same way by the respondents. The interviews were recorded and later

transcribed. The information from all transcripts was collated and analysed seeking themes and patterns from the participants' understanding, impact and value of formative assessment. Such a method provides a valid record of each participant's perception of reality (Ussher, 2001).

3.6.3 Focus group conversation

The focus group conversation is a popular method especially in social science research. The purpose of the focus group conversation is to focus discussion on a particular issue. The focus questions for discussion can be structured where pre-prepared questions and a checklist are at hand or can be completely unstructured where the interviews are minimal (Bell, 2005), depending on the purpose of the interview. So, in preparation for the focus group session, the five interested participants engaged with me in this study were asked to write a short narrative of about 200 words from given topics surrounding the research question, based on the evidence from the interviews, to share with others during the focus group session (*see Appendix E*). This was necessary to confirm some of the data collected and also to 'end' the investigation in terms of participants' immediate involvement. My role would be to facilitate the discussion, probing into emerging issues which were not covered adequately by the questions during the individual interviews (Bell, 2005). All five participants were invited to a discussion and sharing session.

Based on the interest of all five participants, a common venue was located and arrangements were made to spend at least an hour of sharing together, based on given topics, issues and experiences on formative assessment. This session was audio recorded by me but was not transcribed. It was used only as a back-up as required for confirmation of all or part of the conversation (Ussher, 2001).

3.7 Ethical considerations

When the objects of inquiry are human beings [such as in this study], extreme care must be taken to avoid any potential harm to both the researcher and the researched (Boubee-Hill, 1998; Cohen et al, 2000; Fontana & Frey, 1994). Cohen et al (2000) and Kvale (1996) suggest two concerns to watch for in ethical considerations; first, the manner in which the research has been conducted in

relation to the research subject (matters such as informed consent, confidentiality, and persons involved) and secondly, acknowledgement of the contribution of all the people who have been involved in the research and as well as open recognition of individuals whose research influenced this present study.

In this present study, the guidelines of the University of Waikato Human Research Ethics Regulation (2005) and the Solomon Islands Research Act (1982) were adhered to. As stated previously, following the approval of my ethics application by the University of Waikato, School of Education Ethics Committee (*see appendix A*), I wrote to principals (*see appendix B*) and classroom teachers (*see appendix C*) of various secondary schools in Honiara, Solomon Islands, informing them of my research intent and to seek their approval to conduct research in their schools. Ethical issues related to participants were addressed in the covering letter requesting their participation. These issues were also briefly addressed before each interview. Ethical considerations that underpinned this study include:

- Informed consent considered
- Right to privacy
- Protection from harm
- Confidentiality
- Participant's right to decline

3.7.1 Informed consent

Fontana and Frey (in Boubée-Hill, 1998) suggested that informed consent involves “receiving consent from the subject after he/she has been carefully and truthfully informed about the research” (p. 50), how the research is to be conducted, disseminated and any possible implications for participating in the study (Cohen et al., 2000; Fontana & Frey, 1998). Informed consent in this study was obtained from principals, education authorities and teachers who volunteered to be interviewed. The principals were contacted to seek informed consent of the involvement of their teachers in the study. Informed consent was asked from teachers to seek their willingness to participate. In acquiring informed consent, participants were also informed of their right to withdraw from the research without any consequences (Boubée-Hill, 1998).

3.7.2 Right to privacy

Right to privacy means protecting the identity of the participants (Cohen et al., 2000; Fontana & Frey, 1994). Schools' and individuals' right to privacy in this study was maintained by making every effort not to reveal their identities in the final writing of the report. Identifiable codes were used instead of their real names and background information minimised. In addition, during the interview process, I ensured the questions I asked were focused on my research questions and that the participants were not made to feel that their privacy was being invaded or their time improperly used (Malasa, 2007). Extreme care was also taken to protect each participant's human dignity. The only individual information used will be to develop brief generic profiles of each participant (*see section 3.4.5*).

3.7.3 Participant right to decline

Research participants were made aware of their rights to withdraw from my research project at any stage without fear of any consequences. Should such situation arise, their right to withdraw will be fully respected. For proper running of my research project, participants were advised that they could withdraw their consent to participate up to ten days after they have confirmed the accuracy of their interview transcripts. They may also withdraw their consent regarding answering particular question(s).

3.7.4 Confidentiality

Research participants were assured that any data they provided would remain confidential and will not be used in any manner other than for my academic purposes only. Moreover, information they shared will be kept confidential at all times and could be accessed only by me and my supervisor. Interview venues were also kept confidential and were located at negotiated locations acceptable to each participant. That would mean, seeking their respect to ensure that all the discussions and activities carried out for the research must be kept within our circle only. In this study, all individual interviews were conducted in a private room at the participant's school.

In Solomon Islands where everybody lives in a close knit society (see section 1.7.2), maintaining anonymity is a great challenge. However, in this study, before the interview and focused group session began, the participants were verbally informed about this challenge and were kindly asked to respect that notion of anonymity. This was in order to respect the cultural sensitivity of some of the data that could be collected in my study and, as is the case with many indigenous communities (Bishop, 1997), certain culturally sensitive information and practices in the Solomon Islands that are not normally disclosed to a wider public audience (Malasa, 2007). It is incumbent upon me to ensure that all the data gathered is used appropriately and that the socio-cultural requirements regarding the sensitivity of some data are respected. If at any time I came across any controversial or culturally sensitive issue, I carefully planned how such information was to be stored and appropriately incorporated into the study.

3.7.5 Protection from harm

Protection from harm means protecting the participant from any physical, psychological, emotional, cultural or professional harm or any other kind of distress that may arise from taking part in this study (Cohen et al., 2000; Fontana & Frey, 1994). As far as possible, every measure was taken to ensure that the research participants understood the implications of their participation in this research. I further ensured that they were aware of their right to withdraw from the study should they have concerns regarding the manner in which the research was conducted.

3.7.6 Social and cultural considerations

Carrying out a research project in a country with more than eighty different languages and diverse ethnic groupings like Solomon Islands can be a great challenge to any researcher. Being aware of socio-cultural issues, indigenous culture, traditions, and beliefs of the people and especially of my research participants, I was prompted to take extra care in planning my research methods and approaches (Aubrey & Carol, 2000) in order to eliminate as far as possible any ethical and social or cultural oversight and insensitivity which may occur. Bishop (1997) speaks of the influence of researchers with preconceived euro-centric views on the indigenous cultures, values, traditions and beliefs of the

Maori people in New Zealand in the early sixties. In such situations, the researcher rather than the participant has the power and control over the research process, which can result in possible cultural biases in the study (Malasa, 2007). As a Solomon Islander of Melanesian descent, I may justifiably claim to be working from a position within the broader socio-cultural context of the participants.

Another issue commonly overlooked by outside researchers in the Solomon Islands is the diversity of cultures, values and beliefs amongst the indigenous communities (Malasa, 2007). Malasa pointed out that a common mistake or oversight by most researchers in the Solomon Islands is the issue of generalisation of cultures and the assumption of national homogeneity (see section 3.5.5). As a researcher, I need to take this into account as I interact with participants with differing cultural backgrounds.

3.8 Analysis

Delamont (1992) suggested that when research is primarily ethnographic, the analysis is a very important stage in the procedure. Proper analytic procedures ensure reliability and validity. In this situation, Delamont (1992) suggested that the researcher read and re-read participants' interview transcripts, field notes, diaries and draw out both recurrent patterns and instances that run contrary to those patterns. Themes and categorizations are also extracted during these recurrent readings.

3.8.1 Data transcription

After the interviews were completed, the interview data were then transcribed and later translated into English. This was necessary because some of the interviews were conducted in Solomon Islands Pidgin. While I was mindful of the importance of translating the transcribed interviews into English I realised there may be losses in the originality of some of the interview transcripts during this process of translation. The audio recorded data were transcribed by listening to the tape over and over for a while which it took 4 – 5 hours for each interview and later were transferred into written text. This process involved the researcher reading and re-reading the transcribed interviews in order to familiarize himself

with the data. After transcribing, each translated interview, the transcripts were sent to the participants in the Solomon Islands to confirm their accuracy and for the participants to include further reflections if they wished. The transcribed interview notes were then further discussed with each participant for validation purposes after each individual interview in Honiara, Solomon Islands.

3.8.2 Data analysis strategies

Burns, (2000) suggested that in order to generate findings that transform raw data into new knowledge, a researcher must be able to engage in the analysis of the data collected during the research process. After I had transcribed and translated the interview field data of the five participants for this research project, I analysed the data for common themes to answer my research questions. One of the strategies I employed in this study to identify common themes was coding. Coding is the process of classifying and categorizing data into themes, issues, topics or concepts (Bogdan & Biklen, 1992; Burns, 2000; Maykut & Morehouse, 2001; Delamont, 1992). This means that the researcher has to systematically go through data, line by line, phrase by phrase and write a descriptive code by the side of each piece of data (Bogden & Biklen, 1992; Cohen et al., 2000) noting the regularities and recurring ideas/themes in the settings or people (Maykut & Morehouse, 2001). Coding can be done by hand or using one of the computer programmes (Delamont, 1992). In this study, I used hand coding. Delamont (1992) spoke of three ways of coding. The first method she identified was '*multiple coding*'. Multiple coding, according to Delamont (1992), can be attached to one version of the data with coloured pens, highlighting, symbols, or thin slips of coloured paper sellotaped to the text and sticking out over the edge. The second, '*multiple copies of data*' (everything relating to a particular category is filed together in a box labelled with a particular code). The third method she identified was '*data indexing system*'. This method enabled the researcher to record the coding on cards, leaving the data untouched except for page and line numbers (Delamont, 1992).

In analysing the interview transcripts, I used the three methods highlighted by Delamont above. First, I used coloured highlighter pens to highlight parts of the participants' responses that explored teachers' perceptions and understanding of

the value and impact of formative assessment. Different coloured codes were used for different themes. For example, understandings were yellow, values were blue and impacts were coded green. This was done in relation to information that emerged from the literature review and the research questions.

Secondly, I extracted everything related to a particular category and filed them together. And thirdly, the coloured codes were indexed on separate sheet of papers. For instance, yellow codes were labelled as C1; blue codes were labelled as C2 and green codes were labelled as C3. This process continued until all the five interview transcripts were completed.

Once the categorising was done, the researcher looked for key issues raised in each category and reported the information using the thematic approach (Malasa, 2007).

3.9 Issues of strength and limitation in this study

A number of writers such as Bell (1993), Best and Kahn (1993), Cohen et al. (2000) and Ussher (2001) suggested that qualitative research, such as the current study, is open for criticism for lacking trustworthiness, validity, reliability and generalisability. Although it may not be possible to establish validity and reliability in the traditional sense related to research, I attended to several aspects, set out below, in order to make the research as trustworthy and useful as possible (Ussher, 2001).

3.9.1 Trustworthiness

Trustworthiness, according to Cowie and Bell (1996), relates to “whether something or someone may be trusted or relied upon to be true” (p. 11). A study is trustworthy if and only if the reader of the research report judges it to be so (Rolfe, 2004). Golafshani (2003) suggested that a good research is trustworthy (that is, it is credible to the reader), reliable, valid and is rigorously accurate. According to Bryman (2001) and Lincoln and Guba (1985, in Lunn, 2006), there are four elements of trustworthiness that help to ensure the validity, reliability, objectivity and quality of the research:

- Credibility
- Transferability
- Dependability

- Confirmability

3.9.1.1 *Credibility*

To confirm the information and enhance the credibility or internal validity in this study, I attended to several strategies. One strategy used in this study to establish credibility was respondent validation (Bryman, 2001). According to Bryman, respondent validation is a “process whereby a researcher provides the people, on whom he/she has conducted the research, an account of his/her findings” (p. 273). To ensure credibility of the data gathered in this study, copies of the interview transcripts were sent to the participants for validation, verification, further clarification and to confirm their accuracy.

While internal validity is the ability of a study to measure what it intends to (Cohen et al., 2000; Ussher, 2001), trustworthiness is executed within an inquiry by ‘triangulation’ (Cohen et al., 2000; Stake, 1995). Triangulation is also a strategy used to confirm credibility. Studies by Bryman (2001) and Cohen et al. (2000) highlighted that triangulation can incorporate the use of multiple informants, multiple sources of data, multiple methods or multiple perspective to confirm the findings. In selecting one teacher from four different secondary schools in Honiara, I was using the method of multiple informants and multiple sources of data (Bryman, 2001). Using the semi-structured interviews, documentation and focus group conversation as methods of data collection in this study, I was using multiple methods. Following the interviews and transcription process, discussing the emerging trends and findings with a focus group allowed for multiple perspectives to be included – yet another way to use verification by triangulation to establish credibility (Lunn, 2006).

3.9.1.2 *Transferability*

Several writers including Bryman (2001) and Lincoln and Guba (1985, in Lunn, 2006) suggested in order to improve transferability or external validity, it was essential to provide sufficient thick descriptions grounded in contextual evidence so readers can decide what is relevant to them. Hence, taking note of the particular and giving sufficient contextual details, the question of transferability would be open to individuals to determine themselves (Merriam, 1998, in Lunn, 2006). In

this study every effort was made to probe the intention of the participants. The intended meaning was constructed through the voices of the participants. This is a case study involving four schools and five teachers, and findings may not necessarily be generalisable to other settings (Lunn, 2006). According to Bryman (2001, p. 273), “external validity refers to the degree to which findings can be generalized across settings. This may be problematic for qualitative researchers, such as this present study, because of the size of the sample, which was small. Hence, while mindful of the significance of transferability of the data to provide external validity I recognised there were some shortcomings in developing this criterion due to the nature of the research study (Lunn, 2006). It is important for the reader to acknowledge that the likelihood of this study producing the same results if carried out on two separate occasions, even by the same researcher, are low (Ussher, 2001).

3.9.1.3 *Dependability*

Dependability is ensuring the researcher does not allow personal bias or information of a suspect nature to influence the findings (Yin, 1988, in Lunn, 2006). “To establish the merit of research in terms of this (dependability) criterion, researchers should adopt an ‘auditing’ approach. This entails ensuring that complete records are kept of all phases of the research process” (Bryman, 2001, p. 273). I kept complete records of the transcripts. To guard against personal bias I presented the actual words of the participants informing the findings and also continually reviewed the transcripts and reflected on my analysis (Lunn, 2006).

3.9.1.4 *Confirmability*

Bryman (2001, p. 276) suggested that “confirmability is concerned with ensuring that, while recognizing that complete objectivity is impossible in social research, the researcher can be shown to have acted in good faith”. My intentions throughout the course of this study have been transparent and uppermost in my mind. My supervisor, through questioning various aspects of my work, opened up new perspectives for reflection and further research.

Several writers like Burns (1994), Merriam, (1998), Mishler (2000) and Seale (1999) considered trustworthiness as a criterion offered as an alternative to the traditional validity and reliability. This means the researcher needs to be careful in the handling of the data in allowing the data to ‘speak for itself’ (Deruige, 2007).

3.9.2 Validity

Numerous research scholars including Bell (1999), Burns (1994), Cowie and Bell (1996) and Gipps (1994) refer to validity as the extent to which an instrument measures what it purports to measure (e.g. ‘fitness for purpose’). In other words, validity is concerned with ‘accuracy’ of findings. More recently, validity has taken numerous forms; it can be viewed as an indication of the appropriateness of a research study’s methodology (Mtaita, 2007), and the relationship between the data collected and the construct theoretical framework (Burns, 1994). Cohen et al. (2000) maintained that in qualitative data, validity might be addressed through honesty, depth, richness and scope of the data achieved, the participants approached, the extent of triangulation and the disinterestedness or objectivity of the researcher. Asking participants to clarify ambiguous statements during the interviews and returning copies of the interview transcripts to the participants to verify and confirm that the data collected was an accurate reflection of their responses, were ways of maintaining validity in this study (Boubee-Hill, 1998; Cohen et al., 2000). Allowing sufficient time in identifying what is to be explored in this study, I was able to construct the interviews purposely (Ussher, 2001). My professional judgement was needed as to the content and structure of the questions and the representativeness of questions in providing adequate opportunities for participants to offer information.

A number of research scholars (Burns, 1997; Cohen et al., 2000; Miles & Huberman, 1994) considered triangulation as a way of checking validity and reliability of data. Triangulation helps the researcher to be confident with findings, countering the effect of bias in methods, data sources and investigators. Convergence of major themes or patterns in the data from interviews and documents can lend strong credibility to the findings (Maykut & Morehouse, 1994, in Mtaita, 2007). As stated already, engaging multiple methods, such as semi-structured interviews, recording, recursive analysis of participants’ interview transcript and focus group discussion enabled a cross checking for consistency and hence validity and reliability (Cohen et al., 2000). This involved interviewing

participants from different schools, recording and documenting. Construction of interview questions was guided by the research objectives and research questions. Using the same questions for all interviewees throughout the course of the interview gave all participants the opportunity to add any relevant or appropriate point they felt to maintain consistency (Mtaita, 2007). Using open-ended questions in the interview to gather information allows for fair, comprehensive and greater depth of response (Mtaitai, 2007) although this also encourages breadth of response rather than a narrow focus.

3.9.3 Reliability

Although the term 'reliability' is a concept used for testing or evaluating quantitative research, the idea is most often used in all kinds of research (Golafshani, 2003). A good qualitative study can help us "understand a situation that would otherwise be enigmatic or confusing" (Eisner, 1991, p. 58). Cohen and colleagues (2000) maintained that reliability is "essentially a synonym for consistency and replicability over time, over instruments and over groups of respondents" (p.117). It is concerned with exactness and accuracy. That means that for research to be reliable it must demonstrate consistency across different observations or studies of similar context. To ensure reliability in qualitative research, examination of trustworthiness is crucial. Patton states that reliability and validity are two factors which any qualitative researcher should be concerned about while designing a study, analysing results and judging the quality of the study. This corresponds to the question "How can an inquirer persuade his/her audiences that the research findings of the enquiry are worth paying attention to?" (Lincoln & Guba, 1985).

A number of writers such as Anderson (1990), Bogdan and Biklen (1992), Burns (1997), Cohen et al. (2000) and Denzin and Lincoln (1994) suggested that in qualitative research, reliability is best considered as a fit between what researchers record as data and what actually occurs in the natural setting being researched, rather than the literal consistency across different observations or studies - for example, the degree of accuracy and comprehensiveness of coverage (Burns, 2000; Cohen et al., 2000).

When interviewing Cohen et al. (2000) suggested that greater reliability can be obtained if the interviewer: outlines the reasons for the research; states the major questions to be addressed; established positive rapport with the participants; and consciously tries to eliminate any possible causes of unreliability before they occur. As I have stated already, engaging multiple methods (Cohen et al., 2000; Golafshani, 2003), such as semi-structured interviews, recording, recursive analysis of participants' interview transcript and focus group discussion enabled a cross checking for consistency. Informing the respondents of the reasons for undertaking the research improved reliability because the respondents saw that there was no advantage to be gained from offering false information (Boubee-Hill, 1998). Giving participants a copy of the interview guides prior to the interview gave respondents time to think about their responses so that they were less likely to be overly influenced by any good or bad experience they had had with formative assessment on the interview day. Giving participants a transcript of their interview so they could verify and confirm their accuracy ensured that the data finally presented in the research results was accurate.

If the validity or trustworthiness can be maximised or tested then “credible and defensible results” (Johnson, 1997, p. 283) may lead to generalizability (Stenbacka, 2001) as a structure for both doing and documenting high quality qualitative research. Therefore, the quality of a research is related to generalizability of the result and thereby to the testing and increasing the validity or trustworthiness of the research (Golafshani, 2003).

3.9.4 Generalisability

Bell (1993, in Boubee-Hill, 1998) suggests that most educational research aims to generalize and add to educational theory. Generalizability refers to the degree to which the results can be generalized beyond the setting or individuals under study (Boubee-Hill, 1998; Cohen et al., 2000). Lincoln and Guba (1985) suggest that researchers should provide sufficient data for readers and users of research to determine whether transferability is possible. As stated previously, transferability refers to the degree to which findings can be generalized across settings. In this study, an attempt has been made by the researcher to collect sufficient data using open-ended questions and providing detailed, in-depth data to readers so that others can decide the extent to which findings from this research can be

transferable to another situation (Cohen et al., 2000). In this situation, Ussher (2001) suggested that it is the job of the reader to take the findings and consider their educational implications in their own schools or classroom. Other factors influencing the trustworthiness and generalizability of this study are participant perspectives including selection bias and individual history.

Based on the research questions and research design this study should be considered trustworthy and the findings transferable.

3.10 Summary

This chapter explained the methodology of this study. It outlined the research questions, introduced the methodological framework and discussed methods used to gather and analyse data, and ethical concerns. The study sought to explore teachers' perceptions of the value of formative assessment in Solomon Islands secondary schools. The interpretive framework adopted in this study requires the participants to be involved in order to construct reality. The choice of the semi-structured interview and focus group conversations was deemed necessary for this study, to allow generation of mainly qualitative data that would allow respondents' meaning of their perceptions to be explored. Ethical manners were maintained by asking for volunteers to participate and providing information explaining the purpose of the research, avoiding direct potential harm to participants as well as excluding their names in the final report. Trustworthiness was maintained in this study by triangulation, recursive analysis of participants' interview transcripts, and returning interview transcripts to participants to verify and confirm their accuracy. While it may not be possible to generalize issues discussed in this study to another context, it is up to the readers (i.e. classroom teachers, parents, policymakers and other researchers) to identify if there is any relevance to their schools or settings.

The following chapter will present the data gathered using this methodology and methods from this study.

Chapter 4

RESEARCH FINDINGS

4.1 Introduction

The results underpinning this study were organized in formal themes derived from the participants' interview transcripts. The semi-structured interview questions, focus for the teachers' thinking regarding their use of formative assessment as a classroom strategy, were designed to produce a picture of: perception, understanding, impact and value. These enabled teacher participants to express in their own words their perceptions of the value of formative assessment in their classrooms. In particular, the key questions this research addresses are: what are the teachers' understandings of assessment for formative purposes and how do they link it to their understanding of learning? And what is the perceived value and impact of assessment for formative purposes to secondary school students' learning?

The analysis and findings of this study, followed by a recursive revision of the participants' interview transcripts, eventually led me to define three themes in the teachers' perceptions of the value of formative assessment. Each theme, supported by quotes from participants' interview transcripts, will be discussed in this chapter. The three main themes are:

- Assessment practice for formative purposes is
- Benefits of assessment for formative purposes.
- Impact of formative assessment on students' learning.

4.2 Assessment practice for formative purposes is....

Most of the teachers involved in this study understood the term formative assessment and how it can be used to improve students' learning in their classroom. For example:

It is continuous or on-going assessments throughout the learning process. It is used by teachers to provide effective feedback, and to evaluate the effectiveness of teaching and learning strategies. It narrows the gap between what has been learned and what still needs to

be learned and to plan the specific next step required to improve performance, perhaps through the use of alternative strategies. (T2)

Formative assessment is a range of formal and informal assessment procedures (i.e. practical tests, mini-assignments, homework, quizzes, exercise, and etc...) undertaken by teachers in the classroom during the teaching of any unit as an integral part of the normal teaching and learning process in order to modify and enhance learning and understanding. It helps to build a picture of a student's progress, and informs decisions about the next steps in teaching and learning. Normally, the marks obtained from formative assessment are not included towards the student's final grade (T4).

Continuous assessment executed by a teacher during the day-to-day teaching. I do not have to wait for the end of a unit or term or semester, but it happens continuously with the students as they learn during the lesson (T1).

When these teachers were asked about their understanding and how they dealt with the relationship between assessment for formative and summative purposes, their responses revealed levels of understanding about the two terms. All five teachers involved understood the respective theoretical place of each type of assessment within the teaching and learning process:

Formative assessment is all about providing feedback about what has been learned and what still remains to be learned within the course of teaching itself and not after a particular unit has been covered as is the case with summative assessment. (T3).

*It's about **students** actively learning, progressing and monitoring themselves. Summative is about the **teacher** monitoring students' progress. (T2)*

Formative assessment is included in the teaching process as opposed to summative assessment which is commented upon and graded at the end of a learning period or term or semester. (T1).

The other two teachers shared similar thoughts. However, only two teachers were able to explain how they dealt with the relationship in terms of the practicalities of classroom management:

I prefer using formative assessment to summative assessment due to the fact that assessment should be on-going and an integral part of activities in the 'world language' classroom. I have been dealing with formative assessment largely in the form of teacher conferencing on individual basis, reading through work completed so far and offering my comments (written/verbal) and suggestions on how it could be improved. (T2).

I used a range of formative strategies in an attempt to help low achievers and those students with learning barriers in my class. These include the use of the scaffolding process, reading through and marking and commenting on individual work. These strategies enabled students to collaborate with others and to think, communicate and make decisions for themselves, and assisted me to identify and provide necessary assistance to the slow ones. (T1).

When these teachers were asked about how they used formative assessment in their classroom, most of these teachers indicated that they used a variety of formative strategies in their classrooms. For example, T1 highlighted that when she starts a new topic, she clarifies the learning goals and targets for that particular topic. In this way, students can recall what is expected of them at the end of the unit and this helps them plan their own learning in the learning process.

Another teacher, T4, when describing how he uses formative assessment in his science class said:

In order for students to know the concepts well I have to involve them in practical exercise. I would divide the class into smaller groups and then allow them to work on their own. In so doing, I mixed the smarter and weak students in each group, thinking that the smart ones might assist the weak ones. I have also used the scaffolding process during each lesson in my class.

T2 indicated that she uses games, quizzes, group work, pair discussions and individual conferencing. T3 and T5 highlighted that they only used questioning and giving of examples when explaining a new concept.

When these teachers were asked whether or not their schools have a formative assessment policy, all five teachers' responses revealed that there is no current policy on formative assessment in the schools they are currently teaching. T4 highlighted that formative assessment strategies they carry out in their schools depend very much on teachers' educational background, philosophy, knowledge about formative assessment and what they see as appropriate for students to learn based on the syllabi. However, these teachers identify the importance of having whole school policies encouraging and supporting assessment dialogue between teachers and learners, which monitors and celebrates good practice, which, in turn, incorporates strategies for improving performance and encourages a shared responsibility for learning with learners.

4.3 The benefits of assessment for formative purposes

Two of the teachers involved in this study understood the benefits of formative assessment and suggested that these benefits, among others, include: "learning gains, providing feedback, conveying value, reinforcing learning objectives, and so on". However, most of these teachers do value the support formative assessment provides regarding immediate and appropriate feedback to students, working in partnership with students, tracking students' progress, to clarifying under-achievement and to fostering team work with their colleagues.

When these teachers were asked why they value using formative assessment in their classrooms, three teachers indicated that formative assessment is beneficial

to both the teacher and students, as it can improve both the teaching and students' learning, as T4 explained:

When I include formative assessment as an integral part of the normal teaching and learning processes, it enhances the quality of my teaching and learning of students in my senior classes.

The formative strategies I employed in my classroom assisted me to get information about the quality of my teaching and students' learning. This information can be used to make necessary instructional adjustments such as re-teaching, trying alternative instructions, or offering more opportunities for practice. (T1).

T2 highlighted that “formative assessment can provide valuable information regarding how effective a teacher’s instructional strategies have been to date. It informs both the students and teacher about any adjustments that should be made in the learning process to improve students’ understandings and achievements.

4.3.1 How do these teachers see formative assessment benefiting teacher’s instruction and the learners?

When these teachers were asked about how they are benefiting from assessment for formative purposes, most of these teachers acknowledged the support formative assessment provides in informing them of the effectiveness of their instructional strategies as one of the teachers explained:

Formative assessment helped me to identify the level of understanding certain students have reached, become aware of students’ strengths and weaknesses and to monitor their current progress during the learning process. It also aids me to use alternative approaches or methods of teaching, because certain methods can help students to learn better. (T1).

Another teacher, T4, highlighted that assessment for formative purposes enabled him to use a wide range of effective, practical, day-to-day teaching techniques in

his classroom situation. T2 pointed out that formative assessment supports her in gaining immediate feedback on her own teaching as well as on students' work and individual conferencing.

All five teachers involved in this study said that teachers are not the only ones benefiting from formative assessment. The students benefit too because formative assessment improves their learning, improve their attitudes toward learning, and helps them to take responsibility for their own learning.

Formative assessment enabled students to identify their own strengths and weaknesses and know their current progress during the learning process. It also helps students to make further decisions and maintains current standard of learning. (T1).

T1 further highlighted that anecdotally, students who benefited from formative assessment have the advantage of performing higher in their final exams.

While the value of assessment for formative purposes in promoting students' learning in the classroom is undisputable, most of the teachers involved in this study highlighted that large class size and heavy workloads often present a barrier to teachers' implementation of assessment for formative purposes. T1, T2 and T4, who know the benefit of formative assessment and the difference it makes to student learning, feel that they cannot maintain all the initiatives and feel constrained by class size.

I cannot manage formative assessment as effectively with a class size of 40 – 50 (T3).

Because we have a very big number of students in the classroom (50 students to one teacher), I find it challenging to scaffold the slower ones while in the classroom. Not only that, but it also restricted my teaching styles and student's involvement in the learning process (T1).

Class size is not the only barrier to formative assessment mentioned by all these teachers during the interview session. T1, T3 and T4 identify school culture and the educational policies as major barriers to formative assessment. If the school philosophy is exam oriented and the political commitment within the school tends towards external assessment, formative assessment can be marginalised. This is particularly true for secondary schools in Solomon Islands, as T3 explained:

The current system of education we are using mainly uses summative evaluation. In this system, students are filtered out of the system early because their grades at the end of each entry level (e.g. Std 6, F3 or F5) show failure.

Another common barrier raised by these teachers is school facilities/equipment and teacher's attitudes and commitment to formative assessment. T5 highlighted that the lack of proper school facilities and equipment and teacher's knowledge, attitudes and commitment to formative assessment could impede its implementation in secondary schools in Solomon Islands.

4.4 The impacts of assessment for formative purposes.

The way teachers assess students in schools can have a positive or negative impact on the way they learn and on their motivation to learn. Three of the teachers involved in this study stated during the interviews that intentional use of assessment in the classroom to promote learning can improve students' achievement. This can also have a positive impact on students' attitudes to learning (T1, T2 & T4).

When these teachers were asked about how they see formative assessment impacting on motivation, most of them acknowledged the significant role formative assessment play in stimulating student intrinsic interests, as one of the teachers explained:

Formative assessment plays an important role in the learning process of students. It motivates students, makes them eager and willing to do their work, enables them to be active and interested in

their classroom activities, and helps students to be committed in their work. (T5).

T5 further elaborated that:

Through well prepared lesson plans and lesson presentations, proper classroom management, and organization, appropriate teaching and assessment strategies students are:

- *Motivated, encouraged and inspired as these promote positive attitudes towards learning in the classroom.*
- *Eager and willing to do their work because they are excited, keen and enthusiastic about their work;*
- *Active and lively, as they participate in the learning process;*
- *Interested and involved because they are induced into the learning process; and*
- *Committed and loyal because they are dedicated to their work*

T2 highlighted that formative assessment plays a significant role in **informing** and **involving** the learners themselves in the process of assessment. She further suggested that effective learning cannot take place in the classroom in isolation from students being actively involved in the learning process through peer and self-assessment.

Formative assessment strategies I employed in my class motivated students to interact, be actively involved and learn from their peers and evaluate their own learning. (T2).

When asked how these teachers engage in motivating students in the learning process, all the teachers confirmed using a wide range of formative assessment strategies in their classrooms. However, only two teachers were able to describe how these formative assessment strategies benefited and enhanced students' intrinsic interests and attitudes toward learning, as explained by one of the teachers:

The formative strategies I used in my class stimulates my students to collaborate freely with others and to think, communicate, discuss and

make decisions for themselves. At the same time, I was able to identify and scaffold those who needed help. (T1).

T2, however, when responding to this question stated that “the effectiveness of these strategies depends on students’ understanding of the type of activity a teacher brings to the class, age and the cultural setting of the school. Some formative strategies work more effectively than others. For example, in my English class, games and quizzes and group work makes students active and lively, thus helps students to learn more quickly”.

When asked how these teachers see formative assessment impacting on self-esteem, two of the teachers’ responses revealed that self-esteem is enhanced by building on students’ intrinsic interests. They refer to self-esteem as “*one’s judgement of worthiness (positive or negative). This is expressed in attitudes one holds toward him/herself*”. T1 highlighted that self-esteem is one of the keys to students’ competence and success. Both T1 and T2 highlighted that formative assessment can enhance both student motivation and self-esteem by:

- Providing feedback to move learning forward
- Providing the scaffolding that students need to genuinely succeed
- Emphasizing progress and achievement rather than failure
- Reinforcing the idea that students have control over, and responsibility for, their own learning

The other three teachers hold the view that students’ self-esteem is enhanced by extrinsic rewards such as praise and encouragement or by awarding grades, as one of the teachers explained:

I observed in my class that students who get very high marks in assessment tasks such as tests and assignments, tend to favour and work harder in that particular subject than those who do not normally do well (T5).

Another teacher, T4, observed that “low attaining students tend to have low self-esteem while high attaining students tend to have high self-esteem”. T4 further highlighted that “fear of failure can also lead to low self-esteem in students”.

T2 however argued that student self-esteem can also be affected by external factors. She identifies family and financial problems, laziness, fear, shyness, student's cultural context as factors inhibiting students' low performance in her English class.

T4, when responding to this question, highlighted that using classroom assessment for differentiating learning can also have a positive impact on students' attitudes to learn. To use his words:

I observed that when I use various instructional approaches which are relevant, students are confident, work independently, have control over their own learning and seem to understand and learn more quickly (T4).

When asked how these teachers deal with low achievers in their class, only two teachers were able to explain their case.

When I come across low achievers in my English class, I use individual conferencing and monitor their progress. Other times I would encourage them saying: "you can do it" or "that's how you learn". I believe that all students are capable of doing well. (T2)

To find out students' level of understanding, I usually asked two questions at the conclusion of my lesson: "what do you find difficult" and "what do you find easy" on what we have covered so far? I made myself clear to them that if anyone was having difficulties understanding topics we have covered, they should come and see me. In that way, I should be able to help them on a one-to-one basis. (T1).

In dealing with low-achievers, T1 further suggested three approaches which she perceives, can have a positive impact on low-achievers:

- The scaffolding approach (allow time in class or after class to assist students with learning difficulties).

- The teacher, parent child approach (let parents know of student learning difficulties and proposed plan of action).
- Stick to the recommended teacher-student ratio per class (in Solomon Islands, 1:35) (with a small number of students, the teacher can have contact time with each student and so assist them thoroughly).
- Provide daily quiz bizz for the students identified as low-achievers and monitor their progress.

Asked whether these teachers allow opportunities for students to suggest how to remedy their own problems or to address remedies with their peers, most of these teachers said that they do not normally allow students to suggest remedies for their own problems, however, they sometimes allow opportunities for students in their classes to problem solve and also to address remedies with their peers in their subject areas, but in slightly different ways. For instance, T3 highlighted that in her maths class, when doing review exercises, she would allow students to mark their peers' work by exchanging books with someone sitting next to them, give them a mark and returns their books. Other times she would ask students to write their answers on the chalkboard and asked other students to comment orally on the answer.

T2 on the other hand, stated that she sometimes organises group discussions in her English class. After the discussion, she would ask each group to choose a leader to present a summary of their discussion and allow other groups to comment on what has been presented.

While formative assessment can have a significant impact on students' attitudes and achievement, most teachers involved in this study suggest its implementation in secondary schools depends on teachers' understanding and interpretation of the concept of formative assessment, as one of the teachers explained:

For teachers to effectively and efficiently implement the concept of assessment for leaning, they need to have some understanding of what constitutes this concept. (T3).

T1 and T3 adds that pressures from internal tests/exams, together with school wide national external examinations, can restrict both their teaching styles and students' engagement and enjoyment in the learning process, and about the best ways to develop the learning of their students. Although these tests/exams have an important role to play in securing public confidence in local schools, they pointed out that their undue influence on the development of effective formative assessment is a significant constraining factor with respect to sound teaching and learning. This is of great concern especially to teachers who are teaching Forms 3 – 6 (ages 13 – 16), as T3 explained:

Pressures from summative test and national examinations nationwide restricted my teaching approaches and students' involvement and enjoyment and hence my teaching is targeted only to what is to be tested or examined.

The chapter that follows will discuss these findings and their implications on classroom formative assessment practices in Solomon Islands secondary schools.

Chapter Five

Discussion of findings and conclusions

5.1 Introduction

This chapter first gives a brief overview of the research findings, then discusses teachers' perceptions of the value of formative assessment as emerged from the findings, and their implications on classroom formative assessment practices in Solomon Islands secondary schools. In my discussion, I link findings to the guiding research questions and to the literature reviewed in chapter 2. The discussion attempts to illuminate classroom teachers' perceptions and understanding of the value of assessment for formative purposes in their classroom.

5.2 Brief overview of findings

A key intention of this study was to ascertain teachers' perceptions, understanding and value of classroom assessment for formative purposes. It is an exploratory investigation into teachers' perceptions of the value of assessment for formative purposes in Solomon Islands secondary schools. The focus of this study was directed by the following research questions:

- What are the teachers' understandings of assessment for formative purposes and how do they link it to their understanding of learning?
- What is the perceived value and impact of assessment for formative purposes on secondary school students' learning?

This forms the framework guiding the interview schedules and the analysis process.

Although common themes emerged from the responses of the five teachers regarding their knowledge about what constitutes formative assessment, there were noticeable gaps and variations in their articulated understanding of formative assessment practices. Some perceived assessment of learning (summative assessment) encourages them to focus on performance rather than formative assessment.

Views expressed by the participants are purely from personal experiences and understanding of formative assessment and theories of learning.

Theoretically, most participants in this study have expressed some level of understanding of the value and impacts assessment for formative purposes has on learning. However, it could be seen from the research findings that formative assessment could be a dilemma for participants with no teaching qualifications. This was largely due to teachers' limited theoretical understanding of how assessment could and should be integrated into the learning and teaching process or teachers' limited knowledge of theories of learning and their relationship to theories and methods of assessment (Torrance & Pryor, 1997).

Assessment for learning (AfL) does have a place in Solomon Islands secondary schools but its use is limited. Particular issues are attitudes, school ethos, pressures from external and internal examinations, educational policies and so on. Harlen (2005), Pongi (2004), the Solomon Islands Ministry of Education (2004) and the participants in this study made it clear that the influence of summative assessment overshadows formative approaches. Cultures of testing and accountability may crowd out formative assessment or prompt teachers to downplay it (Carless, 2007), hence, formative assessment processes remain weak compared to summative assessment (Black & Wiliam, 1998b). The current policies or regulations governing assessment in Solomon Islands secondary schools place a counter-productive distance between the teacher and the student and make absolutely no direct or little attempt to redress this crisis (S.I. Ministry of Education, 2007-draft).

Overall, many of the perceptions of the participants in this present study were parallel with the existing literature on the characteristics of good quality formative assessment. For instance, in line with the literature reviewed, the teacher participants perceived that formative assessment is continuous or ongoing assessment throughout the learning process (Aitken, 2000; Chappuis & Chappuis, 2007/2008; Chappuis & Stiggins, 2002; Popham, 2006) and that its intentional use in the classroom can lead to significant learning gains (Black & Wiliam; 1998; Chappuis & Chappuis, 2007/2008; Clarke, 2005; Gipps, McCallum, & Hargreaves, 2000; Wiliam, 2007/2008) through both students' intrinsic motivation

and self-esteem (ARG, 2002; Black et al., 2004; Clarke et al., 2003; Miller & Lavin, 2007; WNCP, 2006), equity of student outcome and improving students' ability to learn (OECD, 2005).

5.3 Discussions of issues

The focus of the discussion held with each teacher participant during the interviews was centred on their perceptions and understanding of the value and impact of assessment for formative purposes in their schools. What follows is the discussion of the issues identified by the participants during the interviews and includes:

- Teachers' perceived understanding of assessment for formative purposes;
- Teachers' perceived value of assessment for formative purposes;
- Teachers' perceived impact of assessment for formative purposes;

The section following discusses the conclusions of the research findings and includes:

- Implications for classroom practices in Solomon Islands secondary schools
- Emerging professional development needs
- Limitations of the study
- Recommendations
- Suggestions for further future research

5.4 Teachers' perceived understanding of assessment for formative purposes

Many of the teachers involved in this present study appear to have a general theoretical understanding of what constitutes formative assessment. Like Aitken (2000), Black and Wiliam (1998b) and Clarke (2005), they perceived formative assessment as 'continuous' or 'ongoing' assessment throughout the learning process. It is used by these teachers to provide feedback and to evaluate the effectiveness of their teaching and learning strategies. It is used to narrow the gap between what has been learned and what still needs to be learned and to plan the specific next step required to improve learning and achievements (see also Bell &

Cowie, 2001; Black et al., 2004; Chappuis & Chappuis, 2007/ 2008; Chappuis & Stiggins, 2002; Clarke et al., 2003; Dixon, 1999; Dixon & William, 2003b; Heritage, 2007; Hill, 2000; Popham, 2006; Sadler, 1989; Wiliam, 2007/2008).

The conversation with these five classroom teachers produced a range of generalisations (Basseby, 1999). There were noticeable gaps, variations and confusions in their articulated understanding of formative assessment (Dixon & William, 2003b). While they can theoretically understand the benefit of formative assessment, they still lack comprehensive and profound understanding of the real importance of formative assessment. As mentioned previously, this was largely due to either their limited theoretical understanding of how assessment could and should be integrated into the learning and teaching process or their limited knowledge of theories of learning and their relationship to theories and methods of assessment (Black and Wiliam, 1998b; Carless, 2007; Torrance & Pryor, 1997).

Studies investigating teachers' formative assessment practices have led to the identification of two types of formative activities: 'planned' or 'formal' formative assessment and 'interactive' or 'informal' formative assessment (Bell & Cowie, 1997, 1999, 2001; Harlen, 1998). This was consistent with the view T4 held toward formative assessment. T4 described formative assessment as consisting of a range of 'formal' and 'informal' assessment procedures undertaken by teachers in the classroom during the teaching of any unit, as an integral part of the normal teaching and learning process in order to modify and enhance learning and understanding.

As Cowie and Bell (1999) explain, planned or formal formative assessment is teacher-focused and relates to the planning and assessment teachers develop prior to or during the course of a lesson. Types of activities associated with planned formative assessment include brain storming to determine children's prior knowledge before commencing a unit of study, or questioning at the beginning of a lesson to check on children's understandings. In contrast, 'interactive' or 'informal' formative assessment is embedded in the teaching and learning process, as teachers work with small groups or individuals and can best be described as student-teacher interaction. Although teaching is planned, teachers

realised that learning is unpredictable and idiosyncratic. In noticing, recognising and responding to student thinking, teachers become mediators in the learning process (Dixon & William, 2003b).

Several research scholars (for example, Black et al., 2004; Black & Wiliam, 1998b; Chappuis & Chappuis, 2007/2008; Leahy, Lyon, Thompson & Wiliam, 2005; Wiliam, 2007/2008), reported that assessment for formative purposes involves using assessment in the classroom to raise students' achievement. It is based on the idea that all students will improve most if they understand the aim of their learning, where they are in relation to this aim and how they can achieve the aim (or close the gap in their knowledge).

Similarly, two teachers in this study perceived that students will achieve more if they are fully engaged in their own learning. If students know what they need to learn and why and then actively assess their understanding, gaps in their own knowledge and areas they need to work on, they will achieve more than if they sit passively in a classroom working through exercises with no real comprehension of either the learning intention of the exercise or of why it might be important (Black & Wiliam, 1998b).

To tap the potential of formative assessment Leahy, Lyon, Thompson and Wiliam (2005) and Wiliam (2007/2008) suggested that teachers must:

- Clarify and share learning intentions and criteria for success with students.
- Engineer effective classroom discussions, questions and learning tasks;
- Provide feedback that moves learners forward;
- Activate students as the owners of their own learning; and
- Encourage students to be instructional resources for one another.

The lack of distinction between formative and summative assessment in policy documents in Solomon Islands secondary schools can have a significant effect on teachers' practice. Teachers in this present study often refer to formative assessment as part of teacher's ongoing or continuous assessments, which count towards the students' overall course work and which later contributes to students' final term grade. While coursework is regarded as a useful component of formative assessment, some scholars (see for example, Black & Wiliam, 1998b; Harlen, 1998; Sadler, 1989)

argued that even ongoing or continuous assessment does not necessarily mean the information is used to support learning, for in reality much of this assessment takes the form of a series of short summative tests, teachers use primarily for reporting purposes (Dixon & William, 2003b) rather than an integral part of the teaching and learning process. Studies by Bell and Cowie (1997), Dixon (1999) and Hill (2000) have reported very similar findings. When assessment is purely for formative purposes, there is no final mark or summative grade in the grade book (Chappuis & Chappuis, 2007/2008). Assessments will produce no formative benefits if teachers administer them and report the results.

5.4.1 Difference between assessment for formative and summative purposes

At a theoretical level, teachers in this present study were able to explain the main distinction between formative and summative assessment and identify some of the key characteristics of formative assessment (Dixon & William, 2003b). Their responses show levels of understanding of these terms and the respective theoretical place of each type of assessment within the teaching and learning process. This was congruent with the current literature on the relationship between assessment for formative and summative purposes (ARG, 1999, 2002; Black & Wiliam, 1998b; Brookhart, 2007/2008; Crooks, 2004; Harlen, 1998; Hill, 2000; Taras, 2008; Ussher, 2001). Like the participants in the study carried out by Aitken (2000), only two of these teachers were able to describe how they dealt with the relationship in terms of the practicalities of classroom management.

More recently, scholars (see for example, Chappuis & Chappuis, 2007/2008; Guskey, 2007/2008) have articulated that it's not how you label the assessment that matters, but how you use the results. In other words, it's how the results are used that determines whether the assessment is formative or summative. Evidence from research in this area shows that assessment for formative and summative assessments facilitate different assessment purposes (Assessment Reform Group, 1999, 2002; Black et al., 2004; Black & Wiliam, 1998b; Bloom et al., 1971; Chappuis & Chappuis, 2007/2008; Chappuis & Stiggins, 2002; Harlen, 2005; Wiliam, 2007/2008). Like these authors, the teachers said that summative assessment involves judging students' performance against national standards (level descriptions). Teachers often make these judgements at the end of a unit of

work, year or key stage. Test results also describe students' performance in terms of levels. However, an important aspect of assessment for learning is the formative use of summative data (Black et al., 2004; Carless, 2008).

In contrast, formative assessment delivers the information during the learning process, before the summative assessment. As was also reported by teacher participants in this study, both the teacher and the student use informative assessment results to make decisions about what actions to take to promote further learning. It is an ongoing, dynamic process involving far more than frequent testing and measurement of student learning (Chappuis & Chappuis, 2007/ 2008; Popham, 2006).

While summative assessment has its own well-established procedures (Kennedy, Sang, Wai-ming, & Fok, 2006; Ussher, 2001), Black and Wiliam (1998b) provide strong evidence from an extensive literature review, to show classroom 'formative' assessment, effectively implemented, is a powerful means to improve students' learning; this was also reported by teacher participants in this study. Summative assessments such as standardised exams can have a harmful effect and be a very limited measure of students' learning (Black & Wiliam, 1998b), as well as having limited value for guiding students' learning (Clark, 2006). Like Black et al. (2004) and Black and Wiliam (1998b), two teachers in this present study reported such an assessment strategy can have a negative impact on low-achieving student's intrinsic interest, possibly causing them to believe they lack 'ability' to learn (T1 & T2, in section 4.3).

Teacher participants in this present study have reported using a wide range of formative assessment strategies in their classrooms. As one would expect, different teachers found different techniques useful, depending on the school's cultural context, resources available, students' age and cultural background, and teacher's knowledge of formative assessment. What worked for some did not work for others (Leahy, Lyon, Thompson, and Wiliam, 2005; Wiliam, 2007/2008).

Whilst the teacher participants perceive formative assessment as a powerful means to improve students' learning, its implementation is not always easy, as

reported in the literature (Black & Wiliam, 1998b; Carless, 2007). It requires a change of attitude (Heritage, 2007), administration and school ethos (Aitken, 2000), educational policies (ARG, 1999, Black & Wiliam, 2005, Clark, 2006, Dixon & William, 2003a; OECD, 2005), teacher professional development (Aitken, 2000; Black & Wiliam, 1998b; Dixon & William, 2003b), will-power, time and class size (Neesom, 2000), patience and effort. The areas mentioned above must be considered if assessment for formative purposes is to be successful in Solomon Islands, otherwise, they could become potential barriers to the implementation of formative assessment.

Like Black and Wiliam (1998b) and Clark (2006), teachers in this study suggested that if we want to maximize student achievement, policy-makers must pay far greater attention to the modernisation of formative assessment through the use of interactive communicative approaches. The development of a draft assessment policy is currently under way in Solomon Islands. The development of such assessment practices requires a change in classroom ethos established by the class teacher. However, these teachers realized that they can only be expected to make any change if they are encouraged to do so within a supportive environment. This was supported by the Assessment Reform Group (1999) and Black and Wiliam (1998b).

Significantly, teacher participants in this study reported most secondary schools in the Solomon Islands do not have a current policy on formative assessment, an area which the Ministry of Education and the Education Authorities need to seriously address in the future. T4 noted that formative assessment strategies employed in their school depend solely on teacher's experience and qualifications, philosophy, knowledge about formative assessment and what they see as appropriate for the students to learn, based on the syllabi (see section 4.1). However, these teachers identify the importance of having whole school policies which encourage and support an assessment dialogue between teachers and learners, which monitors and celebrates good practice, which incorporates strategies for improving performance and also encourages a shared responsibility for learning with learners (Neesom, 2000).

Apart from policy, these teachers perceived that the tendency for assessments for formative purposes to take place in secondary schools in Solomon Islands also

depends on a number of factors including teachers' attitudes toward the role formative assessment can play (see section 4.2). This finding was congruent with what Heritage (2007) noted about changes in teachers' attitudes. Heritage (2007, p.4) highlighted that "even if teachers have all the required knowledge and skills for formative assessment, without the appropriate attitudes toward the role that formative assessment can play in teaching and learning, their knowledge and skills will lie dormant". She then urged teachers to view formative assessment as a worthwhile process that yields valuable and actionable information about students' learning, and to view formative assessment and the teaching process as inseparable, recognizing that one cannot happen without the other (Heritage, 2007).

5.5. Teachers' perceived value of assessment for formative purposes

Participants in this study value the support formative assessment provides for immediate and appropriate feedback to students, to working in partnership with students, to monitoring students' progress and to clarifying under-achievement (see section 4.2).

Like Stiggins, Arter, Chappuis and Chappuis (2006), three teacher participants in this present study perceived formative assessment as beneficial to both teacher and students (T1, T2 & T4, in section 4.2), stating that it informs both the teacher and students about any adjustments that should be made in the learning process to improve students' understandings and achievements (see also Black & Wiliam, 1998b; Brookhart, 2007/2008; Clarke, 2005; Clarke et al., 2003).

It is clear from the research findings that the benefits these teachers received from formative assessment vary. Two of these teachers highlighted that employing formative assessment strategy in their classrooms informs them about the effectiveness of their teaching and student learning (see T1 & T4, in section 4.2) which enabled them to make the necessary instructional adjustments such as re-teaching and using alternative instructions (Boston, 2002). The other three, however, perceived that formative assessment supports them in giving immediate feedback (T2), the opportunity to work in partnership with students and colleagues (T5) and to engage students in peer and self-assessment (T2 & T3) (see

section 4.3.1). This is consistent with the literature (Absolum, 2006; Black et al., 2004; Boston, 2002; Chappuis & Chappuis, 2007/2008; Chappuis & Stiggins, 2002; Popham, 2006; Sadler, 1989; Wiliam, 2007/2008). It appears that these were the benefits these teachers valued in formative assessment in their classrooms.

These teachers consider that teachers are not the only ones benefiting from formative assessment; the students benefit too. They said formative assessment, implemented effectively, helped students improve their learning, improve their attitudes toward learning, and helped them take responsibility over their own learning (See section 4.2). This is congruent with the current literature on the benefits of formative assessment (for example, Black et al. 2004; Black & Wiliam, 1998; Boston, 2002; Chappuis & Chappuis, 2007/2008; Chappuis & Stiggins, 2002; Wiliam, 2007/2008).

To realize the true benefits of formative assessment, Chappuis and Chappuis (2007/2008) and Guskey (2007/2008) urged teachers to focus attention on what the students and teachers do with the assessment results to improve real-time teaching and learning at every turn. Like Black and Wiliam (1998b) and Chappuis and Stiggins (2002), these teachers reported that this could help teachers identify and monitor students' progress and also help students to identify their strengths and weaknesses during the learning process and take control over their own learning (see section 4.2).

5.5.1 Feedback.

Feedback is critical to learning (Black & Wiliam, 1998b; Brookhart, 2007/2008; Chappuis & Chappuis, 2007/2008; Gipps & Tunstall, 1996). It can help students to become self-regulated learners. Like these authors, three teachers in this present study (see section 4.2) reported an awareness of the significant role feedback plays in supporting learners to identify their own weaknesses and strengths and to plan and take responsibility over their own learning during the learning process, although some of their responses in the interviews revealed using evaluative feedback in their classrooms.

Feedback is part of formative assessment (Black & Wiliam, 1998b). Like Pintrich and Zusho (in Nicol & Macfarlane-Dick, 2006), teachers in this study acknowledged the importance of formative assessment and feedback in empowering students as self-regulated learners, a concept manifested in the active monitoring and regulation of numerous different learning processes (e.g. setting of learning goals, the strategies used to achieve goals, the management of resources, reactions to external feedback, etc.), embedded in student-centred learning.

While interaction is critical to feedback, research (see for example, Black & Wiliam, 1998b; Carless, 2007; Jeanne, James & Choo, 2005) revealed large class size impedes interaction. Therefore, large classes impede feedback and hence formative assessment as a classroom strategy, as perceived by these teachers. For example, as T4 noted “I cannot manage formative assessment working as effectively and efficiently with a class size of 40-50 students”. Similarly, T1 commented that she finds it “challenging to scaffold the slower ones while in the classroom because of the size of her class” (50 students to one teacher).

Summative assessment, as an impediment to feedback, can impede effective delivery of formative assessment in secondary schools. Congruent with Aitken’s (2000) research finding, these teachers perceived that if the school ethos is exam-oriented and the political commitment within the school tends towards external assessment, formative assessment can be marginalised. This is accorded to the situation in secondary schools in Solomon Islands as T3 noted:

... the current system of education we are using mainly uses summative evaluation. In this system, students are filtered out early because their grades at the end of Standard 6, Form 3 or Form 5 show failures...

This perception is consistent with the Education Strategic Plan 2004 – 2006 Report (Ministry of Education, 2004), where it states, “the Solomon Islands school assessment system only caters for external examinations which are administered at the end of Standard 6, Form 3 and Form 5...” (p.24). The examination system does not evaluate or report student progress in achieving learning desired outcomes, and does not promote the adoption of teaching practices that support continued learning throughout the schooling period.

5.6 Teachers' perceived impact of assessment for formative purposes

Developing formative assessment practice in secondary schools can have a profound effect on the quality of learning and teaching (Gawn, 2007). Like Black and Wiliam (1998b) and WNCP (2006), participants in this present study perceived that intentional use of classroom assessment to promote learning can improve students' achievement. They said that such assessment practices can have a positive effect on students' attitudes and achievements.

Apparently, teacher participants in this present study saw the role formative assessment plays in stimulating students' intrinsic interests as highly significant. In particular, T5 highlighted that:

Formative assessment plays a vital role in the learning process of students. It motivates students, makes them eager and willing to do their work, enables them to be active and interested in their classroom activities, and helps students to be committed in their work.

Participants believe that such assessment practices cannot be done in isolation from proper planning, classroom management, organisation and proper assessment strategies as T5 noted:

Through well prepared lesson plans and lesson presentations, proper classroom management, and organization, appropriate teaching and assessment strategies students are: motivated, encouraged and inspired as these promote positive attitudes towards learning in the classroom; eager and willing to do their work because they are excited, keen and enthusiastic about their work; active and lively, as they participate in the learning process; interested and involved because they are induced into the learning process; and committed and loyal because they are dedicated to their work.

This finding was consistent with the current literature on classroom formative assessment and motivation (Assessment Reform Group, 2002; Chappuis & Stiggins, 2002; Clarke et al., 2003; Kohn, 1994; WNCP, 2006).

5.6.1 Involving students in the learning process

One of the greatest challenges for classroom teachers including those in the Solomon Islands is to ensure that they provide the best possible learning environment for their students: classroom culture that encourages and recognizes ‘active learning’, ‘collaborative learning’, ‘interdependence’, problem-solving (Ashman & Conway, 1993; Page, 1994; Slaughter, 1994; Wright, 2000), creative thinking and one that encourages students to continually learn how to learn together (Black et al., 2006; Sadler, 1989; Senge, 1990).

Participants in this present study perceived that in order to engage students in the learning process, they needed to provide a communicative, dialogic and interactive environment (Cowie & Bell, 1999; Clark, 2006). In doing so, these teachers have used a variety of formative assessment practices in their classroom to collect evidence, depending on the subject, the particular classroom circumstances and the purposes they wanted to fulfil at different age levels. These included oral questioning, small group teaching, review and revision, individual conferencing, commenting on or marking students’ performance, problem-solving, individual or class discussion, group work, worksheets, assignments and teacher-made-tests. These assessment strategies enabled students to collaborate freely with their peers, think creatively, discuss and make appropriate decisions about their learning. This is congruent with the current literature (see for example, section 2.3.2).

As I have already stated previously, teachers in this present study acknowledged the important role formative assessment plays in informing and involving the learners themselves in the process of assessment. However, a question often asked by teachers, including those involved in this present study, is “how do students use assessment to take responsibility for and improve their own learning?” In answering this question, Chappuis and Stiggins (2002) suggested that:

students’ involvement means that students learn to use assessment information to manage their own learning so that they understand how they learn best, know exactly where they are in relation to the defined learning

targets, and plan and take the next steps in their learning. Students engaged in the assessment for learning process when they use assessment information to set goals, make learning decisions related to their own improvement, develop an understanding of what quality work looks like, self-assess, and communicate their status and progress toward established learning goals. (p. 41)

Participants in this study saw the importance of involving students into the process of assessment. However, the strategies they employed in their classrooms do not go beyond 'peer marking' and 'commenting' on their peers' work, answers or presentation.

5.6.2 The effect of formative assessment on students' self-esteem

Three of the participants in this present study perceived self-esteem to be one of the keys to student's competence and success and it can be enhanced by building on students' intrinsic interests (Clarke et al., 2003; WNCP, 2006).

Like the Assessment Reform Group (2002), Black et al. (2004), Black and Wiliam (1998b) and Clarke et al. (2003), teacher participants reported low attaining students have low self-esteem and their low self-esteem is reinforced by constant failure in an examination driven learning environment while high attaining students have their high self-esteem reinforced by constant success. Students, who believe they can learn, face new challenges in a state of 'relaxed alertness', an optimum state to take risks and learn (AAIA, 2003). On the other hand, low attaining students who believe they cannot learn experience stress, when facing a challenge. So, according to Black and Wiliam (1998b), they 'retire hurt', and avoid investing effort in learning which could only lead to disappointment – hence no learning takes place.

It is worth mentioning here that grades and other extrinsic rewards were not the only factors inhibiting students' low self-esteem; there are external factors as well. For example, in this study, T2 identifies family and financial dilemmas, laziness, fear, shyness and students' cultural context as factors inhibiting students' low performance in her English class. This was supported by studies undertaken by the ARG (2002), Bishop et al. (2007) and Clark 2006).

Teacher participants in this study appear to hold two opposing views on the type of approaches they used in their classes to enhance student self-esteem. Some hold the view that students' self-esteem is enhanced by building on students' intrinsic interests (T1, T2 & T4) while others hold the view that students' self-esteem is enhanced by extrinsic rewards such as praise and encouragement, grades, prizes and so on (T3 & T5). However, research undertaken in this area (see for example Assessment Reform Group, 2002; Black & Wiliam, 1998b; Clarke et al., 2003; WNCP, 2006), suggested that a classroom culture promoting formative assessment which focuses on helping students to learn better, feel ownership and have choices in their learning can have a more positive effect on students' motivation to learn, rather than a school culture focusing on rewards, grades, 'gold stars' or ranking. Congruent with the research undertaken by the Assessment Reform Group (2002), Black & Wiliam (1998b) and WNCP (2006), participants in this present study suggested that formative assessment can enhance student motivation and self-esteem by providing feedback to move learning forward; providing the scaffolding that students need to genuinely succeed; emphasizing progress and achievement rather than failure and reinforcing the idea that students have control over, and responsibility for, their own learning.

Another method mentioned by these teachers, which could also have a positive effect on students' attitude to learn, is using classroom assessment for differentiating learning (T1, T4, & T5). They said that using various instructional approaches which are relevant, enabled students to work confidently and independently and to have control over his/her, own learning (WNCP, 2006).

The evidence from research (see for example, Black & Wiliam, 1998b) shows that high quality formative assessment does have a powerful effect on student learning. This is particularly effective for students who have not done well in school, thus narrowing the gap between low and high-achievers while raising overall achievement. In an attempt to help low-achievers, teachers in this study have suggested a variety of approaches, including individual conferencing, counselling and giving encouragement.

While formative assessment can have a significant effect on students' attitudes and achievement, the research findings suggested that its implementation in

secondary school classrooms depend on teachers' understanding and interpretation of the concept of formative assessment (Black & Wiliam, 1998b; Carless, 2007).

In a school culture where classroom assessments serve the primary purposes of selection, accountability, certification, promotion and qualifications, tension is possible between formative assessment and high visible internal and external summative tests, and nationwide examinations (Harlen, 1998; OECD, 2008; Pongi, 2004). Apparently, pressures from these internal tests and exams, together with the school wide external examinations, can restrict both teaching styles and engagement in the learning process - the best ways to develop the learning of their students (Aitken, 2000; Black et al., 2004; SI Ministry of Education, 2004). Although these tests and exams have their well established purpose and procedures, in securing public confidence in local schools, these teachers said that their undue influence on the development of effective formative assessment is a significant constraining factor with respect to sound teaching and learning (Aitken, 2000).

5.7 Implications on formative assessment for classroom practice

Assessment for formative purposes as a classroom strategy has implications for how teachers design and use classroom assessment practices and what teacher must prepare their students to do in their classroom.

The relationship between formative assessment and constructivist theories of learning in recent research has emphasized the need to *share learning goals with students* (Black, 2000; Wiliam, 2007/2008; Leahy et al., 2005; Wiliam, 2007/2008) and to incorporate *descriptive feedback into the scaffolding process* (Gipps & Tunstall, 1996; Shepard, 2000) which help students to recognize their next steps in the learning process. A teacher who shares ownership of assessment communicates trust in students and confidence in their abilities to understand and apply performance criteria (Brookhart, 1997).

In recent years, studies on formative assessment practices have emphasised the importance of having students *actively involved in the assessment process* (Black & Wiliam, 1998b; Wiliam et al., 2005; Wiliam, 2007/2008), allowing them to take

more control and more responsibility for their own learning, which indeed should enhance effort and achievement (Brookhart, 1997; 2007/2008; Chappuis & Chappuis, 2007/2008; Chappuis & Stiggins, 2002). To achieve this, teachers must have a better theoretical understanding of social constructivism and metacognition, otherwise, assessment will always sit outside learning, and teachers and learners will always play traditional rather than contemporary roles in the learning and teaching (assessment) process (Dixon & William, 2003). This will necessitate teachers altering their attitude and believing and thinking about assessment regarding that which prevents them from relinquishing previously held conceptions about the place and role of assessment in learning (Dixon & William, 2003a).

It was noticeable that when these teachers articulated their assessment practices, the planned use of formative assessment dominated. It would appear that if monitoring, analysis and reflection are to be an integral part of teaching, then teachers need further assistance in understanding using interactive formative assessment. If we are to increase teachers' knowledge of formative assessment, there needs to be focus on teacher professional development programmes (TPDP) and initiatives. If this is to be successful, I would suggest there needs to be a consistent approach, nation-wide, that focusing teachers' attention on both theoretical and conceptual notions underpinning formative assessment and deconstructing their current pedagogical practices.

Establishing effective formative assessment in a classroom necessitates teachers first of all providing a classroom climate conducive to effective learning. For students to learn, the fear of failure has to be removed to encourage honesty and openness, and to provide students with the support they require in trying out strategies in a safe and secure environment. Such a classroom climate allows students to be actively involved in the learning process (partner not recipient), and *let them to believe that all can learn and improve.*

Put simply, assessment for formative purposes has the following implications for classroom practice:

- Sharing learning goals with students.
- Involving students in self-assessment.

- Providing feedback that helps students recognise their next steps and how to take them.
- Being confident that every student can improve.

5.8 Conclusion

The conversations with five teachers in this study regarding their perceptions and understanding of the value of formative assessment in secondary schools in Solomon Islands demonstrated close links to the characteristics of good quality formative assessment. The analysis of these teachers' perceptions and understanding of what constitutes assessment for formative purposes was based on three common themes which emerged from participants' interview transcripts: teachers' perceived understanding, value and impact of assessment for formative purposes.

Clearly, there were noticeable gaps and variations between the teachers' perceptions and theoretical understanding of formative assessment and their capacity to implement the relevant practices in their classrooms. Although they could theoretically understand what constitutes formative assessment processes, they still lacked comprehensive and profound understanding of the real importance of formative assessment processes.

The findings of this present study indicated that formative assessment, as a classroom strategy, does have a place in secondary schools in Solomon Islands. The teachers in this study perceived that the form of formative assessment used in their classrooms was limited by policies, systems and methods employed by their schools.

This study suggests that if classroom teachers are to become effective '*mediators of learning*' they must have a better theoretical understanding of social constructivism and metacognition, otherwise assessment will always sit outside of learning, and classroom teachers and learners will always play traditional rather than contemporary roles in the learning and teaching (and assessment) process.

Finally, for improvements to be made in areas highlighted in this study, the focus must be on teacher knowledge and ability and the policies and practices of schools. Unless teachers, students, parents and policymakers value and see the potential for formative assessment, it will continue to be under-emphasized, undervalued and poorly used.

5.8.1 **Emerging professional development needs**

The conversations with the five classroom teachers involved in this present study revealed that carefully planned, sustained and holistic professional development is required if formative assessment is to be effectively incorporated into their classroom practices.

Current research findings revealed that classroom assessment in Solomon Islands secondary schools encourages superficial, rote learning (Ministry of Education, 2004; Pongi, 2004). There is little reflection on what is being assessed. Currently, assessment for summative purposes is over-emphasized (Ministry of Education, 2004; Pongi, 2004) and assessment for formative purposes is under-emphasized, undervalued and poorly used (Black & Wiliam, 1998b).

The evidence from the findings shows that teachers generally had a limited theoretical understanding of the theories of learning and how formative assessment could and should be integrated into the learning and teaching process, especially, those with no teaching qualifications.

Most of the teachers in this study found themselves complying with policies, agendas and structures which were institutionalised in favour of high-stakes summative assessment (Pongi, 2004). This was reflected in classroom assessments executed by these teachers. They inevitably used both internal and external summative examinations in various ways, with little feedback related to assessment of the formative kind. Often teachers believed they were assessing formatively, but were in reality completing on-going summative assessments used primarily for reporting purposes (Harlen, 1998; Dixon & William, 2003b).

There were noticeable gaps and confusion with teachers' articulated understanding of the concept of assessment for formative purposes. For example, feedback provided by these teachers was based on existing knowledge rather than new knowledge (Leahy, Lyon, Thompson & Wiliam, 2005) and these teachers tended to listen evaluatively to students' answers rather than interpretively (Davis, 1997).

Indeed, a classroom culture of negotiation, questioning, and focused thinking is required. If formative assessment is to be effective, it must promote and support change within the classroom. Whatever details emerged as components of professional development, they can only be judged as beneficial on the basis of their effects in the classroom. The Assessment Reform Group (1999) and Black and Wiliam (1998b) suggested that any professional development programme initiatives in this area should focus attention on how formative assessment, as a classroom strategy, can be used to:

- provide effective feedback to pupils
- actively involve pupils in their learning;
- assist teachers to adjust their teaching to take account of the results of assessment;
- recognize the profound influence assessment has on the motivation and self-esteem of pupils, both of which are crucial influences on learning;
- assist students to assess themselves and understand how to improve.

Presumably, any professional development programmes built around these three broad areas will only succeed if classroom teachers find their own ways of incorporating the ideas and practices into their own patterns of classroom experiences (Black & Wiliam, 1998b).

5.9 Limitations of the present study

This study required a few teachers in Solomon Islands to express their views on and perceptions and understanding of the value of formative assessment in secondary schools in Solomon Islands in general. The participants were from only five schools in Honiara, Guadalcanal, Solomon Islands, therefore the data

gathered does not adequately proportionately represent gender or ethnicity of the targeted population in Solomon Islands.

The present study was limited only to interviews. There were no observations made on classroom teaching, therefore it lacks evidence to support the information collected (self-reported). In transcribing the participants' interview transcripts from Solomon Islands 'Pidgin' to English, perhaps the originality of the participants' words may have been occasionally lost in translation. There is also a possible bias from the researcher's analysis and interpretation of the data.

The findings of the current study were based on the analysis of the perceptions of only five secondary school teachers who gave their personal responses to the main research questions, therefore the data collected does not include the perceptions of school principals, students, policymakers, parents and other teachers.

5.10 Recommendations

From the findings and analysis of this study and the literature reviewed on formative assessment, I believe improvements need to be made into classroom teachers' assessment for formative purposes in secondary schools in Solomon Islands.

Based on my study, I offer the following recommendations as strategies to improve formative assessment in secondary schools in Solomon Islands:

Recommendation 1: Assessment focusing on excellence and improved learning must be prioritized in Solomon Islands secondary school classrooms.

While assessment of learning for accountability is important in playing a role in the lives of students and the community, research (see for example, Black & Wiliam, 1998b; Ussher, 2001) suggests that improvement in learning for excellence is the foundation of a successful classroom programme. As alluded to in this study and elsewhere in both national and international literature, the potentially positive effects assessment has on students' self-esteem and learning is a significant feature of such an assessment. Within a learner-centred culture,

student's confidence develops as their ability to perform is identified and tracked through perceptive assessment practices (Ussher, 2001).

Recommendation 2: Guidelines covering assessments for formative purposes in Solomon Islands secondary classrooms are urgently required.

As indicated in this study, to maximise learning for all in the classroom, policy makers must pay greater attention to interactive formative assessment. For this to be successful, it is critical that a national framework be put in place to guide teachers, schools and their authorities in formulating classroom assessment for formative purposes (school-based or internal assessments). This assertion was supported by Pongi (2004), Director of South Pacific Board for Educational Assessment (SPBEA). He proposed each Pacific Island Country (PIC), including Solomon Islands, should develop an assessment framework in line with the curriculum framework - one aimed at promoting teaching and student learning.

Developing formative assessment guidelines might assist classroom teachers and their Education Authorities to devise school-based or internal assessments that are consistent with policy directions in Solomon Islands Curriculum Frameworks and assessments which meet the requirements of National Education Guidelines (NZ Ministry of Education, 2004).

Formative assessment guidelines are critical to secondary schools in Solomon Islands, especially with the implementation of school-based assessment (SBA) for subjects not currently examined externally, to ensure trustworthiness, reliability and validity. Now that the Government is planning to introduce basic education (BE) for all children in Solomon Islands from Standard one to Form three by 2015 (Ministry of Education, 2004, 2005), this formative assessment framework can play a significant role in assisting classroom teachers implement this initiative through school-based assessment (SBA).

Recommendation 3: Teacher development in formative assessment processes is needed.

While I acknowledged that formative assessment is currently utilized in secondary schools in Solomon Islands - as indicated in this study, the analysis of the research

findings also highlighted (see section 5.4) that teachers still lack theoretical understanding of what constitutes formative assessment. Research (see for example, Torrance & Pryor, 1997) revealed that this could be largely due to teachers' limited opportunities to develop knowledge of theories of learning and their relationship to theories and methods of assessment, including how assessment should be integrated into the learning and teaching process.

Developing teacher's pedagogical knowledge and understanding of contemporary theories of learning (cognitive, socio-cultural and constructivist) will give them renewed confidence to apply formative assessment in their classrooms and realize its potential in supporting learning. If we are to maximize formative assessment and capture its potential, then teacher professional development in formative assessment is critical.

5.11 Suggested areas for further future research

As indicated in this study, further research could:

- be conducted into the existing relationship between assessments for summative and formative purposes to confirm that summative assessment dominates.
- focus on students' perception of formative assessment in secondary schools in Solomon Islands.
- look into other aspects of formative assessment such as students' self-assessment.
- investigate how involved students are in their own learning (see p.12).
- focus on policy, to understand official strategies for assessment in Solomon Islands.

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