**DEVELOPING STANDARD-BASED FORMATIVE ASSESSMENT: A HANDBOOK
FOR GRADE 2 TEACHERS**

by

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Abstract

Assessment reform has drawn educators' attention to standard-based and performance-oriented assessment. By the end of the 1990s, many education systems around the world had developed mandatory learning standards for curriculum (O'Connor, 2018). The assessment reform has drawn educators' insights in effective formative assessment to enhance student learning. However, early year teachers have experienced difficulties in implementing effective formative assessment due to a lack of practical guidelines in relation to grade-level learning standards. The purpose of this project is was construct a practical handbook about standard-based formative assessment for British Columbia (BC) Grade 2 teachers. This project sifts through the existing literature and examines the five formative assessment approaches which were most reflected: teacher observation, self-assessment, oral questioning, teacher-student conferences, and performance assessment.

A qualitative research approach was employed in this project to analyze text data. My research process included collecting, organizing and analyzing data; creating a concept map; and constructing the handbook. The data came from multiple sources including 28 handbooks, 52 scholarly articles and 38 other publications on formative assessment.

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Chapter One: Introduction

The education assessment reform that began in the 1980's in North America has had significant impacts on the way educators think about the role of classroom assessment (Davies, 2011). The assessment reform has drawn educators' attention to standard-based and performance-oriented assessment. Mandatory learning standards have been developed for curricula (O'Connor, 2018). The learning standards describe what students are expected to know and able to do at different grades in K-12 schooling (Cooper, 2006; Davies, 2011; Earl, 2013; O'Connor, 2018; Schimmer, Erken, & Vagle, 2019; Volante, 2010). The standard-based assessment system focuses on output — what students will know and be able to do rather than input — the opportunities that will be provided to students to develop their knowledge and understanding. The standard-based assessment reform has shifted educators' insights from large-scale assessment (assessment of learning) to classroom assessment in service of supporting student learning (assessment for learning) (Davies, 2011; O'Connor, 2010; O'Connor, 2018; Volante, 2014).

Assessment for learning (AfL), often referred to as formative assessment, is an ongoing classroom assessment process that causes and forms learning with greater participation (Earl, 2013; Fisher & Nancy, 2007; McMillian, 2007; O'Connor, 2018; Stiggins, 2017; McTighe & Wiggins, 2005). AfL has existed as an informal activity for a long time in Canadian classrooms. It became a more formal practice more than 40 years ago when many educators and researchers emphasized the importance of everyday classroom assessment on promoting student learning and improving student achievement (Earl & Volante, 2015). The research-based AfL of the present day is reflected in practice and policy around the world and is adapted in policy frameworks throughout Canada and is a key part of educational programs Provincial assessment policies that

integrate A*f*L into the classroom are evident (Alberta Ministry of Education, 2018; British Columbia Ministry of Education, 2016; Ontario Ministry of Education, 2010; Western and Northern Canadian Protocols for Collaboration in Education [WNCP], 2006). Evidence of the integration can be found in the document titled *Rethinking Classroom Assessment with Purpose in Mind* (Western and Northern Canadian Protocols, 2006). This document revealed the important roles of Assessment *for learning*, Assessment as learning and Assessment of learning in classroom assessment. Western and Northern Canadian Protocols for Collaboration (WNCP) represents the Ministries of Education of British Columbia, Alberta, Manitoba, Northwest Territory, Nunavut, Saskatchewan, and Yukon Territory. This implies that the education systems in western and northern Canada including British Columbia (BC) have placed significant emphasis on A*f*L in classroom learning.

The BC Ministry of Education established a new concept-based, competency-driven curriculum for K-9 (the Newly revised Curriculum) in 2016. The revised curriculum includes *curricular competencies learning standards* and *content learning standards*. Curricular competencies learning standards describe what students are expected to do over time including the skills, strategies, and processes, while content learning standards define what students should know in a given area of learning at a particular grade level, including the essential topics and knowledge. The BC curriculum places a focus on classroom assessment. The *Framework for Classroom Assessment* in line with the new curriculum states that student progress in relation to the learning standards will be documented mainly by classroom teachers through formative assessment. The framework requires teachers to break down learning standards into criteria and conduct corresponded criteria-based classroom assessment (BC Ministry of Education, 2017).

Purpose of the Project

The standard-based assessment reform throughout Canada and the recent *BC Framework for Classroom Assessment* have placed a greater requirement on BC teachers' assessment literacy, that is, the knowledge, skills, and application of assessment principles and practices necessary to enhance student learning (BC Ministry of Education, 2017). There is an understanding that Canadian classroom teachers need support and resources in order to improve assessment literacy (Earl & Volante, 2015; Beckett & Volante, 2015). The literature has shown that the formative assessment approaches fall into seven categories: teacher observation, self-assessment, peer assessment, performance assessment, questioning, portfolio, and the formative use of tests. The focus of this project is a review of the existing literature on formative assessment in constructing a practical handbook of formative assessment strategies and tools in relation to BC learning standards for Grade 2 English Language Arts. The purpose of this handbook is for use as an additional resource for BC Grade 2 teachers to assist their classroom assessment practice.

Significance of this Project

The effectiveness of A*f*L in supporting learning has been acknowledged across Canada (Earl, 2010, 2013; Davies, Busick, Herbst & Shermand, 2014; Earl & Volante,2015; Beckett & Volante, 2011; O'Connor, 2010, 2011, 2018; Schimmer, 2013a, 2016). Multiple studies have clearly indicated the importance of A*f*L over the last few decades (Black & Wiliam, 1998; Crooks, 1988; Kluger & DeNisi, 1996; Natriello, 1987, as cited in Davies et al, 2015). Black and Wiliam (1998) conducted a large review from 250 studies and reported that formative assessment has had a significant impact on student learning, especially that of low achievers, thus reducing the achievement gap. Black and Wiliam (1998) found that formative assessment supports student learning by providing ongoing activities that guide students with what is the

next step in their learning process and guide teachers in improving their instruction. Canadian research has shown that when teachers effectively use consistent formative assessment strategies students become more engaged in learning and achieve greater success (Earl, 2013; Davies, Busick, Herbst & Shermand, 2014; Beckett & Volante, 2011; Schimmer, 2013a). Thirty-six researchers from 12 countries met in New Brunswick in 2014 to discuss how formative assessment supports learning. The latest research in theory, policy and practice in classroom assessment was presented (Davies, Laveault, & Sherman, 2014). The BC Ministry of Education (2017) revealed that effective classroom assessment has resulted in a more assessment literate culture in schools, greater provincial consistency, and increased student achievement.

Although the research showed that formative assessment could enhance student learning, it is evident that teacher practice in Canada lags behind current research in A*f*L(Davies, et al, 2014, Beckett, Drake &Volante, 2010; O'Connor, 2017). Canadian assessment researchers Earl, DeLuca, and Volante (2015) suggested that additional research is needed to support teachers in fully implementing A*f*L in diverse teachable subject areas. Beckett and Volante (2015) conducted a three-year study in elementary and secondary schools in Ontario and found that most of the teachers still overemploy summative assessment and only a minority use formative assessment on a regular basis. Beckett and Volante (2011) concluded that there is a research-practice divide in implementing formative assessment in Canada.

A study that examined teacher education programs and interviewed teacher candidates in higher education indicated that classroom attempts in conducting effective formative assessment are inadequate (Fazio & Volante, 2007). Fazio and Volante (2007) found that teacher candidates in higher education in Canada still need further training in formative assessment. The sixty-nine teacher candidates involved in Fazio and Volante's (2007) study highly rated their need for

further training in formative assessment approaches such as portfolio and performance assessment.

Beckett and Volante's (2011) study indicated that in-service teachers are experiencing difficulties in using particular formative assessment approaches such as peer assessment and self-assessment. The authors suggested that insufficient understanding of the different approaches of formative assessment can cause an imbalance between the use of formative assessment and the improvement in student learning. However, the literature shows that there is not enough research with an emphasis on formative assessment approaches in professional development (Beckett &Volante 2011; Cooper, 2006; Chappuis & Stiggins, 2002). Most of the hitherto research is limited to examining different approaches toward summative assessment.

The literature also shows that there is not enough internal professional development that guides teachers in how to integrate formative assessment into teachable subject areas (Beckett & Volante, 2011; Davies et al, 2015; DeLuca & Volante, 2016). Most of the professional development is from external resources such as a college Faculty of Education (DeLuca & Volante, 2016). It's pointed out that these one-day off-site workshops are not effective in improving assessment literacy as training must be followed by coaching and mentoring in individual classrooms (Cooper, O'Connor, & Wakeman, 2009). Beckett and Volante (2011) argued that teachers would benefit more from internal professional development by sharing good practices and seeing what good assessment looks like in particular subject areas. Davies et al (2015) examined eight positional leaders' experience as they implemented AfL and found that school and system leaders had insufficient support for providing good quality professional development. The BC Ministry of Education (2017) conducted a large-scale project by hosting eleven community open houses and some small group parent meetings throughout BC This

research sought feedback from parents regarding assessment of their child's learning. The reports showed some concerns from the parents such as not receiving enough effective feedback; not having enough clarity regarding performance scales; not maintaining sufficient communication between school and home; and having confusing and unsupported student-initiated assessment and peer assessment (BC Ministry of Education, 2017). All of these factors imply a recent surge in creating resources which are intended to help teachers link current theoretical frameworks to daily formative assessment practices to improve their assessment skills.

My experience of teaching Grade 2 literacy provided an opportunity to realize the significant impact of formative assessment on teaching and building student motivation and confidence toward learning. However, I noticed that there is a lack of practical and ready-to-use formative assessment resources that are directly linked to the grade-level learning expectations. This deficiency can lead to exhaustion and frustration. My belief in formative assessment's significant impact on learning caused me to take the initiative and write a user-friendly handbook for myself and my colleagues.

My teaching experience has helped me realize that teachers need easy and practical resources that might resemble a cookbook that provides step-by-step guidance. The literature shows that there exists guidebooks and manuals that offer in-depth information for teachers on formative assessment (Boushey & Moser, 2009; Cooper, 2006; Davies, 2011; Earl, 2013; Earl & Katz, 2006; Fenwich & Parsons, 2000; O'Connor, 2018; Hellsten, Klinger & McMillan 2010; Siggtins, 2005). This research indicates that manuals that specifically present practical assessment strategies regarding the Grade 2 learning standards are rare. I noticed the information provided in the existing relevant manuals is either too academic or broad for grade two teachers to employ in their daily teaching. I believe that what early year teachers need is a formative assessment

handbook presented in a way that is easy to understand and appealing to read like a cookbook. This project is significant in terms of assisting teachers to plan and implement formative assessment in a more effective and efficient way. This project may save time in selecting relevant materials from the endless collection about formative assessment. The information in this project is presented in easy-to-understand language with graphic organizers in order to make it more appealing to read.

This project is also significant for me in that the process of constructing the handbook has deepened my understanding of formative assessment and the handbook itself serves as a tool kit for my own teaching. I consider it a privilege to be an early year teacher and take it as my responsibility to establish a handbook of comprehensive formative assessment tools for my teaching.

Personal Location

I am a full-time Chinese student enrolled in the Master of Education in the specialization area of Multidisciplinary Leadership (MDL) program at the University of Northern British Columbia (UNBC). I have spent time researching literature in the area of formative assessment during my time in this program. The motivation to research this project came from my four years of experience in teaching and using educational assessment tools while being employed in the Chinese public-school system and the Canadian international school system.

My interest specifically informative assessment tools stems from my working experience of administrating and organizing educational assessments in the British Council, the International English Language Testing System (IELTS) Test Centre and the electronic testing center of Pearson Education (Pearson VUE). I have supervised over 100 high-stakes standardized examination periods while monitoring thousands of exam candidates. I was overwhelmed by the

negative format of high-stakes standardized testing (McMillan, 2007). Those high-stakes standardized tests require students to answer the same questions and are scored in a "standard" manner in order to compare the relative performance of individual test takers (Kohn, 2011, 2015). Administrating the exam periods allowed me to observe student behaviors as they wrote these high-stakes tests. My observation of test anxiety made me realize that I am in favor of alternative assessments rather than only standardized testing. Since then, my interest in researching educational assessment has been growing inside me.

I taught English in the Chinese public school in Guangdong province. The classroom routine was to have informal class quizzes regularly and formal tests monthly and annually. The general evaluation methods in that public school did not include many other assessment strategies. My experience of using many standardized tests in this public school led me to inquire more about alternative assessment.

I have taught in a Canadian International Baccalaureate (IB) school located in China for the past two years. I had an opportunity to collaborate with Canadian teachers to learn and practice a variety of formative assessment methods on a regular basis. The Canadian International School is accredited by the New Brunswick Department of Education, Canada. This multicultural school population is comprised of students from all over the world while most teachers are from Canada. I taught English as an Additional Language (EAL) in the first year as a Grade 2 language teacher and I also taught mathematics, literacy, and units of inquiries in my second year as a Grade 2 homeroom teacher. I used a variety of formative assessment methods including performance assessment, self-assessment, peer assessment and portfolios. These assessment strategies enhanced my teaching and provoked an interest in researching formative assessment. I realized how powerful and important formative assessment is in teaching and learning. This realization is

the driving force behind my interest in this research project. Our staff spent considerable time determining a common understanding of formative assessment and searching for formative assessment tools at our grade-level collaborative meetings on which we often had difficulty in reaching agreement. These discussions and my personal experiences have led me to conclude that a teacher handbook would be an excellent way to inform teachers about how to conduct effective and systematic formative assessment.

Conceptual Framework

This project was designed with the conceptual framework of assessment for learning as described by Earl (2013) and Earl and Katz (2006)**.** The framework currently forms the basis for the official document entitled *Rethinking Classroom Assessment with Purpose in Mind (*the Western and Northern Canadian Protocols for Collaboration in Education–WNCP, 2006). The framework outlines three purposes of assessment that guide teachers in how to implement effective, efficient and fair classroom assessment practices: assessment for learning, assessment as learning (A*s*L), and assessment of learning (A*o*L).

Earl and Katz (2006) suggested that classroom assessment plays a major role in how students learn, their motivation to learn, and how teachers teach. However, the power of assessment for learning and assessment as learning was more emphasized in the framework. Earl and Katz suggested that the quality of assessment depends on reliability, reference points, validity and record-keeping, while the key issue concerns matching assessment approaches with the purpose. The framework suggested that planning classroom assessment based on learning expectations results in coherent, efficient and effective classroom assessment. Earl and Katz suggested that teachers can use many different strategies and tools for classroom assessment and can adapt them to suit the purpose and the needs of individual students.

Rethinking Assessment with Purpose in Mind provides a detailed description of the three purposes of assessment (WNCP, 2006). This forms the framework for thinking about how to select or develop assessment tasks; how to use them; and how to achieve buy-in from students, parents, and others. Case examples from teachers in Western and Northern territories and provinces are included for the three purposes of assessment (WNCP, 2006). The framework also provides suggestions on how educators should engage in the process of rethinking and changing assessment. It suggested that rethinking assessment is a collaborative process of professional learning and requires systematic planning and implementation at the level of the school, the district or division, and the province or territory (WNCP, 2006).

This study also refers to the *Framework of Classroom Assessment* in order to examine the policy and framework specifically for the BC education system (BC Ministry of Education, 2017). The framework was created by the BC Ministry of Education and educators throughout the province in order to provide teachers with additional assessment supports aligned with the new concept-based and competency-driven curriculum (BC Ministry of Education, 2017). The suggested use for this framework is classroom assessment support materials for teachers' daily practice in BC. Students' learning achievement in relation to the learning standards is required to be documented mainly by classroom teachers through formative assessment throughout K-12 as stated in the newly revised curriculum expectations. Therefore, the *BC Framework of Classroom Assessment* focuses on classroom assessment and describes criteria-referenced formative assessment as the basis for assessing students' learning. The assessment criteria focus on the essential learning goals of specific knowledge and competencies within the grade level.

The collaborating team of BC educators and teachers have broken down the learning standards from the revised curriculum into criteria categories that reflect the key competencies

within an area of learning (Figure 1). Figure 1 displays the procedure of how curricular

competencies are broken down into criteria. For example, for the subject of English Language

Arts, the criteria categories are outlined as the five consistent groupings throughout K-9: 1)

engaging and questioning; 2) processing; 3) analyzing; 4) recognizing identity and voice; and, 5)

constructing and creating (the BC Ministry of Education, 2017d). Teachers may choose one or

more of the categories that are relevant to particular tasks or contexts when they are assessing

students' work. These categories are not mandatory and are intended only to support teachers in

their assessments. The framework also outlines the assessment criteria within each category that

reflects specific competencies within the grade-level bands. The criteria are similar across grades,

creating a continuum, giving teachers a picture of the past or the future criteria of the grade they

are working with. The relatively broad criteria focus on the essential learning goals and thus

provide teachers with flexibility for designing specific tasks based on their classroom context.

The framework also proposes six potential assessment approaches (applications) to develop

criteria-based classroom assessment: observation/ reporting, continuum/ rubric, reflection

prompts/ self-assessment, interviews/conference and teacher/ peer feedback (the BC ministry of

Education, 2017d). However, there is acknowledgement that teachers can develop their own

assessment formats in various ways and may elaborate the suggesting criteria with more specific

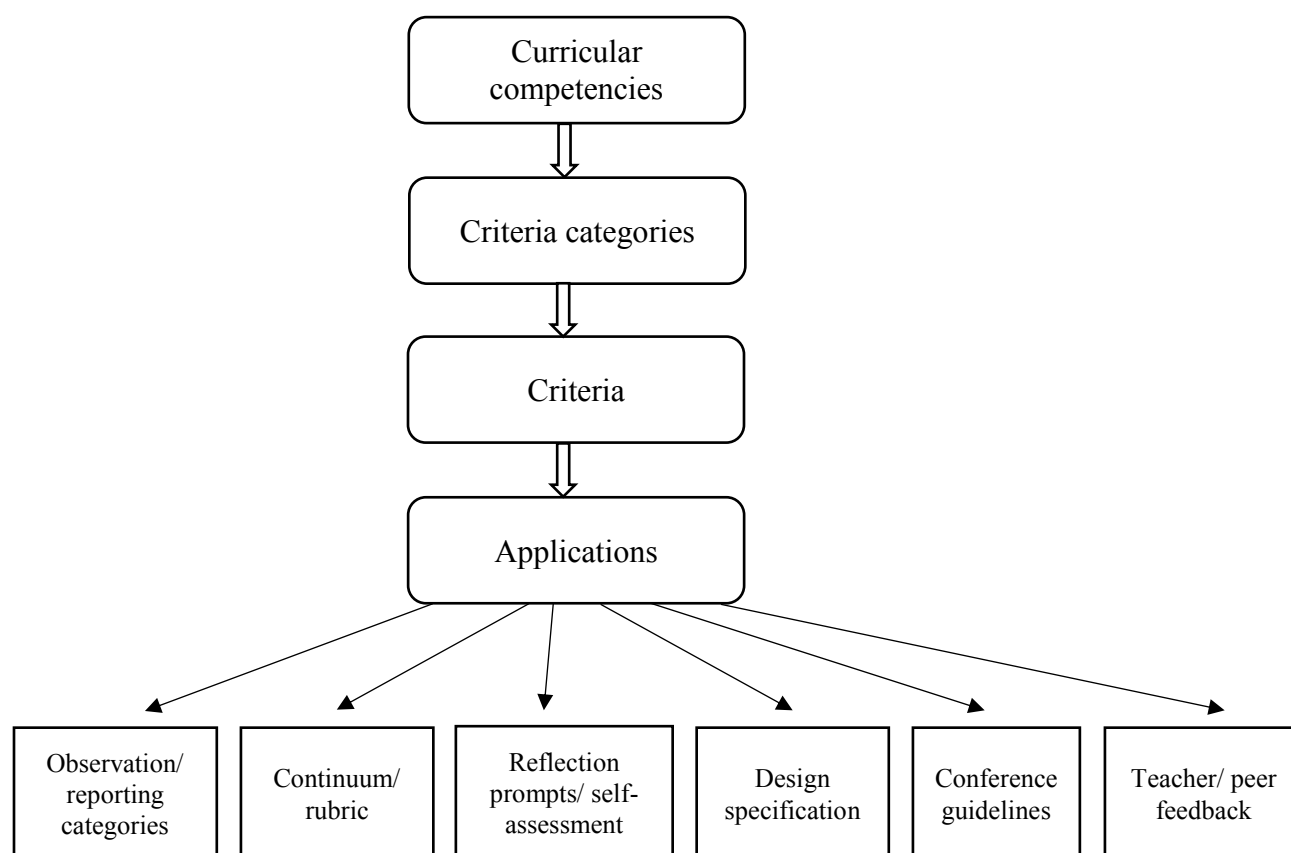descriptors based on particular tasks and learning contexts.

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Observation/ reporting categories	Continuum/ rubric	Reflection prompts/ self-assessment	Design specification	Conference guidelines	Teacher/ peer feedback

Figure 1. Framework for Classroom Assessment (BC Ministry of Education, 2017)

Chapter Conclusion

The goal of this project is to create an easy-to-understand formative assessment handbook for teachers to assist them in how to conduct formative assessment in a more effective and efficient way. The handbook begins with offering general information and orientation, introduction of formative assessment, and guidelines for matching formative assessment strategies with learning standards.

The main part of the handbook presents the five approaches of formative assessment strategies: teacher observation, self-assessment, teacher-student conferencing, oral questioning, and performance assessment. Each approach follows the same layout: a definition of that formative assessment strategy, when to use that strategy, and three to four sample tools of that

strategy. This simple layout is to ensure that as many teachers and parents will be able to use the handbook as possible. The handbook also provides links and further resources to supplement the handbook.

This chapter has presented the background of this project, its purpose and significance, the researcher's personal location and theoretical framework. The next chapter outlines the formative assessment literature reviewed for this project.

Chapter Two: Literature Review

It is essential to analyze formative assessment research literature to understand the necessary information that should be included in the handbook. The goal of this literature review is to explore the current literature and research surrounding formative assessment as well as various materials and handbooks administered by educators in Canadian elementary schools.

This chapter is organized into three sections that inform the reader of the three purposes of assessment: assessment for learning, assessment as learning, and assessment of learning. The second part of this chapter examines seven formative assessment approaches: teacher observation, self-assessment, peer assessment, performance assessment, questioning, portfolio, and the formative use of tests. The last part of this chapter includes information that presents the relationship between formative assessment and the newly revised BC curriculum.

Key Assessment Terms and Their Relationships

Assessment is the systematic process for collecting data that can be used to make inferences about student learning (Black & Wiliam, 2010; Hellsten, Klinger & McMillan, 2010; Stiggins 2017). Assessment serves many purposes for the public, the school districts, and policy makers. The three main categories of assessment are assessment for learning (A*f*L), assessment as learning (A*s*L), and assessment of learning (A*o*L) (Earl, 2013; Earl & Katz, 2006).

Assessment for learning is assessment designed primarily to promote learning. A*f*L includes diagnostic assessment as an *initial assessment* and progresses to formative assessment with students being continuously assessed and given feedback for improvement. Assessment as learning is considered as a subcategory of A*f*L and frequently described as self-assessment in some education systems (Stiggins, 2005; McMillan, 2010; Cooper, 2006; Fisher & Frey 2007). However, A*s*L is emphasized as one of the three purposes of assessment in some other education

systems, especially in the Canadian literature (Davies, 2010; Earl, 2003; Earl & Katz, 2006). A*s*L is the assessment process that involves student ownership of their own learning through monitoring, challenging and adjusting their strategies and understanding. Assessment of learning is assessment designed primarily to determine student achievement at a given point in time. A*o*L is a summative assessment that occurs at the end of a learning period and summarizes student achievement of learning (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; O'Connor, 2018; Schimmer, 2019).

Assessment for Learning

A*f*L is an ongoing process that causes and forms learning. It is when students learn through assessment rather than having the assessment as merely a proof of what students have learned. Students are informed of where they are and where they need to go in their learning; therefore, it is also considered formative assessment (Cooper, 2006; Davies, 2011; Earl, 2013; Earl & Katz, 2006; Earl, DeLuca & Volante, 2015; Fisher & Nancy, 2007; O'Connor, 2018; Schimmer et al, 2019; Stiggins, 2005). Performance tasks, project-based learning and oral questioning are common forms of formative assessment in which assessment itself can be the means for learning (Benjamin, 2013). Stiggins (2005) stated that traditional tests can also be turned into formative assessment by including meaningful follow-up feedbacks that are beyond the mere correction of wrong answers. Schimmer (2011a) noted the function of formative assessment is more important than the format. The literature indicated that any assessment format may be used as formative assessment as long as the results of a test or project are used to inform learning (McMillian 2007; Schimmer, 2011a; Stiggins, 2005).

Formative assessment involves a set of ongoing activities that are undertaken by teachers and their students with feedback to guide students in what the next step in their learning process is

and guide teachers in improving instructional methods (Absolum, 2010; Black et al, 2004 Brookhart, 2010; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; McMillan, 2007; Stiggins, 2007, 2017; McTighe & Wiggins, 2011; Leahy & Wiliam, 2015). Black and Wiliam (2010) stated that formative assessment is usually informal and occurs during instruction and there is no one simple set of activities that constitutes formative assessment; it is not a *quick fix* process with a single formula. Hellsten, Klinger, & McMillan (2010) suggested that the efficacy of formative assessment relies on three elements: 1) the extent to which assessment tools are embedded in the classroom instruction, 2) the extent to which additional instructional strategies are employed, and 3) the extent of student engagement and learning.

Black and Wiliam (1998) reviewed more than 580 articles and chapters on assessment worldwide and summarized them into a lengthy review which reveals that improving the quality and effectiveness of formative assessment raises student achievement in both classroom and large-scale tests. Black and Wiliam reported that improved formative assessment helps low achievers especially, resulting in a narrowed achievement gap.

A two-year follow-up project that supported Black and Wiliam's findings was conducted in 1999. The project entitled *King's-Medway-Oxfordshire Formative Assessment Project* (KMOFAP) involved 24 teachers from six schools in two local authorities in Oxfordshire and Medway and a research team from King's College London (Black, Harrison, Marshall & Wiliam, 2018). The KMOFAP project revealed that enhanced formative assessment produces significant learning gains. The teachers involved in this project developed innovative formative assessment practices based on research findings and all attained positive change in their classrooms.

The following sections examine the common features of A*f*L from the literature: formative assessment cycle, supporting learning, active involvement and intrinsic motivation, effective feedback, instructional corrections, and clear learning expectations.

Ongoing classroom assessment cycle. McTighe and Wiggins (2005) noted that assessment should be thought of as a *collection of evidence* over time instead of a test at the end of instruction because understanding develops as a result of ongoing inquiry and rethinking. Teachers are suggested to employ a circular, continuing process involving their evaluations of student work and behavior, feedback to students, and instructional correctives to conduct effective formative assessment (Absolum, 2010; Cooper, 2006; Davies, 2011; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2011; Schimmer, 2019; Stiggins, 2005). Hellsten et al. (2010) established the *Formative Assessment Cycle* to describe the process of formative assessment (Figure 2). The Formative Assessment Cycle has three phases: 1) teachers evaluate student progress on what students learn, understand, and can do through collecting information, 2) teachers provide immediate, appropriate, and specific feedback to students, and, 3) the feedback is followed by instructional correctives—activities that broaden and expand learning or correct misunderstanding. Teachers follow student engagement with new learning strategies and make additional evaluations of student learning and then the cycle is repeated. The formative assessment cycle is based on the cognitive and constructivist learning theories that learning is a process of constructing understanding during which individuals attempt to connect new information to what they already know (Vygotsky, as cited in Cooper, 2006).
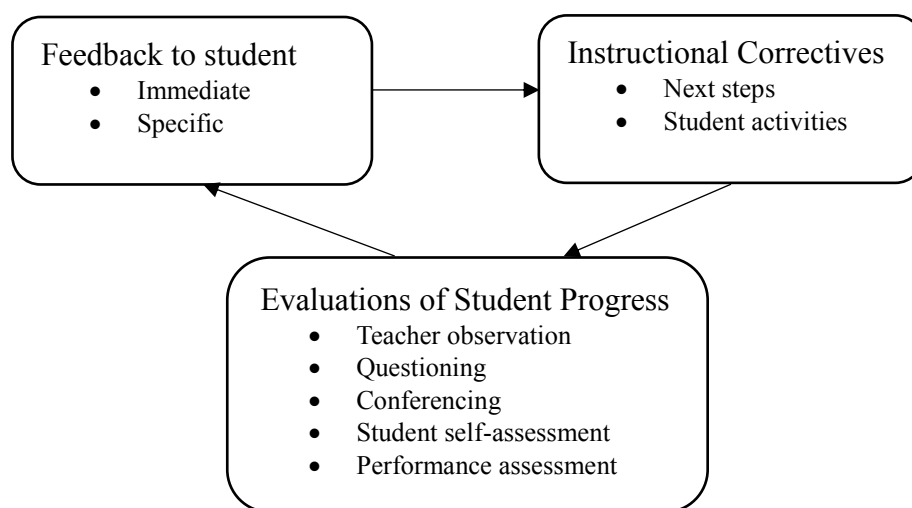
Figure 2. Formative Assessment Cycle (McMillan, 2007)

  Informing learning. Multiple studies have showed that formative assessment has significant impact on learning (Black & Wiliam, 1998; Stiggins, 2005; McTighe & Wiggins, 2005). The prioritized purpose of formative assessment is to provide teachers and students with diagnoses during learning processes in order to make decisions that will bring about more learning. Hellsten et al. (2010) and Stiggins (2005) suggested that students learn through formative assessment rather than having the assessment measure what has been learned. The process of working through the task that is being assessed provides opportunity for learning and informs students themselves about how to improve their achievement. Formative assessment helps students answer three questions: *Where am I going? Where am I now? How can I get there from here?* Students know what the learning expectations is, how to evaluate and monitor their own progress, and what to do to get themselves from where they are to where they need to be (Chappuis & Stiggins, 2005; Stiggins, 2005).

  Active involvement and intrinsic motivation. The literature indicated that formative assessment opens the assessment process and involves students as owners of learning (Absolum,

2010; Cooper, 2006; Davies, 2007; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2005; Schimmer, 2019; Stiggins, 2005). Earl (2013) stated that the ability to monitor one's own learning is one of the most important benefits of formative assessment. Stiggins (2009) suggested teachers maximize the power of formative assessment by creating assessment that involves all students. Black and Wiliam (1998) found when teachers employ effective formative assessment and give students more control in assessment, students become more confident and more active in their own learning. Students take more responsibility for their own learning when seeing their learning progress and believing that they can achieve their learning.

Formative assessment is consistent with cognitive theories of learning that emphasize intrinsic motivation (Hellsten, Klinger & McMillan, 2010). These theories indicate that teachers cannot teach students everything that they need for the uncertain future nor motivate them based on judgment on their achievement (Pink, 2009). Students will more likely be motivated when they experience progress and achievement associated with seeing their own learning journey, rather than the failure and defeat associated in comparison to their more successful peers (Pink, 2009; Medina, 2008; McTighe & Wiggins, 2005; Stiggins, 2017).

Effective feedback. Effective feedback is an important component in formative assessment. The literature showed that students' learning can be enhanced significantly by receiving descriptive feedback (Cooper, 2006; Davies, 2007; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2005; Schimmer, 2019; Stiggins, 2005). Black and Wiliam (1998) conducted a comprehensive review of studies on feedback given to students and discovered 60% of the studies suggested feedback can improve students' achievement. The research literature

shows that effective feedback has the following characteristics: 1) relates performance to criteria; indicates progress and corrective procedures, 2) occurs frequently and immediately, 3) provides specific and descriptive information, and, 4) focuses on key errors and effort attributions (Absolum, 2010; Balck & Wiliam, 2010; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2007, 2017; McTighe & Wiggins, 2005; Leahy & Wiliam, 2015).

Studies have shown the negative impact of numerical scores or letter grades as they cannot inform students about how to improve their work. Numerical scores or letter grades distract students from authentic learning as students and teachers pay too much attention to grading at the expense of learning from descriptive comments (Black & Wiliam, 1998; Chappuis & Stiggins, 2005; Cooper, 2006; O'Connor, 2018). Educators suggested that teachers provide students with clear and descriptive feedback that informs them about where they are, and what they need to do next in order to improve. Black and Wiliam (1998) suggested teachers give students opportunities to respond to teachers' comments and maximize the power of effective feedback by reducing the distraction of scores or grades.

Instructional correctives. One of the core fundamentals behind formative assessment is instructional response from the teacher, leading to application to create change by the student. Instructional correctives are important processes where teachers use assessment information, modify their instruction and decide on the next steps (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; Schimmer, 2019; Stiggins, 2005). Cooper (2006) argued that activities serving as formative assessment must have the potential to influence what the teacher will plan to do next. McMillan et al. (2010) claimed that assessment without instructional changes is not formative. The authors also suggested that instructional changes be qualitatively different from the initial teaching and

contain new instructional strategies because it is not effective to simply repeat an unsuccessful activity.

   Clear learning expectations. The literature shows that learning expectations must be transparent to students to enable them to have a clear overview of learning goals and what completing each step in the process signifies (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; Schimmer, 2019; Stiggins, 2005). It is suggested that activities only serve as formative assessment when the teacher creates a direct link between the activities and the intended learning expectations. McTighe and Wiggins (2005) provided teachers with a simple and logical approach called the *Backward Design Model*, which connects learning expectations, assessment and instruction. Teachers begin with *the end* or the learning expectations in mind and plan learning experiences and instruction accordingly (Figure 3).

    Chappuis and Stiggins (2005) claimed that teachers and students cannot *partner* effectively without a shared vision of *the enterprise* of learning. The effectiveness of student involvement in the assessment process depends on their understanding of the learning expectations. Researchers suggested that teachers need to break down standards into specific learning targets and write learning targets in terms that students will easily understand (Fisher & Frey, 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2005).
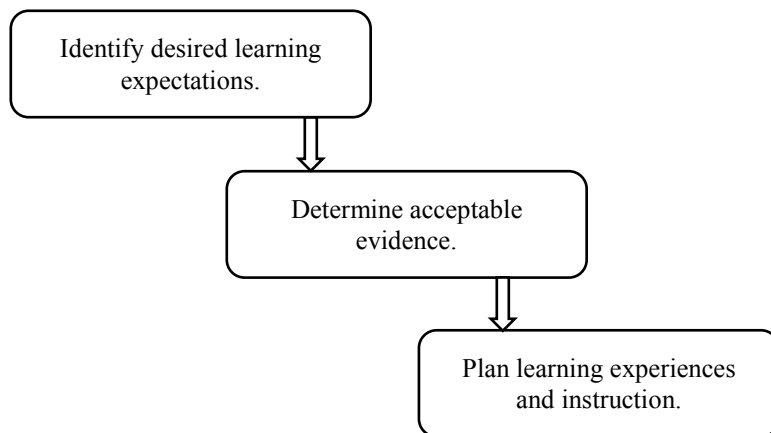
```
┌─────────────────────────┐
│ Identify desired learning│
│      expectations.       │
└─────────────────────────┘
             │
             ▼
   ┌─────────────────────────┐
   │  Determine acceptable    │
   │       evidence.          │
   └─────────────────────────┘
                │
                ▼
      ┌─────────────────────────┐
      │ Plan learning experiences│
      │     and instruction.     │
      └─────────────────────────┘
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Figure 3. The Backward Design Model by McTighe and Wiggins (2005).

Assessment as Learning

A*s*L is the collaborative process with activities enabling students to take ownership of their learning. There are common features of A*s*L in the literature including students as key assessors, clarity of what good work looks like, safe environment, descriptive feedback, and relating content to prior knowledge. Teachers use A*s*L to obtain rich and detailed information about how students are progressing in developing the skills to monitor, challenge, and adjust their own learning. A*s*L is the learning process that focuses on students' metacognition or the awareness and analysis of one's thinking processes (Earl, 2013; Earl & Katz, 2006). Metacognition occurs when students make sense of the information, relate it to prior knowledge, and use it for new learning. Students are the key assessors and the critical link between assessment and their learning (Earl & Katz, 2006). A*s*L aims to assess the extent to which students understand concepts and how they use metacognitive analysis to make adjustments to their previous understanding (Earl & Katz, 2006). The teacher's role in A*s*L is to monitor students' goal-setting processes and their thinking about their learning and the strategies that students use to support or challenge their thinking. Many assessment methods can be used as long as they allow students to connect learning to the images of what quality learning looks like

such as models, exemplars, criteria, and checklists. Good practices of assessment as learning focus on how well the practices engage students in thinking critically, and in making judgements about their ideas and understanding. Earl (2013) specifically posited that, unlike A*o*L and A*f*L, the reference point of A*s*L is a blend of students' prior knowledge and curricular learning expectations.

Assessment as learning has research-based support. Dewey (as cited Davies, 2011) described learning and self-assessment as a continuous cycle, or *a learning loop,* that is continuous in that we learn, we assess, and we learn more. The impact on the brain type of research revealed the brain to be *self-referencing* with a focus on the significant metacognitive impact of self-assessment in learning (Davies, 2011). Multiple researchers have shown that learning is constructing thoughts and making sense of the world around us (Earl, 2013; Stiggins, 2005; McTighe & Wiggins, 2005). Student learning outcomes is the expectation they can critically think, problem solve, and be self-motivated lifelong learners in the modern world (Davies, 2011). Deep learning occurs when students interact with new ideas instead of just transferring ideas from external sources (Davies, 2011). Students must learn to be critical assessors of their learning, they must be able to monitor their own learning, and the must be able to use what they learn to make adjustments and adaptations in their thinking to develop a deep understanding of their learning and the content being learned (WNCP, 2006).

Students as the key assessors. One of the main features of A*s*L is that students are their own assessors (Earl, 2013; WNCP, 2006). Students have high involvement in determining the learning goals, learning criteria, learning methods and potential ways of showing evidence of their learning. Research showed that students are actively engaged and motivated in the real work of learning when they are their own assessors (Cooper, 2006; Earl, 2013; Earl & Katz,

2006; Davie, 2007). Being their own assessors increases students' self-awareness and helps them see mistakes and variations of success so that they are able to make adjustments. Sharing the decision making and giving students opportunities to practice assessing their own work build their confidence and competence in making important judgements about and adjustments to their learning. The teacher's role in A*s*L is to model and teach the skills of self-assessment, guide students in setting goals, and provide exemplars and models. Earl (2013) suggested teachers build up a routine and create more opportunities for students to practice self-assessment skills and develop internal feedback to become competent assessors.

Metacognition. Another key feature of A*s*L is that it allows metacognition to happen during the assessment process (Earl, 2013; WNCP, 2006). Students are able to be aware of and analyze their thinking in the process of metacognition as the process of metacognition. Students are able to monitor and challenge their understanding by making connections between different information, organizing and reorganizing ideas. Ideas are the raw material for this process of metacognition, and existing knowledge and beliefs can enable or impede new learning. Students are also able to make adjustments to their understanding and develop new learning through relating the raw material with prior knowledge or through discussion and challenge with external sources such as peers, teachers, or parents (Earl, 2013; Davies, 2011). Effective learners develop cognitive routines for organizing, synthesizing and reorganizing ideas. The learners also self-engage to provide themselves with internal feedback that leads to the new ideas or learning (Earl, 2013).

Clarity of what good work looks like. Students are provided with sufficient clarity of what good work looks like in A*s*L. Earl (2013) and Davies (2011) suggested that it is important to break down learning standards into student-friendly criteria or personal learning goals in order

to enable students to have a clear image of the learning expectations. Teachers can make the learning expectations by telling students what they are expected to learn, eliciting criteria, providing examples of quality work and modelling how to produce good work (Davies, 2011; Earl, 2013). Learners eventually become more independently responsible for these processes. Davies (2011) established a four-step model for setting criteria: first, students brainstorm their ideas about good qualities of particular tasks or performances; second, students are asked to sort and categorize these good qualities; third, students name each category; and, fourth, teachers and students work together to add, revise, and refine these criteria. Earl (2013) suggested providing models or examples from the previous-year students to have the current learners acquire a better image of the learning expectations so that they are aware of the variations of "good work." The author also suggested that teachers offer examples in the intermediate stages and share stories about how experts sometimes struggle in meeting their own goals. In A*s*L, students shift from asking, "What did I get?" or "What are you going to give me?" to becoming more aware of knowing how they are doing and what is the next step in their own learning (O'Connor & McTighe, 2005).

Safe environment. A safe environment for taking chances and making mistakes while support is available has been frequently mentioned in the literature in relation to A*s*L (Earl, 2013; Earl & Katz, 2006; Davies, 2011). Research has shown that a safe environment is the foundation of effective A*s*L as students' self-esteem and emotion greatly determine the extent to which students are willing to engage in assessment (Earl, 2013; Davies, 2011; WNCP, 2006). Gipps, McCallum and Hargreaves (2000) found that *emotional safety,* that is the sense of confidence, competence, and being supported, played a critical role in risk taking. The authors noted that students fear failure and are reluctant to try again when they are exposed to an assessment

environment without *emotional safety* where students are surrounded by previous failure, frustration, and anxiety. Davies (2011) suggested that students can be engaged in assessment when students are aware that mistakes are essential for learning, know how to give help, how to get help, what support to get, and how to use the support.

Descriptive feedback. One important feature of A*s*L is that teachers provide descriptive feedback regarding students' metacognitive processes as well as help students develop stills of constructing descriptive feedback for themselves or peers (Earl, 2013; WNCP, 2006). Providing current, accurate, and focused feedback allows students to see the gap between their learning and reference points as it relates to prior knowledge and curricular learning expectations. With descriptive feedback, students are more motivated and likely to work with their conceptions and make adjustments. Earl (2013) suggested that teachers provide both informal and formal feedback as they both have their important roles in guiding students towards further learning. Informal feedback can refocus on students' thinking and allow them to collect their thoughts and feelings, so that they can carry on with less frustration and confusion. Formal descriptive feedback for A*s*L can occur when teachers meet students to discuss their learning. This type of feedback provides students with a chance to regroup, establish reaffirm their strategies, and try again with renewed and additional learning approaches (Earl, 2013). Teachers need to guide students in developing the skill internal descriptive feedback. This skill includes knowledge and strategies to validate and question students' own thinking, and to become comfortable with the inevitable uncertainty in inquiring about new knowledge.

Assessment of Learning

Assessment of Learning (A*o*L) is often referred to as summative assessment in the literature and is for the purpose of evaluation and the demonstration of curricular learning outcomes

(Absolum, 2010; Cooper, 2006; Davies, 2007; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2005; Schimmer, 2019; Stiggins, 2005). A*o*L informs teachers, parents or outside educators of students' proficiency in relation to curriculum learning outcomes in the form of a final grade. It often affects important decisions about students' future (Earl, 2013; Earl & Katz, 2006; Davies, 2007; O'Connor; Schimmer, 2013). For example, teachers use the information from A*o*L to communicate with parents about their children's proficiency and progress; potential employers and schools use the information to make decisions about hiring or acceptance; principals, district or administrators use the information to review and revise programming. The common features of assessment of learning are finality of learning, large-scale testing, reporting with a number or letter grade, and extrinsic motivation.

   Finality of learning. Harlen (2007) stated that assessment of learning differs from assessment for learning in that summative assessment has an air of finality. The assessment practice occurs after instruction is completed, and documentation of what students have learned at the end of an instructional unit is then completed (Earl, 2013; Davies, 2011; O'Connor, 2018; Schimmer, 2013; WNCP, 2006). Stiggins (2001) stated that A*o*L does not inform students about learning because of the finality. Assessment of learning is rooted in the assumption that learning is a final accumulation of knowledge that is *sequenced, hierarchical* and needs to be *explicitly* taught and reinforced (Harlen, 2007; Stiggins, 2005) while assessment is considered a mechanism that merely provides a score of learning. Harlen (2007) noted that a fixed sequence is formed in learning: teachers teach knowledge, students take tests, teachers judge students' achievement and move on to the next unit of learning.

Large-scale testing. Large-scale testing is a widely used traditional approach for implementing measuring assessment. These traditional paper-and-pencil tests often include multiple choice questions, short answer questions or essay assignments designed by outside sources (Earl, 2013; Davies, 2011; O'Connor, 2018). Every province and territory (with the exception of Prince Edward Island) currently administers some forms of large-scale student assessment (Volante, 2010). These large-scale tests are different in terms of grades tested, test format, and frequency of administration. The tests play a significant role in evaluating the accountability of schooling and have an important impact on educational decisions about school, district, and provincial achievement targets (Beckett & Volante, 2011; Volante, 2010; O'Connor, 2018).

O'Connor stated that one of the negative consequences of external testing is that teachers overemphasize tested subject matter at the expense of the broader curriculum. Testing also distracts students from authentic learning and neglects higher-order and critical thinking skills as test preparation consumes greater amounts of classroom time (O'Connor, 2018; Stiggins, 2005). Research found that while these test preparation practices have resulted in higher test scores, student learning often does not change (O'Connor, 2018). Research has also shown that large-scale assessment has a negative effect on student motivation and causes a higher dropout rate (Volante, 2010). This negative effect on motivation has been discovered in Canada and the United States as evidenced by statistics reported by the Alberta Teachers Association (2005) and the National Center for Educational Statistics (as cited in Volante, 2010).

Numerical scores or letter grades as feedback. Feedback is mostly in the form of a letter or number grade at the end of a unit or learning period. Multiple studies have shown that feedback with letter or number grade has a less positive effect on student learning than assessment for

learning and assessment as learning (Harlen, 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2005; O'Connor, 2018). O'Connor (2018) claimed the system of using a number or letter grade is against authentic learning that aims to prepare students to be the self-directed, independent lifelong learners. Number or letter grades fail to give accuracy of student achievement. O'Connor (2018) suggested that a better assessment system produce grades that are fair, accurate, specific, and immediate.

External accountability. The real beneficiaries of the results from assessment of learning are usually outside stakeholders such as parents, school leaders, and district leaders who attempt to evaluate how well students have learned at the end of a unit or a period of time in order to make important decisions (Earl, 2013; Davies, 2007; O'Connor, 2018; Schimmer, 2013; WNCP, 2006). Teachers use A*o*L to identify the gap between students' learning and the learning standards so that they can report students' progress and proficiency to parents and school leaders. Parents refer to the information from their children's report cards to make suggestions that may affect the students' further education and career. Principals or system leaders use the information from assessment of learning to evaluate the effectiveness of curricula and the accountability of particular schools or educational programs (WNCP, 2006).

Extrinsic motivation. A*o*L places more attention on students' extrinsic motivators to reinforce hard work and good learning behaviors while to punish insufficient learning behaviors (Earl, 2013; Earl & Katz, 2006; Stiggins, 2005). Assessment of learning in education has been emphasized in most traditional education systems and is still being focused in some modern education systems where educators believe that comparing students with more successful peers can motivate students even though assessment of learning continues to exist (Earl, 2013). High test scores are thought to reinforce the behaviors that result in substantial learning while failing

test scores are thought to discourage the behaviors that result in "insufficient learning" (Hellsten, Klinger, & McMillan, 2010; O'Connor, 2018; Stiggins, 2005).

New trend of assessment of learning. The traditional role of A*o*L in motivating students has been challenged because societal expectations for schooling and insights into the nature of learning have changed (Fullan, 2016; McTighe & Wiggins, 2005; Stiggins, 2005). Kohn (2011, 2015) stated that pure extrinsic motivation can undermine students' natural curiosity in their learning process. Condry (as cited in Stiggins, 2005) concluded similarly that students became less efficient in solving problems when external rewards were provided.

Recent research has brought some new insights in how to implement effective assessment of learning. These insights draw educators' attention to some new summative assessment methods: portfolios, exhibitions, presentations, multimedia projects, and a variety of other written, oral, and visual methods (Davies, 2011a; Earl, 2013; Earl & Katz, 2006). For example, the BC Graduation portfolios are designed as a requirement for graduation (Earl & Katz, 2006). Students are required to use the criteria and standards as guides for planning, collecting, and presenting their evidence of learning while teachers use the criteria and standards to assess students' evidence and decide their proficiency. O'Connor (2018) suggested a standard-based grading system with a shift from letter or number symbols to grading with descriptive feedback in relation to learning standards. This new grading system involves a variety of methods such as report cards with descriptive comments, parent-teacher interviews, and student-involved conferencing. O'Connor specifically stated that student-involved conferencing evaluates many forms of success and provides a comprehensive profile of students' level of performance with different sources of information as well as reinforcing students' responsibility for their learning. The document of *Rethinking Assessment with Purpose*s *in Mind* (WNCP, 2006) stated that

teachers should keep detailed and descriptive records covering the assessment methods, the

supporting information, and the criteria in order to provide a meaningful assessment of learning.

Overall, these three purposes of assessment have their valuable roles in education. Research

has shown that assessment of learning has been long used in most classrooms, assessment for

learning has become more prominent in classroom assessment practice, while assessment as

learnings is still rarely used effectively (Earl, 2013). Earl suggested a different kind of interplay

among the three purposes of assessment that highlights the greater contribution of A*s*L and A*f*L

in order to pursue balanced assessment. The author established a *reconfigured* assessment

pyramid to describe this balance of assessment. A*s*L occupied its greatest foundational part in the

bottom of the pyramid while A*o*L stands in the middle with medium portion. Assessment of

learning only occupies a limited area at the top of the pyramid.

Formative Assessment Approaches

The research literature shows that formative assessment approaches fall into seven categories:
teacher observation, self-assessment, peer assessment, questioning, performance assessment,
portfolio, and the formative use of tests (Absolum, 2010; Balck & Wiliam, 2010; Brookhart,
2010; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; McMillan, 2007; Stiggins,
2007, 2017; McTighe & Wiggins, 2005; Leahy & Wiliam, 2015). Although the approaches have
been organized by their formats, there are indeed interrelationships among them. It is important
to note that some approaches belong in multiple categories. The following sections discuss each
approach in detail.

Teacher observation. Teacher observation is a formative assessment method where teachers

observe students' daily learning behaviors and learning attitudes in the classroom and write

down notes to track their learning process (Hellsten, Klinger & McMillan, 2010). Hellsten et al.

indicated that teacher observation can be used to assess students' participation in class discussions, interpersonal skills, the interest level of learning, and the degree of understanding. The authors also claimed that teacher observation is the most prevalent assessment for collecting diagnosis information. A structured and focused observation with written formal notes helps teachers detect student deficiencies in the early stage of the learning process (Hellsten, Klinger & McMillan, 2010; Stiggins, 2007; McTighe & Wiggins, 2005).

Self-assessment and peer assessment. Hellsten et al. (2010) and Stiggins (2005) defined self-assessment as students' evaluating their own or peers' performance, or completing self-report inventories that reveal their attitudes and beliefs about themselves or peers. Chappuis and Stiggins (2002) stated that self-assessment is one of the most effective ways teachers can integrate assessment with instruction in a formative manner by involving students in the assessment process. Self-assessment increases student confidence and motivation with an emphasis on progress and mastery of knowledge and understanding (Black & William, 1998; Black et al, 2004; Hellsten, Klinger & McMillan, 2010; Stiggins, 2007). Self-assessment involves student self-evaluation so that immediate feedback can be incorporated and used to improve learning (Chappuis & Stiggins 2002). Black and Wiliam (1998) found self-assessment and peer assessment help students understand learning goals and teacher feedback better by rating and giving comments on their own or others' work. Atkin, Black, and Coffey (as cited in Chappuis & Stiggins, 2002) established a model of formative assessment in which learners continually ask themselves the following three questions: 1) Where am I trying to go; 2) Where am I now; and, 3) How do I close the gap?

Oral questioning. Oral questioning includes teacher-student informal dialogues, teacher-student formal conferencing, whole-class discussion, and group discussion (Fisher & Frey, 2007;

Hellsten, Klinger & McMillan, 2010; Stiggins, 2005). The literature reveals that oral questioning has the following purposes: grab students' attention conveniently and efficiently, promote students' reasoning, help students think through and verbalize their ideas, control student behaviors and manage the class, and collect information about students' thinking processes and levels of understanding. The literature shows the following seven aims of effective questioning: create a safe environment, frame effective questions, state questions clearly, match questions with learning expectations, allow sufficient wait-time for responses, give effective responses to student answers, and extend initial answers (Black & Wiliam 2004; Fisher & Frey 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2007). A study conducted by Black and Wiliam (1998) revealed that effective oral questioning improves student engagement in learning. Students realize that learning depends less on their capacity to spot the right answer and more on their readiness to express and discuss their own understanding with peers or teachers.

    Performance assessment. Performance assessment is described as sustained tasks for students to demonstrate deep understanding, reasoning and skills by performing, creating, or constructing (Fisher & Frey, 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2005). Performance assessment puts an emphasis on how well students can apply or use what they know in real-world situations (Fisher & Frey2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2005). Tomlinson (as cited in Fisher & Frey, 2007) described how performance assessment differentiates teaching and affords learners with diverse needs creative ways to show their knowledge and skills. Performance assessment tends to be more authentic than other types of assessments as it provides strategies for students to show what they know and can do (Hellsten, Klinger & McMillan, 2010).

The literature stresses the importance of criteria and rubrics in conducting performance assessment (Burk, 2011; Brookhart, 2010; Fisher & Frey, 2007; Hellsten, Klinger & McMillan, 2010). Burke (2011) established *The Six-Step Process* to break down standards to rubrics. The steps include: 1) target the standards according to the data; 2) unpack standards to find the *big ideas* and the essential questions that students will need to understand; 3) define key terms from the standards and organize the criteria into checklists to guide teachers' instruction; 4) create performance tasks correlated to curriculum and standards; 5) develop student checklists that guide students through the specific steps of completing an assignment; and, 6) design teaching rubrics that provide the quality descriptors that tell students about what they have to accomplish to meet expectations.

Portfolios. Portfolios refer to a systematic management tool for collecting and evaluating student work in order to document their learning progress and show evidence of their achievement (Hellsten, Klinger & McMillan, 2010; McCormack & Paratore, 2007; Stiggins, 2007). Stiggins (2005) defined portfolios as a combination of multiple assessments that best indicates student learning. The literature reveals that portfolios can be used as formative assessment through engaging students in developing the portfolio system and is an ongoing learning process where students are able to compare their own works, reflect on their accomplishments, and evaluate their progress (Easley & Mitchell, 2003; Hellsten et al 2007; McCormack & Paratore, 2007). Stiggins (2005) stated that portfolios are able to tap students' intrinsic motivation for learning by enabling them to see their own learning progress and set goals for further learning.

The formative use of tests. Tests are conventionally defined as the *paper-and-pencil tests* including selected-response questions, short-answer questions, and essays. They are traditionally

used as summative assessment at the end of a learning period (Hellsten, Klinger & McMillan, 2010)**.** Fisher and Frey (2007) argue that tests can be used as a formative assessment technique to check for understanding if it is designed to reveal how each student did in mastering each learning target. Stiggins (2001) argued that any traditional test can be turned into a formative assessment by including a meaningful follow-up that decreases anxiety and competitiveness. Black and Wiliam (1998) discovered the use of tests for formative purposes can improve classroom practice if students are actively involved in the testing process through engaging in a reflective review of the tests, setting questions, marking answers and reworking exam answers in class. Stiggins (2017) stated the power of short-answer items and selected-response lies in their great efficiency in evaluating students' understanding in a fair and quick manner. McMillan, Hellsten and Klinger (2010) noted that essays are a good way to assess students' complexity of thought and reasoning without taking teachers too much time to construct. Essays provide students with flexibility in their responses and allow teachers to evaluate students' ability to communicate their reasoning. The literature indicates an overall message that tests should be a positive part of the learning process through students' active involvement in the testing process (Black and Wiliam, 1998; Hellsten, Klinger &McMillan 2010; Stiggins, 2007).

Learning Standards from the Newly Revised BC Curriculum

The core competencies are sets of intellectual, personal, social and emotional proficiencies that all students need to develop in order to engage in deep and life-long learning (BC Ministry of Education, 2017c). The newly designed BC curriculum is based on three guiding or focal aspects about the student learners: thinking aspects, personal and social aspects, and communication aspects (BC Ministry of Education, 2017c). The transformation of BC education represents a shift from the traditional assessment of only academic achievement to the

assessment that emphasizes student competencies and the learning process. The classroom assessment framework integrated with the new curriculum focuses on formative criteria-referenced assessment as the basis for assessing learning. Formative classroom assessment plays a key role in assessing student learning while traditional paper-and-pencil tests fail in collecting meaningful data on complex competencies. The framework indicates that student achievement is documented mainly by classroom teachers through the use of formative assessment in the K-12 school system. This transformation of the BC curriculum acknowledges the significant role of formative assessment and the need for resources that support the teacher.

The goal of this project is to construct a formative assessment handbook that assists teachers in implementing effective classroom assessment. As Earl and Katz (2006) noted, the key issue of effective classroom assessment lies in how teachers match assessment strategies with learning standards. The learning standards from the newly revised BC curriculum are explicit statements of expectations (*curricular competencies*) and define what students should know in a given area at a certain grade level (c*ontent*). I made connections between the learning standards synthesized from the literature and the BC learning standards and presented their relationship in a T-chart for the matching assessment strategies with learning standards section in the handbook.

The BC Performance Standards for Grade 2 were accessed for more detailed information in the areas of reading and writing (the BC Ministry of Education, 2017a, 2017b). These standards described a significant number of educator judgements about standards and expectations for Grade 2 level Reading and Writing. The BC Performance Standards illustrated four levels of student performance: not yet within expectations; minimally meets expectations; fully meet expectations; and, exceeds expectations (BC Ministry of Education, 2017a, 2017b). These

standards are curriculum-embedded and are used on a regular basis guiding assessment practices in the K-12 school system.

Chapter Conclusion

Assessment is the collection, evaluation, and use of information to help teachers make decisions that improve student learning (Black & Wiliam, 1998; Hellsten, Klinger & McMillan, 2010; McMillan, 2007; Stiggins, 2005, 2017; McTighe & Wiggins, 2005). Assessment has three purposes: A*f*L, A*s*L, and AoL. A*f*L supports learning to improve the quality of instruction while assessment of learning determines how much a student has learned at a particular time. A*s*L is a collaborative process where teachers involve students as their own assessors of their learning. A*o*L is used for the purpose of evaluation and the demonstration of curricular learning outcomes.

Formative assessment is considered as assessment for learning that requires teachers to employ a circular, continuing process involving their evaluations of student work and behavior, feedback to students, and instructional correctives. Formative assessment informs teachers and students about learning during the learning process in order to make decisions that will bring about more learning. Formative assessment actively involves students and taps into their intrinsic motivation through providing effective feedback and clear learning expectations. The research literature has demonstrated that the forms of formative assessment fall into seven groupings: teacher observation, self-assessment, peer assessment, questioning, performance assessment, portfolio, and the formative use of tests. This chapter has presented the main areas of research necessary for investigation in order to create a handbook for formative assessment. The following chapter presents the research design involved in carrying out this project and a snap-shot of the handbook contents.

Chapter Three: Methodology

This chapter begins with an overview of qualitative research methodology and the rationale for choosing qualitative content analysis for the development of the formative assessment handbook. This component is followed by my research processes of collecting data, analyzing data, and a concept map (Figure 4) used to frame the handbook components.

Research Project Focus

The research focus is to determine the type of information, strategies, and tools that would assist Grade 2 English Language Arts teachers with formative assessment that would lead to student learning and overall achievement. This project is an opportunity to create a teacher hand book that would guide them through student assessment implementation for literacy.

Qualitative Research

The literature has shown that qualitative research looks for the meanings ascribed to a social problem whereas quantitative research looks at numerical results (Berg & Lund, 2012; Creswell 2017; Mayan, 2009). The decision to apply a qualitative approach for this project was informed by several reasons. The first reason is that a qualitative research approach allowed for delving into a variety of descriptive data such as scholarly articles, books, manuals, and other publications. The literature was analyzed inductively, recursively, and interactively so that an in-depth understanding of the research question was gained (Creswell, 2017; Marshall & Rossman, 2006). A qualitative research method presents the reflexivity of the researcher and a complex description and interpretation of the problem (Creswell, 2017). In this case, the data analysis was used to determine what materials should be included in the handbook. As the researcher, it was the literature review that enabled an understanding of the concepts during the data analysis process (Morse as cited in Mayan, 2009).

A qualitative content analysis approach was applied to ensure a systematic examination and subjective interpretation of the text data as a proven method for writing handbooks and manuals (Hsieh & Shannon, 2005). The aim in this approach was to identify patterns, themes and meanings, and focus on the content or contextual meaning of the text. Text data might be in verbal, print, or electronic form. This study focuses on print and electronic media such as articles, journals, books, manuals or other publications.

Hsieh and Shannon (2005) stated that content analysis includes three specific approaches: conventional content analysis, directed content analysis, and summative content analysis. I used directed content analysis in this study which uses the existing themes from the literature as initial themes and the ones that emerge from the data analysis process as final themes. Hsieh and Shannon's (2005) directed content analysis approach fit directly with the research on formative assessment. I was aware of these themes prior to my initial research and used them as a launch point for my research. However, there was exposure to newly emerging themes during the data analysis process.

Data Collection

The qualitative content analysis approach focused on the topic of formative assessment with the intention of detecting themes and patterns (Hsieh & Shannon, 2005). This approach allowed for the organization and analysis of a vast amount of information from the existing research. The data was sifted and sorted in order to detect formative assessment themes, patterns, and trends. All data collected for this project was research based with content provided in the literature by experts in the field. This led to the creation of a practical handbook that teachers could use as a resource when developing assessment tools.

The data collection process included collecting and organizing data from 28 handbooks, 52 scholarly articles and approximately 40 other publications regarding formative assessment. The process involved reading and re-reading these materials from a very broad based scope that provided a general sense of formative assessment. The research quest was formulated once there was a decent understanding of formative assessment through the reading of these materials. These themes were then organized through the development of a concept map to create a research plan for the handbook that was thoughtful and manageable. The eleven themes initially identified were: teacher observation, oral questioning, performance assessment, checklists, rubrics, self-assessment, peer assessment, portfolio, selected responded items, short-answer items, and essay. Creating a concept map provided a visual snap-shot for overall perception and understanding which revealed an overlap that resulted in the emerging five major themes as the basis for the handbook. These five themes include teacher observation, oral questioning, teacher-student conferences, performance assessment, and self-assessment. These five themes matched my experience as a Grade 2 teacher where I saw a need for clarification.

Data Analysis

The data was sorted and sifted through a coding process for the data analysis. I coded both manually through handwriting memos and digitally in Microsoft Word (Saldana, 2013). The steps of this process included identifying: 1) codes in the data called *First Cycle* coding; 2) similar patterns or relationships called *Second C*ycle coding; 3) emerging themes ; and, 4) the five major themes.

First cycle coding. The *First Cycle* coding process involved the use of *In Vivo Coding* and *Descriptive Coding*. Saldana (2013) suggested both of these methods are appropriate for all qualitative studies and helpful particularly for beginning qualitative researchers learning how to

code data. *In Vivo Coding* uses words or short phrases from the actual language of the qualitative data. *Descriptive Coding* summarizes a passage of qualitative data (Saldana, 2013). Each publication selected for the purpose of this study were coded and recorded through the use of a color-coding system. The color-coding system displayed codes related to the seven initial concepts in different colors and codes that enabled the sorting and sifting for content organization. The coding continued until the content was reduced down to the five major themes.

Second cycle coding. The primary use of a *Second Cycle* coding process was to highlight the key themes that emerged from the *First Cycle* coding and to develop a sense of categorical, thematic, and conceptual organization of the data (Saldana, 2013). The literature was combed through again as the premise of determining similar patterns/themes. The *Pattern Coding* was applied at this phase of the analytical process to sort and organize the data. Pattern codes were described in the literature as explanatory or inferential meta-codes that identify an emergent theme and pull together a lot of material into a more meaningful and succinct unit of analysis (Saldana, 2013).

Creating a concept map. The sixth and last step of data analysis was to create a concept map in order to organize and assemble the emerged themes. Berg and Lune (2012) revealed that concept mapping is a useful technique to visually display the connections between the researcher's knowledge and learned information. The concept map (see Appendix A) enables me to better organize my thinking and help better understand the relationships between those emerged themes. The concept map begins with the main concept — formative assessment in literacy, and then branches out to show how formative assessment can be broken down into the seven major formative assessment strategies. Each strategy further branches out into some specific formative assessment tools.

Generating categories and identifying themes. The third step of the data analysis process was to generate categories and themes using webbing and charting strategies. The data was organized with the use of different colors codes that eventually were sorted into different categories. The codes marked with grey were organized into specific categories, but the various colour schemes continued to be re-examined to organize the multiple categories into fewer and more streamlined groups based on their interrelationship with the emerging theme.

Identifying core themes of the research. The fourth step of the data analysis was to analyze and finalize the emerging themes as a whole and look for meaningful patterns among them. The core themes of the study were significant with regard to formative assessment and are the basis for the handbook (see Appendix C). The notion of remaining flexible and open to the possibility that new themes could emerge and that some could become less relevant than originally considered was always at the forefront of the data analysis process. A snapshot of the themes, categories, subcategories, and major codes is presented in table format in the appendices section (see Appendix B).

Chapter Conclusion

The design of this project was specifically chosen to create a practical formative assessment handbook for the subject of literacy for Grade 2 teachers in the British Columbia K-12 school system. The process involved delving deeply into a variety of descriptive data and an interpretation of the problem. I specifically employed the qualitative content analysis approach in this study to identify patterns, themes and meanings of the text data from the existing literature.

I collected and organized data from 28 handbooks, 52 scholarly articles and 31 other publications on formative assessment. I then identified re-occurring concepts in these materials and narrowed them into seven larger concepts: teacher observation, oral questioning,

performance assessment, self-assessment, peer assessment, portfolio, and the use of formative assessment. The second step was data analysis where I went through the First Cycle coding and the Second Cycle coding in order to identify codes and their relationships. I generated seven categories based on the codes collected from the two cycles of coding, and created the list of the emerged themes. The following step required me to re-analyze the literature from which emerging themes were populated while looking for meaningful patterns among them in order to identify the five core themes for the handbook. Lastly, I was able to formulate a concept map as a visual tool to organize and display these five themes.

The handbook (see Appendix C) includes six sections. Section one presents the introduction to formative assessment; a concept map of formative assessment strategies; a guide in how to match formative assessment with learning expectations. The other five sections address the five formative assessment approaches. Appendix B outlines the emerging themes from the data analysis with a list of categories and major codes and the sources and frequency the information appeared in the literature.

Chapter Four: Results, Recommendations, Reflections

This chapter begins with outlining a brief overview of the results from the process of qualitative content analysis and the handbook outline. It is followed by implications of this study, recommendations for future research, and my personal reflections throughout the research process.

Results

The significant themes that emerged from the research literature are presented in a table located in the appendices section (see Appendix B). The table is comprised of the themes that are then broken down into subsections and concepts teachers may need to consider when addressing formative assessment. The sub-categories are further broken down into classroom strategies labelled as Codes in the table. The last two columns of the table include the number of sources and the frequency of the material found in the literature for each category.

Handbook Outline

The introduction section of the handbook begins with discussing the three purposes of assessment: assessment for learning, assessment as learning, and assessment of learning and their relationships. It is followed by a general description of formative assessment and the characteristics of formative assessment. The third part of section one includes a concept map as a visual of the five formative assessment approaches and their relationships. The main concept of formative assessment in literacy branches out to the formative assessment approaches. Each approach further branches out to more specific formative assessment tools. The introduction is completed with a guiding chart of *Matching Formative Assessment Approaches with Learning Standards*.

The remaining sections (Two – Six) follow the same format to make the handbook consistent and easy to read in asking the following questions throughout: What is the formative assessment approach?; Why use the formative assessment approach?; What learning expectations can the formative strategy assess?; and, specific sample tools for the formative strategy. Sections two to six are titled: *Section Two: Teacher Observation*; *Section Three: Oral Questioning; Section Four: Teacher-student Conferencing; Section Five: Performance Assessment; and, Section Six: Self-Assessment.*

Implications

This handbook can be a valuable resource for BC Grade 2 teachers in three ways. First of all, it provides a comprehensive understanding of formative assessment. The description and significance of different formative assessment approaches provides teachers with knowledge about what formative assessment looks like in the daily classroom and why they would choose these particular assessment approaches. Each formative assessment approach is defined and explained in detail in different sections. Teachers will be able to choose a particular formative assessment approach based on their comprehensive understanding.

The handbook is also a valuable resource because it provides teachers with specific guidelines that can help them understand how different formative assessment approaches are developed and how they should effectively implement particular formative assessment approaches. The visual example tools that are specifically designed for Grade 2 teachers may save teachers' time researching and creating formative assessment tools in relation to their teachable areas.

The highlighted strength of this handbook is that it matches the newly revised BC learning standards with each formative assessment approach (BC Ministry of Education, 2019).

Research has shown that teachers have difficulties in choosing good-fit standard-based assessments (Beckett, Drake &Volante, 2010; Beckett & Volante, 2015). This project synthesized the text data from existing literature in relation to the assessment approaches and how to match those approaches to the learning standards. The guidelines for matching formative assessment approaches with the newly revised BC learning standards enable teachers to see the relationships between learning standards and assessment approaches when teachers attempt to match particular learning standards with an appropriate assessment approach.

Recommendations

When I reflect on my research process and the results of this project there are four recommendations I would suggest for the implementation of this handbook and for future researchers.

I would recommend making this resource accessible for BC Grade 2 teachers especially for the northern BC districts. The presentation of this resource can be done by introducing this resource in school-wide or district-wide professional development sessions or offering Grade 2 teachers the accessible link to the digital version of the resource. This resource may help BC teachers, especially new teachers, to build their assessment skills and allow them to implement formative assessment practices in a more effective way.

Second, I would recommend future researchers focus on how to develop descriptive feedback in relation to the BC curricular and content competencies learning standards in order to construct a formative assessment handbook for BC elementary school teachers. The result of this project suggests a significant role of descriptive feedback in effective formative assessment. It requires future researchers to study thoroughly the particular learning standards and dig into the strategies of developing descriptive feedback.

Finally, I would recommend future researchers begin with frameworks and policies from a targeted education system before exploring the broad and endless ocean of literature. Throughout the creation of the handbook, I found it challenging to collect a wide range of relevant literature on formative assessment based on the Canadian contexts. I had planned to look into the Canadian-context-based handbooks in order to create a handbook for BC teachers. This does not work well as American literature dominates in the existing American databases such as ERIC, Google Scholar, and Academic. Initially, most of my collection was from the American context. It needed intensive work on my part and extra support from my supervisor and committee members in order to collect the Canadian literature on the field of formative assessment. Therefore, beginning with specific frameworks and policies can save a great amount of time during the data collection process. In addition, I would also recommend future researchers keep in mind that the terms in relation to a particular research topic may vary in different education systems.

Researcher Reflections

My experience of teaching Grade 2 literacy gave me the opportunities to experience the impact of formative assessment in teaching and building children's motivation, confidence and self-efficacy toward learning. I have developed a passion for fostering children's intrinsic motivation and active engagement in learning. Both my teaching and research experiences have enhanced my understanding of formative assessment. I feel a great sense of accomplishment when I reflect on the process I undertook to complete this project along with my Master of Education in the specialized area of Multidisciplinary Leadership.

It has often astonished me that so many resources are put into large-scale assessment and curriculum development instead of focusing on the needs of teachers who lack the skills to

implement effective classroom assessment. The new standard-based assessment systems may place a lot of stress on teachers unless there are practical and ready-to-use formative assessment resources that are directly linked to particular grade-level learning expectations. I have noticed that I have been frustrated and exhausted when I did not have the information and resources to assist and support my teaching role. The belief in formative assessment to support learning drove me to write a user-friendly handbook for my own teaching and for my fellow teachers. The purpose of this project was to develop a handbook for BC Grade 2 teachers to provide them with information surrounding formative assessment strategies in relation to the new BC curricular and content competencies learning standards (BC Ministry of Education, 2019). I have gained a great amount of insight and knowledge from the assessment experts from Canada, the United States, and the other parts of the world through the literature review process and building the handbook. The knowledge and the research skills I have gained though the development of this process have impacted my teaching and my personal growth as a life-long inquirer.

I have gained support from my family, friends and the professors in the University of Northern British Columbia. I must say that all of the professors I had contacted were more than willing to help and answer my questions. Their effective feedback has been helpful. In addition, there is incredible value in the Master of Education program. I have learned how to improve my practice as a teacher through the course. I have also learned how to conduct research and have realized how hard it is to construct a project. I am now able to understand how time-consuming the task of completing research can be. My research process gave me a new appreciation for research-based studies. I am thankful for my decision to write a project as an exit route because it allowed me to become much more knowledgeable in the area of formative assessment. I will use the knowledge I gained to enhance my future practice as a teacher.

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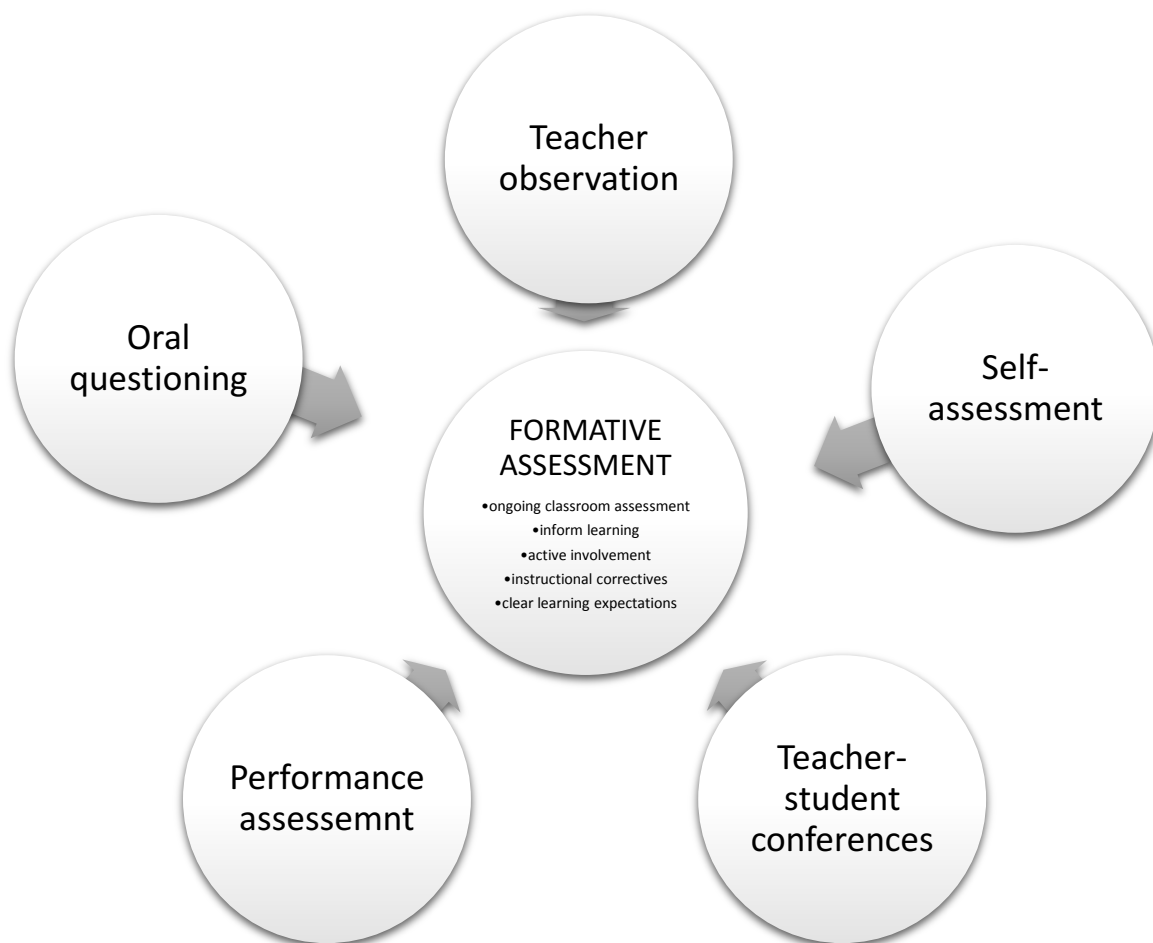
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    purpose in mind.

Appendix A: Formative Assessment Concept Map

Teacher observation

Oral questioning

FORMATIVE ASSESSMENT
•ongoing classroom assessment
•inform learning
•active involvement
•instructional correctives
•clear learning expectations

Self-assessment

Performance assessemnt

Teacher-student conferences

Appendix B: Content Analysis Themes

1. Teacher Observation	Codes	Sources	Frequency
Structure of Observation	- unstructured observation - open-ended - systematic - structured observation	7	17
Appropriate Interpretation	- practical - purposeful - no conclusion or inferences - keep interpretations separate - connected to the level of understanding	3	15
Observation Checklist	- format - guidelines and examples - targeted affective traits - criteria-based checklist - simple/ straightforward - brainstorm with other teachers	4	24
Rich Data	- frequency - a variety of source - frequent information - comprehensive competence - different context	6	25
Record Keeping	- brief - immediate record - anecdotal notes - clear and precise note	8	19
Follow Up Actions	- review again later - look for pattern - effective feedback	5	21

2. Teacher /Student Conferencing	Codes	Sources	Frequency
Goal Setting	• goal as the focus • decide the next goal • set goal together • define goals • clear goals	5	23
Coaching	• modelling • demonstration • reading • writing strategies • guided reading • writing workshops • three-minute meeting • running record	6	29
Scheduling	• scheduled appointment • mark in calendar • track scheduling • manage time for students	4	10
Differentiation	• target strategies or skills • learning difficulties • one-on-one • focused groups • grouping strategies	8	25
Accountability	• observe and listen closely • evidence of practice • teacher student relationship • sense of power and growth • encouragement/ reinforcement • responsibility for learning	4	19

3. Self-Assessment	Codes	Sources	Frequency
Metacognition Process	• be aware and analyze thinking • monitoring thinking • challenging understanding • making connections • connect with external sources. • making adjustment	14	45
Clear Learning Expectations	• breaking down standards • setting criteria together • providing exemplars • modelling • variations of quality • begins with short instruction	15	38
Effective Feedback	• immediate feedback • focused feedback • descriptive feedback • showing the gap between current learning and learning targets • feedback connected to prior knowledge • frequent informal feedback • developing skills for developing feedback for self	15	56
Safe Environment	• support • assistance • value of self-assessment • confidence and competence • risk taking • essential mistakes • self-assessment as routine	12	31

4. **Performance Assessment**	Code	Source	Frequency
Subjectivity	- professional judgement - no correct answer - complex targets	9	17
Integrated with Instruction	- takes days or weeks - time-consuming for teachers - takes time to develop tasks - time consuming - portfolio	10	22
Authentic	- hand-on activities - real-work context - application of knowledge - realistic problems - collaboration - sustained work - project-based - problem-based	16	36
Complex Proficiency	- deep understanding - reasoning skill - cognitive process - problem-solving skills - apply knowledge and skills - psychomotor skills	21	50
Criteria/Rubric	- based on learning targets - criteria checklist - tasks development procedure - clear task description - involve students in creating checklist - modelling - demonstration - examples	19	54
Effective Tasks	- readers' theatre - multimedia presentation - visual display - graphic organizer - writing products - games	7	15

5. Oral Questioning	Code	Source	Frequency
Format	• teacher-led review • class discussion • teacher-student conferences	7	18
Nature Of Questions	• Bloom's Taxonomy • literal questions • Inferential questions • Application question • rating the difficulty • looking for Meaning • evaluation questions • interest level questions	7	22
Practical	• most frequently used • convenient • efficient	5	9
Functions Of Questions	• promote thinking • promote reasoning • promote comprehension • verbalize ideas • challenge beliefs • Clarifying thinking • looking for meaning • interpersonal skills • expressing thoughts • simple factual knowledge • engaging students	8	52
Effective Questions	• clear questions • precise questions • involve all students	6	16
Quality of Student Responses	• allow waiting time • safe and active environment • student confidence • the length of responses • depth of responses	5	19
Teacher Responses	• acknowledgement • meaningful and honest feedback • appropriate praise • simple responses: • "right," "correct," "no."	11	22
Extending Initial Questions	• probing into in-depth response • thinking process • extending understanding	7	11

Appendix C: Developing Standard-Based Formative Assessment: A handbook for Grade 2

Teachers

Developing Standard-based Formative Assessment

—A handbook for grade two teachers
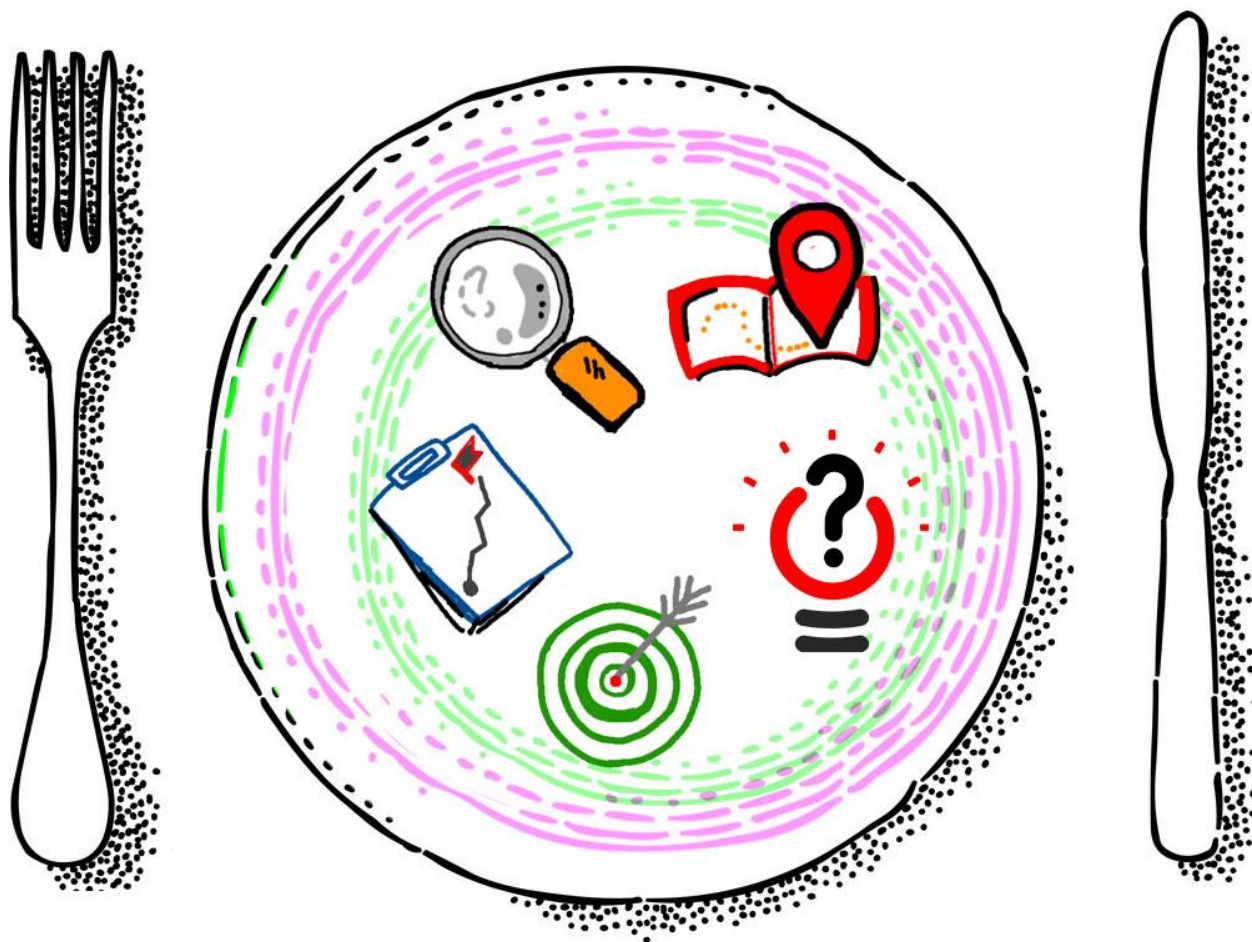
Section1: Introduction

Assessment for learning (A*f*L), often referred to as formative assessment, is an ongoing classroom assessment process that causes and forms learning with greater participation (Earl, 2013; Fisher & Nancy, 2007; McMillian, 2007; O'Connor, 2018; Stiggins, 2017; McTighe & Wiggins, 2005). A*f*L has existed as an informal activity for a long time in Canadian classrooms. It became a more formal practice more than 40 years ago when many educators and researchers emphasized the importance of everyday classroom assessment on promoting student learning and improving student achievement (Earl & Volante, 2015). The research-based A*f*L of the present day is reflected in practice and policy around the world and is adapted in policy frameworks throughout Canada. A*f*L is a key part of educational assessment programs in Canada. Provincial assessment policies that integrate assessment for learning into classroom teaching and learning are evident (Alberta government, 2018; BC Ministry of Education, 2017a; Ontario Ministry of Education, 2010; Western and Northern Canadian Protocols for Collaboration in Education [WNCP], 2006).

The BC Ministry of Education established a new concept-based, competency-driven curriculum for K-9 (the Newly revised Curriculum) in 2016. The revised curriculum includes *curricular competencies learning standards* and *content learning standards*. Curricular competencies learning standards describe what students are expected to do over time including the skills, strategies, and processes, while content learning standards define what students should know in a given area of learning at a particular grade level, including the essential topics and knowledge. The BC curriculum places a focus on classroom assessment. The *Framework for Classroom Assessment* in line with the new curriculum states that student progress in relation to the learning standards will be documented mainly by classroom teachers through formative

assessment. The framework requires teachers to break down learning standards into criteria and conduct corresponded criteria-based classroom assessment (BC Ministry of Education, 2017a).

The standard-based assessment reform throughout Canada and the recent *BC Framework for Classroom Assessment* have placed a greater requirement on BC teachers' assessment literacy, the knowledge, skills, and application of assessment principles and practices necessary to enhance student learning (BC Ministry of Education, 2017a). Research has shown that Canadian classroom teachers need more support and resources in order to improve assessment literacy (Earl & Volante, 2015; Beckett & Volante, 2015). In this handbook, I aim to review the existing literature about formative assessment and construct a practical guide with formative assessment strategies and tools in relation to BC learning standards for grade two English language art. I first sifted through the existing literature to look for common concepts, then organize and analyze the text data from the literature, and finally look for emerged themes about formative assessment practices. In order to make the handbook more practical for BC grade two teachers, I chose the literature carefully by focusing on the research studies from Canadian researchers and frequently refer to the BC learning standards for grade two English language arts. The purpose of this handbook is to present the emerged themes in an easy-to-read handbook in relation with BC learning standards for grade two English language arts. The handbook can be used as an additional resource for BC grade two teachers to assist their classroom assessment practice.

The Three Purposes of Assessment

Assessment is the systematic process for collecting data that can be used to make inferences about student learning (Black & Wiliam, 2010; Hellsten, Klinger & McMillan, 2010; Stiggins 2017). Assessment serves many purposes for the public, the school districts, and the policy

makers. The three main categories of assessment are assessment for learning (A*f*L), assessment as learning (A*s*L), and assessment of learning (A*o*L) (Earl, 2013; Earl & Katz, 2006).

Assessment for learning is assessment designed primarily to promote learning. A*f*L includes diagnostic assessment and formative assessment. Diagnostic assessment, described as "initial assessment" in some education systems, is the assessment to determine appropriate staring points for instruction. Formative assessment is assessment occurs during the learning process and provides feedback to both students and teachers to help improve learning. Assessment as learning is considered as the subcategory of A*f*L and frequently described as self-assessment in some education systems (Stiggins, 2005; McMillan, 2010; Cooper, 2006; Fisher & Frey 2007). However, A*s*L is emphasized as one of the three purposes of assessment in some other education systems, especially in the Canadian literature (Davies, 2010; Earl, 2003; Earl & Katz, 2006). Assessment as learning is the assessment process that involves student ownership of their own learning through monitoring, challenging and adjusting their strategies and understanding. While it is considered as a subcategory of AfL, it is frequently described as self-assessment (Stiggins, 2005; Hellsten, Klinger & McMillan, 2010; Cooper, 2006; Fisher & Frey 2007). Assessment of learning is the assessment designed primarily to determine student achievement at a given point in time. Assessment of learning is a summative assessment that occurs at the end of a learning period and summarizes student achievement of learning (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; O'Connor, 2018; Schimmer, 2019).

What is Formative Assessment?

Assessment for learning (A*f*L) is an ongoing process that causes and forms learning. It is when students learn through assessment rather than having the assessment as merely a proof of what students have learned. Students are informed of where they are and where they need to go in

their learning; therefore, it is also considered formative assessment (Cooper, 2006; Davies, 2011; Earl, 2013; Earl & Katz, 2006; Earl, DeLuca & Volante, 2015; Fisher & Nancy, 2007; O'Connor, 2018; Schimmer et al, 2019; Stiggins, 2005). Performance tasks, project-based learning and oral questioning are common forms of formative assessment in which assessment itself can be the means for learning (Benjamin, 2013).

The following sections examine the common features of A*f*L from the literature: formative assessment cycle, supporting learning, active involvement and intrinsic motivation, effective feedback, instructional corrections, and clear learning expectations. Each feature will be discussed in detail.

Ongoing classroom assessment cycle. McTighe and Wiggins (2005) noted that assessment should be thought of as a *collection of evidence* over time instead of a test at the end of instruction because understanding develops as a result of ongoing inquiry and rethinking. Teachers are suggested to employ a circular, continuing process involving their evaluations of student work and behavior, feedback to students, and instructional correctives to conduct effective formative assessment (Absolum, 2010; Cooper, 2006; Davies, 2011; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2011; Schimmer, 2019; Stiggins, 2005). Hellsten et al. (2010) established the *Formative Assessment Cycle* to describe the process of formative assessment (Figure 1). The Formative Assessment Cycle has three phases: 1) teachers evaluate student progress on what students learn, understand, and can do through collecting information, 2) teachers provide immediate, appropriate, and specific feedback to students, and, 3) the feedback is followed by instructional correctives—activities that broaden and expand learning or correct misunderstanding. Teachers follow student engagement with new learning strategies and make

additional evaluations of student learning and then the cycle is repeated. The formative

assessment cycle is based on the cognitive and constructivist learning theories that learning is a

process of constructing understanding during which individuals attempt to connect new

information to what they already know (Vygotsky, as cited in Cooper, 2006).
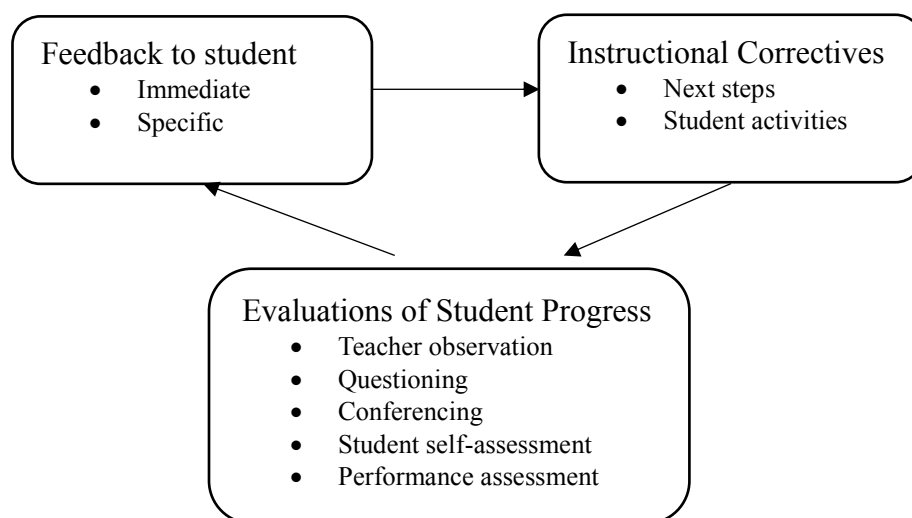

Figure 1 Formative Assessment Cycle (McMillan, 2007)

   Informing learning. Multiple studies have showed that formative assessment has significant

impact on learning (Black & Wiliam, 1998; Stiggins, 2005; McTighe & Wiggins, 2005). The

prioritized purpose of formative assessment is to provide teachers and students with diagnoses

during learning processes in order to make decisions that will bring about more learning.

Hellsten et al. (2010) and Stiggins (2005) suggested that students learn through formative

assessment rather than having the assessment measure what has been learned. The process of

working through the task that is being assessed provides opportunity for learning and informs

students themselves about how to improve their achievement. Formative assessment helps

students answer three questions: *Where am I going? Where am I now? How can I get there from*

here? Students know what the learning expectations is, how to evaluate and monitor their own

progress, and what to do to get themselves from where they are to where they need to be (Chappuis & Stiggins, 2005; Stiggins, 2005).

Active involvement and intrinsic motivation. The literature indicated that formative assessment opens the assessment process and involves students as owners of learning (Absolum, 2010; Cooper, 2006; Davies, 2007; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2005; Schimmer, 2019; Stiggins, 2005). Earl (2013) stated that the ability to monitor one's own learning is one of the most important benefits of formative assessment. Stiggins (2009) suggested teachers maximize the power of formative assessment by creating assessment that involves all students. Black and Wiliam (1998) found when teachers employ effective formative assessment and give students more control in assessment, students become more confident and more active in their own learning. Students take more responsibility for their own learning when seeing their learning progress and believing that they can achieve their learning.

Effective feedback. Effective feedback is an important component in formative assessment. The literature showed that students' learning can be enhanced significantly by receiving descriptive feedback (Cooper, 2006; Davies, 2007; Earl, 2013; Earl & Katz, 2006; Earl & Volante, 2015; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; McTighe & Wiggins, 2005; Schimmer, 2019; Stiggins, 2005). Black and Wiliam (1998) conducted a comprehensive review of studies on feedback given to students and discovered 60% of the studies suggested feedback can improve students' achievement. The research literature shows that effective feedback has the following characteristics: 1) relates performance to criteria; indicates progress and corrective procedures, 2) occurs frequently and immediately, 3) provides specific and descriptive information, and, 4) focuses on key errors and effort attributions

(Absolum, 2010; Balck & Wiliam, 2010; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; Stiggins, 2007, 2017; McTighe & Wiggins, 2005; Leahy & Wiliam, 2015).

Instructional correctives. One of the core fundamentals behind formative assessment is instructional response from the teacher, leading to application to create change by the student. Instructional correctives are important processes where teachers use collective results, modify their instruction and decide on the next steps (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; Schimmer, 2019; Stiggins, 2005). Cooper (2006) argued that activities serving as formative assessment must have the potential to influence what the teacher will plan to do next. McMillan et al. (2010) claimed that assessment without instructional changes is not formative. The authors also suggested that instructional changes be qualitatively different from the initial teaching and contain new instructional strategies because it is not effective to simply repeat an unsuccessful activity.

Clear learning expectations. The literature shows that learning expectations must be transparent to students to enable them to have a clear overview of learning goals and what completing each step in the process signifies (Cooper, 2006; Earl, 2013; Earl & Katz, 2006; Fisher & Nancy, 2007; Hellsten, Klinger & McMillan, 2010; O'Connor, 2018; Schimmer, 2019; Stiggins, 2005). It is suggested that activities only serve as formative assessment when the teacher creates a direct link between the activities and the intended learning expectations.

Formative Assessment Concept Map

Teacher observation

Oral-questioning

Self-assessment

FORMATIVE ASSESSMENT

•ongoing classroom assessment
•inform learning
•active involvement
•instructional correctives
•clear learning expectations

Performance assessemnt

Teacher-student conferencing
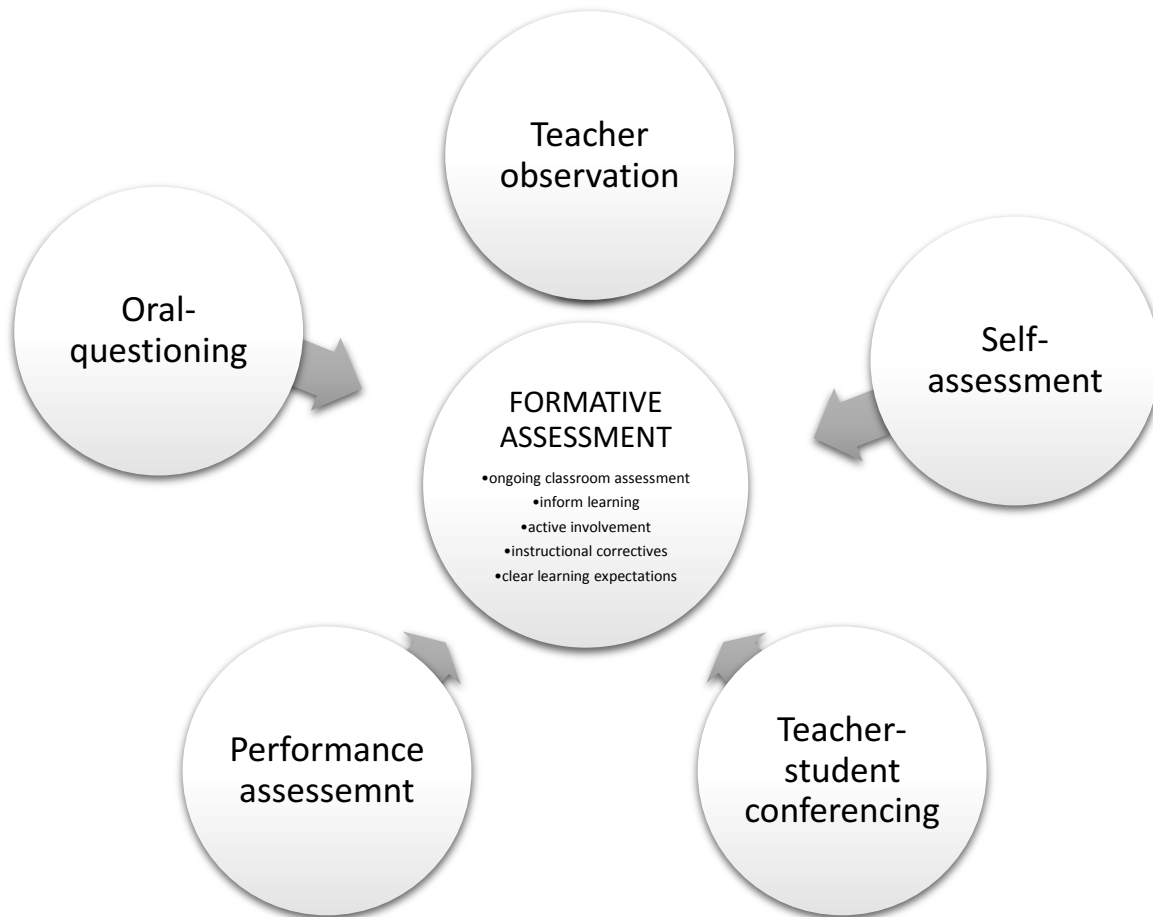
Understanding Formative Assessment by Symbols

In this handbook, I have created some symbols in order to help Grade 2 teachers better understand formative assessment and make the handbook more appealing to read. Each symbol included in this handbok contains its unique meaning and was designed and illustrated by myself on my drawing tablet.

A magnifying glass was desinged to symbolize teacher observation. This symbol reminds teachers to pay attention to the unspoken messages about student learning that may be ignored during the whole-class instruction. In teacher observation, teachers may pay attention to students' nonverbal behaviors such as body language, facial expressions and gestures, as well as the voice-related cures such as tone, loudness, intensity and pauses.

A GPS pin in an open book was designed to symbolize self-assessment. This symbol shows that students, as their own assessors for their learning, are able to monitor, make adjustments and make decisions on what is the next step. A GPS also indicates students' increased independence in nevigating the direction of their learnng.

An increasing curve on a clipboard was designed to symbolize teacher-student conferencing. The literature showed that the new purpose of teacher-student conferencing has shifted from conferring to coaching toward a target (Boushey & Moser, 2009; Davies, 2011b; Fenwich & Pasons, 2000). The increasing curve towards a target in this symbol indicates that students and teachers are both clear about students' learning progress and targeted learning goals. The clipboard in this symbol implies that keeping a good record is also an important component of conferencing.

The icon of a target with an arrow was designed to symbolize performance assessment. This symbol indicates the most significant component—a clear learning target in performance assessment. This symbol reminds teachers always select particular learning targets and a focused vision of the achievement they are assessing when they implement performance assessment. This target icon also implies that a learning target should be grounded in real-world contexts, integrating essential content and skills.

A light bulb with a question mark inside was designed to symbolize oral questioning. The light bulb is well known as the symbol of thinking, lighting up and connecting. This symbol of a question mark inside of a light bulb reminds teachers to ask meaningful questions that promote student thinking and probe students into in-depth responses. The light from the light bulb implies that ideas and thinking are connected and shared between who asks questions and who answers.

In order to make the structure of this handbook more clear, I make some metaphors, "the dish", "the benefit", "the ingredients or nutrition", "the recipe tips" and "the cooking tools" for the important components of formative assessment. I also created symbols for these metaphors (Figure 1), which are used as cohesive devices to connnect different components of this handbook.

The inspiration of comparing formative assessemnt with cooking was from my personal experience. There was a time when I tried to make a dish with kale, but I had no recipe for it. It happened that my roommate has a cook book with all types of decicious recipes. I started with searching for kale in the index section where recipes are organized by ingredients. I chose one recipe for making a kale soup out of many. This experience of starting with an ingredient helped

me cook a dish in an effective and efficient way without spending hours in studying many recipes. This made me think about the format of the handbook that I was writing. I believed that a handbook would be pratical and appealing to readers if it could guide teachers to implement formative assessemnt as easily as a cook book guide us to cook a dish.

When we try to make a delicious dish, we usually plan ahead regarding which dish we are going to make, what health-related benefits it brings to us, what ingredients are needed, what the recipe is, and what cooking tools we might need. Implementing an assessment approach is like cooking a dish. Before teachers carry out an assessment activity, they may plan ahead regarding which assessment approach they are going to use (the dish), why they should use this assessment approach (the benefit), what learning targets can be assessed through this approach (the ingredients or nutritions), what the guidelines for implementing this approach are (the recipe tips), and what tools they might use (the cooking tools).

Figure 1. The cooking-related symbols and their meanings.

The dish is a metaphor for an assessment approach.

The benefit of a dish is a metaphor for the advantages of an assessment approach.

The ingredients or nutrition is a metaphor for the learning standards.

The recipe tips is a metaphor for the guidelines of creating a effective formative assessment approach.

The cooking tools is a metaphor for the tools that teachers might need in order to implement a particular assessment approach.

Matching Assessment Approaches with Learning Standards

Research has shown that the key issue of quality classroom assessment lies in how well teachers match assessment with the learning standards (Cooper, 2006; Earl & Katz, 2006; O'Cornnor, 2018; Stiggins, 2005). The first step of planning an assessment task is to identify what skills or knowledge teachers intend to know about students. In other words, teachers need to choose particular targeted learning standards before they implement assessment practices.

After the process of choosing learning standards, teachers can match appropriate assessment approaches with those learning standards.

The literature indicates that different assessment approaches are suitable for assessing different learning standards (Stiggins, 2005; Hellsten, Klinger & McMillan, 2010). Throughout the process of constructing this handbook, I have sifted through a variety of sources about formative assessment, and thematically analyzed the text data. In a chart, I synthesized the most-reflected learning standards from the literature related to each assessment approach. Then I made a connection between the learning standards mentioned in the literature with the BC learning standards (this is presented in a T-chart in the section of "matching assessment approaches with learning standards" in each chapter). Finally, I matched each assessment approach with the BC learning standards and present them in a table (Table 1). For example, the literature showed that teacher observation is suitable for assess students' affective traits such as interest level, participation and learning motivation. Therefore, I matched teacher observation with the BC learning standard, *engage actively as listeners, viewers, and readers. In addition,* I also included the elaborations of the BC learning standards in Table 2, which elaborate those boldface terms mentioned in the learning standards (BC Ministry of Education, 2017c). The function of this section in this handbook is like the function of the index section in a cook book where all relevant recipes are listed under an ingredient. When teachers attempt to assess a particular learning standard (the ingredient), they can choose one of the relevant assessment approaches (the recipes) to match the learning standard.

Table 1 BC Grade 2 English Language Arts Learning Standards

Legend:

 self-assessment   teacher-student conferencing   Oral questioning

 Performance assessment   Teacher observation

BC Learning Standards (English Language Arts, Grade2)	Suitable assessment approaches

1. Curricular Competencies:
*Using oral, written, visual, and digital **texts**, students are expected individually and collaboratively to be able to:*

• 1. **Read fluently at grade level**

• 2. Use sources of information and **prior knowledge** to make meaning.

• 3. Use developmentally appropriate **reading, listening, and viewing strategies** to make meaning.

• 4. Recognize how different **text structures** reflect different purposes.

• 5. **Engage actively as listeners, viewers, and readers**, as appropriate, to develop understanding of self, identity, and community

• 6. Demonstrate awareness of the role that **story** plays in personal, family, and community identity

• 7. Use personal experience and knowledge to connect to **stories** and other **texts** to make meaning

• 8. Recognize the structure and elements of **story.**

• 9. Show awareness of how **story in First Peoples cultures** connects people to family and community

• 10. **Exchange ideas and perspectives** to build shared understanding

• 11. Create **stories** and other **texts** to deepen awareness of self, family, and community

• 12. Plan and create a variety of **communication forms** for different purposes and audiences

• 13. Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation

• 14 Explore **oral storytelling processes**

2. Content *(Students are expected to know the following):*

• 15. **elements of story**

• 16. **literary elements and devices**

• 17. **text features**

• 18. **vocabulary associated with texts**

• 19. **reading strategies**

• 20. **oral language strategies**

• 21. **metacognitive strategies**

• 22. **writing processes**

•23. **features of oral language**

• 24. word patterns, word families

•25. **letter formation**

• 26. **sentence structure**

• 27. **conventions**

Curricular Competencies

 text/texts: *Text* and *texts* are generic terms referring to all forms of oral, written, visual, and digital communication:

— Oral texts include speeches, poems, plays, and oral stories.

— Written texts include novels, articles, and short stories.

— Visual texts include posters, photographs, and other images.

— Digital texts include electronic forms of all the above.

— Oral, written, and visual elements can be combined (e.g., in dramatic presentations, graphic novels, films, web pages, advertisements).

• **read fluently at grade level:** reading with comprehension, phrasing, and attention to punctuation

• **prior knowledge:** personal stories and experiences

• **reading, listening, and viewing strategies:** examples include making predictions, making connections, making simple inferences, asking questions, engaging in conversation with peers and adults, showing respect for the contribution of others

• **text structures:** examples include letters, recipes, maps, lists, web pages

• **engage actively as listeners, viewers, and readers:** being open-minded to differences; connecting to personal knowledge, experiences, and traditions; participating in community

and cultural traditions and practices; asking meaningful questions; using active listening; and asking and answering *what if, how*, and *why* questions in narrative and non-fiction text

• **story/stories:** narrative texts, whether real or imagined, that teach us about human nature, motivation, and experience, and often reflect a personal journey or strengthen a sense of identity. They may also be considered the embodiment of collective wisdom. Stories can be oral, written, or visual, and used to instruct, inspire, and entertain listeners and readers.

• **story in First Peoples cultures:** Traditional and contemporary First Peoples stories take many forms (e.g., prose, song, dance, poetry, theatre, carvings, pictures) and are told for several purposes:

— teaching (e.g., life lessons, community responsibilities, rites of passage)

— sharing creation stories

— recording personal, family, and community histories

— "mapping" the geography and resources of an area

— ensuring cultural continuity (e.g., knowledge of ancestors, language)

— healing

— entertainment

(from *In Our Own Words: Bringing Authentic First Peoples Content to the K–3 Classroom,* FNESC/FNSA, 2012)

• **exchange ideas and perspectives:** taking turns in offering ideas related to the topic at hand, engaging in conversation with peers and adults, and showing respect for the contributions of others

• **communication forms:** examples include personal writing, letters, poems, multiple-page stories, simple expository text that is non-fiction and interest-based, digital presentations, oral

presentations, visuals, dramatic forms used to communicate ideas and information

• **oral storytelling processes:** creating an original story or finding an existing story (with permission), sharing the story from memory with others, using vocal expression to clarify the meaning of the text

Content – Elaborations Grade 2

• **elements of story:** character, plot, setting, structure (beginning, middle, end), and dialogue

• **literary elements and devices:** language, poetic language, figurative language, sound play, images, colour, symbols

• **text features:** how text and visuals are displayed (e.g., colour, arrangement, and formatting features such as bold, underline)

• **vocabulary associated with texts:** book, page, chapter, author, title, illustrator, web page, website, search box, headings, table of contents, pictures, and diagrams

• **reading strategies:** using illustrations and prior knowledge to predict meaning; rereading; retelling in own words; locating the main idea and details; using knowledge of language patterns and phonics to decode words; identifying familiar and "sight" words; monitoring (asking: Does it look right? Sound right? Make sense?); self-correcting errors consistently using three cueing systems: meaning, structure, and visual

• **oral language strategies:** asking questions to clarify, expressing opinions, speaking with expression, taking turns, and connecting with audience

• **metacognitive strategies:** talking and thinking about learning (e.g., through reflecting, questioning, goal setting, self-evaluating) to develop awareness of self as a reader and as a writer

• **writing processes:** may include revising, editing, considering audience

• **features of oral language:** including tone, volume, inflection, pace, gestures

• **letter formation:** legible printing with spacing between words

• **sentence structure:** the structure of compound sentences

• **conventions:** common practices in punctuation (e.g., the use of a period or question mark at end of sentence) and in capitalization (e.g., capitalizing the first letter of the first word at the start of a sentence, people's names, and the pronoun.

Table 2 Elaborations of BC Curricular Competencies

Section 2: Teacher Observation

A magnifying glass was designed to symbolize teacher observation. This symbol reminds teachers to pay attention to the unspoken messages about student learning that may be easily ignored during the whole-class instruction. In teacher observation, teachers may pay attention to students' nonverbal behaviors such as body language, facial expressions and gestures, as well as the voice-related cures such as tone, loudness, intensity and pauses.

The Dish

What is Teacher Observation?

Teacher observation is an essential approach for formative assessment (Caldwell, 2008; Fisher & Nancy, 2007; McMillian et al. 2010; Stiggins, 2005). It includes unstructured informal observation and systematic structured observation. Unstructured observation is open-ended with no fixed format, checklist or rating scale for recording what teachers observe. It is often used to assess nonverbal behaviour such as body language, facial expressions, and gestures which expresses students' unspoken messages. It is also used to assess voice-related cues such as tone, volume, intensity, and pauses. Structured observation is a systematic process used to observe and

record student behaviours that indicate targeted skills and competencies. In order to make appropriate interpretations of students' behaviours, teachers need to establish criteria-based checklists in relation to targeted skills or strategies (Boushey & Moser, 2009; Caldwell, 2008; Earl & Katz, 2006; Fisher & Nancy, 2007; O'Connor, 2018; Paratore & McCormack, 2005; McMillian et al. 2010; Stiggins, 2005). Record keeping is an important component of teacher observation. Teachers should write down anecdotal notes about the processes students go through when teachers conduct either unstructured or structured observations.

The Benefit

Why Teacher Observation?

Stable and consistent observation allows teachers to gain rich data that indicates student learning as it enables teachers to get frequent information from a variety of sources and different contexts. It also allows teachers to assess different competencies of the student: knowledge, skills, strategies, and learning styles (Fisher & Nancy, 2007; Parotore & McCormack, 2005; McMillian et al. 2010; Stiggins, 2005). Significantly, teachers are not constrained by what is in a checklist or rating scale when they conduct unstructured observations. Unstructured observations also make it possible to determine affective traits and emotional dispositions such as mood, mental state, attitude, self-assurance, responsiveness, confidence, interest, anger, and fear. Hellsten, Klinger and McMillan (2010) stated that teacher observation is especially helpful when the nonverbal and verbal messages conflict. For example, when teachers ask individual students

or the whole class whether they understand what they have learned, they say "yes", but with confused faces and low voices. This behaviour indicates that students may not really understand what they just learned. By carrying out teacher observation, the teacher is able to assess the degree of understanding demonstrated in student answers.

The Ingredients/Nutrition

Matching Assessment with Curricular Competencies

Research has shown that teacher observation can be used to assess:	Related BC Learning Standards (English Language Arts, Grade 2)
➢ Reading skills or strategies such as making predictions, making connections, rereads, checking for understanding (3). ➢ Positive emotional dispositions such as confidence, happiness, self-assurance, and responsiveness (5). ➢ Negative emotional dispositions such as nervousness, anxiety, anger, fear, and concern (5). ➢ Affective traits such as the interest level in particular learning topics and student motivation towards learning (5). ➢ Student participation in class or discussion (5). ➢ Cooperation in group work (5). ➢ The verbal skills demonstrated in expressing thoughts (10).	➢ *2. Use sources of information and prior knowledge to make meaning.* ➢ *3.Use developmentally appropriate reading, listening, and viewing strategies.* ➢ *5. Engaged actively as listeners, viewers, and readers.* ➢ *7. Use personal experience and knowledge to connect to stories and other texts to make meaning.* ➢ *10. Exchange ideas and perspectives* ➢ *14. Explore oral storytelling (sharing story with others, using vocal expression to clarify the meaning of the text.* ➢ *20.Oral language strategies: asking questions to clarify, expressing opinions, speaking with expression, taking turns and connecting with audience.*

➤ Interpersonal skills (10).	➤ *21.Metacognitive strategies: talking and thinking about learning to develop awareness of self as a reader and as a writer.*
➤ Willingness to ask questions (20).	
➤ The degree of understanding demonstrated in student answers (7, 21).	
➤ Accuracy of student responses to questions (21).	
➤ Learning styles (whether students like to use pictures, sounds, language or body to make sense of learning materials).	

The recipe tips

Guidelines for Effective Teacher Observations

❖ **Before teacher observation, teachers should**

- Schedule systematic observations to record student behaviours that indicates the presence of targeted learning expectations.

- determine in advance how specific behaviours relate to the learning expectations, create criteria-based checklists in relation to these particular learning expectations.

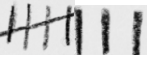- collaborate with other teachers, establish criteria that may give teachers some ideas of examples of particular characteristics such as seeking corrective feedback, asking questions, helping other students, saying he likes school.

❖ **During teacher observation, teachers should**

- pay attention to students' nonverbal behaviours such as facial expressions, body language

and gestures. Focus on the eye brows and forehead, the eyes, and especially the lips, which provides the most important source of nonverbal information.

- pay attention to voice-related cues such as tone, loudness, intensity, and pause etc.

- make a brief but descriptive anecdotal record, but not making conclusions or inferences in what is recorded (refer to Tool 3 and Tool 4 for examples).

- describe what teachers saw or heard in the anecdotal record, not what it may mean. Simple descriptions such as "frowned", "asked question", and "stared out window" instead of "unhappy", "frustrated", "sad", "motivated", and "positive" (refer to Tool 2 for details).

❖ **After teacher observation, teachers should**

- make appropriate interpretations of students' behaviour after teachers carefully analyze the records and find patterns in the data.

- keep interpretations separate from descriptions of the behaviours.

- take follow-up corrective action following teachers' observations and interpretations.
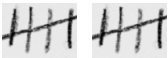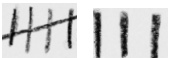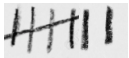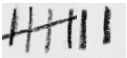
Tools for Effective Teacher Observation
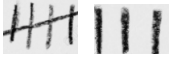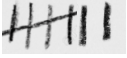
Tool 1: Teacher Observation Plan in Relation to BC Learning standards

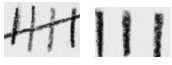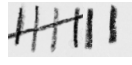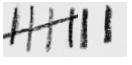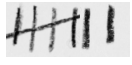Teachers may implement systematic observation by recording the frequency of certain student behaviors in a table. Whenever teachers see certain behaviors that indicate the presence

of learning targets, they can draw a stick below those targets. After a unit of learning, teachers can see how students are approaching particular learning criteria.

Observation of Students' General Behaviors				
Criteria 1: *Use prior knowledge* Criteria 2: *Asking questions* Criteria 3: *Engaged actively* Criteria 4: *Expressing opinions*				
student	1. Prior knowledge	2. Ask question	3. Engaged actively	4. Expressing ideas
Ben	ⵂⵂ ⵂⵂ	ⵂⵂ ‖‖	ⵂⵂ‖	ⵂⵂ‖
Giada	‖	‖‖	‖‖	‖
Bora	ⵂⵂ‖‖	ⵂⵂ	‖‖	ⵂⵂ
…				

Observation of Students' Interpersonal Behaviors		
Criteria 6: *Exchange ideas and perspectives* Criteria 7: *Retelling story with others, using vocal expression to clarify* Criteria 8: *Collaborating with others*		
Student	6. exchanging ideas	7. retelling	8. collaborating
Ben	ⵂⵂ‖‖	ⵂⵂ‖	ⵂⵂ‖

Giada	|||	|||	||
Bora	卌	|||	卌
…			

Observation of Students' Behaviors in Using Reading Strategies				
Criteria 9: Use developmentally appropriate reading or viewing strategies such as making prediction, and making inferences. *Criteria 10: Demonstrate awareness of the role that story plays in personal, family, and community identity.* *Criteria 11: Use personal experience and knowledge to connect to stories and other texts to make meaning*				
Student	9. Making prediction	9. Making inference	10. Role of story	11. Connection
Ben	卌 |||	卌||	卌||	卌||
Giada	|||	|||	||	|||
Bora	卌	|||	卌	|||
…				

Tool 2: Messages students convey through Nonverbal Behaviour and Vocal Cues

This chart helps teachers to interpret student behaviours in an effective and efficient way. Teachers may refer to this chart from time to time to make themselves familiar with these unspoken messages.

What are your students telling you?			
Message	Facial Expressions	Body Language	Vocal cues
Confident	Relaxed, direct eye contact,	Open posture, chin up, hands waving, forward position in seat.	Fluent, few pauses; variety in tone; loud
Nervous	Tense, brows lowered	Rigid, tense, tapping, picking	Pauses; "ah" sounds; repetition; shaky, soft, quiet, fast
Bored	Looking around, relaxed,	Slumped posture, hands to face	Soft, monotone, flat
Frustrated	Brows together, eyes downcast, squinting	Tense, tapping, picking, placing fingers or hands on each side of head	Pauses; low pitch
Interested	Direct eye contact, brows uplifted	Learning forward, relaxed, opening arms and legs, nodding, raising hand	Higher pitch, fast
Not understanding	Frowning, biting lower lip, squinting eyes, looking away	Leaning back, arms crossed, head tilted back, hand on forehead, fidgeting, scratching chin, leaning head on hands	Slow, pauses, "ah," "um," "well" expressions, low pitch, monotone, quiet, soft.

adapted from McMillan et al. (2010). *Classroom assessment: principles and practice for effective standards-based instruction.* Toronto: Pearson, Allyn, & Bacon.

Tool 3: Guideline for taking anecdotal note.

When taking notes in teacher observation, teacher can consider including the following details.

Student name:

Observation details:

Related learning standards:

Date

Tool 4: Techniques of record keeping.

Teachers may refer to these recording techniques to learn how to keep effective records about student learning.

- √ or X (done or not done)
- Rubric score
- Letter or number mark (x/10, %, A,B)
- Symbol (G-Good, S-satisfactory, NI-needs improvement)
- Anecdotal comment

adapted from O'Connor (2018). *How to grade for learning*. Thousand Oaks: Corwin.

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Section 3: Self-assessment

A GPS pin in a book was designed to symbolize self-assessment. This symbol shows that students, as their own assessors for their learning, are able to monitor, make adjustments and make decisions on what is the next step. A GPS also indicates students' increased independence in navigating the direction of their learnng.

The Dish

What is self-assessment?

Self-assessment is an assessment process where teachers involve students to be their own assessors and take ownership of their learning. Students are empowered to be aware and analyze thinking, monitoring learning, making connection and making adjustment to their learning (Boushey & Moser, 2009; Cooper, 2006; Davies, 2011a, 2011b; Earl, 2013; Earl & Katz, 2006; Fenwich & Parsons, 2000; O'Cornnor, 2018; McMillan et al. 2010; Siggtins, 2005)

In self-assessment, teachers are suggested to provide criteria checklists or other tools for students to ensure that they understand the learning expectations and are able to make decisions

on what is the next step of their learning (Cooper, 2006; Davies, 2011a, 2011b; Earl, 2013; Earl & Katz, 2006; O'Cornnor, 2018; McMillan et al. 2010; Siggtins, 2005). Self-assessment happens in different forms such as self-reflecting journals, assessing own work against checklists or criteria, self-reports, and self-inventories.

The Benefit

Why Self-assessment?

Self-assessment is a key approach of formative assessment as it provides opportunities for students to think of the quality of their own work (Cooper, 2006; Davies, 2011a; Earl, 2013; Earl & Katz, 2006; O'Cornnor, 2018; McMillan et al. 2010; Siggtins, 2005). In self-assessment, students are their own assessors for their learning and they learn to provide effective feedback for their own learning via the process of monitoring, making adjustments and making decisions on what is the next step. Students' independence is increased by self-assessing as they have autonomy in their learning rather than relying on external help from teachers or others (Davies, 2011A; Earl, 2013; Earl & Katz, 2006; O'Connor, 2018). Research has shown that students who set goals, make plans and monitor their progress achieve more than those who do not (Davies, 2011a; Stiggins, 2005).

Matching Assessment with Learning Standards

Research has shown that self-assessment can be used to assess:	Related BC Learning Standards (English Language Arts, Grade 2)
➢ The skills of connecting learning to prior knowledge or personal experience (2, 7, 11). ➢ The metacognitive process (3). ➢ The skills of making connection of information (3). ➢ Confidence in learning (5). ➢ Risk taking (5). ➢ Engagement in learning (5). ➢ The skills of organizing and reorganizing information (21). ➢ The skills of monitoring and manage one's learning (21). ➢ The skills of using checklists for self-assessment (2, 19,20). ➢ The skills of judging learning in relation to learning standards (21). ➢ The skills of making self-adjustment (21).	➢ *2. Use sources of information and prior knowledge to make meaning* ➢ *3.Use developmentally appropriate reading, listening, and viewing strategies to make meaning* ➢ *5.Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community* ➢ *7.Use personal experience and knowledge to connect to stories and other texts to make meaning* ➢ *11.Create stories and other texts to deepen awareness of self, family, and community* ➢ *19.Know reading strategies* ➢ *20.Know oral language strategies* ➢ *21.Know metacognitive strategies*

The recipe tips

Guidelines for Effective Self-assessment

❖ **Build a safe environment where:**

- support and assistance are available when needed.

- students are aware of the value of self-assessment.

- students feel a sense of confidence, competence, and being supported,

- students are willing to take risks.

- students are aware that mistakes are essential for learning.

- students know how to give help, how to get help, what support to get, and how to use the support.

❖ **Show students what good work looks like by**

- telling students what they are expected to learn.

- breaking down the learning standards into student-friendly criteria or personal learning goals.

- setting criteria together.

- providing examples of quality work from the previous-year students or teacher-made examples.

- modelling how to make good work.

- showing variations of quality.

❖ **Provide and help to develop descriptive feedback by**

- making it current, accurate, and focused.

- allowing students to see the gap between their learning and reference points, which means prior knowledge and curricular learning expectations.

- informally refocusing students' thinking and allowing them to collect their thoughts and feelings, so that they can carry on with less frustration and confusion.

- formally informing students to regroup, establish new or reaffirm their thinking, and come back to try again with renewed and additional learning strategies (Earl, 2003).

- guiding students in developing skills for constructing descriptive feedback for themselves and peers. These skills may include knowledge and strategies to validate and question students' own thinking, and to become comfortable with the inevitable uncertainty in inquiring into new things.

❖ **Place a focus on metacognition by having students:**

- be aware of and analyze their thinking.

- monitor and challenge their understanding.

- make connections between different information, organizing and reorganizing ideas.

- Adjust their understanding and develop new learning through connecting the raw material with prior knowledge.

- discuss with peers, teachers, or parents and challenge their understanding.

Tools for Effective Self-Assessment

Tool 1: "Easy or Difficult" Card.

Teachers may hand this card to students after a learning topic / a lesson is finished. When the class meets the next time, teachers may share with the class what they learned from these cards and what questions or topics need review.

Topic:_____	symbols to indicate your understanding
It's easy.	√
I know this so well I can teach someone else.	★
I need to do this with a partner.	☺
I need more time.	◕

Self-Assessment and Goal Setting (Davies, Kathleen & Cameron, 2011b)

Tool 2: Criteria for partner work (a

bookmark)

Discussing with others

Talk about topic.

Everyone takes turn to talk.

Listen carefully and respectfully.

Learn new ideas from others.
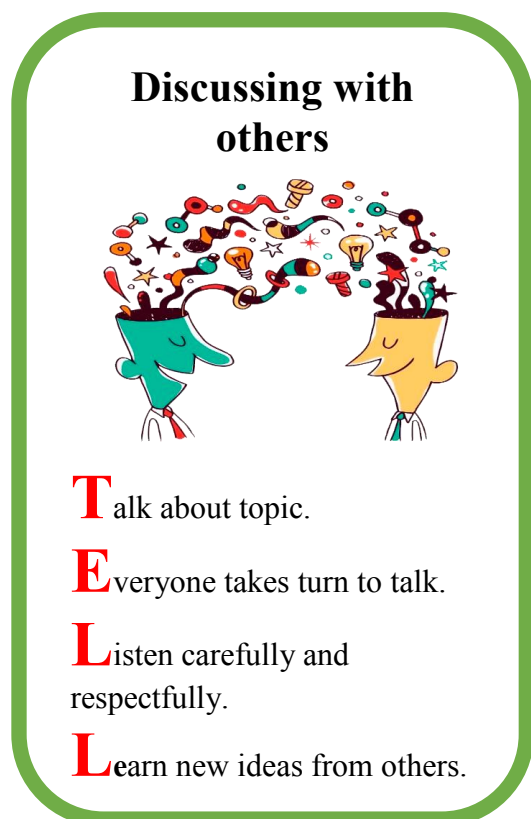
Adapted from Davies, Kathleen & Cameron,

(2011b). Self-assessment and goal setting.

Courtenay, BC: Building Connections

Publishing.

Tool 3: Reading Checklist (include basic

reading strategies outlined in BC Reading

Performance Standards (Grade 2).

When I
don't understand
the text:

I reread.
I check for understanding.
I use picture clue.
I use my prior knowledge.

AHA!
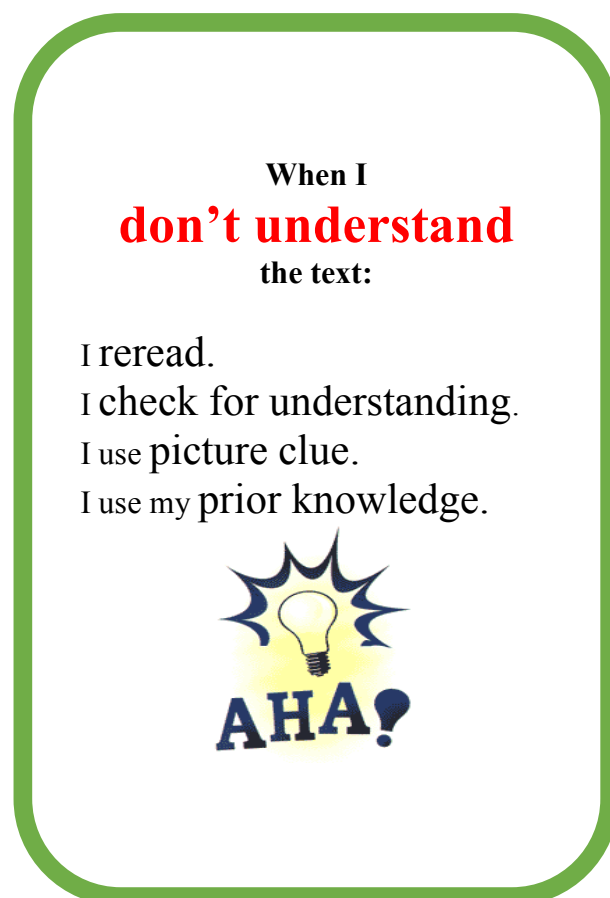
adapted from BC Performance Standards for

Reading.

Tool 4: Writing process (a book mark)

Tool 5: Revision Checklist for Writing:

	Idea: I have a **clear message.**
	Details: I included several **details.**
	WOW words: I used some **WOW descriptive words.**
	Organization: My writing has a **Beginning, Middle, and End.** It has some **connecting words.**
	Sentence: I wrote **complete sentences.**

adapted from rating scale for *meaning, style, and form* from the BC Writing Performance

Standards (Grade 2).

Tool 6: Editing Checklist for Writing

C	**Capitals:** I capitalize **names, places, titles, starts of sentences, I, months and days**.
U	**Understanding**: I checked and read out my sentences and they **make sense.**
P	**Punctuations:** I used periods, commas, exclamation marks and question marks in the right places. **, . ! ?**
S	**Spelling:** I stretched out my words, used my Work Bank to do my **BEST in spelling!**

adapted from rating scale for *conventions* from the BC Writing Performance Standards (Grade 2)

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Section 4: Teacher-Student Conferencing

An increasing curve on a clipboard was designed to symbolize teacher-student conferencing. The increasing curve towards a target in this symbol indicates that students and teachers are both clear about students' learning progress and targeted learning goals. The clipboard in this symbol implies that keeping a good record is an important component of conferencing.

What is Teacher-student Conferencing?

Teacher-student conferencing is the process where teachers meet with students and discuss what students have learned and what is the next step in learning. To put it specifically, teacher-student conferencing is the brief time when teachers and students talk directly in order to figure out exactly where the student is in terms of mastering particular strategies or skills and what the student need to do in order to achieve the learning expectations (Boushey & Moser, 2009; Davies,

2011b; Dirksen, 2006; Fenwich & Parsons, 2000; Fisher & Nancy, 2007; Paratore & McCormack, 2005; McMillan et al. 2010; Siggtins, 2005)

Teacher-student conferencing often comprises a series of questions from the teacher: What are you reading now? How do you understand a reading strategy? What often do you read? Why did you choose this book? At the end of the teacher-student conference, teachers and student set goals together. The goals set in the current teacher-student conference are the focus for the next conference.

The Benefit

Why Teacher-student Conferencing?

In teacher-student conferences, teachers provide model-demonstration, guided practice, and individualized instruction toward a predetermined goal (Boushey & Moser, 2009; Davies, 2011b; Fenwich & Parsons, 2000; McMillan et al. 2010; Siggtins, 2005). Conferencing is a great time to teach and assess focused reading and writing strategies. It can be also mini-lessons that teach students grammar, conventions, and literacy elements. The conferencing moment is where true coaching and teaching occurs, as teachers can assess individual students' strengths and challenges in learning and help students toward learning targets every time they meet (Boushey & Moser, 2009; Davies, 2011b; Fenwich & Parsons, 2000). Conferencing especially helps at-risk readers and writers by talking through and reinforcing different reading and writing strategies.

Helping students set meaningful individual goals is another advantage of teacher-student conferencing. Research showed that it is hard for children in primary grades to set meaningful goals without guidance or a concrete conference system. The purpose of the conferring session has shifted from conferring to coaching toward individual goals (Boushey & Moser, 2009; Davies, 2011b; Fenwich & Parsons, 2000). Students understand the learning target and where success is after setting goals together with teachers. In addition, students are highly involved in the assessment process, which motivates students and empowers them to take responsibility for their learning and progress (Boushey & Moser, 2009; Caldwell, 2008; McMillan et al. 2010; Siggtins, 2005).

Accountability is achieved while teachers are able to gain rich data about student learning. In teacher-student conferencing, teachers have opportunities to meet with students, observing and listening closely to students, and seeing in that moment whether they can apply what has been taught. Conferencing also has a significant impact on student-teacher relationships as the students can see and feel teachers are fully present for their learning (Boushey & Moser, 2009; McMillan et al. 2010; Siggtins, 2005).

The Ingredients/Nutrition

Matching Assessment with Learning Standards

Research has shown that teacher-student conferencing can be used to assess:	Related BC Learning Standards (English Language Arts, Grade 2)

- Oral reading fluency (1).
- Summarizing text, telling main idea (2).
- Retelling the story (3, 14).
- Using prior knowledge to connect with text (3).
- Asking questions throughout the reading process (3, 20).
- Predicting what will happen, use text to confirm (3)
- Inferring and supporting with evidence (3, 6).
- Using the picture to match words (3).
- Decoding words: use beginning and ending sounds, blend sounds, stretch and reread, flip the sound, chunk letters and sounds together (3, 24).
- Reading appropriate-level texts (3).
- Common sight words and high-frequency words (3).
- Adjusting and applying different reading rates to match text (3).
- Using pictures, illustrations, and diagrams (3).
- Expanding vocabulary: use dictionaries thesauruses, and glossaries as tools (3).
- Using text features (titles, headings, captions, graphic features) to make meaning (4).
- Reading strategies: check for understanding, back up and reread, skip the word and then come back (5, 19).
- Comparing and contrasting within and between text (7, 21).
- Recognizing literacy elements (genre, plot, character, setting, problem/resolution, theme) (8).
- Exchanging ideas (10).
- Writing skills (13, 22, 25, 26, 27).
- Using words parts to determine the meaning (24).

- *1. Read fluently at grade level*
- *2. Use sources of information and prior knowledge to make meaning*
- *3. Use developmentally appropriate reading, listening, and viewing strategies to make meaning*
- *4. Recognize how different text structures reflect different purposes.*
- *5. Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community*
- *6. Demonstrate awareness of the role that story plays in personal, family, and community identity*
- *7. Use personal experience and knowledge to connect to stories and other texts to make meaning*
- *8. Recognize the structure and elements of story*
- *10. Exchange ideas and perspectives to build shared understanding*
- *13. Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation*
- *14. Explore oral storytelling processes*
- *19. Know reading strategies*
- *20. Know oral language strategies*
- *21. Know metacognitive strategies*
- *22. Know writing processes*
- *24. Know word patterns, word families*
- *25. Know letter formation*
- *26. Know sentence structure*
- *27.Know conventions*

The recipe tips

Guidelines for Effective Teacher-student Conferencing

❖ **To preparing for conferencing, teachers should:**

- organize their time and make choices about which students need time on that day.

- make a scheduled appointment system where they mark down all these appointments in a calendar. Conferences need not be planned for every student.

- only plan for two or three conferences with students per day.

- keep in mind that more at-risk students will need more conferencing than higher functioning students as at-risk students need more one-on-one time with teachers.

- plan for enough uninterrupted time to conduct an entire conference.

- establish the guidelines for a good conference and stick to the guidelines to keep conferences intentional and focused. The guidelines should focus on the real, important aspects of teaching and learning, even when the purposes of conferences may vary with students who have different needs.

- carefully think out and plan conferring questions in advance, keeping the questions sharply focused on the content and achievement targets.

- focus strictly on the predetermined learning goals set in the last conference.

- create a healthy conference atmosphere by sharing the purpose and format of a conference. Students should be made aware that both teachers and students must be open

to honest communication.

- be completely present with students, and truly focused on their learning needs.

- develop a shared language around conferencing. For example, teachers may explain to students the language about reading strategies such as *making prediction, cross check for meaning, picture walk* in the beginning of the semester and reinforce the use of them throughout their daily instruction. In this way, students are familiar with these those terms in a conference with the teacher.

❖ **To keep good record during conferences, teachers should**

- keep records short, concise, and include only the information that is needed.

- listen and observe carefully for evidence about whether students demonstrate the focused skills or strategies successfully and decide whether they are ready for independent work.

- focus on one or two strategies each time and write down on descriptive notes the conferencing form.

- add notes that are related to the predetermined goals: Were they able to check for understanding? Did they choose to back up and reread?

❖ **To set meaningful goal at the end of conferencing, teachers should**

- not only cover what students are learning but also focus on students' individual goals.

- set a new specific goal for the next conference, if students have demonstrated the current goal, make success look clearly and openly defined.

- have focused, purposeful, and assessment-driven conferences with students.

- conclude each conference with a summary of what has been covered and how teachers and students will work together in the future.

- provide students with opportunities to see and celebrate their growth and encourage them

to continue practicing the focused skills or strategies.

- engage students in setting goals and let students see the sense of power, responsibility and growth that comes from taking charge of their learning.

Tools for Teacher-student Conferencing

Tool 1: Guided reading

Guided reading involves teacher-led instruction and practice in a specific decoding and comprehension strategies for reading. Here is the procedure for guided reading.

- o Step 1: The teacher groups students flexibly and teachers select texts that match the instructional reading level or reading interests of the focal group of students. (Typically, 15-20 minute per group)

- o Step 2: The teacher introduces the topic or story to the students, connects it to prior knowledge, and invites students to make predictions.

- o Step 3: The teacher models or reviews a reading strategy. The teacher directs the students to read the text, or a portion of the text, silently.

- o Step 4: The teacher stops at different points to ask students to display the strategy taught, make connections, or draw conclusions.

- o Step 5: Teachers can ask a student to read aloud as he or she circulates among students,

jotting down information about fluency, accuracy, and reading strategies for constructing meaning.

adapted from Boushey, G., & Moser, J. (2009). *The café book: Engaging all students in daily literacy assessment and instruction.* Portland: Stenhous publishers.

Tool 2: Writing workshop

Writing workshop is a format for teaching writing that emphasizes process-based instruction. Guidelines for conducting a writing workshop vary but typically include the following components.

- o Sharing: exemplary writing is shared with students as models of good writing.

- o Mini-lesson: a short direct instruction model-demonstration or guided practice is given to teach focused lessons in grammar, conventions, writing process and literacy elements.

- o Writing and conferencing: students are given time to apply what they learned in the mini-lesson.

- o Student sharing: students read aloud what they are writing and invite feedback from the teacher or peers to assist in revising their work.

adapted from Boushey, G., & Moser, J. (2009). *The café book: Engaging all students in daily literacy assessment and instruction*. Portland: Stenhous publishers.

Tool 3: Checklist for teacher-student conferencing

- o Step 1: Check scheduled appointments.

- o Step 2: Review the previous conference notes for the students' skills or strategy focus.

- o Step 3: Observe and listen to the student carefully.

  Is he or she applying the skill/ strategy taught?

What is the student doing well with his or her strategy/ skill application?

Record this on a conferring notebook.

- o Step 4: Share with the student teachers' observation about what he or she is doing well.

- o Step 5: Teach or reinforce the still or strategy that is just right for the student now by explicit explanation, modeling, or giving examples.

- o Step 6: Ask the student to practice the skill/ strategy while the teacher listen in.

- o Step 7: Based on the teaching and learning of the current conference, set a goal for the next conference together with the student.

Tool 4: Teacher-student conferencing form

Teachers can use this form to record students' behaviours and set goals for the next conference. This form should be open and visible to students during a conferencing session.

Student:		
Date	Observation and Instruction	Next step

adapted from Boushey, G., & Moser, J. (2009). *The café book: Engaging all students in daily literacy assessment and instruction.* Portland: Stenhous publishers.

Tool 5: Teacher-student conferencing calendar

Teachers can mark down all the appointments in a calendar in order to schedule
systematic teacher-students conferencing. This calendar provides the teacher ith a clear pictures
of which students he / she will need to meet.

January 2020							
reading focus: nonfiction (text features)				writing: information writing			
Week # of the semester	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week _1_			1 *Bora, Alex,*	2 *Ben, Giada*	3 *Melody Vivian*	4	5
Week ___	6	7 *Michael*	8 *Bora, Alex,*	9 *Ben, Giada*	10 *Michelle Sofiya*	11	12
Week ___	13	14 *XXX*	15 *XXX*	16 *XXX*	17 *XXX*	18	19
Week ___	20	21 *XXX*	22 *XXX*	23 *XXX*	24 *XXX*	25	26
Week ___	27	28 *XXX*	29 *XXX*	30 *XXX*	31 *XXX*		

Tool 6: Recording form for teacher-student conferencing

Teachers may use this form to track the teacher-student conferencing record. Teachers
can see the dates and frequency of conferencing, which provides teachers a clear picture of who
he or she has seen and who need to be scheduled for conference soon.

Student	Reading								Writing							
Ben	1/2	1/9	1/16	1/24					1/3	1/10	1/17	1/25				

Giada	1/3	1/10	1/17					1/10	1/15	1/17				
Michael	1/4	1/10	1/17					1/5						
…														

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Section 5: Performance Assessment

A target with arrow icon was designed to symbolize performance assessment. This symbol indicates the most significant component of a clear learning target in performance assessment. This symbol reminds teachers always to select particular learning targets and maintain a focused vision of the achievement they are assessing when they implement performance assessment.

What is Performance Assessment?

Performance assessment involves activities that involve students demonstrating their performance skills or competency in creating products (Caldwell, 2008; Cooper, 2006; Davies, 2008; Dirksen, 2006; Earl 2013; Earl & Katz, 2006; Fenwich & Parsons, 2000; Fisher & Nancy, 2007; O'Connor, 2018; McMillan et al. 2010; Schimmer, 2019; Siggtins, 2005). Performance assessment that assesses performance requires students to demonstrate skills of constructing a

response, clarifying answers, defending a topic, applying knowledge, or making oral presentations. Performance assessments that require students to produce often involve sustained work over days or weeks, which gives students opportunities to demonstrate their deep understanding and thinking skills (Stiggins, 2001; McMillan, 2010).

Unlike objective tests, performance assessment usually means subjective tasks that have no single "correct" answer. The accountability of performance assessment relies on teacher observation and professional judgment (Caldwell, 2008; Fisher & Nancy, 2007; O'Connor, 2018; McMillan et al. 2010; Siggtins, 2005). It requires teachers to prepare and develop their assessments thoughtfully in order to collect sufficient data about student performance. Research stated that student learning will be placed in a harmful way if teachers do not invest enough time and energy in developing performance assessment (Stiggins, 2005; McMillan, 2010).

The Benefit

Why Performance Assessment?

The great potential of performance assessment has been acknowledged by many education systems over the past decade (Stiggins, 2001; McMillan, 2010). Educators have discovered the best principles of performance assessment and used them to assess learning expectations that used to be measured mostly by conventional objective tests. Research showed that performance assessment has advantages in supporting learning (Caldwell, 2008; Earl, 2013; Earl & Katz, 2006; Fenwich & Parsons, 2000; Fisher & Nancy, 2007; O'Connor, 2018;

McMillan et al. 2010; Schimmer, 2019; Siggtins, 2005). First, performance assessment can be used to gain rich and useful sources of information about students' mastery of particular skills or competencies. Students construct responses to demonstrate reasoning skills, communication skills, comprehensive understanding, problem-solving skills, and application of knowledge. Second, teachers are able to integrate assessment with instruction as learning occurs during the performance assessment process. Performance assessments usually involve students meaningfully in hands-on activities for extended periods of time, which enhances the development of understanding. By using performance assessment, teachers do not need to take time away from instruction. Third, students are more engaged in learning as they are clear about the learning expectations and are provided with additional ways to show what they know and can do. In performance assessment, teachers share specific criteria to help students identify what a successful performance is. Finally, research has shown that performance assessment tends to be more authentic than other approaches as it is usually based on a real-world context and links to performance standards (Fisher & Frey, 2007; Stggins, 2005). Further, it helps students construct knowledge through disciplined inquiry, and focuses on higher-order thinking skills and application of knowledge (McMillan, 2010; O'Connor, 2018; Stiggins, 2005).

The Ingredients/Nutrition

Matching Assessment with Learning Standards

Research has shown that	Related BC Learning Standards (English Language

performance assessment can be used to assess:	Arts, Grade 2)
➢ Reasoning skills (2). ➢ Making inference (3, 21). ➢ Making prediction (3). ➢ Analyzing information (3). ➢ Positive attitudes (5). ➢ Interest level towards learning (5). ➢ Motivational dispositions (5). ➢ Academic self-concept (5). ➢ Deep understanding (7,9) ➢ Application of knowledge and skills (7). ➢ Communication skills (10, 12, 13). ➢ Presentation skills (10). ➢ Proficiency in constructing responses (11, 14). ➢ Proficiency in constructing performance tasks or creating products (11, 12). ➢ Proficiency in carry out steps in product development (12). ➢ Problem solving skills (21). ➢ Critical thinking (21). ➢ Generalizing and organizing information (21) ➢ Challenging understanding (21).	➢ *2. Use sources of information and prior knowledge to make meaning* ➢ *3.Use developmentally appropriate reading, listening, and viewing strategies to make meaning* ➢ *4. Recognize how different text structures such as maps, lists, and web pages reflect different purposes.* ➢ *5. Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community* ➢ *6. Demonstrate awareness of the role that story plays in personal, family, and community identity* ➢ *7. Use personal experience and knowledge to connect to stories and other texts to make meaning* ➢ *9. Show awareness of how story in First Peoples cultures connects people to family and community* ➢ *10. Connects people to family and community* ➢ *Exchange ideas and perspectives to build shared understanding* ➢ *11. Create stories and other texts to deepen awareness of self, family, and community* ➢ *12. Plan and create a variety of communication forms for different purposes and audiences* ➢ *13. Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation* ➢ *14. Creating a story or finding an existing story, sharing the story with others, using vocal expression to clarify the meaning of text.* ➢ *21. Metacognitive strategies.*

The recipe tips

Guidelines for Effective Performance Assessment 🎯

❖ **First of all, teachers should have a clear picture of the learning expectation by**

- defining performance skills and competencies in the subject areas they teach.

- learning about the patterns of reasoning, the performance skills, and the products that constitute maximum proficiency in the subjects they teach and assess. This is because performance assessment relies on teachers' professional and subjective judgment.

❖ **Second, teachers should select a clear learning target by**

- beginning assessment development with a clear target and a focused vision of the achievement they are assessing.

- selecting feasible purposes that integrate essential content and skills and are grounded in real-world contexts such as performance skills, constructing responses, or creating products.

- thinking about whether the assessment should be an individual performance or a group performance, or both.

❖ **Third, teachers should develop performance criteria that are used to evaluate student performances by**

- creating feasible, directly observable, understandable, clearly and specifically defined criteria.

- Create rating scales to specify clear definitions of different levels of proficiency.

❖ **Fourth, teachers should develop the appropriate type of performance tasks in relation to the established criteria by**

- creating tasks that reflect particular competencies that students are expected to do.

- inviting students to witness their own growth during the procedure of conducting the performance tasks.

- creating appropriate tasks for the age of the students.

- provide supports and available resources.

- relying on the same criteria in order to keep it fair for all students.

- providing detailed task descriptions that clearly indicate the following information: What is the final product? What is the procedure to in order to construct the performance tasks? What resources may be needed? What is the rating scale to assess this task?

❖ **Fifth, teachers should create a clear checklist in relation to the performance criteria by**

- involving students in the process of transforming performance criteria into the checklist.

- Sharing the performance criteria checklist before students start the performance tasks.

- collaborating with students in keeping track of which criteria have been covered in class and which are yet to come throughout the performance tasks.

- using student-friendly language in the checklist to ensure that each student understands the checklist.

- modeling or showing examples of performances before students start to do their tasks if the tasks are new or challenging to students.

❖ **Sixth, teachers should integrate performance assessment into teaching by**

- using performance assessment as an instructional strategy, not just a source of data.

- taking their students inside the assessment development process.

- helping students apply the formative assessment results over time to track their own success.

❖ **Finally, teachers should create a safe environment by**

- having students understand that it is all right to perform at low levels at first when trying something for the first time.

- protecting the academic self-concept of those who have lower-achievement on particular performances.

Tools for Performance Assessment 🎯

Tool 1: Readers' Theatre

Readers' Theatre is an effective way to help challenging books accessible to all students (Paratore & McCormack, 2005). In Readers' Theatre, students use a text as a script for practicing the reading of literature; the purpose is to have students practice their scripts through re-reading until they can accomplish a "polished" reading performance. It requires the students to think about character traits, actions, and motives and to use that information to read the story in their character's words. It requires no costumes, props, or memorization. Here is the procedure for Readers' Theatre:

Step 1. Introduce Readers' Theatre to students by demonstrating, modelling, or showing examples.

Step 2. Group students according to reading levels or reading interests.

Step 3. Have children discuss and choose a text as a script for Readers' Theatre. Sometimes the teacher may prepare some meaningful texts in advance for them to choose.

Step 4. Provide time for children to discuss and assign each person's role.

Step 5. Let students practice repeatedly the scripts to learn their parts.

Step 6. Have students perform their parts of the story to the class.

Step 7. Have students write a brief self-reflection about the Readers' Theater experience.

Tool 2: Venn Diagrams

Venn Diagrams enable students to think more critically and graphically to organise and categorise information by telling similarities and differences about a specific topic, theme, or literature focus (Figure 1). Topics can be:

o   Books by the same author

o   Books with a similar theme

o   Two characters in fairy tales

o   The structures of two nonfiction books

o   Two types of poems

o   The student and a character in a story

Here are the steps to carry out Venn diagrams:

Step1. Draw the Venn diagram by drawing two overlapping circles. Each circle will represent one subject. Label the diagram and the circles.

Step 2. Fill in the Venn diagram by writing the characteristics of the topic or them that are different into each identified circle. The similar characteristics are written in the overlapping sections of the circle.

Step 3. Summarise the information and display the Venn Diagram with the class.
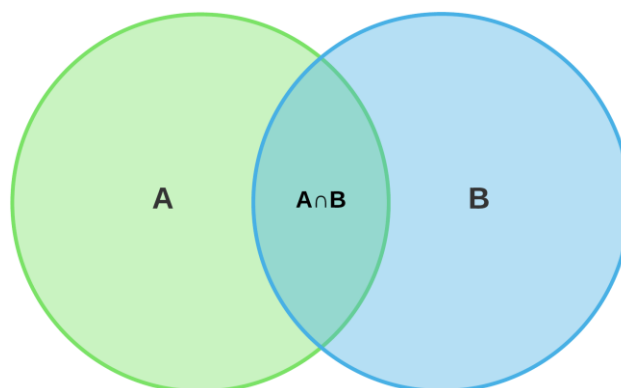
Figure 5.1. Sample of Venn diagram

Tool 3: Book Report

Regularly writing about the books that students read helps students clarify their understandings of what they have read and can provide the basis for oral presentations or book discussion. Here are the steps to conduct book report assessment.

Step 1. Introduce book reports. The teacher explains to the class what is a book report and what are the criteria of a quality book report.

Step 2. Teachers can show teacher-made samples of book reports or the samples from previous year students.

Step 3. Discuss and chart the book report format with the whole class.

Book Report

Author _____   Tittle_____

Began reading _____   Finished _____   Rating (1-5)____

```
┌─────────────────────────────────────────────────────────────┐
│     What it's about:   _____    │
│                                                             │
│        _____  │
│                                                             │
│        _____  │
│                                                             │
│     What I think of it:                                     │
│                                                             │
│        _____  │
│                                                             │
│     Book ratings might be:                                  │
│     1 Not recommended                                       │
│     2 OK                                                    │
│     3 Recommended                                           │
│     4 Highly recommended                                    │
└─────────────────────────────────────────────────────────────┘
```

adapted from Hancock, J., & Leaver, C. (2006). *Teaching strategies for literacy.* Norwood: Australian Literacy Educators' Association.

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　　　12 classrooms.* West Palm Beach, Florida: Learning Sciences International.

Section 6: Oral Questioning

A light bulb with a question mark inside was designed to symbolize oral questioning. This symbol reminds teachers to ask meaningful questions that promote student thinking and provoke students into in-depth responses. The light from the light bulb implies that ideas and thinking are connected and shared between the ones who ask questions and the ones who answer.

What is Oral Questioning?

Oral questioning may occur in different formats in the classroom: teacher-led reviews, class discussions, and conferencing with individual students (Fisher & Nancy, 2007; McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005). Teacher-led reviews are brief activities when the teacher leads the class to go over what they have learned in order to refresh students' memory and reinforce previous knowledge before moving to the next step of learning. Class discussions are activities where teachers and students ask and answer each other's questions, exchange ideas, or solve a problem as instruction proceeds. Teacher-student conferences are used

to obtain information that is specific to individual students or particular groups of students. During the oral questioning process, the teacher listens to students' answers, interprets the students' responses in relation to learning standards, and recognizes the respondent's level of understanding before moving to the next step accordingly. Research showed that the first two formats of oral questioning allow teachers to obtain significant information about students' understanding in a timely and efficient fashion, without taking teachers extra time for assessment (Fisher & Nancy, 2007; McTighe & Wiggins, 2013; McMillan et al. 2010; 1Siggtins, 2005). We will cover the first two formats in this section, then discuss in greater depth the teacher-student conferencing in the next section as teacher-student conferencing has its own unique features.

The Benefit

Why Oral Questioning?

Effective assessment requires teachers' constant monitoring of students' understanding during instruction. Teachers often need to ask students questions and monitor how students answer questions during instruction, in order to know if students understand what they have learned or how well they can perform specific related skills (Fisher & Nancy, 2007; McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005). Except for lecturing, questioning during student-teacher interactions is the most frequently used instructional strategy. Most teachers ask hundreds of questions each day. Therefore, oral questioning during instruction is an essential

component of effective assessment and the predominant method of assessing student progress. Research showed the following reasons about why teachers need to conduct oral questioning.

First, students are more engaged and active in the classroom when the teacher poses questions to engage students to think and discuss about a topic. Oral questioning activities provide students with opportunities to organize their thoughts and think about the ways to express ideas (Earl, 2013; Earl & Katz, 2006; Dirksen, 2006; McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005).

Second, questions can promote students' reasoning and comprehension by helping them think through and verbalize their ideas. With oral questioning, teachers are able to provoke students into in-depth responses and encourage students to elaborate on their responses (Dirksen, 2006; Fisher & Nancy, 2007; McMillan et al. 2010; Siggtins, 2005).

Third, teacher questioning can challenge students' beliefs, clarify misunderstanding, and redirect students' thinking. Student learning is also enhanced by listening to the answers of other students. Peer answers may be expressed in ways that make more sense to the student than the way the teacher explains things (Dirksen, 2006; Fenwich & Parsons, 2000; Fisher & Nancy, 2007; McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005).

Fourth, questions enable students to figure out what is the important content to be learned and provide an opportunity for students to assess their own level of understanding in these areas. For instance, asking questions that compare and contrast (e.g., How are fiction and nonfiction different?) will cue students that they need to learn about how these two types of texts are similar and different, not just consider the features of each one (McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005).

Fifth, oral questioning can also assess interpersonal skills, as students need to interact with the teacher or their peers. Through consistent discussing and sharing ideas with others, students learn to listen to and respect other ideas. In addition, students improve their communication skills by consistently clarifying their intent and elaborating ideas when interacting with others (Dirksen, 2006; Fenwich & Parsons, 2000; Fisher & Nancy, 2007; McTighe & Wiggins, 2013; McMillan et al. 2010; Siggtins, 2005).

The Ingredients/Nutrition

Matching Assessment with Learning Standards 💡

Research has shown that oral questioning can be used to assess:	Related BC Learning Standards (English Language Arts, Grade 2)
➢ Listening strategies (3) ➢ Affective traits such as listening respectfully (3) ➢ being open-minded to others' ideas (3) ➢ Making prediction (3, 19) ➢ Making inference (3, 19) ➢ Making connection (3, 19) ➢ Application ➢ Deep understanding (7, 9, 21) ➢ of knowledge (2, 7, 8, 9) ➢ Interpersonal skills (12)	➢ *2. Use sources of information and personal stories and experience to make meaning* ➢ *3. Use developmentally appropriate strategies such as making predictions, making connections, making simple inferences to make meaning. Engaging in conversation with peers and adults, showing respect for the contribution of others.* ➢ *4. Recognize how different text structures such as letters, maps, and lists reflect different purposes.* ➢ *5. Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community*

➢ Communication skills (12)	➢ *6. Demonstrate awareness of the role that story plays in personal, family, and community identity*
➢ Sharing ideas (10)	➢ *7. Use personal experience and knowledge to connect to stories and other texts to make meaning*
➢ Using vocal expression to clarify meaning (14, 20)	➢ *8. Recognize the structure and elements of story*
➢ Simple factual knowledge (15, 16, 17, 18)	➢ *9. Show awareness of how story in First Peoples cultures connects people to family and community*
➢ Recalling information (15, 16, 17, 21)	➢ *10. Exchange ideas and perspectives to build shared understanding*
➢ Ability to clarify response (20)	➢ *12. Plan and create a variety of communication forms for different purposes and audiences*
➢ Understanding of meaning (21)	➢ *14. Explore oral storytelling processes*
➢ Ability to define response (21)	➢ *15. Know elements of story*
➢ Ability to elaborate answers (21)	➢ *16. Know literary elements and devices*
➢ Ability to verbalize thinking (12, 22)	➢ *17. Know text features*
➢ Critically thinking (21)	➢ *18. Know vocabulary associated with texts*
	➢ *19. know reading strategies*
	➢ *20. know oral language strategies*
	➢ *21. know metacognitive strategies*
	➢ *22. know features of oral language*

The recipe tips

Guidelines for Developing Effective Questioning

Asking more questions gives teachers sufficient information to make sure students

understand. The validity and effectiveness of an oral questioning approach relies on how teachers

develop the questions and how they react to student responses. Research has shown some common features of effective questioning techniques.

❖ First, teachers need to ask clear and precise questions to enable students to understand the intent of a question. Questions are vague if there are too many possible responses or if questions are too general. For example, "can you tell me something about what you learned?" "What did you think about …?"

❖ Second, teachers need to match questions with learning expectations by

- asking questions that reflect particular learning expectations, and the degree of emphasis on different topics that will be assessed.

- asking more complex questions that require higher-thinking skills (refer Tool 2 & Tool 3 for details).

❖ Third, teachers should involve the entire class by

- thinking about how to involve students who often volunteer and students who are avoiding answering.

- allowing students to think and discuss with partners first, before asking them to share with the whole class.

- engaging those with low proficiency in particular topics.

❖ Fourth, teachers should allow sufficient waiting time for student responses after posing a question by

- letting students know that a response is always expected and teachers will wait as long as it takes.

- keeping in mind that a simple recalling question does not require a longer wait time, compared to a question that engages students to deepen their understanding (Black &

William, 1998).

❖ Fifth, teachers should provoke students into in-depth responses by

- probing specific follow-up questions to let students clarify their intent, explain their reasoning process, or bring in more detailed information (tool 1).

- asking students questions to extend their understanding and to think about what they have learned. For example, "what brings you to this conclusion?" "Can you explain your answer in detail?" When students are asked to explain their answers, their learning improves (Black & William, 1998).

- showing students that thinking about what they are learning is as important as giving the right answer.

❖ Finally, teachers should provide effective feedback by

- helping students feel that it is safe to take risks, and their questions and answers are valued. using descriptive and meaningful feedback to acknowledge students' answers.

- including information about where students are in learning and how much progress they have made, as well as how they should improve.

Tools for Oral Questioning

Tool 1: Examples of probes to extend initial responses include phrases such as the following:

Probes to extend students' responses
❖ Why did you think that was the correct answer?

❖ How did you arrive at that conclusion?   ❖ Explain why you think you arrived at that solution.   ❖ Could you give more details to explain your idea?   ❖ Could you give any examples?

Tool 2: Bloom's Taxonomy and corresponding questions

Teachers may refer to this table to choose questions in relation to different levels of

understanding.

Level	Prompts
Knowledge: Recalling information.	❖ Where is… What did…Who was… When did… ❖ How many…, ❖ Locate it in…, ❖ Point to the…
Comprehension: Making predictions, making inferences, making sense of the meaning.	❖ Tell me in your own words… ❖ What does it mean… ❖ Five me an example… ❖ Describe what… ❖ Illustrate the part of the story that… ❖ What is the main idea of …
Application: Applying knowledge or skills in a new situation.	❖ What would happen to you if… ❖ Would you have done the same as… ❖ If you were there, would you… ❖ How would you solve the problem…? ❖ In the library, find information about…
Analysis: Separate material or concepts into component parts so that its organizational structure may be understood.	❖ What things would you have used …? ❖ What other way could… ❖ What things are similar/ different? ❖ What part of this story was the most exciting? ❖ What things couldn't have happened in real life? ❖ What kind of person is… ❖ What caused ___ to act the way he/she did?
Synthesis: Build a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	❖ What would it be like if… ❖ What would it be like to live… ❖ Design a … ❖ Pretend you are … ❖ What would have happened if… ❖ Why/why not? ❖ Use your imagination to draw a picture of … ❖ Add a new item on your own… ❖ Tell/write a different ending…

Evaluation: Make judgements about the value of ideas or materials.	❖ Would you recommend this book? ❖ Why or why not? ❖ Select the best…why is it the best? ❖ What do you think will happen to…? ❖ Why do you think that? ❖ Could this story really have happened? ❖ What character would you most like to meet? ❖ Was ____ good or bad? Why? ❖ Did you like the story? Why?

adapted from Fisher, D, & Nancy, F. (2007). *Checking for understanding*. Alexandra, VA:ASC.

Tool 3: Some probing words to ask questions

    This tales provides teachers with guiding words to create literal or inferential questions.

Literal questions words	Inferential question words	
	Text inferences	Application inference
Who, What, Where, When, Define, Label, List, Name,	Why, How, In what way, Interpret, Discuss, Explain, Describe, Summarize, Classify, Demonstrate, Show, Relate, Order, Connect, Compare, Categorize, Analyze,	Imagine, Predict, How might, Create, What might happen if, If…then…, What are some possible consequences of…, Modify, Invent, Design, Plan, Judge, What do you think…, Evaluate, What is your opinion of…, Conclude, Recommend

adapted from Cardwell, J. S. (2008). *Comprehension assessment: a classroom guide*. NY: The

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