# SECONDARY EDUCATORS' EXPERIENCES IMPLEMENTING FORMATIVE ASSESSMENT IN RURAL SOUTHERN MARYLAND: A TRANSCENDENTAL PHENOMENOLOGICAL QUALITATIVE STUDY

by

Bonnie J. Skinner

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree Doctor of Education

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## Abstract

The purpose of this phenomenological qualitative study is to describe secondary educators' experiences in planning and implementing formative assessment in rural southern Maryland to gain an understanding of their definition and use of Assessment *for* Learning (A*f*L) in diverse classrooms. The theory guiding this study, the sociocultural learning theory, grew from the work of the psychologist Vygotsky. The sociocultural learning theory is the best worldview for this study as Vygotsky's beliefs of parents, caregivers, peers, other mentors (teachers), and culture are responsible for the development of cognition and higher-order functions with learning occurring by interacting with other people. Four essential research questions focus on secondary teachers in a rural school district in Southern Maryland descriptions of and experiences with formative assessment. Data collection for this study includes a questionnaire and interviews using researcher-designed questions conducted with a purposeful sampling of secondary teachers who have experience with the use of formative assessment and journals kept by the same teachers. Analysis of the data includes phenomenological reduction, horizontalization, and clusters of meaning for synthesis. The results explain the how the formative assessment process is used by the chosen educators in secondary classrooms including themes related to their experiences, impact on student learning, and barriers to implementation of formative assessment.


*Keywords*: formative assessment, summative assessment, technology enhanced formative assessment, high stakes tests, engagement, short-cycle formative assessment, diagnostic assessment, assessment for learning

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**Copyright Page (Optional)**

## Dedication

I dedicate this dissertation to my parents who gave me moral lessons on discipline and hard work from an early age to prepare me for my studies and encouraged me to make it this far. In memory of my mom who always believed in me and would be proud of my progress. To Arnold, my amazing husband, high school sweetheart, and life partner, who has been my biggest fan and always cheers me on, has been patient and supportive, read lots of papers and spent lots of time alone during this process, but was always in my heart and my biggest fan. To my children, their significant others, and my grandkids; Crystal, Bryan, Devin, Michelle, Avry, Leia Jocilyn, Rick, Fay, and Erykah who have supported and encouraged me every step of the way. May you all pursue knowledge throughout your lives. To my brothers and their wives Steve, Ramona, Pat, and Lisa for your help and encouragement. To my co-workers, especially Amy, who helped me through many stressful days and celebrated my achievements with me, Dr. Bill who was an example and reminder that I could do this, Melissa who was always there to listen and offer encouragement. Finally, all my student's past, present, and future I hope this is an example that you can do anything you put your mind to. To all my fellow ER nurses and first responders who are there for our community and offered encouragement along the way. The way to success is to continuously pursue knowledge and is achieved with the love, support, and help of many people including our teachers, mentors, family, and supporters. It's a Wonderful Life.

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To my dissertation chair, Dr. Woodbridge who was the guiding light every step of the way as I neared the end of this dissertation journey and to all my professors along the way. To Dr. Woodbridge and the Merry Band of Scholars who encouraged each other virtually through this process in whatever stage of the journey we were in. We did it together. To Dr. Ziegler for all the input for my writing.

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## List of Abbreviations

Assessment *as* Learning (A*a*L)

Assessments *for* Learning (A*f*L)

Assessment *of* Learning (AoL)

Association for Supervision and Curriculum Development (ASCD)

Council of Chief State School Officers (CCSSO)

Formative Assessment Classroom Tools (FACTs)

Formative Assessment for Students and Teachers (FAST)

Formative Assessment for Maryland Educators (FAME)

Formative Assessment-based Mobile Learning (FAML)

Formative Assessment Multimedia Learning Environment (FAMLE)

No Child Left Behind Act (NCLB)

Responsive Practices for Learning Environments (RPLE)

State Collaborative on Assessment and Student Standards (SCASS)

Web-based Assessment and Test Analysis System (WATA)

Zone of Proximal Development (zpd)

# CHAPTER ONE: INTRODUCTION

## Overview

Education is important for individuals in society to improve opportunities for employment, income, the health of the individuals, economic growth, and prosperity (Vinelli & Weller, 2021). Preventing students from dropping out of high school by being engaged in learning and experiencing success benefits society by improving earnings and economic growth (Levin et al., 2007). Formative assessment, also known as an assessment *for* learning (A*f*L), has been discussed in educational literature for many years and may increase student learning, achievement, engagement, and success (Black & Wiliam, 2009). Formative assessment represents the next best hope for promoting achievement gains for students (Andrade et al., 2019). Definitions and use of formative assessment are broad and varied so an understanding of teacher perceptions and implementation of formative assessment is important to show if A*f*L works to improve learning and student achievement. Could these practices be the important actions that can improve learning successes for students and improve educational outcomes? Is formative assessment at the heart of equitable instructional practices? Chapter One identifies the historical, social, and theoretical context of formative assessment with the possible benefits of A*f*L for students. The chapter will conclude with a discussion of the definitions and research demonstrating that using A*f*L can help teachers improve learning for all students.

## Background

The history of formative assessment use may have its beginnings over 50 years ago with the first mention of the term formative in the 1960s when Cronbach referred to formative evaluation ideas as tools to improve curriculum (Cronbach, 1963). Ausubel (1968) discussed meaningful learning practices and explained that the most important factor in teaching is

knowing what the student already knows. Scriven later built on the term formative to clarify evaluations (Grant & Gareis, 2014; Scriven, 1991). Pioneers, researchers, and groups emphasizing the use of formative assessment through the years include not only Scriven, but also Bloom (Bloom et al., 1971), Black and Wiliam (1998, 1998a, 1998b, 2006a), Marzano (2010), Sadler (1989), Stiggins (2014), Assessment Reforms Group ([ARG]; 1999), Organization for Economic Cooperation and Development ([OECD]; 2016), National Council of Teachers of Mathematics (2000), National Research Council (2001), and National Association of State Boards of Education ([NASBE]; 2009). A better understanding of educators' perceptions of formative assessment practices and implementation will help formulate a plan to assist teachers in making better informed instructional decisions in the future.

People with more education live longer, have less disability, are healthier, are less likely to be incarcerated, less likely to be a parent as a teenager, less likely to commit suicide, and are overall more tolerant and happier (Wiliam, 2018). Black and Wiliam, some of the most revered, well-known researchers and professionals on the topic of formative assessment, have done extensive studies and reviews of learning development and academic growth in their work since the 1980s, where they have made clear that student success in learning should be the goal of any well-developed society. Students who do not complete high school or complete only high school at the highest level of their education have much lower annual earnings and higher unemployment rates (National Center for Education Statistics, 2021). According to the U.S. Department of Education, to prepare for tomorrow's economy, most occupations require some education beyond high school, and many of our students are not prepared for this reality with the United States having one of the highest high school dropout rates in the world (U.S. Department of Education, 2014). Recently the COVID-19 pandemic has contributed to challenges in

educational opportunities and money being used for other things, according to The Center for American Progress (Vinelli & Weller,2021).

**Historical Context**

The original use of the term formative by Cronbach (1963) related to the evaluation of educational programs or a whole curriculum, but later Scriven replaced formative evaluation with formative assessment where the object became student learning in a classroom rather than its original reference to the whole program or curriculum (Clark, 2011). Scriven (1967) introduced formative assessment as evaluation tasks that improve student learning in an essay on educational evaluation contrasting formative and summative evaluation. Scriven (1967), an academic philosopher, coined the term *formative evaluation* when he explained it was an ongoing improvement to enhance the curriculum. Most of the discussions of the history about the concept of formative assessment are traced back to Scriven (Andrade et al., 2019).

Bloom applied Scriven's definition and ideas of formative evaluations over 30 years ago when he developed Bloom's Taxonomy and linked the idea of improving student thinking skills in the cognitive domain to improve teaching and learning (Bloom, 1968). He divided intellectual outcomes into categories from the lowest level of thinking to the most complex level of evaluating information (Bloom, 1968, 1971). Bloom and his colleagues popularized the idea of differences between summative and formative aims in their handbook (Bloom et al., 1971). Researchers in the 1980s and 1990s from around the world continued to expand on the formative ideas and the term "formative assessment" replaced "formative evaluation" (Gareis & Grant, 2014). In 1989, formative assessment theory was introduced and developed by Sadler, Black and Wiliam (Black & Wiliam 1989a; Black & Wiliam, 2009; Sadler, 1989).

The British researchers Black and Wiliam seemed to have brought more attention to

formative assessment as a useful tool for student achievement beginning in the 1990s with their review of empirical research studies and meta-analysis, which found that using formative assessment as an intervention in classrooms resulted in the largest ever reported student gains in learning to date (Black & Wiliam, 1998a). The work of Black & Wiliam led to the idea that formative assessment could improve test scores being used for accountability in schools which brought more awareness and expansion to formative assessment practices, ideas, tools, and research. Definitions and ideas have continued to evolve since these original concepts were proposed in the 1960-1970s.

Wiliam is one of the foremost educational authorities in the implementation and use of formative assessment. He has shown, through his work, how formative assessment strategies help students become empowered and collaborates with teachers to engage in learning (Wiliam, 2018). Many of the interventions and changes made to improve education in the past did not help much at the classroom level, and formative assessment is something that can help students learn and can be easily implemented in the classroom by a knowledgeable educator. "The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly" (Ausubel, 1968, p. VI). Understanding what pre-existing knowledge, the learning has is a fundamental of the constructivism theory of teaching and learning that has merit today. Using formative assessment in instruction minute by minute and day to day is a process that leads to informed teaching and learning with the students and teachers who are the ones involved. Formative assessment is the most cost-effective intervention with the best evidence that has the highest impact on teaching and learning that lead to metacognition and self-regulation (Wiliam, 2022). Students who are informed have choice and voice leading to better outcomes and success.

The Assessment Reform Group, in the United Kingdom, coined the phrase "assessment for learning" in 1999 when they worked with Black and Wiliam to distinguish between summative and formative assessment (Assessment Reform Group, 1999). Another expansion in awareness of the benefits of using formative assessment occurred in 2005 with the OECD study looking at secondary schools in Canada, Denmark, England, Finland, Italy, New Zealand, Australia, Queensland, and Scotland. Despite the international attention on A*f*L including global adoption of the practices of formative assessment, the United States still did not make a move to transform educational practices or policies with the primary focus on summative assessments (Clark, 2011).

Various methods of reform to improve education have been attempted in this country as well as internationally, and the big question raised is what works to improve education for all students. Different types of assessments measure student progress and achievement, including mandated large-scale testing, summative assessments, and formative assessments. Grading and scores are instructional power, but grading is often inequitable and involves beliefs, expectations and decisions that lead to an outcome. There is often hidden curriculum involved in grading that students do not know. Although change may not happen nationally, in states, or even at the county level, teachers can influence change in their own classrooms and maybe their school and best teachers are the best way for change to occur (Wiliam, 2018). Research has shown that formative assessment can improve student learning and achievement but may be missing from many classrooms (Black et al., 2003). In other words, "formative assessment is research rich, yet practice poor" (Keeley, p. x, 2016). Using formative assessment to adjust instruction to fit the needs of the students may be one of the most effective means of improving learning. An understanding of how to help teachers make these changes in their classrooms to improve student

achievement should be a focus in classrooms and can be achieved by looking at educators' experiences, perceptions, understanding, and implementation of formative assessment, which is the focus of this research.

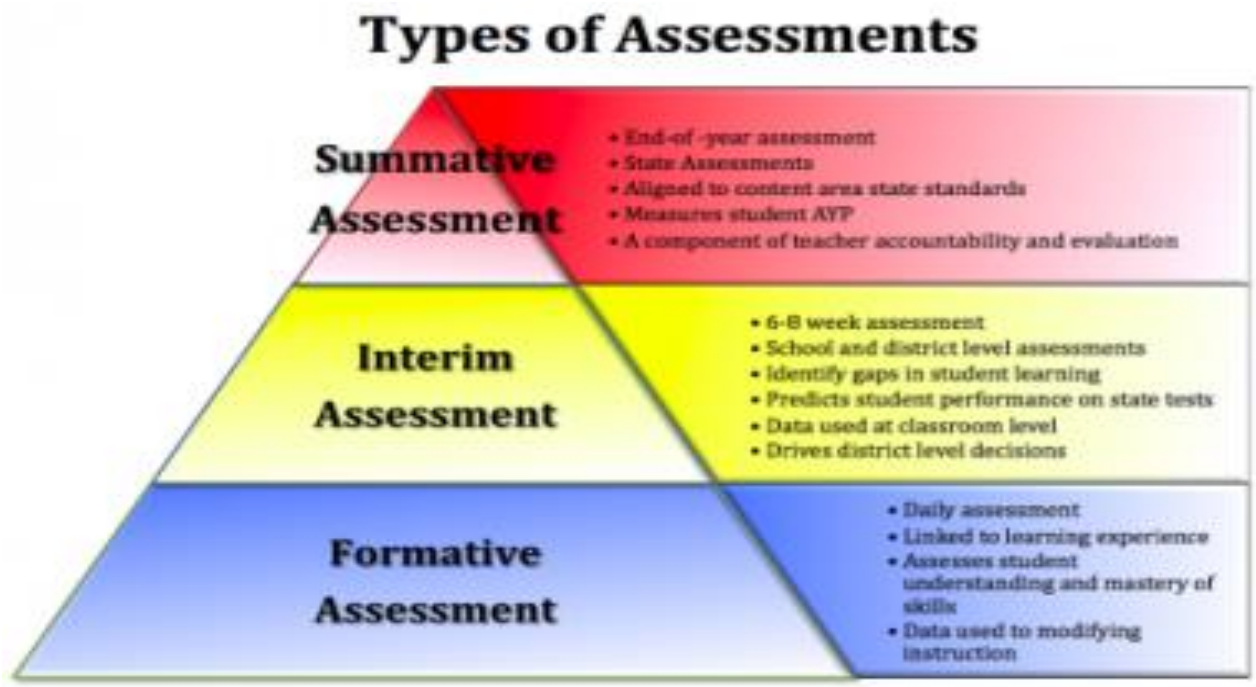
In 2005 the Council of Chief State School Officers (CCSSO) and other organizations found a misconception that formative assessment is a measurement instrument rather than a process to change teaching practices that may affect learning (Heritage, 2010). Stiggins (2014) found that research and development efforts over the past two decades from around the world provided educators in the US with ideas, tools, and strategies needed to succeed at using formative assessment to guarantee excellence in education and assessment. Before that, not much research can be found on the use of formative assessment in United States schools. In the last twenty years, the use of formative assessment in schools and classrooms in the US has increased due to Richard DuFour's model. DuFour, a former Illinois superintendent, looked at common assessments to compare and discuss data and provide additional help and support to teachers and students after evaluating progress. DuFour helped develop the idea that common (or summative) assessments might improve learning during a school year or in the short term but did not improve long-term success. DuFour and others focused on long-term formative assessment, which is the process that teachers should use to assess students regularly, then analyze the data and check for understanding of the concepts to check for sufficient progress (DuFour et al, 2004). If there is insufficient progress made, interventions are planned and implemented to help students learn the necessary objectives in the curriculum. Before DuFour's model was introduced formative assessment implementation in the US was rare or not recognized (Wiliam, 2018). More administrators like DuFour, who have been shown to make a difference and promote formative assessment, would help increase the use of A*f*L in more classrooms.

Popham (2008) explained that it was only during the past decade that educators started to talk about the distinction between formative and summative assessment and how formative assessment decisions in instruction could benefit student learning, achievement, and success. When teachers and educators spend a significant amount of their time preparing for standardized, high-stakes, summative assessments superficially there is less time for really understanding what students know and are thinking during instruction, which is the deeper understanding that matters for student learning (Keeley, 2016). A balance in diagnostic/formative assessment and preparation for summative assessment is crucial for demonstrating student learning and progress.

Formative assessment today is enhanced by technology with data and instant results to help guide day-to-day decisions for changes to instruction by the teacher in the classroom. Assessments are formative when the information from the activities in the classroom is used to adapt teaching and learning to make informed choices and meet student needs (Haught, 2018). Adjustments to instruction and teaching by teachers may include reteaching, more practice, feedback, or providing alternatives to the current instruction, and there are many tools to assist with these practices that engage students.

**Figure 1**

*Types of Assessments*




*Note.* Reprinted from "Using Homework as a Formative Assessment," by J. Taylor, 2014, *Edulastic.* Copyright 2021 Snapwiz Inc.

**Social Context**

The 1994 Educate America Act had a goal to have U.S. schools leading the world in math and science by the year 2000, yet this did not happen (Wiliam, 2018). When President George W. Bush signed the (No Child Left Behind Act [NCLB], 2002) connecting federal funding to schools in the United States, all schools were required to use annual standardized tests, or summative assessments, to evaluate students. Since then, schools in the U.S. have continued to mandate more standardized tests to show school and teacher improvement, yet data showed minimal impact on individual student growth from these large-scale assessments (Popham, 2008). In 2014 students were still failing to reach proficiency on the state standards, and even

with the 2009 American Recovery and Reinvestment Act with included Race to the Top funding and School Improvement Grants Program, there is still no impact on student achievement according to the education department (Wiliam, 2018). Formative assessments used by classroom teachers during instruction to inform learning have been shown to have a significant impact on student achievement (Black & Wiliam, 1998a; Chappuis et al., 2009; Clark, 2005; Hattie, 2009; Marzano, 2006; William, 2019;). Purposefully planned formative assessment relies on a defined instructional goal, an initial level of understanding followed by teaching and learning activities to bring students to the goal and is an ongoing process involving both teachers and students (Council of Chief State School Officers [CCSSO], 2018).

Another recent study looking specifically at rural Southern Maryland schools showed that appropriately supported interventions, or a toolbox of formative assessments, by school districts can change teacher practices and may improve student achievement (Wylie et al., 2008). Technology is now a part of formative assessment for 21st-century learners, and in a recent study by Vankataramani et al. (2019), they found that students preferred online, game-like activities over written quizzes. Student motivation and involvement are important, and from a historical perspective, it has changed with the implementation of technology, yet formative assessment is and has been, an integral part of teaching and learning even without the use of technology.

Thinking about the place for assessments in the US today to evaluate not only students but educators as well and how to inform teachers to help students be successful, we need to find evidence-based research that leads to information about what works. Teachers are in the perfect place to give information about formative assessment and its use in their classrooms and during instruction and the impact it has on student achievement. Examining the teaching and learning

practices and conversations during instruction is vital to better understanding formative assessment (Rached & Grangeat, 2020).

**Theoretical Context**

Sadler's (1989) seminal work proposed a theory of formative assessment when he found that student self-assessment is critical to improving student learning, and quality should not only be assessed on the finished product but during the formation. Formative assessment was developed as a theory by Black and Wiliam, who began their work in 1998. The goal of their initial work was to provide unification of the terms and practices that were formative (Black & Wiliam, 2009) to help develop it as a theory. In response to a request to define formative assessment, Black and Wiliam stated,

> "We use the general term assessment to refer to all those activities undertaken by teachers and by their students in assessing themselves that provide information to be used as feedback to modify teaching and learning activities. Such assessment becomes formative assessment when the evidence is used to adapt the teaching to meet student needs'' (1998a, p. 140).

Empirical research by Pryor and Crossourad (2008) proposed theorization of formative assessment, but it was called a "discursive social practice" by the authors, and they proposed a process and a model using the sociocultural learning theory. It is still unclear if formative assessment has been established as a theory or practice that improves learning and engagement or if the term is used in combination with other learning theories.

Although formative assessment may sometimes be referred to as a theory, discussions about formative assessment usually begin with the sociocultural learning theory, and the traditional work of L.S. Vygotsky emphasizes the motivational aspects of learning and the

importance of the teacher on the mental development process of the student. The three tenants that define the Sociocultural Learning Theory are social interaction which plays an important role in learning, language as an essential learning tool, and learning which occurs in the zone of proximal development (ZPD) which is the difference between what a learner can do on their own and what they can do with guidance and encouragement from others (Allman, 2020). Proximal is what they are close to mastering. The sociocultural school holds that consciousness and learning are social processes, meaning we become who we are by being involved with those around us (Pryor & Crossouard, 2008). In other words, who we are is shaped by our cultural norms, traditions, and values. Vygotsky's idea of a ZPD is used to discuss the importance of the teacher in a social context. Vygotsky talks about what students can achieve on their own and recognizes they achieve more with the support of competent teachers and on the right basis (Vygotsky, 1978). The student's inner process of development is awakened by the teacher at school, according to Vygotsky (1978). ZPD and instruction, including formative assessment with day-to-day adjustments, and a supportive adult (the educator) that involves students (the learners) to move from what they know to what they can do next is a key to achievement. Formative assessment, by nature, would be considered social and therefore consistent with the sociocultural learning theory. Formative assessment, a form of constructivist assessment, has roots in epistemology, where the learner has prior knowledge that can be determined by their social environment and learning (Dann, 2014). The learner constructs their knowledge with the reality determined by their learning and social experiences. Learning as an active process defines the sociocultural and constructivist views that describe formative assessment (McLeod, 2019). Formative assessment is socially situated as a form of classroom interactions between students and teachers (Tierney & Charland, 2007).

The use of formative assessment can lead to student self-regulation, self-efficacy, sense of belonging, and cognitive development, which are motivational aspects of student learning. A new learning theory about building and using assessments, including formative assessment, in curriculum and instruction, was a focus of recent research done by Shepard et al. (2018). The findings concluded that the sociocultural learning theory addressed curriculum development, instruction, professional development, and program evaluation by looking at learning progressions with social interactions. An individual's cognition and learning develop through social interactions with teachers and peers, problem solving, performing complex tasks, and devising strategies needed to meet goals which are part of the social elements of Vygotsky's sociocultural learning theory (Penuel & Shepard, 2016). Teachers using formative assessment in the classroom have been found to incorporate cognitive and social aspects of each student, as the sociocultural model signifies (Shepard et al., 2018). Whether formative assessment is considered a stand-alone theory, part of another theory, or a group of practices incorporated into the sociocultural learning theory, its importance on student learning is acknowledged as a pedagogic practice and will be developed here as part of the sociocultural learning theory.

## Problem Statement

The problem is that not all teachers have a clear definition or understanding of the positive impact integration of formative assessment practices can have on the classroom environment of teaching and student learning because there is not a firmly established definition or description of educators' experiences and implementation of formative assessment (OECD, 2016; Ozan & Kincal, 2017; Wiliam, 2018; Zhan & So, 2017). The idea of formative assessment has been shown to help increase student learning and has the potential to prepare students to succeed on summative assessments during a course and in the world beyond the classroom and

should complement the cumulative summative assessments (Dixson & Worrell, 2016). An improved understanding of formative assessment has been needed for a long time to foster coherent conditions for research, policymaking, clarity in assessment theory, and practice to accelerate student learning and achievement (Cizek, 2010). A definition of formative assessment as a process or practice needs clarity to collect data with empirical evidence to back it up, but a definition by itself cannot effect change. For formative assessment practices to be embodied into everyday classroom practice support is needed for teacher learning and development (Council of Chief State School Officers [CCSSO], 2021). It seems that not all teachers consistently assess students learning for understanding before moving on in the learning process. It is important to look to convincing evidence, ongoing research, and development of formative assessment to encourage all teachers to make integral changes to instruction and support states, districts, and schools to make continuous improvement to student learning.

## Purpose Statement

The purpose of this phenomenological qualitative study is to describe secondary educators' experiences in planning and implementing formative assessment in rural southern Maryland to gain an understanding of their perception and use of Assessment *for* Learning in diverse classrooms. Formative assessment will generally be defined as those assessment practices used by teachers as assessments for learning during the learning process that inform teachers' decisions about future instruction or a learning check-up.

## Significance of the Study

Developing an understanding of the perception and use of formative assessment in secondary classrooms and any limitations to implementation is important in furthering the use of assessments for learning and is the significance of this study for the field of education and

classroom practices. There are currently eighteen states that use exams, or high-stakes tests, to grant or withhold diplomas, yet evidence shows that these tests decrease student motivation and increase the proportion of students who leave school early (Amrein & Berliner, 2003). Formative assessment is increasingly being emphasized in education, but the United States lags behind other countries in using formative assessment consistently (Black & Wiliam, 2018). It has been recommended that substituting more formative testing could result in reforms that make a difference by improving summative assessment scores for students. Some of the barriers to implementing formative assessment in the classroom seem to be related to time, overload of information, and lack of understanding or training. Gaining an understanding of teachers' perceptions and formative assessment can add to the body of knowledge to help increase the use of this valuable tool for students and teachers.

**Theoretical Significance**

The theory guiding this study is the sociocultural theory of Vygotsky, as it focuses on the motivational and social aspects of learning with the three elements of cognition, language, and ZPD or social context (Vygotsky, 1978). The use of formative assessment interventions by educators focusing on developing conceptual knowledge, motivating, and engaging students in their learning aligns with the sociocultural theories of learning (Lyon et al., 2020). The teachers' perceptions and effective instructional practices with the involvement of the students and peers are key factors in teaching and learning. Formative assessment has developed as a practice and theory, where the techniques are now considered to be responsive teaching practices used to elicit, identify, interpret, and respond to students' ideas (Gotwals & Birmingham, 2016).

**Empirical Significance**

Effective teachers are the single most important factor in student achievement according to a qualitative case study by Curry et al. (2016). The focus of the study was to review data used by teachers to inform (formative) rather than evaluate (summative). The study found that informative data helps teachers be more reflective in their teaching practices and formative assessment data improves teacher motivation. A study exploring international research of innovative cases where teaching, learning, and assessment have been used and policies that support or inhibit formative assessment practices was done by Centre for Educational Research and Innovation (CERI) and reported by Organization for Economic Cooperation and Development (OECD) concluded that more conceptual and empirical work about teaching, learning, and assessment was needed but many strengths in formative assessment processes leading to high quality outcomes were found (2016, 2008). The empirical significance of this current study is to understand secondary educators' experiences with the real-life use of formative assessment. Using interview questions and a questionnaire for this phenomenological study will help contextualize the educators' experiences and allow clarification of the phenomenon.

**Practical Significance**

Current gaps in the research on the concept of experience with formative assessment are a broader discussion of the purpose of formative assessment in education to close the learning gap and pay attention to control or reflexivity in the concept of A*f*L (Egelandsdal & Riese, 2020). Other gaps come from the lack of a firmly established definition and the need to clarify existing instructional gaps between theory and practice, use of tools and programs for teacher professional development, and student involvement (Dann, 2014; Wylie, 2008). Further research into teachers' perceptions and experiences is important to the understanding and implementation

of formative assessment. Sach (2012) identified that future research was needed to bring about improvements using teachers' voices. Teachers, administrators, and other stakeholders, including those who help develop professional development, need to know areas of support to improve formative assessment practices (Lyon et al., 2020).

## Research Questions

The purpose of this study is to understand secondary teachers' experiences using formative assessment in their classrooms to understand how they use this information to inform their teaching daily. The idea behind formative assessment is to identify individual student strengths and weaknesses and help teachers understand learning needs and act in their teaching (Zhan & So, 2017). Not all teachers have a definition or understanding of formative assessment practices, and this study aims to identify teachers' descriptions and use of formative assessment in rural southern Maryland classrooms.

### Research Question One

*How do secondary educators in a rural school district in southern Maryland describe their experiences of planning and implementing formative assessments?*

### Research Question Two

*How do secondary educators describe their experiences in addressing culture in the planning and implementation of formative assessment to adjust instruction?*

### Research Question Three

*How do secondary educators describe language or linguistics in formative assessment practices implementation?*

### Research Question Four

*How do secondary educators describe cognitive development in students when implementing formative assessment?*

## Definitions

1. *Assessment for Learning* – formative assessments purpose as a consideration for future decisions about teaching (Black & Wiliam, 1998).

2. *Evaluation* – the process of determining the merit, worth, and value of things, and are the products of that process (Scriven, 1991).

3. *Formative Assessment* - those assessment practices used by teachers as assessments for learning during the learning process that informs teachers' decisions about future instruction or a learning check-up (Definition adapted from Bailey & Jakicic, 2010; Marzano, 2010). Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes (Popham, 2008; FAST, 2006; SCASS, 2006). Formative assessment is a planned process in which teachers use assessment-elicited evidence of students' status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning tactics (Popham, 2008).

4. *Summative Assessment* - an 'assessment of learning' at the end of teaching (Black & Wiliam, 1998). The assessment of a test taker's knowledge and skills is typically carried out at the completion of a program of learning, such as the end of an instructional unit (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education [AERA, APA, & NCME], 2014, p. 224)

5. *Short-cycle Formative Assessment* - the ability of teachers to assess students and adjust instruction minute-by-minute and day-by-day. Formative, short-cycle assessment provides crucial and timely information to provide timely feedback and is also called real-time assessment, diagnostic testlets, quick and informal assessments, continuous assessments, and assessments for learning (Edmentum, 2016).

## Summary

The importance of formative assessment has been shown and proven to help improve student learning and achievement. The problem is that formative assessment is not clearly understood or consistently implemented and encouraged in all classrooms in the United States. Teachers often do not understand the definition of formative assessment and may not have the tools or knowledge to implement formative assessment effectively. There is evidence that *Af* L does increase student achievement but less is known about supporting teachers in how to develop these practices (Wylie et al., 2008). Clarification of the definition and theory of formative assessment is important and will be discussed from the current literature. The purpose of this study is to develop an understanding of secondary educators' experiences implementing formative assessment in rural southern Maryland and identifying possible barriers to implementing formative assessment.

# CHAPTER TWO: LITERATURE REVIEW

## Overview

This chapter reviews literature relevant to this study of formative assessment perceptions of educators in secondary classrooms, including the existing definitions, understandings, use of formative assessment tools, and the significance of formative assessment use for educators and students in teaching and learning. The benefits of formative assessments will be explored in this literature review with supporting research and findings. When Chronbach (1963) first looked at the idea of tests being used to improve learning, he explained that teachers in the classroom accumulate a large amount of information on students' performance which is used to assign a grade, but a more important use of the information could be to make improvements in the course and in teaching. In recent years formative assessment has started to be incorporated into pre-service and in-service educators' training in various domains (Andrade et al., 2019). Can the process or practice of formative assessment improve learning and help teachers understand what students need to learn and achieve success? This question will be explored with a description of what formative assessment is, based upon the related literature, the theoretical framework, and a summary of the findings including the gaps in the research. Formative assessment as a theory, a process, or a thing is explored. This chapter is divided into a summary of what formative assessment is, the theoretical framework, the related literature, and a summary. A literature review of formative assessment in the secondary environment found definitions, history, theory, and tools of formative assessment as a broad category for students and teachers, specifically for certain core subjects such as mathematics or science and other specialized courses. The majority of the primary or secondary sources included were obtained through electronic databases or web

searches (ProQuest, Google Scholar, and Jerry Falwell Library), and some were found in books by formative assessment pioneers and researchers on the topic.

## Theoretical Framework

Although formative assessment itself has been proposed as a theory by Sadler (1989), Black and Wiliam (2009), and by Pryor and Cossourad (2008), it is still unclear if it has been established as a theory, and the term has varied uses in the literature. Formative assessment was called a discursive social practice that included a proposed process and model with the sociocultural learning theory as the lens (Crossourad & Pryor, 2008). The sociocultural learning theory is a logical choice to use as an association theory for formative assessment due to the elements of motivation for learning involving both the student and the teacher.

### Sociocultural Learning Theory

The sociocultural learning theory and the traditional work of L.S. Vygotsky (1978) places emphasis on the motivational aspects of learning and the importance of the teacher on the mental development of the student. Learning and development are not synonymous as Vygotsky delineates these terms separately which is a fundamental basis of socioculturalism (Black & Wiliam, 2009; Clark, 2012) The use of formative assessment can lead to student self-regulation, self-efficacy, sense of belonging, and cognitive development, which are motivational aspects of student learning. There are three tenants of the sociocultural learning theory which include social interaction, language, and learning occurring in the Zone of Proximal Development or ZPD (Allman, 2020). Social processes or interactions affect who we are by involvement with other people and include culture, traditions, and norms (Pryor & Crossouard, 2008). Vygotsky's ZPD explains the role of the teacher in this social context and an account that students can achieve

more with the support of competent teachers. The teacher develops the students' inner processes of learning in the classroom setting (Vygotsky, 1978).

This theory helps explain how the process of formative assessment used by teachers in the classroom can lead to student motivation and achievement in the ZPD. It is important to note a central theme of Vygotsky's ZPD is development and not just simple learning but is an acquisition of new mental capabilities and maturing psychological functions known as the development level leading to good learning (Black & Wiliam, 2009). The starting point of changing or restructuring the existing knowledge is knowing what the learner already knows. Formative assessment and cognitive development are a combination of individual, social, and cultural context with stable internal values and beliefs challenged or reinforced by external feedback from active engagement in a community of learning (Clark, 2012; Efklides, 2011; Vygotsky, 1978). Formative assessment is a social process determined by the social environment and leading to learning (Dann, 2014). McLeod explains that learning is an active process with sociocultural views (2019). Culture in today's classrooms is more diverse due to increased migration and it is important for teachers to address formative assessment practices at the classroom level by focusing on culturally responsive assessment (CRA) as a part of the social processes (Nortvedt, 2020). "The general 'social' theory underlying socio-cognitive development efforts is consistent with the sociocultural theory in that it posits that individual cognition develops through social interaction, as individuals solve problems, complex tasks, and devise strategies to pursue particular goals" (Penuel & Shepard, 2016, p. 147). Teachers using formative assessment in the classroom is found to incorporate cognitive and social aspects of each student, as the sociocultural learning theory model signifies (Shepard et al., 2018).

Social processes relating to formative assessment focus on communication and any assessment conversation is considered social in nature due to the interactions between teachers and students (Grangeat & Rached, 2021). Social processes of communication used in formative assessment can be oral, written, or pictorial and frequent assessment conversations may allow teachers to listen to know what students believe and why (Furtak & Ruiz-Primo, 2006). Formative assessment has the potential to prepare students to succeed on summative assessments during a course and in the world beyond the classroom and should complement the cumulative summative assessments (Dixson & Worrell, 2016). "Assessment refers to a judgment about the performance of learners on the basis of specific weighted set goals" (Ismail et al., 2019, p. 1). This judgement about learners and their progress is formed through interactions with the teachers, students, and their peers with the curriculum guiding the goals and learning targets.

In looking at formative assessment as a practice Leenknecht et al. (2021) explain that "assessment is seen as a social activity in which a teacher, a student, and peers interact and discuss the standards, criteria and the assessment practices" (p. 236). Implementing formative assessment in classrooms is a social process that involves social interaction between students and the teacher and is part of the social processes dimension focus on knowledge that is communicated, represented, and argued during the social interactions (Grangeat & Rached, 2021). This study will focus on developing an understanding of the educator's and teachers' experiences with Assessment *for* Learning (A*f*L*)* in this setting in rural Southern Maryland to determine implementation and use. Involving students in the process, a term coined Assessment *as* Learning (Dann, 2014) has also been discussed where the educator would encourage students in the zpd to be active in learning with self-regulation, goal setting, and learning progress as in the social aspects of the sociocultural learning theory.

## Related Literature

It is necessary to have definitions in any field and to recognize that definitions are constructed agreements and are socially mediated yet there should be consideration given to evidence and merits of new perspectives and this includes assessment ideas (Leighton, 2019). Defining formative assessment is difficult and may even be impossible based on the varied uses explanations, and evidentiary merits over time that were found during this literature review. The term has been around for over fifty years and there is not an agreed upon definition or consensus in the educational field as to what it is. The term formative assessment seems to be used to fit whatever need those using the term have; for example, administrators may use it to describe a good assessment or evaluation, those selling tests may use it to make a sell and others my use the term as they monitor student progress whether it be by looking at data, scores, or progress and success, teachers may use the term as a formal or informal practice used in their classrooms. Formative assessments may also be considered short-cycle, medium-cycle, or long-cycle processes during the instructional cycle. There are also many formative assessment types. The various definitions, or lack of, along with types and uses of formative assessments will be explored to look for gaps in the research and understanding of assessment for learning.

Assessments are used to collect information, gather data, and offer scores or feedback to students. Many terms associated with assessment include test, quiz, exam, high-stakes test, classroom assessment, and more. Assessments can be summative or formative. Both types of assessments are used to collect information about student learning, yet definitions are vague and varied among administrators, educators, students, parents, researchers, policymakers, and other stakeholders in education. One of the problems identified through research on the topic is that educators and others in the field of education have only a rough idea of what formative

assessment is and how it can transform teaching and learning despite increasing pressure for educational accountability (Rutgers, 2021). Educators, administrators, and students are often confused due to the various uses of the term. Formative assessment must be more clearly understood and implemented, with data on proven techniques to improve outcomes and educators' experiences. A*f*L has been shown to help increase student learning, prepare students to succeed on summative assessments during a course and in the world beyond the classroom (Dixson & Worrell, 2016). Looking at classroom practices it was found that assessment to promote learning is the most powerful tool to empower learners and raise standards, yet A*f*L was one of the weakest areas of practice (Carreira, 2012).

### *Definitions of Formative Assessment*

The many varied definitions and interpretations of formative assessment create confusion about formative vs. summative assessment. Sometimes the terms 'formative' and 'summative' are applied to evaluation cycles for teachers, and other times, they refer to types of assessments. There are also commercial products labeled as formative but are mini-summative assessments (Andrade et al., 2019). The Council of Chief State School Officers (2018) explain that formative assessment is a planned and ongoing process where teachers elicit evidence of student learning to improve understanding of outcomes and leads students to be self-directed while promoting a collaborative and respectful environment. The term formative is sometimes applied to graded assessments that may not be formative. "The term itself has come to be used very generously, causing some confusion about what is and is not considered formative assessment" (Parker, 2018, p. 7).

In response to a request to provide a definition for formative assessment, Black and Wiliam (1998) explained assessment as a general term used to refer to all those activities

undertaken by teachers and by their students to provide information used for assessing and to provide feedback to modify teaching and learning which becomes formative assessment when the evidence helps adapt teaching to meet student where they are. The basic principle of formative assessment is to identify each student's strengths and weaknesses in their learning progression and help teachers better understand the student's learning needs and act. "Formative assessment looks forward rather than backwards, and thus becomes a powerful tool for promoting learning" (Zhan & So, 2017, p. 502). The newer forms of technology-enhanced formative assessment have been found to enhance student's engagement in assessment tasks with instant feedback to inform the learners and the teachers to look at the direction of the future teacher and learning (Spector et al., 2016). Technology-enhanced formative assessments (TEFA) are strategies for improving student learning and motivation usually collected in real-time that help teachers provide instant feedback (Poth, 2018; & Elmahdi et al., 2018).

The many varied definitions and interpretations of formative assessment create confusion about formative vs. summative assessment. Sometimes the terms 'formative' and 'summative' are applied to evaluation cycles for teachers, and other times, they refer to types of assessments. The term formative is sometimes applied to graded assessments that may not be formative. The term formative assessment or assessment of learning has come to be used very generously creating confusion about what is and is not considered formative (Parker, 2018). A gap in the research is ensuring a definition can be firmly established diminishing confusion and demonstrating the benefits of formative assessment for teaching and learning. In a study about perceived application of formative assessment strategies by teachers it was found that students' associated feelings of autonomy and competence with motivation to learn by contributing the students' need for satisfaction to autonomous motivation which leads to formative assessment

practices by the teacher creating a feedback loop (Leenknecht et al., 2021). Formative assessment as a practice plays a role in student motivation yet A*f*L approaches to assessment are still only minimally adopted by teachers despite interest and demonstrations of its effectiveness (Boud et al., 2018). It is not clear if the lack of consistent implementation comes from lack of understanding or knowledge of formative assessment practices.

Assessment as Learning (A*f*L), another term associated with formative assessment, has been found to lead to student empowerment and participation in the assessment of their own learning where students are at the center of learning (Lee et al., 2019). Formative assessment has been found to support self-regulation in secondary students. Self-regulation is necessary for lifelong learning. In a study by Xiao and Yang (2019), the students' perceptions of classroom formative assessment and feedback were found to help develop a deeper understanding of their capability for self-regulation in English language learning. The role of formative assessment in self-regulation might apply to other subjects and not just English language. Formative assessment is an essential aspect of teaching that includes teachers gathering evidence of what their students know, modifying their teaching practices and providing feedback to improve student learning (Gotwals & Birmingham, 2016). Student gains in learning triggered by formative assessment are amongst the largest ever reported among other educational interventions (Popham, 2008).

More support for the use of formative assessment is needed, increased teacher education, and more professional development, should be focusing more on how to teach, as well as continuing research to guide implementation and improvement of the use of formative assessment. Improving teacher quality can raise student achievement according to Black (2018).

Formative assessment is a complex process with major components of eliciting student knowledge, interpreting this knowledge and the teacher making decisions for instruction based on student knowledge (Ateh, 2015). In 1968 Ausubel discussed the most important factor in teaching is to know what students know by finding out where students are in their learning. With all the discussions about the components, importance of FA, and research on the topic a single definition is still not firmly established in the literature. This lack of a definition could possibly be due to a lack of understanding and there is a still a question of whether formative assessment is a process, theory, practice, tool, or whatever other thing it is considered. So therefore, it is not clear if formative assessment is being used or implemented into most classrooms and how. Formative assessment has been found to help students learn and educators teach (Wiliam & Leahy, 2015), may be a way to improve teaching and learning (Rached & Grangeat, 2020), and it is considered an assessment for learning (Black & Wiliam, 1998). Even though research firmly establishes a link to student learning and achievement with the use of formative assessment (Black & Wiliam, 1998), it is still not encouraged or implemented in all classrooms in the United State.

***Formative Assessment Implementation and Use by Educators***

A problem found during the literature review relating to formative assessment is that not all teachers implement formative assessment to find out what students know, or it is not clear if formative assessment activities are occurring in all classrooms. Efforts to improve instruction have focused on textbooks, programs, technology, and curriculum with most countries aspiring to have 21st-century curriculum and Curriculum for Excellence (OECD, 2016). Changing curriculum does not change the students' classroom experience and a "bad curriculum well taught is usually a better experience for students than a good curriculum badly taught; pedagogy

trumps curriculum" (Wiliam, 2019, p. 22). What matters is how things are taught to students and if learning goals are set that can be assessed for student learning.

Effective teachers are the single most important factor in student achievement according to a qualitative case study by Curry et al., (2016). The focus of the study was to review data used by teachers to inform (formative) rather than evaluate (summative). The study found that informative data helps teachers be more reflective in their teaching practices and formative assessment data improves teacher motivation. Standards for accountability that focus only on summative high-stakes test scores have been found to demotivate teachers and students alike. A review by Hattie and Temperley (2007) found quantitative evidence that students who receive feedback, an important part of formative assessment, perform more effectively on a task than those who receive praise, rewards, or punishment. For students to be involved in their own learning they need to be able to interpret formative assessment feedback. Student interpretation generates meaning and Shepard et al. (2018) explained that theory and research needed to be done on design and use of assessment, and this includes formative assessment. There is also a lack of understanding of students' interpretations of feedback according to Leighton (2019) and this is fundamental to validating the formative assessment process. Feedback messages are any dialogue between students and teachers to inform students to improve learning (Winstone et al, 2017).

Cotton (2012) explained that areas of weakness related to formative assessment were observed in The Measures of Effective Teaching (MET) Project. The weaknesses were found to be in feedback, classroom discussion questioning, and discussion techniques, using assessment to shape instruction, and low use of formative assessment in classrooms (Kane & Stiger, 2012). According to Wiliam and Leahy (2015) in their book to help teachers embed formative

assessment into their teaching practices, they note that teachers should find out what students learn during teaching before attempting to teach anything else. There has been increased interest in formative assessment approaches in recent years, yet they are minimally adopted by teachers (Boud et al., 2018). The Black and Wiliam (1998a) meta-analysis concluded that "the research reported here shows conclusively that formative assessment does improve learning" (p. 49). There are still many debates and discussions about the definition, data, implementation, and use of formative assessment. This raises the question as to what factors would help teachers ensure formative assessment is understood and being implemented as a pedagogical improvement. More support for the use of formative assessment is needed, increased teacher education, and more professional development, should be focusing more on how to teach, as well as continuing research to guide implementation and improvement of the use of formative assessment. Improving teacher quality can raise student achievement according to Black (2018).

Assessment should be an aspect of learning with an understanding of the learning gap (Dann, 2014). Gaining knowledge of what the learners already know and where they need help requires learning conditions that would involve a teacher's understanding and use of formative assessment practices. Being able to integrate measurement principles into teaching practices and going beyond generic strategies is necessary to further the development of formative assessment (Andrade et al., 2019).

### *Effects of Formative Assessment Implementation*

In a recent study, the synergy between summative and formative assessment were investigated to explore variation in the effects of summative assessment based on teachers' knowledge of formative assessment or classroom performance (Ahmed et al., 2019). The comparison study was a mixed methodology study that found a significant difference in the

grades marked by teachers aware of classroom formative assessment suggesting synergy between them. Familiarity with the students and their classroom performance did impact the grades and those limited to only summative assessment had lower mean scores. This was based on a written test. The findings were that students overall do better with formative and summative assessments administered by the same teacher and both types of assessment are valuable and interlinked. In this study formative assessment was the teachers' skill in providing feedback to the students. Formative assessment causes formative feedback and is then considered assessment for learning and the teachers' skills are important for effective learning and teaching.

In a study pertaining to a model of formative assessment as practice, a central role for students' motivation was related to tests or assessments. Formative assessment strategies used by teachers were found to promote students' autonomy and competence reinforcing the Sociocultural Learning Theory that was used as a basis to study this phenomenon. "Formative assessment can be considered a practice that is socially situated as a form of classroom interaction, and historically situated as part of an ongoing theoretical shift in the field of education" (Tierney & Charland, 2007, p. 4).

Formative assessment has been found to support self-regulation in secondary students. Self-regulation has been found to be necessary for lifelong learning. In a study by Xio and Yang (2019), the students' perceptions of classroom formative assessment and feedback were found to be helpful in developing a deep understanding of their capability for self-regulation in English language learning. This might be applicable to other subjects as well. "Formative assessment is an essential aspect of teaching in which teachers gather evidence of what their students know and use this information to modify their teaching practices and provide focused feedback to improve their learning" (Gotwals & Birmingham, 2015, p. 2). According to Clark (2012) formative

assessment leads to motivation for self-regulated learning and meta-cognition where learners gain awareness to control their thinking which leads to lifelong learning. There is a challenge to the connection between social and cultural antecedents and low socio-economic status when teachers empower and engage students in the teaching and learning process using formative assessment found to have potential in motivation and achievement (Clark, 2012).

Granberg et al. (2021) conducted a case study for formative assessment practice which looked at the effects it had on self-regulated learning of students including students' perceived autonomy and using self-regulation at higher development levels. Several formative assessment aspects were implemented by a mathematics teacher in the study and the results showed that students began to exert self-regulated behavior even when the teacher was not in the classroom after implementation of formative assessment.

### *Types of Formative Assessment*

Short-cycle formative assessment is the ability of teachers to assess students and adjust instruction minute-by-minute and day-by-day. A formative, short-cycle assessment provides crucial and timely information to provide timely feedback and is also called real-time assessment, diagnostic testlets, quick and informal assessments, continuous assessments, and assessments for learning (Edmentum, 2016). It was found that using formative assessment as part of minute-to-minute and day-to-day feedback in classroom instruction would improve learning and success (Wiliam, 2008).

**Table 1-1.**

*Typology of Kinds of Formative Assessment*

| Type | Focus | Length |
|---|---|---|
| Long-Cycle | Across marking periods, quarters. Semesters, years | 4 weeks to 1 year |

| | | |
|---|---|---|
| Medium-Cycle | Within and between instructional units | 1 to 4 weeks |
| Short-Cycle | Within and between lessons | Day-by-day, Minute-by-minute |

*Note.* This table explains different types of formative assessment based on their use and when they are used in teaching. Reprinted from "Using Homework as a Formative Assessment," by J. Taylor, 2014, *Edulastic.* Copyright 2021 Snapwiz Inc.

Formative assessment practices may be considered formal or planned and informal (IFA) or unplanned as discussed in a recent research study examining secondary school teachers' qualitative IFA practices (Gangeat & Rached, 2020). In this study discursive FA practices during classroom instruction were examined to look at IFA practices using the Elicit, Student response, Recognize, and Using (ESRU) phases model. ESRU is considered a complete cycle of IFA and is the model used to observe teachers during this three-year study which found effective IFA practices contributed to frequent interactions with students who are engaged in questioning with higher cognitive questions and collection of information by teachers to make critical decisions about what to do next to guide students towards learning goals (Gangeat & Rached, 2020). These results were consistent with the current literature (Ateh, 2015; Birmingham & Gotwals, 2016; Grangeat, 2015; and Ruiz-Primo & Furtak, 2007). Interactive or informal formative assessment involve teachers noticing, recognizing, and responding to students during teaching (Bell & Cowie, 2001). IFA can be an interaction between the student and teacher in a whole-class setting, a small-group, or one-on-one and involve a dialogue known as assessment conversations that allow teachers to understand students' conceptions, mental models, strategies, and communications to guide instruction (Furtak & Ruiz-Primo, 2007). Effective IFA involves eliciting, recognizing, and observing (Cizek, 2010). Students should also be involved in their

own learning and be instructional (peer) resources for each other (Black & Wiliam, 2009). Planned formative assessment involves teachers eliciting and interpreting information that then leads to acting and it is usually used with the whole class (Bell & Cowie, 1999).

**Formative Assessment is an Assessment for Learning**

Assessment in education is a measurable set of standards to determine student's knowledge of concepts, proficiency, skill levels, attitudes and what has been learned at the end of a chapter, unit, course, or to demonstrate that required standards have been met (Organization for Economic Cooperation and Development, 2008). Assessments are delivered in a variety of ways like traditional written tests, or standardized assessment, performance based, oral presentations or newer forms of assessment using technology. All assessment should provide students with feedback in some form (Canfield, 2015). Although traditional, formal summative assessments are useful in providing scores and grades or measuring standards and student mastery of a subject, they are also found to have elements of partiality, prejudice, and personal preference rather than ability and merit (Xerri & Briffa, 2019).

Student engagement in learning, motivation and progress are other important factors to consider. Formative assessment, an 'assessment for learning', has been shown to "improve student learning" (Black & Wiliam, 1998, p. 61). It is an integral part of teaching and learning for both students and teachers where assessment is used to monitor and report on progress rather than just giving a measurement at the end, as in the traditional summative assessment view (Leenknecht et al., 2021). The impact of formative assessment can be seen as student motivation where assessment is a practice and social activity between students, teachers, and peers rather than a product or thing (Boud et al. 2018). As a noun, formative assessment could be viewed as a task to be done by a teacher, or a thing, but formative assessment according to the current

literature is viewed more as a process or a continuous check for understanding and good teaching strategies (Duckor & Holmberg, 2018). Formative assessment has also been recognized as a practice that suggests a promising way to support students in becoming self-regulated learners (Andrade & Brookhart, 2016; Black & Wiliam, 1998). Self-regulated learning (SRL) models have been proposed by Zimmerman (2000) and Panadero and Broadbent (2018) where formative assessment, including peer and self-evaluation enhance self-regulated learning. Self-regulated learning is co-regulated by students and teachers, curriculum, and assessment instruments (Andrade & Brookhart, 2016). A*f*L and SRL may represent the best hope for achievement and success for students (Andrade et al., 2019). Teachers should utilize information gained from ongoing formative assessments to adjust their teaching by responding to students' ideas and reasoning which will aid in a more thorough understanding of concepts (Treagust et al., 2001).

Other assessments, such as end-of-course exams and high stakes tests, are considered assessments of learning or summative assessments and are usually done at the end of the learning without looking back at what was learned or accomplished. Improving student learning that results in increased success, better test scores, and life-long learning should be a goal of teaching, rather than just a score or achievement to move on or pass. Recent educational statistics indicate that students who are not motivated to complete high school have much lower annual earnings and higher unemployment rate, or in other words are less successful in the future (National Center for Education Statistics, 2021). Students may not finish high school and drop out if they are not able to be successful in their learning. Using different types of assessments is useful for teachers to evaluate rather than to just assess fact recall and formative assessment us has been shown to advance twenty-first century skills like critical thinking, problem solving, creativity, and innovation which leads to student learning and success (Cotton, 2017).

Assessment has been a term used to collect data about student learning since the early 1900s. In the 1930s Crooks discussed discourse in education relating to assessment and a grade (Cotton, 2017). Ausubel (1968) explained the single most important factor in teaching is finding out what students already know, and teachers should discover this and teach accordingly. The idea of formative assessment was introduced as an evaluation task to improve learning and examine the teacher's success with students in the 1960s (Cronbach, 1963). It later became termed assessment *for* learning (A*f*L) by Black and Wiliam (1998) and today can enhanced by technology with data and instant results to help guide education on a daily basis. The important theory or process of formative assessment is still not consistently implemented in classrooms even though it has been shown to help students do better on summative assessments, have more success, and improve learning and engagement (Black & Wiliam, 2009). Assessments are used to collect information, gather data, monitor, and report on progress, and offer scores or feedback (Wiliam, 2011).

Formative assessment, an assessment for learning, has been shown to "improve student learning." (Black & Wiliam, 1998, p. 61). Other assessments, such as end-of-course exams, norm-referenced, criterion-referenced, and high stakes tests, are considered assessments of learning or summative assessments. Recent studies have found that using specific formative assessment activities and classroom-based assessments, both formal and informal, can assist in learning and create even more learning opportunities. Interaction between teachers and students using Reference to Past Learning Events (RPLE) was studied by Can Daskin & Hatipoğlu who found that micro-moments of understanding in current learning and subsequent learning events demonstrate socially situated learning that can construct an assessment bridge (2019). The findings of formative assessment research also have implications for teacher education and future

educators. Even though the importance of formative assessment has been established as being a powerful tool, in the U.S teacher training is dominated by a concern for summative assessment and formative assessment is neglected in teacher training and in classrooms (Carreira, 2012).

The most succinct definition of formative assessment is 'assessment for learning' came from the extensive writing by Black and Wiliam (2009) on the topic of FA. This idea explains formative assessments' purpose as a consideration for future decisions about teaching. Formative assessment has also been called "teaching for understanding" (Stone Wiske, 1998) or formative evaluation (Scriven, 1967, Bloom 1968, 1971). Sadler proposed a theory of formative assessment in 1989 when he found that student self-assessment is critical to improving student learning. Formative assessment was developed as a theory by Black and Wiliam who began their work on the topic in 1998. The goal of their initial work was to provide unification of the terms and practices that were formative (Black & Wiliam, 2009). The measurement tradition of assessment commonly did not look at the consequences for educational processes, but just the act of the assessment to show how the student did on the test and make a judgement, or grade (Boud et al, 2018). A case for an alternate view on assessment, with increased adaptation of the idea of assessment as a process by teachers is needed to make positive changes in student learning and motivation that make assessment more formative to improve learning and summative assessment results.

Formative assessment techniques are now considered to be responsive teaching practices that are used to elicit, identify, interpret, and respond to students' ideas (Gowals & Birmingham, 2016). Black and Wiliam (2009) proposed formative assessment as practices use in a classroom by teachers to gather evidence about student achievement used to make decisions about the next steps in instruction that are likely to be better than the decisions without the formative

assessment. Assessments becomes formative when teachers provide feedback and depends on how the assessment was planned and implemented, as well as the role the student plays (Purpura, 2016).

**Table 2**

*Aspects of Assessment for Learning*

| | Where the learner is going | Where the learner is right now | How to get there |
|---|---|---|---|
| Teacher | Clarifying and sharing learning intentions and criteria for success | Engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of learning | Providing feedback that moves learners forward |
| Peer | Understanding and sharing learning intentions and criteria for success | Activating students as instructional resources for one another | |
| Learner | Understanding learning intentions and criteria for success | Activating students as the owners of their own learning | |

*Note.* This table explains the elements of formative assessment from the viewpoints of the teacher, peer, and learner or student to understand the elements of finding out what the learner knows and how to get to their learning goals and achieve success. Reprinted from "Using Homework as a Formative Assessment," by J. Taylor, 2014, *Edulastic.* Copyright 2021 Snapwiz Inc.

**Importance of Formative Assessment**

The importance of formative assessment has been noted in public education with the development, implementation, and recommendations of states to make changes to improve accountability, student achievement and prepare for twenty-first century skills (Cotton, 2017).

One example of this is in North Carolina where formative assessment is the foundation of *A Framework of Change* (NCDPI/Academic Services, 2010*).* A statewide professional development opportunity was implemented called North Carolina's Formative Assessment Learning Community Online Network. In Maryland, a program called Formative Assessment for Maryland Educators (FAME) was implemented in 2015 as a road trip (MSDE, 2015). Other states have also implemented professional development programs and some teacher education programs are teaching about FA.

Effective teachers are the single most important factor in student achievement according to a qualitative case study by Curry et al. (2016). The focus of the study was to review data used by teachers to inform (formative) rather than evaluate (summative). The study found that informative data helps teachers be more reflective in their teaching practices and formative assessment data improves teacher motivation. Standards for accountability that focus only on summative high-stakes test scores have been found to demotivate teachers and students alike. A review by Hattie and Temperley (2007) found quantitative evidence that students who receive feedback perform more effectively on a task than those who receive praise, rewards, or punishment.

According to Clark (2012) formative assessment leads to motivation for self-regulated learning and meta-cognition where learners gain awareness to control their thinking which leads to lifelong learning. There is a challenge to the connection between social and cultural antecedents and low socio-economic status when teachers empower and engage students in the teaching and learning process using formative assessment found to have potential in motivation and achievement (Clark, 2012).

Technology-supported formative assessment has had increasing attention, yet little is known about how it is viewed and experienced in classrooms by teachers. The formative assessment multimedia learning environment (FAMLE) was a study done by Zhan and So (2017) finding a change in teachers' pedagogical practice regarding using formative assessment. FAMLE is a learning environment with assessment tasks involving multimedia that measure performance, learning, and knowledge, and provide detailed data records that can be computationally analyzed and displayed so that learning can be improved immediately from the feedback. Unfortunately, formative assessment is not always used in classrooms or is poorly implemented, according to Black and William (1998, 2018). Many tools can be used to implement formative assessment that are supported with research and many new technology-enhanced formative assessment tools engage students.

**Formative Assessment Tools and Strategies in Secondary Classrooms**

Formative assessment tools should be innovative and current and are usually ungraded assessments that provide valuable and crucial information about what students know and understand, and what they do not yet know. The formative assessments are a guide for teachers regarding what information needs to be clarified or what further instruction may be necessary. Formative assessment tools are guides for students to enhance their performance, increase learning, and improve grades and success in the present and future. This section will discuss some of the tools used in the formative assessment process and research that supports their use.

Formative assessment-based mobile learning (FAML) systems or FAMLE and web-based assessment and test analysis systems (WATA) are evaluation strategies that allow student to use technology, mobile devices, and web-based systems. The characteristics that make these part of the formative assessment process or tools are repeated attempts that allow practice,

reflection, and revision. The reason it is an effective formative assessment strategy is that learners can identify their learning flaws to trigger motivation and provide active learning. In a study conducted using mobile learning environments the findings showed that the learners did not achieve as much as those in the traditional group. In this case formative assessment did not increase student learning and the researchers felt it was based on the high cognitive load experienced with the mobile learning overloading the working memory (Chu, 2014). This information showed that other factors do play a role in student learning and implementation of formative assessment strategies. It is important to do more research on use of mobile devices since this is a current trend in education.

A rubric is a tool that helps students, peers, and teachers evaluate written work and give feedback. A rubric is typically an evaluation tool or set of guidelines used to promote the consistent application of learning expectations, learning objectives, or learning standards in the classroom, and to measure their attainment against a consistent set of criteria. In instructional settings, rubrics clearly define academic expectations for students and help to ensure consistency in the evaluation of academic work from student to student, assignment to assignment, or course to course. Rubrics are used as scoring instruments to determine grades or the degree to which learning standards have been demonstrated or attained by students (Great Schools Partnership, 2014). Rubrics can be used as a tool for formative assessment when they are used as self-evaluation tools, for peer evaluation, and for teachers to offer feedback for students to help students make necessary changes and improvements to assignments. According to Brookhart (2013) rubric comes from the Latin word for red and the dictionary defines it as an authoritative rule or a guide to listing specific criteria. In the past, rules were printed in red, so they were known as the "red things." Rubrics can be used as the printed rules for setting criteria for

students' work and can be given to them at the beginning of the assignment or assessment, so they know the expectations. Video-enhanced rubrics called viewbrics support mastery of complex 21st century skills are current uses of formative assessment shown to support feedback and reflection (Ackermans et al., 2021).

A concept map is another tool for formative assessment that has been researched and found to be effective for increasing student learning. Concept maps are graphical representations of students' knowledge and understanding of a topic, consisting of labeled nodes and links representing a web of propositions (Bentson et al., 2017). Kit-Build is a type of concept map that is digital and can improve learning achievements in a lecture class and can save time for teachers and students by improving or confirming the students understanding. The students and instructors gave positive opinions on the use of Kit-Build concept maps as a formative assessment tool in a recent comparison on learner maps (Pailai, 2017).

Formative Assessment Classroom Techniques (FACTs) are the various techniques teachers use to promote student thinking, uncover ideas, and use information about students' progress in moving toward the learning targets to improve instruction (Keeley, 2016). Examples of FACTs include round-robin charts, strategic questioning, student response charts or cards, think-pair-share, 3-2-1 countdown, classroom polls, exit and admit tickets, one-minute papers, thumbs up, thumbs down, or other hand signals, quizzes, observations, A-B-C summaries, idea spinners, cubing, think-tac-toe activities, and Likert scales. Lemov proposed using exit tickets to allow teachers to make inferences about what was learned during a lesson and to differentiate between levels of understanding (2015). This is responsive teaching and can help plan future lessons.

Feedback is a formative assessment tool and can be in the form of comment-only marking by teachers, oral feedback that can be informal and responsive during instruction, or computer-generated. Feedback should be given promptly. Research has shown that feedback has positive consequences as an effective means of scaffolding learning. This study found that feedback specifically increased student achievement and Hickey and Zuicker (2005) found improved learning outcomes over time resulted from continued enhancement of participation in the feedback conversations with students and teachers. Giving quality feedback should be a topic for professional development because this pedagogical skill has been found to be an area where teachers need guidance, and their practices are not always ideal. Peer and self-assessments are ways to get feedback and have been found to play a strong role in the learning and assessment process and self-regulated learning. Reflective processes involve the student in their own assessment and change becomes visible for them so they can take responsibility for their learning (Tierney & Charland, 2007). Peer assessment can occur in a group or cooperative learning environment and are becoming more widely used. Self and peer-assessment have been found to be beneficial to improving work and when carefully designed and implemented can be an effective tool in the formative assessment process necessary for twenty-first century learning (Wanner & Palmer, 2018).

Portfolios can be used as a formative assessment tool where students can include their work. Portfolios have been found to increase student motivation for achievement and engagement. “Students become members of a community of learners and define themselves within portfolio sites and via the portfolio process” (Clark et al., 2001, p. 25). A portfolio might also be used as a summative evaluation tool at the end of a course. Electronic portfolios are now used as well as formative electronic lab assessments or ELA (Chen, 2018). Students were more

satisfied with ELAs as compared to traditional laboratory reports and in a mixed-method study students and teacher preferred the ELAs and electronic portfolios to promote student outcomes and help refocus learning making it formative in nature.

**Table 3**

*Summary of Formative Assessment Strategies that Can be Used in the Classroom*

| Strategy | Description | Value | Challenges |
|---|---|---|---|
| Prior Knowledge Assessment | Short quiz before or at the start of a class | Guides lecture content, informs students of weaknesses and strengths | Students may not be motivated to take assessment seriously, requires flexible class time to respond |
| Minute Paper | Writing exercise asking students what they thought was the most important information and what they did not understand | Can provide rapid feedback, requires students to think and reason | Students may expect all items to be discussed, students may use it to get faculty member to repeat information rather than introduce new information |
| Muddiest Point | Student response to a question regarding the most confusing point for a specific topic | Helps students acknowledge lack of understanding, identifies problem areas for the class | Emphasizes what students do not understand rather than what they do understand |
| "Clickers" (Audience Response System) | A question asked anytime during a class to gauge learning | Provides students/faculty with immediate feedback, debrief can improve the understanding of a concept | Uses up classroom time, students may not be motivated to answer questions seriously |
| Case Studies (problem recognition) | Case analysis and response to case-related questions and/or identification of a problem | Helps develop critical thinking and problem - solving skills, develops diagnostic skills | Time consuming to create, takes considerable time for students to work on them |

*Note.* This table explains five formative assessment strategies that can be used in the classroom with a description and the strengths and problems with each strategy. Reprinted from "A Faculty Toolkit for Formative Assessment in Pharmacy Education," by L. Schlesselman, 2014, *American Journal of Pharmaceutical Education* 78(9) 160

Interaction between teachers and students using RPLE was studied by Can Daskin & Hatipoğlu (2019) who found that micro-moments of understanding in current learning and subsequent learning events demonstrate socially situated learning that can construct an assessment bridge. The findings of formative assessment research also have implications for teacher education and future educators. Even though the importance of formative assessment has been established as being a powerful tool, in the U.S teacher training is dominated by a concern for summative assessment and formative assessment is neglected in teacher training and in classrooms (Carreira, 2012).

There are several technologies related to formative assessment classroom tools (FACTs) that can be used in classrooms today. They include Plickers, a free card activity used by K-12 teachers in over 100 countries (plickers.com, n.d.), Classroom Response Systems (CRSs), Quizlet, Kahoot and Gimkit. These formative assessment tools are known as Technology Enhanced Formative Assessment. CRS is a technology that allows instructors to pose questions and poll students during class. They are usually posted on a board and software is used to collect the responses, aggregate, and display them. The educational value of video games to enhance learning has been explored as a formative assessment tool by Pavlou (2020) where game-informed playful assessment for learning was found to affect students' experience of learning. FACTs technologies have been found to help teachers learn about students' knowledge and thinking, help student become aware of their own and each other's knowledge and thinking,

catalyze small-group discussion and peer learning, and engage students in learning (Beatty, & Gerace, 2009). Students can use their smart phones, computers, iPads, or SMART boards and they usually have fun when using these types of formative assessment. Teachers are expected to use technology to assess students' learning because of the investments in technology and pressure of increasing teacher accountability. Teachers can address this using teacher inquiry or TI with technology, but they need to be encouraged and supported according to a literature review on the topic (Luckin et al., 2017).

**Gaps in the Research**

During the literature review focusing on formative assessment in secondary classrooms, it was found that increasing professional development to improve use of formative assessment and improve feedback could narrow the achievement gap to improve learning. One study looked at preparing teacher candidates to respond to students' ideas in science (Gotwals et al., 2016). Professional development to help teachers learn to use formative assessment tools would increase and improve their use in classrooms. An area of focus in teacher practice that needs more research to support FA in the classroom is the effectiveness of professional learning opportunities. The areas where teachers need support and how to observe and measure implementation were discussed in a report on an instrumentation tool to help program developers and teachers improve FA interventions and practices (Lyon et al, 2020). More work is needed to develop and design and protocols to observe formative assessment use in teaching and learning.

In other countries, more research has been conducted to show the benefits of formative assessment (Black & Wiliam, 2009, OECD,2016). There has been an improvement in encouraging formative assessment use in our country but there are still gaps in collecting data and research relating to the overall impact in the classroom. It takes time to implement a

technique and then identify changes in achievement since things are always changing and it may be hard to attribute improvements to a shift in instructional practices, society, technology, changes to the curriculum or assessment, or even a change in the students.

Rubrics may be useful in short-cycle formative assessments because they tell students what they need to do, how to get there, and then allow students to self-assess. Research about feedback was found during the literature review, but very little research was available about the use of rubrics improving learning. Most research on scoring rubrics emphasized summative aspects (Panadero & Jonsson, 2013). In a study to review the research on formative use of rubrics it was found that rubrics have the potential to positively influence student learning as well as improve performance and self-regulation but there were many factors that need further investigation related to use of rubrics and their usefulness as FA (Panadero & Jonsson, 2013). Rubrics would be considered planned formative assessment

The use of concept mapping has been researched in relation to improved learning, or as a formative assessment tool. Hartmeyer et al. (2017) performed a review of concept maps as a formative assessment process in science classes. Concept maps are another tool that can be used as formative assessment in K-12 classrooms, but the research was limited to science classes. There are many different types of concept maps and ways to implement and use them. Collaborative concept-mapping could provide for peer interactions, discussion, and students' argumentation in classrooms to promote higher-order thinking, if used correctly. Technology can be used to create concept maps yet more research needs to be conducted on the use of concept maps and other technology tools that can be used for formative assessment to prove their impact on achievement.

In their work on formative assessment over the years, Black and Wiliam (1998) have helped define formative assessment and have been able to theorize the impact of assessment for learning has had on improving learning. However, they point out that more work research still needs to be done on instructional design, feedback, self-regulated learning, and motivation needs to be integrated with the strong body of theoretical and empirical work that is available, suggesting integrating assessment with instruction improves learning outcomes. Since 1998 Black and Wiliam, as well as other experts on formative assessment, have continued to collect data and provide information about what works and what we actually do in schools and classrooms. To improve education each school district administrators, curriculum leaders and teachers need to make decisions about how to improve formative assessment and make changes so that what we do makes a difference for our students. Wiliam (2018) points out that "today in America, the biggest problem in education is not that it is bad. It is that it is variable. In hundreds of thousands of classrooms in America, students are getting the education that is as good as any in the world. But others are not" (p. 183). Improving professional development, technology, data collection, and research on formative assessment can make a difference in ensuring all students are getting a good education.

Teachers do not understand formative assessment even though they were using it to enhance student learning according to a survey completed by students and teachers related to perceptions of formative assessment use (Cotton, 2017). Limitations to the Cotton study, and many of the others reviewed in this literature review, are related to size and sampling only being done in one school district so the results cannot be generalized to all school districts in the country. Mastery learning using formative assessment has been found to have an impact on student learning in multiple studies where 25 of 27 studies showed positive effects of this in a

meta-analysis done in 2009 (Hattie, 2009). Most of the studies focusing on formative were found to be qualitative and more quantitative data or mixed-method research are needed to provide stronger support for formative assessment ideas, processes, and strategies. More data collection by teachers would also be useful in understanding best practices of formative assessment with the large number of options and tools available that are considered formative in nature. Studies on what professional development programs would support teachers' development of formative assessment are recommended as well as case studies on different characteristics of formative assessment practices affecting students' SRL development (Granberg et al., 2021). Granberg's qualitative case study research also found that there were few studies done on SRL in K-12 and most were done in higher education, even though SRL can lead to motivation and achievement.

The gap in research on this topic of formative assessment comes from the lack of a firmly established definition of formative assessment (Cizek, 2010), the need to clarify existing instructional gaps between theory and practice, the use of tools and programs for teacher professional development (Wylie et al., 2008), and the need for more research on the use of formative assessment in classrooms in the United States that might be shown to make a difference on student academic achievement and the impact formative assessment have on success for students (Andrade et al., 2019, Cotton, 2017). Even though specific research was done relating to referencing past learning (RPLE), more research is needed to look at different contexts and levels of education as well as different ways of doing formative assessment. Recommendations to research connections between interaction and assessment as well as other informal formative assessments are discussed with the RPLE research (Can Daskin & Hatipoğlu, 2019). Highlighting connections and interactions between formative and summative assessment was also recognized as a gap (Andrade et al., 2019; Jonsson, 2020).

An analysis by the Centre for Educational Research and Innovation about the case for formative assessment explained that assessment is vital and summative assessments are the most visible but formative assessments are frequent, interactive assessments of student progress and understanding to identify areas of need and to adjust teaching (CERI OEDC, 2008). They felt more research was needed on the impact of formative assessment on general students' achievement as well as underachieving students and approaches based on gender, ethnicity, socio-economic status, or age. Other future research focuses they recommended were the challenges of deepening and broadening practice of effective formative assessment approaches and techniques which is what this current study is aiming to do.

Further research connecting the goals and practices of formative assessment to developing self-regulated characteristics in students is needed including looking at how teachers design the learning and prepare for use of FA (Clark, 2012). There is a question as to the level of confidence and ability teachers possess in the use of FA to plan for next steps in students' learning progressions (Macintyre et al, 2007; Herman et al, 2010). Black and Wiliam (1998b) explained that assessment does not become formative until students' evidence of learning is used to adapt instruction to meet learning needs of each student and there is still confusion about this goal being met today. An understanding of the circumstances where learning effectively internalize FA and self-regulated learning should be researched in educational practice (Schunk, 2008).

There is a need to understand how students interpret feedback and how feedback discussions are understood by both teacher and students (Leighton, 2019; Winstone et al., 2017). Leighton explains that teachers are experts in pedagogy or instruction and assessment but are not as knowledgeable about the psychology of how students interpret formative assessment

feedback. The lack of knowledge by teachers about students' interpretations adds to the questions of formative assessment which are, Where am I going? How do I get there? What do I do next? By prompting further inquiry from the teacher's feedback with How do you know this? (Leighton, 2019).

## Summary

Providing feedback to students and assessing for learning, has been found to improve student achievement, success, and summative assessment scores for secondary students (Andrade et al.,2019; Black & Wiliam, 2009; Dixon & Worrell, 2016; Trumball & Lash, 2013). Vygotsky's sociocultural learning theory provides a theoretical framework for this formative assessment study based on the three tenants of social processes, language, and the ZPD with the competent and knowledgeable teacher leading the student to learning, motivation, and self-regulation. Different types of formative assessment from long-cycle over time to short-cycle minute by minute assessment which can be planned or unplanned with frequent student and teacher interactions guides students towards learning goals. The idea of formative assessment as a pedagogical process, theory, or tools to be used in the classroom have been discussed in educational fields for a long time, yet a clear definition and understanding of formative assessment has not been established.

Formative assessment, also known as assessment for learning involves teachers utilizing information gained about what students already know and what they need to learn. Effective teachers who use formative data and reflective teaching practices have been found to improve student motivation and achievement. Formative assessment may be enhanced by technology as in FAMLE or other tools such as rubrics, concept maps, prior knowledge assessments and case studies. Educational leaders in this country have not developed a plan on the most effective way

to understand, implement, and improve formative assessment in all classrooms across the country.

Gaps in the research need to be filled showing the benefits of teachers using formative assessment and which formative assessment tools are most effective beginning with an improved understanding of what formative assessment is and what it does. Formative assessment was found to improve student engagement and grades and the benefits of formative assessment use in secondary classrooms have been established, yet not consistently included in teacher training or implemented in classrooms. Formative assessment could improve learning, promote self-regulation and increased achievement and success for all students in our country and should be more widely encouraged in all classrooms, by all teachers. Research by Rached and Grangeat (2020) concluded that policies or research seeking ways to implement new formative assessment approaches or teacher practices should concentrate on not only developing knowledge but also offering adequate support to teachers by allowing them to participate in a community of practice and adding to teacher training. In a formative assessment context, the teacher plays a role in designing instruction, but the students play a role in learning and setting learning goals (Andrade et al., 2019). Teachers must use information from formative assessments to develop corrective instruction (Bansal, 2020) but a better understanding of the disparities in teacher interpretation of formative assessment and experiences with formative assessment implementation is needed. The impact of formative assessment can be seen as student motivation and self-regulation lead to success where formative assessment is a practice of social activity between students, teachers, and peers rather than a product or thing (Boud et al. 2018). Teachers cannot learn or implement what they do not see modeled. The literature has shown that formative assessment improves learning and exploring teacher's implementation, understanding and use of FA in this study will

help fill gaps in the literature and develop a way to improve perceptions and implementation of this process by more educators in United States classrooms.

# CHAPTER THREE: METHODS

## Overview

The purpose of this phenomenological qualitative study is to describe secondary educators' experiences in planning and implementing formative assessment in rural southern Maryland to gain an understanding of their perception and use of AfL in diverse classrooms. During this study secondary educators who have knowledge of, or have used formative assessment, were invited to participate to gain a better understanding of AfL and its impact on student learning and day-to-day adjustments made to instruction in Southern Maryland classrooms. This chapter details the design of the transcendental phenomenological approach used with reasoning for a qualitative approach, followed by the overarching research questions for the study pertaining to educators' experiences with formative assessment. The Bluffington (pseudonym) county setting for the research is discussed followed by the participants in the study. The procedure involved constructing meaning from analysis of a questionnaire, participant interviews, and journals on formative assessment use during instruction. Next the methodology, qualitative design, and approach for the study will be discussed. The research analysis methods for this study include questionnaires, interviews, and journals. Finally, trustworthiness and analysis pertaining to educators' experiences with formative assessment will be addressed including triangulation, researcher bias, and ethical considerations along with the researcher's role in the study with trustworthiness tied to the decisions made and accuracy of the participants responses transcribed by the researcher.

## Research Design

The overall strategy used to carry out the research in this study is qualitative. The approach to this research study is transcendental phenomenological design. The purpose of this

study is to describe in detail, the meaning and nature of formative assessment as it is used in the natural secondary school setting. This study is qualitative in nature because the data gathered will pertain to the experiences and opinions of secondary teachers, to gain a better understanding of A*f*L. A qualitative design will help describe the lived experience of the educators in the study and find the meaning in their experiences with the phenomenon of formative assessment, or Assessment for Learning (Patton, 2015). In this study attention will be given to secondary teacher's experiences and their stories. Themes from this qualitative research may improve educators' approaches to formative assessment leading to student achievement. This study will help fill the gap in research on educators' experiences implementing formative assessment. Qualitative design is preferred over quantitative in this study because in-depth meaning and essence of the experiences of the educators is essential to developing an understanding of A*f*L rather than collecting data on the use of formative assessment. Quantitative research is grounded in mathematical tools using statistics and probabilities with objective data whereas qualitative research is subjective and grounded in theories (Creswell & Poth, 2018). Creswell (2018) points out that quantitative research methods gather data with predetermined instruments like questionnaires and experiments and then statistical analysis. Questions for qualitative inquiry are more open, or subjective, and data emerge during the collection phase and are discovered during analysis.

Phenomenology is a philosophical discipline that seeks to grasp the originating meanings of everyday thought and be open to new conceptualization of ideas through phenomenological inquiry (Van Manen, 2014). The background comes from philosophy with Husserl being the pioneer for subjective openness in philosophy and science which was a radical approach at the time (Moustakas, 1994). Phenomenology has philosophical presuppositions and perspectives,

returning to traditional Greek concepts of wisdom. Other important philosophers in phenomenology include the writings of Kant, Hegel, Kockelmans, and Van Manen with Hegel constructing the technical meaning of knowledge as it appears to the consciousness (Moustakas, 1994). Another important French philosopher, Maurice Merleau-Ponty's philosophy is of meaning, which is human, worldly and relates to the work humans do each day in their living world. Merleau-Ponty found the phenomena of ordinary life more fascinating than truth or beauty, which was more typical of the philosophers of his time. Perception is a primary focus of Merleau-Ponty's work as it relates to the experiences and phenomena of the human experience (Merleau-Ponty, 1964/1968). Phenomenological studies explore a concept within a group of individuals with a phenomenological reflection to describe the essence of the experience, including what and how of what they share (Creswell & Poth, 2018).

The transcendental phenomenological approach is now widespread in sociology, psychology, and health sciences. Researchers focus on experiences of the participants and suspend all judgements until founded on a certain bias or epoche (Moustakas, 1994). According to the Glossary of Qualitative Research Terms (Heigham & Croker, 2009) phenomenological research is an approach to describe individuals' experiences of a single phenomenon that can be seen or experienced by the human senses such as an object, event or feeling. According to Cresswell & Poth (2018) phenomenology is a common meaning for several individuals of lived experiences, concepts, phenomenon, and what they have in common or the wonder of it and the nature of it.

This approach is the best way to understand teachers' experiences and use of formative assessment to determine the nature of their perceptions and use of formative assessment. Since every teacher that uses formative assessment seems to use it differently and there are various

definitions and understandings of the term, the sample will need to include those who have an idea of what formative assessment is, or educators who have used or learned about formative assessment in the past. The transcendental phenomenological (TPh) design is appropriate because the purpose is to find individuals with common lived experience or phenomena and reduce them to a description of the universal essences (Creswell & Poth, 2018). As van Manen points out, the "very nature of the thing" (1990, p. 177) is being explored using the phenomenological framework to research lived experiences. Verstehen is a phenomenological doctrine which means understanding at a deep level grounded in the human capacity to make sense of the world through inquiry (Patton, 2015). This study will involve inquiry and making sense of the educators' experiences in this setting. The transcendental phenomenological design will allow for discovering the educators' experiences through reflection as well as subjectivity and discovering the essence of the experience (Husserl, 1965) of formative assessment. TPh was developed by Husserl as a methodology seeking to understand human experiences and is grounded on setting aside preconceived notions (epoche) to allow the full meaning of the phenomena to emerge (Moustakas,1994). Other approaches in qualitative research, or ways to think about conducting a qualitative study which are not appropriate for this study are ethnography which studies an entire culture, field research where the researcher goes into the natural state or in situ to observe, and grounded theory developed by Glaser and Struss to develop a theory about a phenomenon by observation (Cresswell & Poth, 2018).

Cronbach (1963) observed that designing a study is as much art as science and requires imagination and creativity. Any design will be affected by the resources, capabilities, people, and personal judgements of those involved (Patton, 2015). The researcher's strengths as a professional and the ability to find meaningful experiences pertaining to formative assessment

make qualitative phenomenology the perfect approach for this study. Comparing phenomenology looking at lived experiences of participants to other qualitative approaches such as narrative focusing at an individual, grounded developing a theory from data, ethnographic focusing on a culture-sharing group, and a case study approach used to analyze a specific case, the qualitative phenomenological approach is best for this study. Other types of phenomenological research include hermeneutical, which is lived experiences and interpreting the "texts" of life, empirical, transcendental, or psychological which describe participants' experiences (Cresswell & Poth, 2018).

Qualitative phenomenological research allows for exploratory interpersonal subjectivity that provides the best opportunity to understand the innermost deliberation of the lived experiences of the participants in the study (Alase, 2017). This study looked at diverse cultures in the study setting that impacted formative assessment, not an individual or singe case and was not looking at data to develop a theory but may contribute knowledge to the formative assessment theory. Phenomenological research includes individuals with common lived experiences, or phenomenon, and what they have in common. In contrast to narrative like other qualitative research designs, the format used for phenomenological research is interview presented in written form (Cresswell & Poth, 2018). Intuition is a place to start when deriving knowledge of the lived human experience and the core processes that facilitate the derivation of knowledge are epoche, reduction and imaginative variation (Moustakas, 1994). Challenges in phenomenological design methods include understanding broader philosophical assumptions and abstracts not easily put into writing that are very conceptual (Knafl, 1994). Merleau-Ponty (1945/1962) described interpretation of phenomenological data as what is said and what is meant are not the same thing, so interpretation is making sense of the words and seeking to answer what

the experience is really like. Caelli described episodes of trying to make sense of the passages as interpretation in action and reflection, writing, and rewriting about the phenomenon is a deeper level where patterns relate to each other and become clear (2017). Phenomenology is a philosophy, so it is unique as an approach to gathering data where phenomenological reduction is implemented by freeing oneself of assumptions to see the phenomenon anew (van Manen, 1990). Deriving a story from the interview transcripts is part of the data collection that is deemed an acceptable way of thinking about the narratives where the researcher looks for events, descriptions or stories that make it anecdotal evidence of what may be true (Caelli, 2017).

Shugart's (2017) dissertation, a similar approach to this study design, applied a disciplined and systematic approach setting aside pre-judgements to allow an openness to hear teachers' pedagogical influences for evaluation. Since this current study was looking to accomplish a similar goal of looking at perceptions of formative assessments' impacts on student growth and achievement this approach was appropriate. Another study by Thacker (2016) used the same approach to study middle school teachers' implementation of formative assessment practices in a rural setting, like the setting in this study.

The study focused on aspects of Vygotsky's Social Development Theory including social, cultural and language, the More Knowledgeable Other, and The Zone of Proximal Development (zpd) and how they relate to the phenomenon of formative assessment as experienced by educators (Vygotsky, 1978). This study could also contribute to the development of the formative assessment theory itself and to the body of knowledge on A*f*L. Other discoveries could have included increased knowledge relating to educator's definition of formative assessment and the implementation of A*f*L in diverse classrooms with different cultures and

languages. Also, the educators' experiences and views about students' cognitive development when employing formative assessment practices were explored.

## Research Questions

### Research Question One

How do secondary educators in a rural school district in southern Maryland describe their experiences of planning and implementing formative assessments?

### Research Question Two

How do secondary educators describe their experiences in addressing culture in the planning and implementation of formative assessment to adjust instruction?

### Research Question Three

How do secondary educators describe language or linguistics in formative assessment practices implementation?

### Research Question Four

How do secondary educators describe cognitive development in students when implementing formative assessment?

## Setting and Participants

The setting and participants for this study came from rural Southern Maryland and included secondary educators. This area has had previous professional development relating to the use of formative assessment and it is modeled with various strategies at continuing professional development and new teacher orientation sessions held in this county. This county has one superintendent of schools, a deputy superintendent, and principals at each secondary school in the county which includes three high schools and four middle schools. There are also two private schools in this county with secondary educators.

**Setting**

The setting for this study is the Bluffington (pseudonym) county public school district in rural southern Maryland. The county is one of 24 local jurisdictions in the State of Maryland has a population of around 115,000 with over 17,000 students enrolled in public schools and a 94% graduation rate (Bluffington, 2020). There are approximately 1500 teachers in this public school district. The secondary schools include four public high schools and four middle schools. The economic activity in this county is very diverse from a large military base employing thousands of active duty and government service workers and contractors to fishermen and construction trades. This setting will be used because Formative Assessment for Maryland Educators (FAME) was introduced in 2014-2015 as a yearlong collaborative professional development process (MSDE, 2015). This initiative and involved processes continued for several years and in Bluffington (pseudonym) county and the neighboring counties. The rationale for using this site is that some teachers may have knowledge of formative assessment due to the FAME professional development provided and the diversity in this county and its communities. Diversity is demonstrated with an enrollment of 62% white students and 18% African American with representation from Hispanic, Asian, American Indian, Alaska Native, Native Hawaiian and two or more races. Students receiving special services include 13% in Special Education, 5% with Limited English Proficiency and 35% receiving free/reduced meals. The motto is Committed to Excellence, Committed to Action and Committed to Students (Bluffington, 2020). Excellence in teaching requires educators to adjust during instruction or employ formative assessment strategies to help students be succeed and excel in learning. One of the pillars listed in the annual report is Instruction, Teaching & Learning were learning gaps, ensuring alignment of curriculum and instruction to State standards and plans for the continuation of student programs. Leadership

in this county includes the superintendent, a student board member, and five elected Board of Education Members with 1491 professional staff and 780 classified staff.

**Participants**

This study included 10 participants, with interviews done until data saturation occurred. The sample pool came from all secondary educators in Bluffington (pseudonym) county including new teachers to the most experienced educators in the county. The educators' demographics include various ages, gender, and ethnic backgrounds. Recruitment began with an email with a link to screening questions included after approval from the administrator at each site was obtained. In the case that maximal variation sampling or the minimum participants were not obtained from the chosen county, then approval from outlying counties in Maryland state would have been sought to participate using the same process of approval and sending letters to the administrators of secondary schools. Once permission was granted from the email generated and sent to administrators, a follow-up email to the administrator was sent within one week requesting the email be forwarded to all secondary educators in their school or at the site. The email included a response link and a link to the IRB approval and the school district approval (see Appendix B). The link consisted of survey questions with demographic information and eligibility requirements (see Appendix B). When answers to the questionnaire were received and consent signed, then purposeful sampling began. Following review of the initial questions by secondary educators a request to participate in the study and consent was generated and sent to each qualified respondent. After the participants granted approval and a signed copy was sent to the researcher, then a questionnaire link for the SurveyMonkey questionnaire was sent within 24-72 hours.

## Researcher Positionality

My professional career began as a nurse, and I did not have formal teacher education before beginning my career in education as a Career and Technology Education (CTE) teacher in a secondary school for 10-12 grade students. I started my teaching career over 15 years ago. The motivation for this study came from the benefits I noted in my teaching practice when formative assessment is correctly implemented with planning or spontaneously to check for student understanding.

### Interpretive Framework

My beliefs are based on the idea that each person will construct meaning in their subject and classroom-based on their experiences and backgrounds. The lens through which I will conduct my study is the conservative social constructivism framework (Creswell & Poth, 2018). Using a qualitative and more subjective approach to develop a better understanding of how secondary teachers in both middle and high school classrooms is a way to construct meaning of the viewpoints and experiences of these teachers. A more constructivist paradigm is important in qualitative research because it is conducted to describe and promote understanding of a human experience, in this case, the teacher's experience with formative assessment (Burns & Grove, 2009).

#### *Philosophical Assumption*

My philosophical assumptions come from my background as a medical professional where facts and truths can be either subjective (what the person says) or objective (what can be seen with the senses). Both subjective and objective information provides a theoretical framework that guides inquiry into any subject or idea. My philosophy and perspectives are unique due to my medical background and training which relies a great deal on subjective and

objective observations and assessments. Subjectivism is the belief that knowledge is filtered through an individual's lenses of language, gender, class, race and ethnicity loaded with values (D1enzin & Lincoln, 2005). These ideas give direction to my practice as a teacher and my education, research, and work in the field. The key components of philosophy ontology, or the nature of reality, and epistemology come from the Greek word episteme meaning knowledge, or how we come to know reality (Gortner, 1993). Prior to being trained as a teacher, my reality came from the unique perspective of a medical professional.

***Ontological Assumption***

Ontology is the study of being and has realism perspectives with real being derived from the Latin word res, which can be translated into a thing. Relativist being translates into a finite subjective experience where nothing exists outside of our thoughts with multiple realities coming from multiple interpretations of experience (Guba & Lincon, 2005). Subjective experiences of reality come from the multiple truths of many people (Levers, 2013). Phenomenological ontology based on Husserl relies on experience (Husserl, 1965). I had never heard of formative assessment, and it was not even something taught or discussed in the courses required for me to obtain my teaching certificate early in my teaching career. Taking a professional development course, Formative Assessment for Maryland Educators (FAME) changed the way I taught and presented me with an introduction to formative assessment. I attended other training and conferences expanding my knowledge of formative assessment. I feel that continuing education and research is essential to growth in education, nursing, and any profession today. My desire to develop and better understanding and definition of *Af*L grew and I wanted to know how the implementation of these ideas would impact my teaching and the students learning in my classroom. I began by questioning, doing research, and literature reviews to improve my

knowledge on the topic and to determine what impact it might have in classrooms in our school and school district if more consistently implemented. Some teachers in our school participated in a book discussion group that I led and more professional development training on the topic of FAME was presented. Formative assessment use in my classroom increased and as a result, I saw improvements in all students' scores on summative assessments, learning and knowledge in the course, and success overall. Now as a mentor teacher I inform new teachers of the possibilities to make informed decisions about instruction using formative assessment in the classroom.

***Epistemological Assumption***

Teacher education and professional development opportunities are needed to facilitate more consistent implementation and use of formative assessment in Southern Maryland secondary schools (Wylie et al., 2008). Formative assessment in classrooms to improve student learning and success across the nation is important. My motivation for choosing this topic is to develop an understanding of secondary teachers' definition of formative assessment and how they implement it in their classrooms. Understanding teachers' perspectives and use of formative assessment align with the axiological perspective where researchers understand the roles and values of the teacher and students with an understanding of the researcher bias, values, and interpretations (Creswell & Poth, 2018).

***Axiological Assumption***

As a Christian educator, I believe it is important to recognize formative assessment strategies and practices as transformative as our process to be more like Christ and progress towards our goals to grow as Christians and let our lights shine. We should strive to know each student and their learning needs more intimately but as mere humans, we need to turn to God

who is omniscient and all-knowing of the needs of His people. We are allowed to reflect on our growth, as our students are with the use of formative assessment. In Psalm 139: 23 David says to the Lord "Search me, God, and know my heart; test me and know my anxious thoughts" (*New International Version*, 2011). We can work to promote student learning and growth with our trust in God to guide us.

**Researcher's Role**

I was the primary researcher and am an educator teaching the Academy of Health Professions for a Career and Technology Center. I was not formally trained in education during my undergraduate degree where I received an associate degree in nursing and became licensed as a registered nurse (RN). I then obtained a Bachelor of Science (BSN) degree in nursing and a Master's (MSN) degree in nursing education. I took several education courses when I was hired to teach health professions students in Career and Technology Education (CTE). None of the courses were specific to pedagogy or instructional practices. I learned about formative assessment practices through the district-sponsored new teacher orientation and from my teacher mentor. I later took a course from the state department of education to learn about formative assessment. From these experiences I developed an understanding of what formative assessment is. In this research, it is crucial to bracket me out of the study and, as the researcher, identify personal experiences with formative assessment but to "partly set them aside so that the researcher can focus on the experiences of the participants in the study" (Creswell & Poth, 2018, p 76). Other things that might impact my research are my personal experiences as a parent of students and my spouse is also a teacher. In my role as researcher, I will not be in authority over any participants in the study. Educators from the school where I teach, family, and close friends will not be invited to participate in the study to prevent bias.

## Procedures

The procedures, or steps used to conduct this study included obtaining the necessary permissions from the IRB and the Bluffington School District secondary schools (see Appendix A for IRB Approval Letter). The information about the participants and data collection were followed by analysis for each of the three data collection methods which included a questionnaire, individual interview, and journal kept by each participant. An explanation of how this study achieves triangulation, trustworthiness and ethical considerations follows. Enough detail is included in this section to be able to replicate this study.

### Permissions

The first steps prior to any data collection include obtaining IRB approval (see Appendix A) and approval from the Bluffington school district (see Appendix B). School district approval involved completion of an Independent Research Request form submitted to the Chief Strategic Officer of Bluffington school district. This form identified the objectives, secondary schools to seek permission from, and the procedures for the study (see Appendix B). After receiving both approvals, permission from the administrators at the nine individual secondary schools was obtained by sending an email to administrators in all secondary schools asking for approval and assistance to send emails to educators to participate in the study (See Appendix B)..

### Recruitment Plan

The researcher used screening protocol-generated categories and questions (see appendix C) to review survey responses utilizing application of maximum variation to generate a purposeful cross-section of 10 participants. Getting participants who agreed to be a part of the study was the first step to the data collection (Creswell & Poth, 2018) after permissions from the IRB, school district and administrators was obtained. The sample pool size of teachers in

Bluffington schools is approximately 455 secondary teachers from the 4 middle schools and 4 high schools (smcps, 2021) with a sample size of 10-15 educators. Purposive sampling selection of full-time teachers in secondary schools will be used, with participation solicited via email and using a screening protocol. Purposeful sampling will allow the selection of teachers representing various subjects, grade levels, and schools that know of, have used, or been trained in the use of formative assessment. Sampling aim to create a specific information-rich group to reveal patterns with data collection and analysis possibilities (Patton, 2015). Maximum variation sampling or heterogeneity will select participants based on gender, age, ethnicity, and years of teaching experience (Moustakas, 1994) until no new information is forthcoming from the educators and redundancy occurs (Patton, 2015). Both middle school and high school teachers participated. Homogenous sampling using snowball or chain sampling helped locate participants who have completed FAME or other formative assessment training to gather in-depth experiences from the subgroup of secondary educators who know formative assessment and will be employed to achieve maximum variation. By starting with key informants who know of educators with this experience or asking interviewees during the interview process it was possible to generate a chain of interviewees who know people that were good sources of the focus of inquiry (Patton, 2015).

Screening protocol questions were included in a link to the SurveyMonkey questions sent to all secondary school teachers by the school administrators to find the participants (see Appendix C). The ten screening protocol questions took approximately 5 minutes or less to complete. One of the requirements for participation was that the educator had knowledge of what formative assessment was and had received education pertaining to formative assessment, had completed FAME or similar training, or attended professional development related to formative

assessment and this was a question in the screening protocol. If educators answer was no to the question of having training, knowledge, or experience with formative assessment then the response thanked them for their time with a note that they were not eligible to participate. If their answer was yes, they met the protocols and were given a link to the consent, if they agreed to participate. If they did not agree they also received a response thanking them for their time. The yes responses were reviewed for a purposive sampling of secondary educators from various subjects in middle and high schools in rural southern Maryland. Snowball sampling was implemented to continue to gather participants for the study as needed to reach a minimum of at least 10 participants meeting the requirements of the study and being from various schools and subjects.

Informed consent was obtained after participants agreed to participate and were selected from the screening protocol questions (see Appendix E). This survey was in the form of a SurveyMonkey survey with secure responses. Recruitment continued until at least 10 qualified participants agreed to participate and completed the consent form to begin the study. After informed consent was obtained from each participant agreeing to participate in the study, the researcher sent an email invitation and link to take the survey questionnaire regarding the educators' experiences with formative assessment planning and implementation (see Appendix G).

## Data Collection Plan

All data collection leads to analysis to look for meaningful patterns and themes (Patton, 2015). Data collection in phenomenological research is done by interviewing a group of individuals emphasizing the phenomenon experienced with a phenomenological reflection (Cresswell & Pot, 2018). In this study on formative assessment, the group was secondary

educators with knowledge of formative assessment who have used this type of assessment, to understand their perceptions and use of formative assessment. Therefore, it is essential that the researcher focuses on participants' experiences and sets their aside their own bias to focus on the individuals or use bracketing which is more about the individual experience than the researcher's interest.

Data collection began with the screening protocol questions sent to possible participants by administrators who agreed to allow participation by their educators. After selecting the participants based on the screening protocol questions, the formal data collection began with the questionnaire. Data collection in qualitative research involves generating large amounts of data with video-recordings transcribed verbatim for data analysis (Sutton & Austin, 2015). The information gathered was kept in a locked, secured location due to the possibility of sensitive information included. Participants kept journals of formative assessment use for about one to two after completing the questionnaire and during the time the interviews were being conducted by the researcher. The data collection processes did get a feel for the educators' experiences with phenomenon that led to the next step, data analysis.

**Questionnaire** *(Data Collection #1)*

After screening and selection of participants who had provided consent to participate, an open-ended questionnaire was sent to participants email they provided on the screening questionnaire, through a SurveyMonkey secure link by the researcher. SurveyMonkey securely stored respondent information in a SOC 2 accredited data center adhering to security and technical best practices (SurveyMonkey, 1999-2021). The open-ended survey questions and rank questions required answers to be typed into a comment box or selected from a drop-down menu. Each provided qualitative data to offer feedback, the open-ended questions were in their own

words. The questionnaire consisted of 10 open questions that will led to an understanding of this group of educators' perceptions, definitions, and use of formative assessment. The questionnaire link was sent by email and began with a welcome and thank you and a reminder to read the entire questions and give detailed responses, as appropriate. This questionnaire consisting of 10 questions that took approximately 15-20 minutes to complete. Questionnaires are a way to gather data as a document. The researcher reviewed and analyzed the meaning and used the seeing vs. looking skill, essential for qualitative research (Creswell & Poth, 2018). The questionnaire was the first data collection tool to find out more about the participant and to start to gain an understanding of the perception of the educators about formative assessment, use of formative assessment during teaching, and to start to uncover themes. The ten questions are as follows and can be found in Appendix G:

***Questionnaire Questions***

1. How long have you been a secondary educator in St. Mary's County Public Schools? (Drop down menu: 0-3 years, 4-7 years, 8-10 years, 11-15 years, 16-20 years, more than 20 years) RQ1

2. What grade(s) do you teach? (Drop down menu: 6, 7, 8, 9, 10, 11, 12, more than one grade in middle school, more than one grade in high school) RQ1, RQ2, RQ3, RQ4

3. What subject area(s) do you teach? (Drop down menu: Science, English/Language Arts, Math, Health, Physical Education, Art, Music, World Language, Social Studies, ESOL, Special Education, Other with fill in the blank, more than one subject with fill in the blank) RQ1, RQ2, RQ3, RQ4

4. What is your definition of formative assessment? (Short answer question) RQ1

5. How often do you use formative assessments? (Drop down menu: never, rarely, sometimes, always) RQ1

6. When using formative assessment, how often do you use the evidence you gather to change your teaching? (Drop down menu: never, rarely, sometimes, always) RQ4

7. In your experiences using formative assessment, what do you feel contributed to students making cognitive gains in learning if learning gains were made? (Brief response) RQ4

8. How do educators guide learning, in a social context, in your school? (Brief Response) RQ2, RQ3

9. How often do educators in your school/district share formative assessment practices and ideas? (Drop down menu: never, rarely, sometimes, often, always) RQ1

10. How does language/linguistics affect your formative assessment experiences? (Brief response) RQ3

***Questionnaire Data Analysis Plan***

This survey was done via SurveryMonkey open-ended questions so that educators could write rich responses to the questions. The responses were viewed individually by the researcher and using Sentiment Analysis on SurveyMonkey Premier that uses machine learning and natural language processing (NLP) to look for positive, neutral, and/or negative responses and categorize each response into color coded words to see how respondents felt (SurveyMonkey, 1999-2021). A filter was used to dig deeper and look for similarities with this tool. Coding was done based on grade and subject taught looking for themes and the amount of time teaching to look for any differences in usage of formative assessment between novice or experienced teachers. A time limit of three weeks to complete the questionnaire questions was given to participants. All

participants completed the questionnaire within a few days of receiving it, except one who was sent a reminder and completed it immediately after that.

**Individual Interview** *(Data Collection #2)*

After screening, informed consent and completing the questionnaire, the interviews were conducted with each participant, using a template and open-ended questions (See Appendix H). The interviews were digitally recorded by the researcher using Zoom recording function or a phone recording for the in-person interview, and field notes were taken. The interview is part of a phenomenological study presented in written format The participants will choose the time and location or type of individual interview. The interview can be done virtually using Zoom or Google Meet or in-person, as per the educator's preference. Interviews with the right questions will help understand the experience of the educators and the meaning they make of the experience with formative assessment (Seidman, 1991). With semi-structured interviews the interviewer can be open and flexible to get more information about the individual educators' stories to see what emerges with each interviewee. The researcher can add questions during the interview to uncover the whole experience as needed (Hill et al., 2005). Written notes taken by the researcher during the interview will help capture non-verbal communication during the interview. Open-ended questions yield more in-depth responses about the educator's experiences, perceptions, knowledge, and opinions (Patton, 2015). The data from the interview must be sufficient to be interpretable. After the interview and during verbatim transcription, notes of the researcher's thoughts will be taken for bracketing.

The interview will be in person at a neutral location of the participants choosing or via a video conference link. The researcher will set up interviews to accommodate the educator's schedule at a location selected by the participant. Secondary schools have different schedules,

and educators have responsibilities pertaining to their jobs, family, and personal life that the researcher must accommodate. The researcher must be flexible with the interview times and locations to help facilitate participation. The semi-structured, open-ended interview questions will provide an opportunity for some flexibility and structure to gain an understanding of the educator's experiences with formative assessment. It is essential to be a skilled observer during the interview and read nonverbal messages "the skilled interviewer is thus also a skilled observer" (Patton, 2015, p. 28). Interviews are the second data collection method to expand on the questionnaire and journals will be kept by participants during the time interviews are being conducted.

***Individual Interview Questions***

The researcher will use the following questions for the interviews to collect informational data about secondary educators' experiences implementing formative assessment (see Appendix H).

1. Introduce yourself to me and explain what you enjoy about teaching?
2. What is your definition of formative assessment? How do you implement formative assessment as an educator? RQ1
3. What was included in your formal education or professional development related to formative assessment? Explain the training and what you learned. RQ1
4. What have you experienced in terms of formative assessment in the classroom? RQ1
5. What context or situations have typically influenced or affected your use of formative assessment practices? RQ1, RQ2, and RQ3
6. Please describe the types of formative assessments you most frequently use. What do you find most beneficial from the use of these formative assessment practices? RQ1, RQ4

7. Please describe an experience you have had as a teacher with using formative assessment. Be as specific and detailed as possible. Please include the grade level and content area of the students you were teaching. RQ1

8. What influence has your understanding of formative assessments had on your teaching and overall assessment practices? What, if any adjustments, to your instruction have you made? RQ1

9. Describe a time when formative assessment practices have been most successful with your students. Please include what you think made them successful. RQ1, RQ2, RQ3, RQ4

10. If applicable, describe a time when formative assessments have not been successful and include why you think they were not successful. RQ1, RQ2, RQ3, RQ4

11. Please describe an instructional situation where you would use formative assessment and one where you would not. Explain your reasoning. Does culture or language influence your use of formative assessment? Do students with special needs or special population students (like gifted and talented or learning disabilities) affect your use of formative assessment? RQ2, RQ3

12. Please think about a lesson or standard you taught recently and describe how you knew if the students did or did not master the learning target or objective. RQ4

13. Can you describe any specific ways your grade level, school, or district use formative assessment to adjust instruction? What, if any, is your role in these aspects of formative assessment practices? RQ1

14. What additional resources would help you use formative assessment practices more consistently? RQ1

15. Consider that professional development refers to any learning experience where your school leadership, an outside consultant, school district, state or other professional instructed, or taught you. Did this experience help you implement formative assessment practices? Why or why not? RQ1

16. Can you describe any negative experiences related to formative assessment or anything that hindered you from implementing formative assessment? What made this experience negative or prevented you from implementing formative assessment? RQ1, RQ2, RQ3, RQ4

17. What other information have I not asked about that might clarify secondary teachers' experiences with formative assessment.

Questions 1-3 are general knowledge, open-ended questions to get to know the educator and their understanding of formative assessment from previous knowledge or training. These questions are straightforward, non-threatening and can help build rapport (Patton, 2015). Questions 4-8 will help develop an understanding of the educator's experiences with formative assessment and relate to the overarching question of the study. Reflection is vital, to understand a process, and questions 9-11 give the educators a chance to reflect on their use of formative assessment and gain insights that may be helpful. These questions also related to the sociocultural learning experience and special populations that may or may not affect formative assessment experiences. These questions can also help develop empathy from the interpersonal interaction during the interview. Empathy combines cognitive understanding and affective connection. Empathetic neutrality and mindfulness are essential during qualitative inquiry (Patton, 2015).

. Questions 12-17 are information gathering questions where questions 12-14 apply to a

specific time or use of formative assessment. The following two questions, 15-16 are related to resources that educators may have employed or will employ to facilitate or implement formative assessment. Question 17 looks at any negative experience educators may have had with formative assessment, and the final question is an open-ended question allowing the educator to express any other ideas. This gives the participant the last opportunity to share any information they may not have said and is a closing question (Patton, 2015).

***Individual Interview Data Analysis Plan***

The researcher will digitally record interviews, and field notes will be taken. Educators will be asked for permission to record the interviews at the beginning of the session. The participants will choose the time and location of the in-person interview. Interviews with the right questions will help understand the experience of the educators and the meaning they make of the experience with formative assessment (Seidman, 1991). With semi-structured interviews the interviewer can be open and flexible to get more information about the individual educators' stories to see what emerges with each interviewee. The researcher can add questions to uncover the entire experience as needed (Hill et al., 2005).

The interviews last approximately one hour to gather enough data and be respectful of the educator's time. This researcher thoroughly analyzed educators' responses from the recordings for common themes related to formative assessment perceptions, definitions, and use with secondary students. The recordings were sent to NVivo Transcription Services for verbatim transcription. This researcher developed an understanding of the themes of formative assessment definitions, experiences, and use with secondary students in rural Southern Maryland from the responses by educators who participated in the study. Interviews continued until saturation was reached or all participants interviewed.

**Journal Prompts** *(Data Collection #3)*

The third method for data collection will be a journal kept by the educators who are participants in the research. Journals are reflective tools used to collect reflective and reflexive data in a study. They supplement the interview and questionnaire, which are the primary data sources in this study (Cresswell & Poth, 2018). Participants will keep a journal of any formative assessment used during the specified time of the study with notes about the experience. The participants will record the type of formative assessment used and, the student responses or any other pertinent information they feel is essential. Journals will evaluate type and frequency of formative assessment practices. Documentation, or a journal, is written way to collect qualitative data with excerpts captured to preserve the context of the formative assessment use (Patton, 2015). Data on the results of the assessments are not the purpose of this study so they will not be asked to record this information, the educators experience with the formative assessment use is what is important so allowing a free response to allow for exploration of the experiences is what will be requested. Journal prompts will be provided as an aid if the participants have a hard time thinking about what to write but the prompts are not required, and free responses will be encouraged. Participants will be asked to journal about their experiences with formative assessment daily or at least once per week during the study period (See Appendix I)

***Journal Prompts/Questions***

1. Can you tell me five positive things about formative assessment, no matter how small you think it is? RQ1

2. Using your experience with formative assessment, if you were responsible for selling it to other educators, what key point would you stress? RQ1

3. If you were the moderator, what would be the next question you would want to ask

your fellow educators?

4. What would you tell a best friend or family member about your experiences with formative assessment today? RQ1, RQ2, RQ3, RQ4

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***Journal Data Analysis Plan***

The final data collection piece was journaling by the educators after completing the questionnaire and through a specified time of approximately two months. Journal prompts were provided to the participants to aid in data collection related to these educator's experiences day-to-day with formative assessment (see Appendix I). In addition, the journals were individually analyzed by the researcher looking at the entries for new or recurring themes from the questionnaire and interviews. Color coding highlights was used similar to the questionnaire to code for themes and positive, neutral, and negative responses.

**Data Synthesis**

The first thing to remember with phenomenological analysis is to suspend all judgments until founded on a particular bias which is epoche and bracketing the researchers' feelings. Using a complete transcription of each participant interview with every expression relevant to the experience is listed and grouped, which is Horizonalization (Moustakas, 1998). Other data can be collected from data, poems, observations, and documents. In this study, journals will be used as other data after analyzing the questionnaire and interview. The use of reduction and elimination will distinguish philosophical assumptions and parts that can be labeled or to see if the data contains sufficient information to understand the experience. If elements of philosophical beliefs or claims to the label are not there, it can be eliminated. Next, the data is clustered and used to generate themes and develop textural and structural descriptions of the experiences and parts to construct meaning and essences of the experience(s). From the individual textural and structural

descriptions, an overall description representing the group is created. Finally, a report detailing the essence of the experience is presented in written form (Moustakas, 1998).

Validity is the accurate measure of the qualitative data or data analysis. Three techniques will be used by the researcher for data analysis in this study. The first technique: Phenomenological Reduction involves knowledge epoche or bracketing. As the researcher, I must recognize and set aside preconceived experiences I have with formative assessment. This process allows the researcher to understand the participants' experiences without bias (Creswell & Poth, 2018). Phenomenological reduction will be used to analyze the data collected and prepared for the focus group by listening carefully to responses and dialogue during interviews about the educator's descriptions of the phenomenon of formative assessment practices and setting aside any bias. "Whatever shines forth in consciousness as I perceive it, reflect on it, imagine it, concentrate on it, is what I attend to-that is what stands out as meaningful for me" (Moustakas, 1994, p. 92).

The second technique will be horizontalization. This concept comes from the idea of horizons constantly arising and fading into the background in a limitless cycle of our conscious perceptions of a phenomenon (Thacker, 2016). The researcher records every significant statement and meaning unit that is relevant to formative assessment. It is essential to give equal value to all accounts (Creswell & Poth, 2018). Horizontalization will be the verbatim recording from the interviews and focus groups using a transcription service with security features like NVivo. Copies will be kept in a locked box in a secure cloud location and the researcher's personal password-protected computer.

Lastly, using clusters of meaning and synthesis of the overall whole is where the researcher clusters the statements into themes or meaning units. It is important for the researcher

remove overlapping and repetitive messages (Moustakas, 1994) the amalgamate textural and structural descriptions of formative assessment meanings and essences to construct a whole picture of the phenomenon (Moustakas, 1994). It is crucial for the researcher also to have empathy and take a stance of "being-in" another's world or listening deeply to the participant's experience and perception, as described by Moustakas (1994). Therefore, finding the clusters or themes from the information is what will be important in this data analysis phase.

## Trustworthiness

Trustworthiness is the rigor of the study and includes the four elements of credibility, authenticity, transferability, dependability, and conformability of a qualitative study which is the equivalent to quantitative research validation instruments and where terms like ethical validation and triangulation are used to ensure validation (Creswell & Poth, 2018; Lincoln & Guba, 1985). Patton explained that validity in quantitative research depends on instrument construct and prudent measure. The researcher is the instrument in qualitative research, so credibility is based on skill, competence, and rigor (Patton, 2015). The techniques used in this study will include triangulation, practicing interviewing, clarifying researcher bias, member or participant checking and feedback, and the last technique will be peer review. One part of the triangulation is using reflexive questions or screens including culture, age, gender, class, language and mor to look at the three elements of the study, which are the participants, me as the researcher, and the audience who will receive the study (Patton, 2015).

The first technique clarifying researcher bias (researcher's lens) is the technique use for the researcher to disclose their biases, values, and experiences about formative assessment from the outset of the study. One way to do this is mapping our own experiences (Patton, 2015). The researcher embeds connections that emerge from past experiences and perspectives, our own as

researchers and those of the participants (Creswell & Poth, 2018). It is essential to look for opportunities to write and discuss connections that emerge throughout the study. Educators in the Career and Technology Center where I am employed were excluded to eliminate bias.

The second technique to ensure trustworthiness will involve member checking and seeking participant feedback (the participant's lens). Member checking is also known as participant or respondent validation (Birt et al., 2016). According to Lincoln and Guba (1985), seminal authors on trustworthiness in qualitative research, member checking shares the findings with the participants. The researcher will accomplish this during this formative assessment study, restating and summarizing information during the interview and questioning the participant to determine accuracy. The participants will be given a rough draft transcript of their interviews to engage with and add to for a synthesized member check (Birt et al., 2016). The participants can reflect on the accuracy of the statements in their interview with the rough draft copy of the transcribed interview. After the data is gathered and compiled, all the findings will be given to the participants involved for member checking. Thus, giving the participants transcripts of their interviews and the data to review. Member checking is vital for the participants to be able to judge the accuracy and credibility of the account and provide alternatives or provide views and feedback on anything missing (Creswell & Poth, 2018).

Another way to develop a high level of trustworthiness for this study will involve asking for other educators to give feedback and confirmation to the results and findings and to get reflective feedback from others who are experts or experienced in the field of education and use educators from different areas to do the reviews. For example, asking for administrators, elementary educators, or professors from higher education that represent different areas of study or experience than secondary education. Feedback tends to avoid bias if all reviewers and

researchers are from different fields (Sohn et al., 2017). Feedback can come from novice and experienced educators which also allows for more openness to the feedback.

**Credibility**

Credibility refers to the extent to which the findings accurately describe reality. Credibility depends on the richness of the information gathered and on the analytical abilities of the researcher. One of the first techniques is adopting appropriate and recognized methods like interview and questionnaires. Triangulation using different methods, types of participants, secondary sites also demonstrate credibility for this study (Shenton, 2004). Peer review, or a reviewer's lens, is a peer check that will be done to review the phenomenon of formative assessment that will be explored during the research. Peer review will help give the research credibility and trustworthiness and is important for reliability and keeping the researcher honest. The peer asks questions and listens to the researcher in a peer debriefing session (Creswell & Poth, 2018). Credible content analysis is more than just reading and involves generating meaningful and valuable findings which will be done using observation and interview and include creativity and hard work (Patton, 2015). To be credible, there needs to be openness and neutrality. The researcher needs to enter with a theory to test but not prove and with no predetermined results. The researcher will look at perspectives as they emerge and be balanced with reporting (Patton, 2015). In this study, sociocultural theory was used from the beginning of the study to look for results and perspectives with the idea of formative assessment as a possible theory or process with no bias or predetermined results expected and looking to the experiences of the educators for data.

**Transferability**

The results and information about educators' experiences with formative assessment can be transferable to other areas of the US and other studies on formative assessment. Transferability is analogous with external validity or generalizability in quantitative research (Guba, 1981). Results could also apply in different situations like higher education, elementary education, and continuing education. Transferability is allowed by providing sufficient details to enable the findings to be justifiably applied to other settings (Shenton, 2004). Detail and transferability will be presented in the analysis of the experiences of secondary educators to illustrate themes that demonstrate transferability to other settings.

**Dependability**

Dependability and confirmability are like reliability in quantitative studies and deal with consistency, which is addressed by providing rich detail about the context and setting of the study (Guba, 1981). Lincoln and Guba explain close ties between dependability, which comes first, and then confirmability (1985). Triangulation will be used for comparing and cross-checking the consistency of the information and reducing researcher bias.

**Confirmability**

Confirmability ensures objectivity ensuring the findings are the results of the experiences of the secondary educators in this county, rather than this researchers' preferences (Patton, 2015). Confirmability will be done by comparing questionnaires, interviews, and journals to check for consistency and comparing perspectives. One other data collection strategy employed for confirmability will be an audit trail with a diagram constructed using the theory and concepts that arise from the elements of the theory. After data analysis, participants will review the data, and expert peer review will be used to check for accuracy, authenticity, dependability, and confirmability of the data (Patton, 2015).

**Ethical Considerations**

Ethical issues in writing and publishing qualitative studies generally include getting permission to use instruments, procedures, or unpublished data, citing work properly, answering questions, and reviewing the manuscript. Taking responsibility for the content, protecting the confidentiality of participants and sources of information (masking names and locations), and obtaining permission to use any copyrighted material are other ethical considerations (Creswell & Poth, 2018).

Before starting this study, IRB approval was obtained and permission from the Bluffington school district was also obtained. As the researcher I do not have a vested interest in the sites chosen and am not a supervisor or person in a power position over any of the participants in the study. The purpose of the study will be disclosed prior to participants signing consent, and participation is voluntary. Cultural, religious, gender, and other differences of the educators in this county will be acknowledged and respected. Appropriate consent will be obtained by the researcher prior to gathering any data and participants can stop participating at any time.

In this study, site and participant pseudonyms are used for confidentiality. No information will be disclosed to harm or identify participants during data collection, analysis, or reporting. All data is secured or locked in a room during the study, and electronic files are kept in a password-protected file. Respect to participants and the study sites was provided with minimal disruptions to teaching. The privacy of the participants was respected. All instruments are my original work.

The researcher addressed ethical validation by this researcher using questioning and disclosing moral assumptions and biases and by using self-reflection to validate work. The study

presents multiple perspectives and a complex picture of formative assessment without siding with or disagreeing with the participants on issues. The participants will be provided a copy of the report and findings. Current APA guidelines will be followed by the researcher without plagiarism.

## Summary

This transcendental phenomenological qualitative study can contribute to the knowledge of formative assessment, which can increase student achievement and success. In this study, secondary teachers' experiences with formative assessment use are explored. In-depth qualitative research analysis from the large amount of data collected will form essential meaning and ideas to contribute to the knowledge of formative assessment. Data collection methods included educators completing a questionnaire, individual interviews, and journals kept for two months during the study. Trustworthiness will be maintained, and all procedures followed as outlined to ensure accuracy and the ability to duplicate the study. This empirical study will help form a better understanding of secondary teachers' experiences with formative assessment in a rural county in Southern Maryland.

# CHAPTER FOUR: FINDINGS

## Overview

Chapter four describes the findings of this qualitative phenomenological research that was conducted to describe secondary educators' experiences in planning and implementing formative assessment in rural southern Maryland to gain an understanding of the educators' perception and use of assessment for learning in diverse classrooms. Formative assessment has been found to be a valuable tool in classrooms to ensure student learning and success even beyond high school (Levin et al., 2007; National Center for Education Statistics, 2021). Formative assessment or assessment *for* learning has been found to increase student learning, achievement, involvement in their own learning, and ultimately success (Black & Wiliam, 2009; Marzano, 2010; Stiggins, 2014; OECD, 2016; National Research Council, 2001; William, 2018). Formative assessment is an integral part of the instructional teaching and learning processes daily however research is limited on how teachers plan for, implement, and use formative assessments. Hence the purpose of this study was to develop a better understanding of formative assessment in secondary classrooms by examining the educators' experiences and meanings of formative assessment. The theory framing this study is Vygotsky's (1978) sociocultural learning theory where the social context requires interactions between teachers, students, and their peers. Within these interactions, the teacher determines the zone of proximal development to help students progress toward their goals (Vygotsky, 1978). This theory and the work of Black and Wiliam (2009) form the basis of the research questions that guided this study and will be discussed in this chapter with the findings from the research. The data analysis and findings will be presented in this chapter beginning with descriptions of secondary educator participants from different schools, grade levels, and subjects including virtual academy teachers, current

classroom teachers, and former teachers who are educators in other roles. The themes discovered from the data collection, which encompass ideas about understanding and use of formative assessment by the participants with resulting effects on instruction, teaching, student learning, engagement, and successes, are included. Finally, responses to the research questions will be presented along with data collected from questionnaires, interviews, and journals. Findings from the study could contribute to a gap in the research about how secondary teachers define and use formative assessments. Instructional decision-making based on the evidence gathered from the formative assessments is challenging, and educators need training, collaboration, support, and time to strengthen their practices. Understanding educators' specific understandings and needs could lead to improved teacher training, improving educational outcomes and practices in classrooms daily.

## Participants

Participants were recruited using a purposeful cross-section of 10 participants from Bluffington County School districts 455 secondary teachers via email to administrators with a link to a screening questionnaire. The screening questions included basic demographic information, which was self-reported on the original questionnaire and confirmed in the interview. The screening included a question ensuring participants had knowledge of formative assessment and a brief description of the research and consent form to review. Initially, the email elicited responses from 16 participants, but after a follow-up email with the questionnaire, interview instructions, and journal prompts, four of the initial respondents replied that they would not have time to participate, and three did not respond to follow-up emails. A second email request was initiated and sent out to the same administrators and a few additional administrators not included in the first email request for participation. The other three

participants replied for a total of ten participants in the research. These research participants were given pseudonyms to protect their privacy and anonymity. Below is a table with a description of the participants.

**Table 4-1.**

*Secondary Educator Participants*

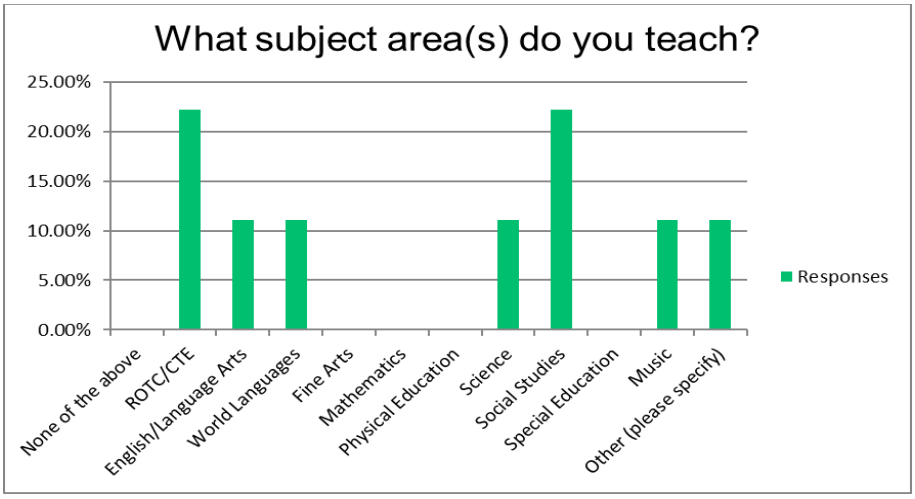
| Teacher Participant | Years Teaching/ Location | Age Range/Gender | Content Area | Grade Level |
|---|---|---|---|---|
| Mandy | 22 Middle School | 40-49/female | Science | 9th-12th |
| Sally | Over 25 Virtual Academy | 40-49/female | Science | 11th-12th |
| Britt | 6-10 High School | 30-39/female | Social Studies | 10th-12th |
| Brooks | 11-15 Middle School | 30-39/female | English/Language Arts | 6th-8th |
| Cally | 16-24 Central Office | 40-49/female | English/Language Arts | 6th-12th |
| Dan | 6-10 High School | 50-59/male | ROTC/CTE | 9th-12th |
| Barb | 16-24 Virtual Academy | 50-59/female | World Languages | 9th-12th |
| Holly | 16-24 Central Office | 40-49/female | Social Studies Special Education | 6th-12th |
| Tim | 16-24 Middle and High School | 40-49/male | Music | 6th-12th |
| Bob | 25+ High School | 70-79/male | ROTC/CTE | 9th-12th |

*Note.* Table 4.1 reflects the demographics of the study participants (N = 10)

The participants' demographics include varying ages, years of experience, and subject matter, and were from several different schools and central offices. The following table shows the various subject areas that participants teach collected from the questionnaire responses.

**Table 4-2.**

*Secondary Educator Participants Subject Areas*




*Note.* Table 2 shows the various subject areas of the participants included in the study (N=10)

All participants had knowledge of formative assessment and had received training related to formative assessment. Several of the participants shared they had taken Formative Assessment for Maryland Educators (FAME), others had been involved in professional development from their professional learning communities or schools, and a few had taken professional development offered by the school district. Very few had any recollection of training on formative assessment during their initial teacher training courses. A few of the participants did not attend teacher training and came from industry and earned a teaching certificate from taking state-required courses that did not include any formative assessment training. Participant Mandy explained that "formative assessment was not even a catchphrase when I did my bachelor's

degree," but she learned about it during the professional development offered by the county. Cally remarked in her interview that she did not remember learning about formative assessment during her formal education, but "great teachers were doing it, primarily elementary teachers."

**Mandy**

Mandy is a high school teacher with 22 years of experience teaching high school science for grades 9-12. She is in the 40-49-year-old age range and has been at the same high school for all her 22 years of teaching. Mandy teaches science and one of her greatest joys is getting the kids outside and interacting with nature, doing labs and hands-on activities. She teaches advanced placement courses and general education environmental science courses. Mandy recalled her training about formative assessment came from country-led professional development that she feels should be more teacher-led and focused on the content area taught.

**Sally**

Sally is a 48-year-old female who teaches science for 11-12 grade students at the newly created virtual academy and works for the department of assessment and accountability. She has over 25 years of teaching experience and 22 years in the classroom. She is now teaching advanced placement (AP) environmental science, virtually. She stated, "I liked being in school myself and like the environment… being able to collaborate with students and provide them information and resources." Sally said she gets to know students as a "whole child" and likes to do a lot of modeling and sharing her thoughts. She completed FAME seven years ago and was a facilitator for groups at her school for two years.

**Britt**

Britt teaches 10-12th grade social studies at one of the three high schools in the county. She is 31 years old, and her favorite part of teaching is getting to know the students. Britt's training related to formative assessment came from professional development in 2017 when she attended FAME in the county. She felt this was a positive experience and recommends it to others.

**Brooks**

Brooks is 32 years old and has been teaching for 11 years. She currently teaches sixth-grade English at a charter school. In the past, Britt has taught 6-8th grade and did some teaching in kindergarten, where she said, "I cried a lot; middle schoolers are more my style." She enjoys the relationships with students and lesson planning that is creative and makes learning fun. Britt likes to try new strategies to get kids moving and enjoy it, like project-based learning. Her school does a lot of PD together, and she did not remember learning much about formative assessment in her formal education.

**Cally**

Cally is currently working at the central office for the school district as the supervisor of instructional programs for the department of curriculum and instruction. She has been teaching for 24 years and was an English/Language Arts teacher for all secondary grades six through 12. Cally is still able to help teach students in the academy prep programs and loves seeing the discovery when it clicks. She is a National Board-Certified Teacher who has helped others earn their certifications, has done professional development in the county, and worked with new teacher orientation. She explained that she did not remember what was included in her formal education about formative assessment, but she has attended, led, and facilitated professional development relating to formative assessment.

**Dan**

Dan is a retired US Navy Captain and teaches at one of the three local high schools. He did defense contracting work for three years after retiring and explained that while the money was good, he had very little job satisfaction. I took a pay cut to teach Navy Junior Reserve Officer Training Corps (NJROTC). He said, "job satisfaction for me comes from guiding young people and trying to make them better citizens." He explained that while he is not a recruiter, he gives them structure and decision-making skills to figure out what they want to do after high school. He says he usually only hears formative assessments discussed a couple of times a year when his assistant asks for his objectives and pre-posttest information. He also uses practical demonstration assessments as an assessment tool, and this is where formative assessment is used most in the classroom.

**Barb**

Barb has been a Spanish teacher for ninth to 12th grade for 20 years and is currently working as a mentor for the new freshman academy in the position of instructional compliance facilitator. We did our interview in person. Barb feels there is confusion surrounding the terminology related to formative assessment. She took FAME to get a better understanding of formative assessment and did not have any recall of training included in her formal education.

**Holly**

Holly has taught for 16-20 years in English/Language Arts, Physical Education, and Science, mostly in middle school. She has been working in the county where this study was conducted since 2004. She currently works with the new teachers and teaches them about using formative assessments by modeling it in the new teacher orientation sessions and through discussions.

**Tim**

Tim is a music teacher and has been teaching for 15 years. He is currently the supervisor for fine arts in the county where this study was conducted. Previously Tim taught High school band, middle school band, and elementary school music in the same county. He enjoys helping students develop a lifelong appreciation of music. One thing he said about formative assessment understanding for fine arts teachers is that they do it every day, and he would love to send all teachers to professional development to get better at providing meaningful feedback to improve instruction, performances, and student's self-assessment techniques to involve students in the learning process.

**Bob**

Bob is 70 years old and teaches CTE full time. He teaches career readiness development, which is a basic course for secondary students identified as high risk for not having skills needed for employment and success beyond high school. He is a former administrator and has a doctorate degree. He has over 25 years of experience in education for secondary students grades 9-12 and has been teaching in his current position for seven years. Bob enjoys his relationship with colleagues in the profession, the kids, and developing curriculum. He loves using EdPuzzles as formative assessments and did his dissertation about virtual learning in high school before COVID made virtual learning mandatory for many school districts and students nationwide.

## Results

The results of the data collection from questionnaires, interviews, and journals will be discussed in this section. Open coding was used for the questionnaire and the interviews to search for words that describe the attributes of each participant's answers. Coded transcripts, questionnaires, and notes accounted for two of the three components of the audit trail. For coding

and auditing, a spreadsheet was used for recording and analysis. Words were added to a spreadsheet and repeated or redundant words were grouped, and words were tallied for frequency of use by the various participants to look for patterns and similarities and to find categories, themes, and sub-themes as they emerged from the data. SurveyMonkey also tallies the frequency of words and helps with the discovery of frequently used words in the questionnaires. All journals were electronically shared with the researcher and coded using open coding to search for similarities and differences from the responses in the interviews and questionnaires. Journals were submitted using word documents or typed into an email. Using the word search, frequent words were typed in, repeated use of words for coding was found, and the data was added to the spreadsheet.

Notes were taken during the interviews, and while reading the questionnaires, tags were added as categories and themes emerged. Journals with reflective memos were reviewed and coded. Words that emerged representing categories and themes were entered into a color-coded spreadsheet for analysis and reanalysis and often recoded as more or different themes were noted. The spreadsheet was constructed with columns for questionnaire tags, journal entries, and each individual interview with tally marks for recurring categories and codes. A separate spreadsheet was kept for themes that emerged and trends in the data were noted. Trends were placed on a separate sheet and compared across all data sources resulting in the study's findings presented here. Notes and memos kept throughout the study provided reflections, emerging trends, and areas of researcher bias or researcher effect (Yin, 2018). For example, during data collection the researcher attended a conference, and a note was made that many of the interview themes were related to conference topics, and the researcher was able to think about the actual data collected and the topics discussed to compare and contrast.

The study's reliability was maintained throughout the data collection process by documentation, reviewing, and comparing coding and data to protect against errors. Trustworthiness was maintained throughout with member checking and triangulation of the data from questionnaires, interviews, and journals. Thick, rich descriptions of the experiences and meanings of formative assessment were included and discussed in the findings with context from the data collection. The themes, codes, and data are presented in chart form, word clouds, and quotes from the participants.

**Questionnaire**

After the selection of participants from an initial screening questionnaire, a second questionnaire link was sent to each participant with open-ended questions and scale questions that were developed to explore each participant's use of formative assessment. The first data collection tool included a ten-question SurveyMonkey questionnaire. The first few questions were demographics of the participants, followed by questions about their understanding and use of formative assessment. There was a 100% response rate among the survey-taking participants an average of eight minutes to complete (questions can be found in appendix E). In response to the questions about educators' definition of formative assessment, the words used most often are portrayed in the word cloud.

**Figure 2**

*Word Cloud of Formative Assessment Definitions*


*Word cloud representation of most commonly used words about formative assessment definition from questionnaire data*

**Individual Interviews**

After completion of the questionnaire, interviews were conducted virtually or in-person using the questions that were developed to encompass Vygotsky's (1978) sociocultural learning theory and to search for the meaning of formative assessment for each participant. The interviews were conducted in a semi-structured format allowing for participant and researcher flexibility. The questions were prepared to gather data to answer the guiding research questions pertaining to how secondary educators in rural southern Maryland describe their experiences of planning and implementing formative assessment and their experiences addressing the theoretical aspects of culture, language, and cognitive development (See attachment H for a full list of the individual interview questions). During the interview, questions were posed to fill in gaps, clarify, or confirm data from the questionnaire answers. Participants chose their planning periods or times after school to schedule virtual interviews and one participant chose an in-person interview conducted at the researchers' school where the participant was scheduled to visit. Each interview lasted approximately 30-45 minutes. Having a previously established working relationship with two of the participants added to context and familiarity with an added element of trust to the interviews. For example, the participants could reference FAME or other professional development opportunities in the county that they were familiar with or had worked on together in previous years. The audit trail included recorded and transcribed interviews with interview notes kept by the researcher. All interviews were transcribed using NVivo transcription and checked for accuracy by the researcher. They were then sent to each participant for peer review of accuracy and to confirm the interview information's meaning and intent.

**Journals**

Finally, the third component of the data trail included a journal kept by the participants as they used formative assessments for a two-week period following the interview. Eight out of ten participants submitted journal entries, and a follow-up email elicited one more email response of formative assessment experiences the educator had since our interview. The participant who did not submit a journal entry was out of school on maternity leave. The journals helped enrich the data with specific experiences as they occurred during classroom instruction with details about successes and challenges implementing formative assessment and with more specific details than the interviews or questionnaires included.

**Table 4-3.**

*Initial Data Categorization*

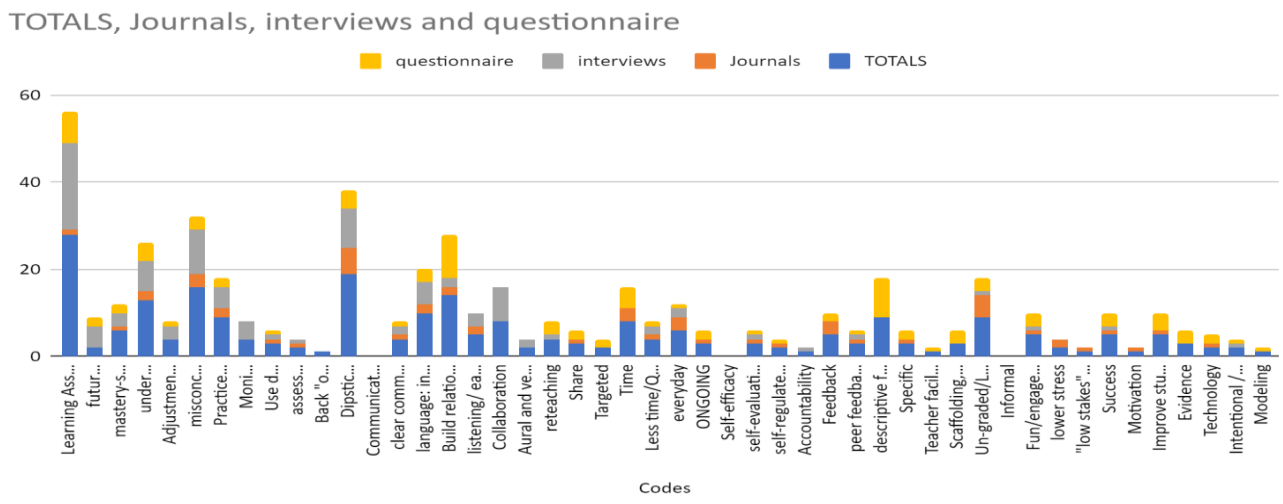
| Formative Assessment Questionnaire, Interview, and Journal Categories |
|---|
| Learning assessment and progressions |
| Mastery and targeted |
| Future instruction |
| Understanding |
| Implementation |
| Misconceptions and deficiencies |
| Practice and repetition |
| Monitor student growth and progress |
| Use data |
| Assess strengths and weaknesses |
| Differentiate |
| Back “on track” |
| Dipstick/check-in |
| Clear communication |
| Language- an integral part |
| Build relationships |
| Listening/eavesdropping |
| Collaboration |
| Aural and verbal |
| Reteaching |
| Shared |
| Time, Less time/quick/immediate |
| Easy |

Everyday
Ongoing
Self-efficacy
Self-evaluation/reflection/self-belief/self-regulated (ownership)
Accountability
Feedback, peer feedback/working together, descriptive feedback
specific
teacher facilitator
Fun/ engaging/ interactive
Un-graded/ low stake/informal
Success
Motivation
Intentional/ with purpose
Modeling
Evidence

*Note.* Table 4-3 is an excerpt of the spreadsheet of initial words coded from the data collection.

**Figure 3**

*Representation of words from all data collection*




**Theme 1: Learning Assessment and Progressions**

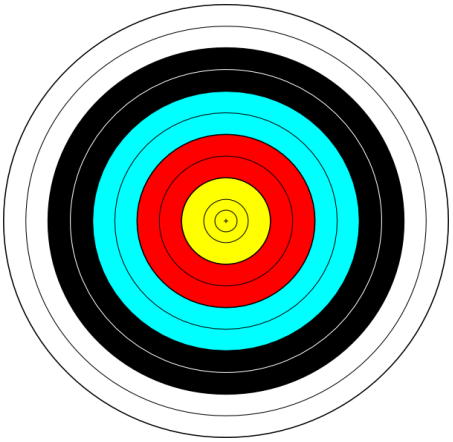
One of the main goals of data collection for this study was to determine how educators in rural southern Maryland defined and implemented formative assessment. According to the Centre for Educational Research and Innovation (CERI), assessments are vital to the educational

process, but formative assessments are frequent, interactive, and monitor students' learning to identify needs to make adjustments leading to lifelong learning, higher achievement, and equity of student outcomes (OECD, 2016). Formative assessment, or assessment *for* learning, is a type of learning assessment to "check for understanding," as Sally stated. The theme of assessment for learning came up numerous times in the questionnaire, interview, and journals during data collection. Holly defined formative assessment as "a process of teaching and assessing for learning." The learning assessment theme was found in the context of its influence on learning progression, future instruction, mastery, understanding, adjustments, implementation, practice with repetition, monitoring student growth, and addressing misconceptions.

The learning assessment theme or assessment for learning as related to formative assessment with learning progressions was coded most often throughout data collection since this is a big part of the formative assessment itself in professional development like FAME, and training courses during teacher education. Four of the interviews included the term "buzz word" when describing that idea of formative assessment has been around in teaching for a long time, but the term has been researched and discussed more in recent years. Tim explained that he attended professional music conferences and listened to master educators, and there was a push for formative assessment as a "buzz word," and everyone realized it was what they had been doing in fine arts all along, and they felt like the leaders in the movement of formative assessment to other subjects. Sally felt that "learning progressions lead to student success". Formative assessment can also be explained as a loop where students and teachers continuously evaluate how close they are to the target or where they are in the progression. A target with the student learning goal in the center. The target is the picture that often comes to mind for the educators interviewed, and there are many levels of learning progressions.

**Figure 4**

*Target representing learning targets or student learning goals*



*Note: Obtained from* Clipartbest.com (2022)

According to Barb, formative assessments are like "checkpoints to measure the learning at the moment." Sally said it was a way to measure "progress." Checkpoints or dipsticks were commonly used words by several participants to describe how they use formative assessment to check for understanding during teaching. Mandy went on to say; it is like "checking the oil in your car to see where it's at." This is also how learning progressions occur, and Sally said formative assessments are "evidence of what the students have learned, or they understand, and you can address misconceptions." Participants discussed how they adjust to the instruction after using data from assessments for learning to help students meet learning objectives, goals, and progressions in learning. Bob says by recognizing learning progressions during interactions with students, he can say, "hey, maybe you are there so now focus on the next step."

Learning assessment will affect future instruction and understanding of the content of the lessons and objectives, according to many of the participants. Some discussions revolved around preparing students for high-stakes summative assessments or project completion, and to meet goals, and teachers' Student Learning Objectives (SLO), which are academic goals set by the

teacher at the beginning of the course and can be the most important measure of learning aligned to the standards even though their definition and purpose are unclear (Mitchell & Manzo, 2018). Sherrington (2017) describes great teaching as the kind of teaching we all aspire to deliver free from association with accountability measures, which is what the discussions about learning assessments and formative assessments focused on. Bob explained that he uses formative assessments to assess student growth after giving a pre-test to provide guided learning that helps students succeed. He stated, "it's for the teacher to assess learning and not a grade for the student." It helps teachers know what students need to know and teach to the curriculum and not the test. Mandy explained that she uses formative assessments to check student learning before summative assessments. The learning goals of the students should also be assessed, and they should be included in the learning progressions. Don described learning assessments and progressions in the development of skills in his course as targeting objectives, action, practice, and demonstration. Don explained that we all have SLOs, but formative assessments are the useful tools that guide the teaching.

Cally explained that "sometimes you see those light bulbs go on and with some, you don't see them go off." Another metaphor she used was when the chef tastes the soup and is still working on it and stirring it, that is the formative assessment or assessment for learning. Once it is in the bowl to serve, it is too late, which is the summative assessment. Finally, talking about learning progressions, she said if you don't know where you are going, how will you know when you get there? For example, if you are flying to London and you don't make a flight plan to get there and just fly five hours to somewhere east, you may end up in France or some other place. Close enough is not good enough, so she explained that "those are the two images I have of formative assessment if I am formidably assessing throughout the flight and assessing throughout

making the soup by tasting and altering it, I'm using my navigational tools to see where things are going."

***Adjustments***

Most of the participants explained how formative assessment contributes to students making cognitive gains and progress using reteaching and adjustments. These were parts of the subtheme to learning assessment. Mandy explained that this is done by "addressing student misconceptions." She also discussed how it is especially important for students with special needs to gauge understanding and adjust teaching. Sally stated that she uses evidence from the formative assessment to check on student progress, and the information is actionable so changes can be made. Barb uses formative assessment to reteach the content in a new way if students are struggling to make cognitive gains and to "guide my teaching and move on if students are grasping the concepts quickly and effectively". Cally talked about how using the data and knowledge gained from the formative assessments should help the teacher and students adjust to meet their learning targets. If the data is not used, then it becomes useless, and time is a factor in not effectively using data and making modifications to instruction. Time was another theme that will be discussed later.

One of the definitions by Black and Wiliam (2009) of an assessment being formative includes teachers adjusting but also includes the learners and their peers. They explain that the evidence of student achievement should be used to make decisions about the next steps. This was expressed by all participants during their interviews when they talked about using formative assessment to adjust day-to-day and even during long-term projects or units where students self-assess, peers give feedback, and teachers give input. Tim explained that in the arts, teaching the students to self-assess is critical to the formative assessment process. He explained that in music

and the arts, it is hard to articulate formative assessment, but he views it like a disease process where the teacher "diagnoses the problem, finds a prescription then cures it" with adjustments made by the students.

**Misconceptions.** During a lesson, it is important to find out what students are struggling with or find difficult to understand. The concept of misconception has many different terms associated with it, including troublesome knowledge (Perkins, 1999), pre-conceptions (Novak, 1977), alternative conceptions (Driver & Easley,1978), missed conceptions (Wiliam & Leahy,2015), and can be found by using the activity "I used to think…but now I think…" (Ritchhart & Perkins, 2008), but whatever term is used to address misconceptions, it is important to do according to the data collected during this study. Some of the concepts that students do not grasp are required threshold concepts that are needed for learning to progress. Students may have incomplete or incorrect ideas, and this was discussed by Barb in relation to language acquisition, Sally in reference to science topics, and several of the interviewees that related to learning during the COVID pandemic. Lots of learning was lost, and there were misconceptions that were emerging and found during formative assessment use.

**Mastery.** Mastery goals usually refer to academic goals relating to whether a student is learning, and performance goals are more related to how students are doing (Wiliam & Leahy, 2015). Yet, data collection revealed the level of mastery required in the arts, including musical performance, graphic arts, and other arts that use formative assessment to guide student learning and performance. Mastery was discussed in the journal entries and questionnaires as comprehension, knowledge, or skill accomplishment. Barb explained in a journal entry using an exit slip that she was able to assess not only students' confidence levels with the material covered that day in class but also their skill mastery to "help me know best how to encourage

students and motivate them to do their best and take ownership of their own learning" to master the information. Another participant explained that the students must be a part of the learning cycle to know where they are in the learning and how to move forward toward mastery. Sally explained that you are not usually looking for mastery but understanding and progress because if you have reached mastery, then there is nothing else to learn, and students stop moving forward in their learning. She explained that she can tell students in response to their learning goals, "hey, maybe you are there now so you can focus on the next step."

Tim looks for mastery or accomplishment in performance in the performing arts. Bob sees mastery or accomplishment towards learning goals in career and technology skills. Mastery can mean different things to the teacher and the student, so developing an understanding of the student's accomplishments was discussed during the interviews when participants explained specific formative assessment use. Ensuring the students are "getting it" before moving on helps lead to accomplishment or mastery of the lesson, topic, and curriculum. Several teachers discussed how the learning was lost or stalled during COVID and virtual learning when attendance, technology, and mental health issues were higher priorities than understanding and mastering content. This leads to a greater need to check for understanding and discover where students are currently in their learning as they return to in-person learning and instruction. Mandy explained that during hybrid and virtual learning, she was getting lots of blank stares and had to ask questions to engage students; this was her formative assessment check for understanding.

***Implementation***

There were variations in the data collected about how and when formative assessments were implemented by educators in their teaching practices. Formative assessment can be planned

or spontaneous, and the participants described both during data collection. One participant, "Britt," stated that her formative assessments were "more successful when I plan them out and where I am more intentional about it." Other educators found that formative assessments could occur spontaneously and could be as simple as a mood check-in or thumbs up/ thumbs down technique to check for understanding of the current topic being taught. Bob explained that sometimes formative assessment is just an "aural and verbal, noticing expressions and body language" of the students during teaching.

The ways formative assessments were implemented by each participant varied with their preferences, training, timing, and the purpose of the formative assessment. Some of the most frequently mentioned types of formative assessments included entrance/exit tickets, questioning or questionnaire, whole-class discussions, grouping, anecdotal notes, writing responses, informal notes, polls, thumbs up thumbs down, modeling, quizzes, and interviews. Checking for understanding or addressing misconceptions and deficiencies were the most frequently cited reason for implementing formative assessments. As Tim pointed out when answering the question about what contributed to students making cognitive gains, he said, "essentially listen, diagnose, prescribe, check for correction." Some of the participants explained that questions could be embedded into the lesson plan to make it more purposeful. When implementing formative assessment in this way, data could be collected to modify instruction in the future or before moving on.

**Theme 2: Communication**

Communication related to formative assessment takes on many different forms and includes communication between teachers and students, peers, administrators, parents, and other stakeholders in education, and can be verbal or non-verbal communication. Some of the sub-

themes discovered that related to communication included listening, language, building relationships, collaboration, making sure communication is clear, sharing information, and reteaching.

***Listening***

Listening was a key element of formative assessment and questioning. Some of the educators interviewed explained how they often walk around the room with a clipboard and take anecdotal notes during small group discussions to understand better what students know and where there are misconceptions. Tim described professional development where music teachers were taught to record students playing or singing and have them listen and self-assess to evaluate improvements needed. This leads to greater awareness and mastery for music students. Although this may seem obvious, it was a topic of discussion during the interviews because without the wait time, listening to answers, purposefully questioning, and student involvement, formative assessments are not useful. Mandy stated that "there are other ways to gauge understanding, and it doesn't have to be paper and pencil" in reference to exit slips and written formative assessments. She felt that even during virtual and hybrid learning, asking questions and listening to the answers was a better gauge of understanding. One specific example of a student who would not write anything down and did not do well on written tests was given by Mandy, but she explained the student could give the answers verbally when asked, and she said he knew the information after listening to him but would not do well on high stakes exams. This leads to the question of how equitable assessments are in measuring student progress and understanding or being fair for all students in demonstrating their proficiency.

***Language***

The discussion about language as a part of communication and Vygotsky's sociocultural learning theory brought about many varied responses, with the interview question asking participants about their explanation of language effects on formative assessment implementation or use. This question was often cited as being confusing, and it elicited different responses depending on the interpretation. Sally said, "for students with language barriers or special needs, I need to use formative assessment more and check in on the students more". She felt she could be better and more purposeful with this. Mandy stated the importance of using different ways to use language to gather information rather than just paper and pencil and gave examples of students watching a video clip, doing hands-on activities, and talking to each other about their projects as ways of using language. She stated that "using worksheets and writing only can shut kids down."

Many of the educators reported experiences circulating around the classroom or working in small groups and using formative assessments to provide in-the-moment verbal feedback to support students' language development. Strategies using conversations in the classroom can help students interact and spark critical thinking (Auslander, 2022). Tim described music as being the universal language, and students can progress and reach their learning goals even with language barriers or special learning needs in other areas of academia.

***Relationships***

Building relationships with students is one of the most important aspects of teaching. In every interview conducted during the data collection process, the interviewees explained that getting to know the students and the relationships with students were what they enjoyed most about teaching. According to multiple research studies, teachers who set learning goals, have high expectations, and create positive student-teacher relationships have above-average effects

on student achievement (Hattie, 2009). This was a theme during data collection in this study. Britt stated that "it helps students feel like I'm actually invested in their learning and helps build the student-teacher relationship" when providing feedback and using formative assessments. Building relationships with students was cited as one of the reasons they were able to implement appropriate formative assessments. Formative assessment may not be useful or successful if teachers do not have relationships with students and they do not know their learning goals and preferences, as pointed out by Cally.

Building relationships with students and colleagues came up many times throughout the research on formative assessment. Stephanie said, "it's more like a partnership" in her interview, in reference to what formative assessment is. Bob explained that much of his formative assessment comes from the expressions and body language of the students during teaching. Sally felt that formative assessment makes the students feel "they are part of the process of what they actually know and are able to do with it." Bob also explained that watching the student's responses and listening to them helps build relationships and contributes to an understanding of finding out what they know and do not understand in the lesson and learning.

**Theme 3: Time**

Time was another frequently mentioned element of formative assessment use and implementation. Time was discussed in terms of not having enough time to adequately plan for and implement formative assessment or attend professional development. The timing of the formative assessments, as well as the duration of formative assessments used was also discussed in relation to time. Some of the sub-themes that were discovered during data collection included the mention of formative assessments being quick, ongoing, and repetitive. Formative assessment was found to save time when she got to the grading part by Britt. She explained that

checking for understanding and providing feedback right now makes "the final product better, and that makes the grading go a little bit faster." Not having enough time to plan, look at the data collected, and collaborate was a common hindrance, and a lack of substitute teachers this year did not allow for planning, professional development, and walk-throughs in other classrooms. Sally said that to be able to implement formative assessment more, she felt like time was one element she needed more of, not only to implement formative assessment but to plan for it, learn more techniques, and share or collaborate with others. Britt explained that running out of time has had a major impact on her formative assessment use. She said, "you are trying to get through things and then you realize it is the end of the lesson, or end of the unit, or even the end of the year and so formative assessment needs to be done the next day or in the future and then it gets away." Unexpected events take time and contribute to lost opportunities as well. So, Britt explained she has great intentions, but if she is not intentional with formative assessment, she does not use it effectively. Unexpected events discussed in the interviews included lost learning during the COVID pandemic, absences, and daily interruptions to the lesson from weather-related events, fire drills, etc.

***Quick and Repetitive***

Many of the participants felt that formative assessments should be quick and done at the beginning of a lesson to check for understanding from previous lessons or at the end to assess learning from that day, but discussions centered on quick checks done during a lesson as well and they can be ongoing like a project that extends over several class periods. Many of the participants used the same formative assessments repetitively, so the students were familiar with them and also were something the participants felt comfortable using. One participant did not like exit slips, and Tim did not discuss exit or entrance slips in music, but the other eight

participants discussed using entrance and exit slips or tickets to gain an understanding of what students had learned during a lesson. One thing Cally mentioned in response to exit tickets was that it is important to use the data gathered and that they are quick and used repeatedly by many educators. In music, formative assessment is repetition or practice, and according to Tim, it is important for students to understand where they are making mistakes, move forward, and make progress. This can be true of many other subjects, and Tim's metaphor of diagnosing, prescribing, and curing is an excellent way to look at formative assessment adjustments and progression.

Britt discussed using acronyms and tools that students know, for example K-W-L charts for what students already know, want to know, and what they learned as a way to assess learning, and adding H for how they know it is even better. She explained how as a new teacher, she was focused on standards and testing to get everything in the curriculum done, but now she knows it is better to slow down and focus on what the students need to know and make learning meaningful. Although the formative assessment may be quick and ongoing, there should be a pause to reflect to see where to go next in the instruction and as discussed earlier, some educators feel they do not have time, yet others felt it could be quick.

***Ongoing***

Ongoing was a theme relating to formative assessment since it should be ongoing throughout the school year, the unit, lesson, day-by-day, and minute-by-minute, to make adjustments to teaching. Ongoing was also discussed in relation to formative assessment during projects, and how students can check on their own work, peer collaboration, and teacher input should be ongoing throughout the project in various ways. Mandy felt that an ongoing formative assessment was used during a field study and a performance assessment she did during one of

her classes. Projects, performances, and other plans that extend to several days or weeks are an example of ongoing formative assessment. Another explanation of ongoing formative assessment is that it is used every day and ongoing throughout the school year. Ongoing professional development and learning were also discussed in relation to formative assessment. Tim felt that it was important for all teachers to attend professional development related to formative assessment.

**Theme 4: Collaboration**

Collaboration developed as a theme in working with other teachers, administrators, students, peers, and other stakeholders in the students' education and the learning community. One way collaboration was discussed was finding new formative assessment techniques to use and incorporate into teaching practices. Sally stated, "it's more like a partnership." Most of the participants felt that it was important to collaborate with colleagues. While making "connections" with students was another theme relating to collaboration. Some of the interviewees are supervisors who encourage collaboration and use this in their work with classroom teachers and educators.

Collaborating with the students is an important element of formative assessment and learning. Collaboration with students begins with communication in low-stakes settings where students can build and work together in collaborative groups. Participant Brooks felt that "students must be a part of the learning cycle." Cally explained that education should be more collaborative with students and teachers because that is the workforce they are going into, she stated, "they are not going to work in isolation."

When students work together and learn to collaborate in teams with peers and teachers, students are involved in the learning process and have a voice which creates self-regulation and

empowerment. This not only helps students at the moment of the instruction or during their education but in the future. Many of the strategies discussed by the participants included students working together and collaborating in teams to become self-regulated, like playing in a musical performance, doing a field study, a group project, and a skill performance with multiple students demonstrating abilities. Several of the interviews included discussions about working on projects, and this can be accomplished by building collaborative skills where students can give peer feedback, and teachers give feedback to the group or individuals, with all able to communicate effectively. Tim pointed out that every student is different, and the feedback and formative assessments will be based upon knowing your learners and collaborating with them.

***Sharing***

One explanation of collaboration and sharing as a theme during the research included discussions about group work and students sharing with peers during the learning process in table groups, teacher-formed groups, or even in a think-pair-share activity. One explanation by Cally of sharing was where she explained how she would grade number one on the first student's paper, number two on the second, and so on, then have students get together in groups and assess each other's responses. Other participants felt that group and cooperative work amongst students were the most beneficial formative assessment practices. Barb explained how sharing and group work developed teamwork and made students more confident.

Another form of sharing that was discussed was working in learning communities with other teachers and sharing data to help improve student learning and prepare for high-stakes summative assessments or county tests. This is often done in professional learning communities and working together, they felt they could develop strategies to help students be more successful from the formative assessment data gathered. Another way two of the participants share

information about formative assessment is with new teachers and while working with teachers in the Freshman Academy and providing feedback and modeling of formative assessments for the teachers. Cally explained that for non-certified staff members and teachers working on credentials formative assessment is one of the first tools given to them. Holly explained that teachers need a toolbox of formative assessment practices and should reflect on their teaching practices. Cally shared a flipchart of formative assessment tools given to new teachers that can encourage them to find and use formative assessment quickly and easily.

Sharing can also be seen in the form of book studies and reading. The book mentioned most frequently during data collection was Total Participation Techniques, but other books by Dylan Wiliam and a book relating to classroom walk-throughs to observe formative assessment practices by other teachers were also discussed and had been encouraged in this county for professional development. Sally felt that finding teachers who work together and are able to form a collaborative group is something that would be useful in implementing formative assessment. She called it "human capital." Sally also stated that teachers can "share the load of information and split up the work" as well as shared resources and item banks of formative assessments.

**Theme 5: Feedback**

Feedback and cognitive gains in learning were mentioned in most of the questionnaires and interviews. Amanda explained that focused and timely feedback guides students as they make errors or make attempts with new content or skills. Tim discussed formative assessment as a feedback loop where "the feedback is applied, and students are given another opportunity to check for understanding." Feedback is one of the most important aspects of formative assessment. Everything we use in our lives has benefited from improvements, including televisions, computers, and appliances; the same is true of learning. Nash (2019) explained that it

is important to go out on a limb and, it breaks off, get up and find a new limb. This metaphor is related to teachers giving feedback to find a new limb. Classroom improvement can be made with the feedback from peers, administrators, parents, and students, as found during data collection in this study.

### *Peer Feedback and Working Together or in Groups*

Mandy explained that a formative assessment was done with her advanced placement class where students did write on their own then the formative assessment included a whole class discussion of "dipsticking questions" that allowed students too shy to ask for help to learn together because she found misconceptions can be addressed and students who were not comfortable asking questions benefited. It is important for students to learn that feedback can come from sources other than teachers, including their peers.

### *Teacher Feedback*

Dan described a time when he had to make adjustments when he had a lot of students who did not understand a topic, so he gave feedback and used a different method or technique, and he noticed substantial learning growth and a "significant increase in understanding". Bob said teachers hear the word assessment and panic because of the idea that if student learning objectives are not met, they can be penalized and receive poor evaluations, but formative assessment is not for the teacher or for a grade, it is for the students and to see how the students are interacting with the curriculum.

**Figure *5***

*Word cloud of formative assessment codes*


*Note.* Word Cloud developed to depict keywords and themes of formative assessment

**Theme 6: Descriptors of Formative Assessment**

Descriptors are words or expressions used to describe something, and educators' descriptions of the impacts of formative assessment use in their teaching practices was another theme coded from the data collection. A majority of the descriptors from the data collection were found to be positive outcomes related to growth in learning and success. The last theme relates to specific findings, tools, and techniques mentioned by the educators during interviews and in journal entries.

***Self-efficacy***

The topic of students developing self-efficacy and taking responsibility for their own learning seemed to be one of the most positive outcomes relating to implementing and using

formative assessment and was found throughout data collection in terms of self-evaluation, reflection, self-belief, self-regulated learning, ownership of learning, accountability, and success. According to Bandura, self-efficacy is a person's belief that they can attain a specified level of performance and is related to mastery with time and effort as well as from encouragement and feedback, leading to motivation (Bandura, 1997). All ideas related to the implementation of the formative assessment were mentioned by participants.

***Equity***

Grading can be inequitable and summative assessments, especially large-scale tests such as standardized tests, were determined to be inequitable by many participants. Teachers must prepare students for benchmark assessments and other standards, but the way to monitor what students know and to make it more equitable is to use formative assessments for motivation and "low stakes" practice, as discussed by Mandy and Cally. Every learner should be engaged in learning; to do this, we need to get to know our students. Bob explained that you "can't assess want to," and building relationships and creating a partnership with students in their learning was an essential element, discussed in detail earlier.

***Fun and Engaging***

In a journal entry relating to an escape room activity, Mandy pointed out that the formative assessment was fun, and students enjoyed working together; she said she enjoyed watching them have fun. Using gamification and online game resources was another tool mentioned by participants. Using things like Kahoot and EdPuzzle can be engaging for students, and technology is a big part of engaging students in learning today. The educators interviewed explained how formative assessments should be enjoyable as well as provide data and information to guide instruction and show where students are in their learning. Bob said he has

started to implement EdPuzzles almost daily because they are a good check for understanding, provide information, and can be done at any time, including at home if students are absent.

### *Toolbox of Formative Assessment*

This study found a diverse range of formative assessment methods and techniques that are used to elicit evidence of student learning and engage the students. There are many types of formative assessment strategies and ways to implement them, with new ideas emerging all the time with changes in technology, culture, the teacher and students, grade level, and subject matter. Furatak et al. (2016) found a positive correlation between formative assessment quality and task design to improve student learning in science, but the same concept can apply to other subjects. Holly explained during her interview that "the key is building your toolbox of formative assessments and making them not routine, but familiar enough to use and figure out what matches what you need". The table below lists some of the formative assessments the participants listed in their journals and as examples during their interviews. Planning time, collaboration, sharing, experience, professional development, and practice can all lead to effective formative assessment development and a broadened range of techniques.

Most of the participants mentioned a book that was used for professional development and book studies in the county where the research was conducted called *Total Participation Techniques* by Himmele & Himmele (2011).

**Table 4-4.**

*Specific Formative Assessments Used by Educators*

| |
|---|
| Thumbs up, thumbs down, and thumbs sideways or sign language |
| Total participation techniques for active learning |
| Entrance and exit tickets or slips and conversations |
| Questioning |
| Escape room |

Whole class discussions
Tables/random groups/ purposeful grouping
Anecdotal notes/ informal notes
Text-based writing responses
Citation walk
Extension activities (carried over from previous day or lesson)
Projects
Questionnaire
Poll
Venn Diagram
Rubric
Google interpret
Modeling
Plickers
Quiz
Interview
EdPuzzle
Technology and gaming
Rubrics
Yes-no-maybe-question cards or colored cups.

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*Note*. Table 4.3 is a list of formative assessments mentioned during data collection that was used by secondary educators

**Table 4-5.**

*Formative Assessment Themes and Related Superordinate and Subordinate Codes*

| Theme | Related Superordinate and subordinate codes | Evidence from the Data |
|---|---|---|
| **Theme 1: Learning Assessment and Progressions** | Assessment for learning, adjustments, checkpoints, dip sticks, light bulbs, address misconceptions and deficiencies, leading to progression and mastery, learning targets and goals, future instruction, understanding, implementation, practice and repetition, monitor student growth and progress, use data, assess strengths and weaknesses, differentiate, back on track, evidence | Most frequently mentioned theme. Students make cognitive gains and progressions when teachers assess for learning and make adjustments to teaching and "check for understanding". This occurs minute-by-minute, day-day-day and over time in the secondary classroom in rural southern Maryland. Is included in professional development and was termed a "buzz word" used in education in recent years but |

| | | |
|---|---|---|
| | | is essential for student success. |
| **Theme 2: Communication** | Clear communication, language is an integral part of formative assessment, build relationships. listening and eavesdropping, aural and verbal, sharing information, and reteaching | Includes communication with students, peers, administrators, parents and other stakeholders in education, "it's more like a partnership". Listening and questioning were frequently discussed elements of formative assessment in classrooms. Building relationships "helps students feel I am actually invested", communication should be clear and sometimes involves watching the students' responses |
| **Theme 3: Time** | Need more time, takes less time, is quick and immediate, easy, faster grading and quicker results, every day, ongoing, and repetitive. Timing of the formative assessment implementation | Every participant mentioned time as an element of formative assessment whether it was in relationship to when it is implemented, planning for it, or not having enough time to implement or look at the data. Formative assessment can save time in grading and "makes the final product better". Can be implemented at the beginning or end of a lesson and is ongoing during the lesson or extended over time for a project or unit. Used repetitively for student familiarization. |
| **Theme 4: Collaboration** | Sharing with students, other teachers and educators, parents, administration, and stakeholders in education. Collaborating during professional development and in learning communities | Formative assessment use is "more like a partnership" and it is important to collaborate with students to "make connections" and colleagues for planning and use of data, should be encouraged by supervisors and administrators. Education should be more collaborative so "they are not going to work in isolation". Collaboration can occur in book studies or |

| | | |
|---|---|---|
| | | teachers can "share the load of information" and share resources. |
| **Theme 5: Feedback** | Valuable, peer feedback, working together, group work, descriptive feedback, specific, teacher facilitator, modeling | Feedback is the key to cognitive gains, focused and timely feedback guides students, feedback is a loop where "students are given another opportunity to check for understanding", misconceptions addressed, allows for "significant increase in understanding", is used to see how students are interacting with the curriculum. |
| **Theme 6: Descriptors of Formative Assessment** | Ungraded, low stake, informal, fun, engaging, interactive, leads to success, motivational, intentional and with purpose, leads to self-efficacy, self-evaluation, reflection, self-belief, and self-regulated ownership of learning | Words or expressions used to describe impacts of formative assessment include self-efficacy, equity, fun, and engaging. Descriptions of different types of formative assessment tools such as exit slips, questioning, purposeful grouping, projects or extension activities, polls, questionnaires, and rubrics should be included in teacher toolboxes |

## Outlier Data and Findings

Unexpected findings and themes that do not align with specific research questions or themes are presented here. Outliers are the few data points deviating from most of the study sample and the population of secondary educators. Outliers are often encountered in educational research and have value in contributing to the understanding of the experiences and meaning of secondary educators in relation to formative assessment (Sullivan & Sergeant, 2011). Only two outliers were identified and are discussed in this section.

### *Grading or extra credit*

One outlier found was giving grades or extra credit for formative assessment. Many of the participants felt that formative assessments are ungraded, which is the typical training from professional development and literature on the subject of formative assessment. An example grading for formative assessments was in a response about the effect of language on formative assessments used in the classroom, and a response was given stating, "I tailor assignments and give a small amount of extra credit for ELLs taking a written test." Another mention of grading was found when a participant discussed how it saved time in grading by "chunking" the tasks into something smaller and seeing the progress to allow for less time spent grading final products. In most of the discussions, formative assessments were un-graded, low-stakes, informal assessments.

### *Negative experiences*

Another interesting outlier in the interview questions was related to the question asking educators to describe any negative experiences related to formative assessment, and none of the people interviewed could give a negative experience but discussed things that may have hindered them. Holly said in response to the question, "just my lack of understanding that prevented me from using it" was negative. Holly said, "sometimes it gets a little chaotic in class, and time gets away from you, so you don't get to it." Not having enough time seemed to be the biggest negative topic, but there were no negative experiences with the formative assessments from the data collected in this study.

## Research Question Responses

The purpose of the research questions was to make sense of the experiences of secondary educators in implementing and using formative assessment focusing on the social, cultural, and language aspects of Vygotsky's social developmental theory. Summaries of the responses to the four guiding questions are included in this section, and an explanation of the educators' definitions, experiences, and uses of formative assessment with views of student's cognitive gains in the Zone of Proximal Development (Vygotsky, 1978), or the classroom with the teacher facilitator or "more knowledgeable other" as referred to in Vygotsky's theory.

### Research Question One Findings

*How do secondary educators in a rural school district in southern Maryland describe their experiences of planning and implementing formative assessments?* The participants' perspectives varied depending on the type of class being taught, the grade, the subject matter, and their experiences with and knowledge of formative assessment. Many of the participants described using formative assessments every day and described it as being engaging and fun for students while being able to monitor and assess students' growth and reactions to the curriculum and instruction. Bill explained, "it is a check of understanding in the process of learning that can be used to guide instruction and measure progress," and he uses it every day during instruction. Sally said formative assessment is "specific feedback and meaningful feedback that can be actionable." Tim explained that he essentially listens, diagnoses the misunderstandings, prescribes, and checks for the corrections made. Lack of time and understanding were two things that hindered the planning and implementation of formative assessments. There were many specific types of formative assessments discussed.

### Research Question Two Findings

*How do secondary educators describe their experiences in addressing culture in the planning and implementation of formative assessment to adjust instruction?* The language was considered an integral part of formative assessment, which was discussed as part of listening or "eavesdropping," body language, verbal responses, self-evaluations, and peer feedback. The culture was also discussed as part of the different learning environments, from school district cultures in developing and delivering professional development to school collaboration, and finally to varying classroom cultures for different ages and subjects taught. One interesting point about culture is related to the differences between middle and high school students' learning and age-related disparity. Holly explained that even though we are teaching secondary students, we should not forget some of the elementary strategies "because you are still teaching kids and you can always modify them for their age, but don't dismiss strategies or ideas that elementary school teachers use." There was also discussion about the focus on the content in high school and how the child can get lost while focusing on getting through the curriculum. "It is important to embed some fun and have some great strategies that are so easy to do," according to Brooks.

**Research Question Three Findings**

*How do secondary educators describe language or linguistics in formative assessment practices implementation?* Mandy explained in her response that "I don't like lecturing, especially with science, and I try not to weigh them down with testing like big summative assessments…because they've been tested to death." It is important for students with special needs and language barriers to not only get feedback from teachers but for the teachers to gauge understanding and differentiate learning as a common part of the discussions. Barb explained that student culture and the strengths of the teacher play a role in student learning, especially for students learning another language or English language learners. Much of the data focused on

making the formative assessments simple, quick, easy, and engaging for all students. Some discussions focused on using words, signs, or observing expressions and body language as part of learning assessments.

Language is also a part of the culture and can impact learning when students have deficits in understanding verbal and written language. Certain courses such as ROTC and other CTE courses can have many acronyms and language barriers that may impact teaching and learning.

**Research Question Four Findings**

*How do secondary educators describe cognitive development in students when implementing formative assessment?* One measure of cognitive development came from teachers discussing formative assessment being used for Student Learning Objectives (SLO) with pre-posttest growth. Using data gathered from formative assessments and detailed item analysis teachers gain focus on learning gains and progressions showing cognitive development in any of the subjects taught. Sally said using formative assessments is "human capital" to show progress and accountability. Bob explained that "you can't teach want to," but he went on to say, "you can engage students in learning and monitor student progress to recognize deficiencies and help them be successful." Formative assessments were also found to help with life skills and success in the future, not just in the classroom, according to Mandy. Cally said that using formative assessments helps students be "metacognitive."

**Table 4-6.**

*Research Questions with Related Themes and Quotes from the Data Collection*

| Research Question | Themes and Subthemes | Quotes and Thoughts from the Data |
|---|---|---|
| *How do secondary educators in a rural school district in southern Maryland* | Learning assessments, checkpoints, misconceptions, adjustments, learning | "Checkpoints to measure the learning at the moment", "like checking the oil in your car", "evidence of what the students have learned, or they understand, and address misconceptions", "It's for |

| | | |
|---|---|---|
| *describe their experiences of planning and implementing formative assessments?* | targets and progressions, reteaching, cognitive gains and mastery. Can be planned or unplanned (spontaneous) and is best when data is used immediately, engaging and | the teacher to assess learning and not a grade". "Sometimes you see the light bulbs go on and with some you don't see them go off", metaphors included tasting the soup as a chef to see what you need to add and a GPS to help you know where you are going and when you get there. "Helps to encourage students and motivate them to do their best and take ownership of their own learning", exit tickets were frequently mentioned. Time was discussed as part of implementation with lack of time for planning and implementing formative assessment and need for more professional development and collaboration. |
| *How do secondary educators describe their experiences in addressing culture in the planning and implementation of formative assessment to adjust instruction?* | Informal, un-graded, fun, engaging, low-stakes, success, collaboration, | Get to know your students and building relationships, "listen, diagnose, prescribe, check for corrections", "there are ways to gauge understanding and it doesn't have to be paper and pencil", virtual and hybrid learning have an effect, formative assessment "helps students feel like I'm actually invested in their learning and helps build student-teacher relationships", It's a partnership, student feel "they are part of the process of what they actually know and are able to do with it", |
| *How do secondary educators describe language or linguistics in formative assessment practices implementation?* | Vygotsky's zone of proximal development with students and teachers, eavesdropping, aural, verbal, visual, listening, hands-on, universal language | "aural and verbal, noticing expressions and body language" "students with language barriers or special needs…use formative assessment more", Hands-on activities and other forms of language were discussed as important "worksheets and writing only can shut kids down", in-the-moment verbal feedback is important to support students' language development, music is the universal language where all students can progress and reach their goals, watching responses and listening helps build relationships and contributes to an understanding. |
| *How do secondary educators describe cognitive development in students when implementing formative assessment?* | Feedback, improvements, gains, increase in understanding, mastery, meeting goals and targets | There is a focus in education on standards and testing but "it is better to slow down and focus on student learning to make it more meaningful", makes students more confident and helps improve student learning for summative assessments, allows for reflection for students and educators, formative assessment is a "human capital" that lead to learning, when checking for understanding and giving feedback students have a chance to improve leading to classroom improvements and overall learning gains, "significant increase in understanding". |

## Summary

Chapter Four presented the finding from the research conducted during this transcendental phenomenological qualitative study that helped clarify and explain the essence of the experiences of secondary educators in rural southern Maryland. The participants came from a purposeful sample of secondary educators with diverse backgrounds, teaching different subject areas, grade levels, and varied years of experience who have knowledge of formative assessment giving this study a unique and interesting insight into the importance of assessment for learning. The study was framed by Vygotsky's (1978) sociocultural learning theory and the four guiding questions relating to language, cognitive development, culture, and experiences in planning and implementing formative assessment. Some themes that emerged from the questionnaires, interviews, and journals included learning assessment and learning progressions, communication, time, self-efficacy, feedback, and fun or engaging learning experiences involving students with teachers facilitating learning. The participants were excited to share their experiences, and their information was valuable in filling a gap in the research on the topic of educators' experiences with formative assessment. These findings will be further discussed in Chapter Five, as well as the significance and limitations of this study, along with the implications, recommendations for policy and practice, and suggestions for future research.

# CHAPTER FIVE: CONCLUSION

## Overview

Chapter Five examines the study's findings as related to the literature on formative assessment, the interpretation of the finding, the implications for policy and practice, the theoretical and methodological implications, the limitations and delimitations, and finally, the recommendations for future research that might be warranted. This chapter will begin with a summary of the purpose, methodology, and findings from this study of educators' experiences with formative assessment use. Next, the study's significance in teaching and learning practices and processes, relation to the literature, and the study's limitations are discussed. The chapter will conclude with a closer look at how this study may impact policy and practice for teaching using formative assessment and how more time for training and discussion might be warranted.

The conclusions of this study support recent research and the literature review of the benefits of formative assessment use in classrooms. It also highlights the idea that each educator's views, understanding, and uses of formative assessment differ. While the focus of this study was originally to develop an understanding of educator's definitions of formative assessment, the findings supported the idea that it is more important that data informed formative assessment is being implemented and used to adjust teaching and that educators have an understanding of formative assessment as a process to improve teaching and learning. Formative assessment can be thought of as a worldview for educators, or a way to approach teaching and learning daily. Each educator has their own view and ideas of ways they use or may implement formative assessment in their own teaching practice but all educators who participated in this study agreed on the importance of building relationships with students and using formative assessment in their teacher practices. Making sure all educators understand the importance of

formative assessment and the impact it can have on student learning is a conclusion of this research and study.

## Discussion

The purpose of this study was to discover secondary educators' experiences planning and implementing formative assessment in their classrooms in rural southern Maryland. In the beginning of the research, an understanding of educators' definition of formative assessment was at the forefront of inquiry and questioning, but as the process continued, it was discovered that a definition was not what was important, but instead an understanding of how and when formative assessment is incorporated into the teaching and learning process which was found to be more consequential for the teaching and learning process. The best way to help students learn and teachers teach was found to be inclusive and responsive pedagogical practices in the classroom every day to include formative assessments. Formative assessment has been found to be a process that represents the next best hope in education leading to increased student achievement and gains, learning, engagement, and ultimately success (Black & Wiliam,2009, Andrede et al.,2019), and this study supported these claims. While there were previous understandings of formative assessment found from the past that did not include the minute-by-minute adjustments recognized today as imperative to student learning, today it is recognized as a process necessary to student achievement and success as discovered in this study and other recent research. Developing an understanding of educators' formative assessment use leads to an approach to assist teachers in making improvements in informed practices and instructional decisions in the future (Black & Wiliam, 1998; Chappuis et al., 2009; Hattie, 2009, Heritage, 2010; Black, 2016; Keeley, 2016; Haught, 2018; Wiliam 2018, Andrede et al., 2019; Rached & Grangeat, 2020). I found that teachers need an understanding of formative assessment, the time to explore and plan

for use of formative assessment, as well as collaboration and training to implement and make these processes work to improve education, equity, and success in teaching and learning for all students. Formative assessment use in the classroom as an important element of effective instruction was the focus of this study and was supported in all participants' interviews, questionnaires, and journal responses.

To answer the four questions guiding the research, the study began with an extensive review of the literature on the history of, practices, processes, and theory of formative assessment. The first question was how do secondary educators in a rural school district in southern Maryland describe their experiences of planning and implementing formative assessments? During the literature review, many books and articles were found discussing the concept and implementation of formative assessment. The themes identified in this study, that described the educators' lived experiences using formative assessment included learning assessment and progression, developing mastery and understanding, dipstick check-in of student learning, monitoring growth and progress, used every day, or during projects and before summative assessments. Different tools or types of formative assessment were also identified in response to the experiences and use of formative assessment, with the most frequently mentioned ones being questioning and listening, exit slips, discussions, and notes.

The next research question for this study was how do secondary educators describe their experiences in addressing culture in the planning and implementation of formative assessment to adjust instruction? The answer to this question was different for each educator based on their classroom culture, subject, education, training, and their experiences, but the overarching theme was to get to know the students and build relationships. I found that having clear communication

and collaboration with the students in setting goals and giving feedback is integral to planning for daily instruction and addressing culture in the classroom or learning environment.

How do secondary educators describe language or linguistics in formative assessment practices implementation? This question is the third research question addressed, and the themes that emerged again related to getting to know the students and the focus on addressing misconceptions or deficiencies. Language is an integral part of formative assessment, and communication is not always verbal but was discussed as being aural, visual, and even through music "the universal language" (Tim) or other art forms. English language learners or other foreign languages were identified during the research as having increased necessity for formative assessment to check for understanding and allow for practice and repetition. Using formative assessment was found to give teachers a better understanding for their students' language and content knowledge not provided with summative assessments. Participants in the study explained how they assess reading, listening, speaking, and writing to check for understanding and give immediate feedback with formative assessment use.

Finally, research question four addressed how do secondary educators describe cognitive development in students when implementing formative assessment? One of the major themes that related to students' cognitive development included involving them in the learning or actively using success criteria so they can gauge their own progress towards success criteria. This develops self-efficacy and allows students to analyze their own work before the teacher does, and is a powerful tool and motivator, as the participants discussed. Cognitive development is a main idea behind formative assessment and success in learning, making learning more meaningful and equitable. In a recent systematic review conducted (Lee, et al. 2020) it was concluded that the overall effects of formative assessment have been shown to improve student

learning and the differential impacts on mathematics, literacy, and arts showed a positive effect especially in the presence of student self-assessment and formal evidence within or between instruction using feedback.

Vygotsky's (1978) sociocultural learning theory guided the research questions and was the theoretical framework for this study with emphasis on the motivational aspects of learning and the importance of the teacher on the mental development of the student in the zone of proximal development. This qualitative phenomenological study was designed to describe secondary educators' experiences and allowed for an understanding of the lived experiences of the participants in their classrooms in rural southern Maryland, and the research found several interesting themes that emerged, some expected based on the literature review and previous findings related to formative assessment, others were new and interesting findings that may help in planning professional development and for teachers in planning and implementing the formative assessment process.

**Interpretation of Findings**

The thematic findings in this study included learning assessments and progressions, communication, time, feedback, and self-efficacy leading to motivation and lifelong learning. It was my belief that the inclusion of formative assessment as a process improves students' self-efficacy, overall success and academic performance, and the data and literature supported this belief. Data collected showed that teachers felt students' learning was improved using formative assessment and learning progressions. Literature supports the idea that summative assessments, although necessary, are at odds with what encourages student learning and motivation, and assessments should not only measure the knowledge base in the moment but should be opportunities for meaningful learning (Kulasegaram & Rangachari, 2018). In the 1980s National

curriculum and summative assessments became more political and findings reporting to third parties including parents, administration, and other stakeholders found a place into education, possibly at the expense of student learning being at the forefront (Torrance, 1993). This led to more questions of assessment for learning which had been a topic of discussion as a process or theory, especially with the work of Black and Wiliam (1998). Torrance discussed the questions and research that was needed to explore formative assessments theoretically in the classroom, not just in research settings. This study did just that by asking about educator's experiences in their secondary classrooms. Formative assessment is a constructivist approach to finding out what the student has learned in the ZPD and not just a snapshot in time of learning that is quickly forgotten, like many summative assessments and their results. Yet just as in the past, there are still many questions surrounding formative assessment and policies about assessment practices and importance on the education system and now equity seems to play into the assessment debate (Wiliam, 2018).

Findings from this study could be used to enhance teaching practices, professional development for teachers, administrators, and others involved in teaching and learning. The findings may also encourage educators to use formative assessment more often and with the application of the data to inform teaching and lead to more student success. The quality of assessment for learning depends on teacher's instructional practices including use of the evidence, feedback and instructional decisions which leads to increased student learning and achievement (Bennett, 2011; Andersson & Palm, 2017' Pinger, et al., 2018). Effective formative assessment practices depend on teacher knowledge and implementation of the formative assessment process with an understanding and toolbox of practices to use.

### *Summary of Thematic Findings*

**Learning Assessment and Progressions.** Learning assessment was the most often mentioned theme during the data collection process. Learning assessment with progressions describes the idea behind assessment for learning, or formative assessment and teachers checking for understanding to clarify misconceptions before moving forward. Assessment for learning, learning assessments, checkpoints, dipstick to measure learning, ongoing, low stakes, and informal were other relevant themes from the research. Several of the participants mentioned that formative assessment has been a part of teaching and learning for a long time, but the term formative assessment has become a buzzword and has been discussed more frequently over the past decade since the publication of Black and Wiliam's influential article *Inside the Black Box* in 1998, as a way to increase student achievement. Formative assessment definitions and use have continued to be questioned since that time and numerous articles and studies have called for more research to be done on the topic. In this research study the formative assessment process was not found to be included in most teacher education as participants reflected on their training, but is discussed and taught through professional development, with mentors, and collaborating with other educators. It has been found that teachers who use formative assessment intentionally and with purpose have positive effects on student learning and success and each participant was able to expand on their classroom experience to demonstrate this point. More emphasis should be placed on teacher training for formative assessment during teacher education or through professional development. A systematic review conducted by Schildkamp et al. (2020) found that only properly planned professional development or teacher education leads to formative assessment use by teachers that is properly supported and planned for to improve student learning and achievement.

**Communication and collaboration.** Communication is essential to the implementation of successful formative assessments where the focus is on classroom interactions and dialogue with teachers, students, and peers. It is a process of discovery, reflection, understanding, and review involving various forms of communication that lead to increased student learning. Using Vygotsky's theoretical framework and the zone of proximal development recognizing the social interaction between teacher and student, communication is imperative. Communication with other educators in the form of sharing data, tools, experiences, educating and mentoring were discussed. Communication with other teachers, parents, and professional learning communities was also found to be important and are elements of part of the students' ZPD teacher and student communication was found to be essential in this research and can be verbal, aural, musical, or non-verbal by watching and listening during student interaction whether planned or spontaneous. Getting to know the students was a significant point expressed by educators during the interviews. Not only was this discussed as being a key part of the formative assessment process but was also one of the most enjoyable elements of teachers' experiences. Formative assessment involves mutual interaction between teachers and students, and collaboration with them, their parents, and with other educators. Administration also plays a role in supporting teachers and encouraging implementation of the formative assessment process, as discovered in the research findings. Assessment practices were challenged with roles for students and teachers alike needing to look at new roles to improve formative assessment as discussed by Black (2015). He felt that formative assessment could be a framework but that teachers are already challenged with their workload and new innovations and changes take time and are challenging to incorporate.

**Time.** Time was an unexpected finding from the research during the data collection. Every one of the participants discussed time. Some of the findings related to time included

formative assessments being quick or done every day during classroom instruction. Others talked about using formative assessment during projects and to help make grading timelier. The other element of time involved the lack of time for planning, implementation, use of data, and professional development. Some of the participants explained they run out of time to incorporate formative assessment, and there are other factors that play a role relating to time, like school cancellation and other factors beyond their control. Time was a distinct factor in the implementation and use of formative assessment. The educators in this study ascertained the value of formative assessment and still had some challenges implementing the process as much as they would like to due to time. Lack of time was the biggest reason that informed formative assessment was not used more often to adjust instruction or maybe even not implemented at all.

**Feedback.** Feedback needs to be continuous, descriptive, specific, motivating, and based on evidence of the data collected to steer learning. Any type of assessment should be accompanied by meaningful feedback, so students are informed on how to improve which is supported by literature as being an important process for successful learning (Kulasegaram & Rangachari, 2018). Most of the participants in this study felt that formative assessment should be ungraded and that the culture in the classroom should be one of learning and not grading, yet students, parents, administrators, and other stakeholders expect and demand grades. Shifting from grades to student learning progressions to motivate, inspire, and empower students and getting feedback from peers and teachers can lead students to become involved in their own learning, not just for a grade. One participant explained that specific and meaningful feedback can be actionable. Feedback should be focused and timely to correct any misconceptions and

should be a feedback loop where students have another chance to learn and prove understanding or mastery.

**Impacts.** Teacher makes more minute-by-minute decisions in their classrooms daily than a brain surgeon in an operating room. Consistent use of formative assessment during lessons ensures that equitable learning with progressions for every student in mastering concepts, content, and skills are occurring. Learning is a process and assessment for learning improves achievement, learning outcomes, growth, student self-efficacy, and success. Self-regulated learning is essential for lifelong learning allowing students to construct knowledge, identify their own learning goals, and evaluate their performance in making learning progressions (Xiao & Yang, 2019). Formative assessment use is a critical component of teaching and learning resulting in motivation, engagement in learning, and instructional power. Formative assessment implementation by teachers is at the heart of equitable and responsive teaching that engages every student and has a noticeable impact on learning outcomes and lifelong success and is not just a thing but a process that is essential to all teaching and learning.

## Implications for Policy or Practice

The importance of understanding formative assessment as it relates to policy and practice begins with teachers and their day-to-day, minute-by-minute use of formative assessment. The way they adjust to provide equitable learning for all students has a huge impact on the learning progressions for students, the school, the district, and the future according to participants in this study. The best way to improve education in our country is to have the best teachers who are getting to know their students and implementing responsive teaching practices to adjust instruction and involve students in their own learning. Even though formative assessment and its

positive effects have been discussed for decades as a high-impact instructional practice but there is variability in reported effects so one proposal to look at critical components of formative assessment was proposed to increase validity of future studies to empirically learn more about what conditions support student learning (Offerdahl, et al., 2018). Policy is not likely to change, but teachers can make decisions in their classrooms and district that lead to changes to improve achievement for each of their students. Without time and training to implement formative assessment as a process, teachers do not know what students know and are not able to make inferences to adjust instruction. The quality of the formative assessment depends on the capability of the teacher to translate information, give feedback, and make instruction decisions. Building expertise amongst educators, including administrators, about the formative assessment process and tools is essential and lacking since not all educator's express confidence or have the time to effectively implement formative assessment. As a personal reflection, in a recent observation by my administrator, my use of formative assessment practices in my classroom were never mentioned or discussed, but student learning objectives or SLOs drive teacher evaluations and only discuss summative or standardized test scores. In Maryland, early learning assessment for pre-K curriculum (MSDE, 2022) discusses using formative assessments but there is nothing noted for secondary students. In the Blueprints for Maryland's Future there is mention of increasing flexibility of timing for major assessments, and there is a discussion about ensuring student's progress toward meeting common core standards and benchmarks that states "a series of formative and summative assessments must be developed and administered" (MSDE, 2022, p. 16) but it then goes on to discuss full high-stakes assessments with no further mention of formative assessment initiatives or developments. Teacher evaluations need to identify those who engage in reflection and formative assessment practices with intentional teaching

approaches to improve education quality (Simonson, et al., 2021). More policies promoting formative assessment use need to be implemented and encouraged.

Policies of administration and school districts require grades and scores from high visible summative assessments. Scores often depend on things that are not relevant to student learning and are often just luck. Learning targets need to be clear so students can set and achieve goals. There is bias in large scale summative assessments that are equitable or focused on student learning. There needs to be a decrease of summative assessment use and focus which just shows the efforts at that moment in time, and more focus on formative assessment and student learning and involvement in their learning. Teacher evaluations need to include formative assessment practice implementation. Policy needs to be focused on adding and increasing the use of formative assessment in all classrooms across the country and ensuring teachers have the time and understanding of how to implement formative assessment daily into their teaching practice. Grades will not close learning gaps, but formative assessment will. Giving teachers more time to get to know their students, which was identified as mandatory by the participants, and providing pre-service training, education, and professional development to assist educators in developing a toolbox of formative assessment practices is essential. Allowing time to collaborate, plan, and analyze data to adjust instruction will improve student achievement and allow students to develop deeper understandings of their learning, leading to lifelong success. These findings about secondary educators' experiences in rural Southern Maryland apply to all educators.

**Theoretical and Empirical Implications**

Vygotsky's (1978) explanation of the zone of proximal development is the region where learners navigate the learning process with support, including the teacher who does more of the work of learning at the beginning, but with help and use of formative assessment to check for

understanding. The learner becomes more independent and develops self-efficacy with encouragement and feedback from the teacher. Empirical implications of this study support the use of the formative assessment process to help lead the learner to success criteria through assessment of learning and increasing independence and self-efficacy. The teacher is also motivated and successful when using informed data obtained with use of formative assessment to adjust instruction and help students reach mastery goals. This study showed how teachers who use reflective practices ensure they are effectively using formative assessment. Therefore, policy should be aimed at providing development of formative assessment practices from pre-service education to experienced teachers in the form of professional development and educational courses with a focus specifically on formative assessment and training to encourage mentors and administrators to be more active in promoting professional development (Andersson & Palm, 2017). This supports the previous research done by Black and Wiliam (1998a, 2009), DuFour (2011), and others who have supported increased use of formative assessment to make learning more equitable and successful for all students. Current research and meta-analysis support the idea that adaptation of instruction to meet students' needs through use of formative assessment can lead to improved learning and achievement (Deunk et al. 2018; Hattie & Timperley 207; Smale-Jacobse et al. 2019). Yet in a study by Büyükkarcı (2014) it was concluded that even though a majority of teachers thought formative assessment helped students learn and English teachers' attitudes about formative assessment were positive, as in this study, they also felt that teachers could not efficiently and frequently use formative assessment practices. In identifying what components are important when implementing formative assessment users and advocates opinions should be elicited to understand what works and this was done using experiences and empirical as wells as theoretical literature by Offerdahl, et al. (2018) where they found several

components as critical to formative assessment success. These included clear success criteria, evidence of student understanding, feedback, and self-regulated learning and they recommend future work focus more on the when, how, and what of the conditions of formative assessment that supports student learning. In another study by Öz (2014) it was concluded that teachers preferred traditional (summative) assessments or more traditional self-assessments instead of using formative assessment tools. Encouraging secondary educators to utilize more elements of assessment for learning or formative assessment in their classrooms and decreasing summative assessments to focus on student learning should be the focus of schools in the future to increase students' academic performance and overall success. While other behaviorist and cognitive theories pertaining to formative assessment have focused on learning motivation and cognition (Torrance, 1993), the sociocultural learning theory appropriately focuses on the student and the teachers guiding them in their ZPD leading to self-efficacy, which leads to lifelong learning (Vygotsky, 1978). Many of the participants in the study have been teaching for years and offered support of formative assessment to achieve this goal.

This study extended the research already conducted about formative assessment and recognized the need to encourage increased use of formative assessment tools and data, rather than focusing solely on a definition. A recent study about using diagnostic data to adjust instruction found that since teachers are more reactive than proactive there is not enough time to gather data from summative assessments and make adjustments that lead to mastery or success, but more frequent formative assessment, time, and collaboration with students to fit students learning progress would help (Choi et al. 2022). Another study relating to learning due to the COVID 19 pandemic found that using survey to collect data is responsive and supports learning and addresses issues of inequity in education created by summative assessments and learning

loss (Fincke et al. 2021). More time and energy should be spent ensuring that formative assessments are being used effectively in all classrooms. It is crucial for teachers to understand how to plan for, individualize, and use formative assessment and when teachers are provided specific information through staff development their skills and implementation of formative assessment is improved (Brink & Bartz, 2019)

**Limitations and Delimitations**

Limitations recognized in this study include size and location. Data was collected from a small school district in rural southern Maryland, with a small sample size of secondary teachers who have knowledge of formative assessment from previous training or professional development. There were some participants that did not complete all three elements of the study, and some initial participants did not participate due to time or other factors. This may not reflect the backgrounds of other teachers in other school districts or locations and may not be reflective of teachers with no training in formative assessment. Without a larger sample size from various school districts with various demographics, the results are only applicable to similar sites and educator make-up including training on formative assessment. While the results are promising and can add to the knowledge of the usefulness of formative assessment, additional data will need to be collected to attribute to other districts and groups of educators.

The study was also limited by duration. The data collection began after the winter holiday and finished by the spring. Collecting data for a longer period or at a different time may include other educators and show different uses or understanding of formative assessment. While there was a varied group of educators included in the sample, more variability may show different results, including more new teachers in the sample may lead to a different understanding of

knowledge about formative assessment from teacher education, which is more recent and memorable for newer teachers.

Another limitation was related to the recent pandemic and use of virtual technologies. Most of the interviews were conducted via Zoom and were virtual rather than face-to-face. This helped accommodate time, schedules, and obligations of the participants. This format allowed participants to conduct interviews without interruption and to complete data at their convenience.

Delimitations included the use of qualitative transcendental phenomenological over quantitative or methods to reflect teachers, results of the use of formative assessment to improve learning or show if teachers are supported or effective. Another delimitation is the researcher's effect on the study, which was identified prior to data collection. The researcher had previous knowledge of formative assessment from attending professional development and planning for and conducting book studies. It was assumed the researcher's knowledge and experience would support data collection and discussions about formative assessment. Nevertheless, the researcher was reflective through written researcher notes, conducted member checks, triangulated data, and did not include teachers from her school or any who had participated in the researchers' book studies. Readers can use the information to extrapolate meaning that can be used in their setting and for their purposes.

**Recommendations for Future Research**

Future research should focus on increasing equity in education for all students, especially considering recent knowledge deficits from the pandemic. Using less standardized testing and summative assessments for all students without appropriate changes to instruction should be

reviewed. Looking at what prerequisite's teachers need to use more formative assessment in their teaching practices to inform education and professional development could help drive decisions for teacher training. Other studies should focus on ways to engage students in learning, possibly with increased use of formative assessment by all educators, to decrease dropouts and help students succeed in the future. A study reviewing the impact of including evaluation of formative assessment practices into teacher observations and the school policy would help understand and verify the use of formative assessment in classrooms and understand the impact on student learning.

Due to the limitations of the demographics, it is recommended that this study could be replicated with elementary and middle school educators to gain an understanding of their use of formative assessment. Additional studies should examine teachers' formative assessment without professional development or with varying ages or years of experience. Finally, studies could explore the impacts of using formative assessment on student learning in a quantitative study and could include students' perceptions of formative assessment use in their learning.

## Conclusion

According to the examination of data, it can be concluded that formative assessment used by educators who have knowledge of the benefits of formative assessment or assessment for learning which focuses on quality, equity, and student achievement in learning targets rather than outcomes, results in empowered students who are successful and self-regulated. It is a responsive teaching practice used daily to adjust instruction and help students set learning targets and achieve self-efficacy with continuous and specific useful feedback from the learning assessments leading to progression, success, and mastery.

The data collected from this study explained secondary educators' experiences in planning and implementing formative assessment and adds to the existing body of knowledge surrounding the impact of formative assessment and learning progressions in teaching and learning. The current methods of summative assessment are not equitable and do not have a desirable outcome or decrease the learning gap for struggling learners. Despite research and data suggesting a shift away from large stakes assessments, schools continue to administer summative assessments in large numbers taking away from classroom instruction time and allowing for less use of formative assessments with adjustments to help students learn and succeed and even basing teacher evaluations on these flawed assessments that are not valid, reliable, or equitable. Students have shifted from learning to earning points to pass or get a grade, and others drop out or give up on education. If schools want to succeed in helping students learn they need to shift to encouraging increased use of formative assessments, ensure teachers are utilizing formative assessments attributes and processes, and decrease the number of summative assessments. Education should focus on more formative assessment use for student learning and success.

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# APPENDIX or APPENDICES

## Appendix A

## IRB Approval

IRB #: IRB-FY21-22-385
Title: SECONDARY EDUCATORS' EXPERIENCES IMPLEMENTING FORMATIVE ASSESSMENT IN RURAL SOUTHERN MARYLAND: A TRANSCENDENTAL PHENOMENOLOGICAL QUALITATIVE STUDY
Creation Date: 11-5-2021
End Date:
Status: Approved
Principal Investigator: Bonnie Skinner
Review Board: Research Ethics Office
Sponsor:

### Study History

| | | |
|---|---|---|
| Submission Type Initial | Review Type Limited | Decision Exempt - Limited IRB |

### Key Study Contacts

| | | |
|---|---|---|
| Member Jerry Woodbridge | Role Co-Principal Investigator | Contact [redacted] |
| Member Bonnie Skinner | Role Principal Investigator | Conta[redacted] |
| Member Bonnie Skinner | Role Primary Contact | Conta[redacted] |

# Appendix B

## School District Approval and Email to Administrators

## Bluffington School District Approval

[redacted]

August 31, 2021

[redacted]

Dear Ms. Skinner:

Your request to conduct independent research in St. Mary's County Public Schools has been approved as submitted. Any changes to the research proposal must be resubmitted for approval. A copy of this letter is being sent to the principals who are involved in your study indicating approval of the project. Please contact the principals for further instructions and to make appropriate arrangements for completing the research project. Thank you for your interest in an independent research project.

Sincerely,

[redacted]

JAM:bad

cc: Dr. Maureen Montgomery, Deputy Superintendent of Schools
Ms. Angela Funya, Educational Director, Chesapeake Public Charter School
Mr. Marc Pirner, Principal, Chopticon High School
Ms. Jen Consalvo, Principal, Esperanza Middle School
Dr. Lisa Johnson, Academic Dean, Fairlead Academy
Dr. Deborah Dennie, Principal, Leonardtown Middle School
Ms. Jill Synder-Mills, Principal, Leonardtown High School
Dr. Jake Heibel, Principal, Great Mills High School
Dr. Wendy Zimmerman, Principal, Spring Ridge Middle School
Ms. Glenna Edwards, Principal, Margaret Brent Middle School

## Appendix C

### Email to Administrators in Bluffington Secondary Schools (Initial Letter)

Dear St. Mary's County Administrator:

As a student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to understand secondary teachers' experiences using formative assessment in their classrooms and understand how they used this information to inform their teaching, and I am writing to invite eligible participants to join my study.

Participants must be 18 ZPDyears of age or older, secondary educators (grades 6-12), and must have knowledge of what formative assessment is and they must have received education pertaining to formative assessment from their teacher education preparation, professional development, or continuing education. Participants, if willing, will be asked to complete a questionnaire with 10 questions (20 minutes) via SurveyMonkey, complete an individual interview (60 minutes), keep a journal/log of formative assessment use (kept for two weeks), and review their interview transcripts for accuracy. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please click here Formative Assessment Participation Survey.

A consent document will be included in the survey link above if you are eligible to participate. You will also be emailed a consent form. The consent document contains additional information about my research. After you have read the consent form, please click the yes choice to participate in the research. Doing so will indicate that you have read the consent information and would like to take part. Once you have received the consent form email and if you choose to participate, you will need to sign the consent document and return it by January 31, 2022, via interoffice mail, email, or return it to me at the time of the interview and prior to any data collection.

Sincerely,

Bonnie J. Skinner
Principal Investigator
Liberty Doctorate Student
[redacted]

## Appendix D

### Email to Administrators in Bluffington Secondary Schools (Follow-up Letter)

December 15, 2021

Dear St. Mary's County Administrator:

This is a follow-up email from the previous email dated January 5, 2021. Please forward this email to all secondary educators in your building.

As a student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to understand secondary teachers' experiences using formative assessment in their classrooms and understand how they used this information to inform their teaching. This is the second request to recruit participants for my study. Last week/Two weeks ago an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to complete the survey if you would like to participate and have not already done so. The deadline for participation is January 26, 2022 .

Participants, if willing, will be asked to complete a questionnaire with 10 questions (20 minutes) via SurveyMonkey, complete an individual interview (60 minutes), keep a journal/log of formative assessment use (kept for two weeks), and review their interview transcripts for accuracy (30 minutes). Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please click here Formative Assessment Participation Survey.

A consent document will be included in the survey link above if you are eligible to participate. The consent document contains additional information about my research. After you have read the consent form, please click the yes choice to participate in the research. Doing so will indicate that you have read the consent information and would like to take part. You will receive an email with the consent form. Once you have received the consent form email and if you choose to participate, you will need to sign the consent document and return it to me by January 31, 2022 via interoffice mail, by email, or at the time of your interview.

Sincerely,

Bonnie J. Skinner
Principal Investigator
Liberty Doctorate Student
[redacted]

# Appendix E

## Screening Protocol Questions

### Screening Protocol Questions Welcome Note

Welcome to this brief survey to find out if you are eligible to participate in my research study "Secondary Educators' Experiences Implementing Formative Assessment in Rural Southern Maryland: A Transcendental Phenomenological Qualitative Study." If you are found to be eligible based on your answers, then you will be directed to read an electronic consent form if you agree to participate. Thank you for your time and consideration

Principal Investigator: Bonnie Skinner, Doctoral Candidate, Liberty University

### Screening Protocol Questions for Formative Assessment Study

**Pre-participation Survey**

1. Name and Contact Information

First and last name

Email address

Phone number

2. What is your gender?

a. Female

b. Male

c. Other (please specify)

3. What is your current age?

a. Under 18 (goes to disqualification page)

b. 18-29

c. 30-39

d. 40-49

e. 50-59

f. 60-69

g. 70-79

4. What is your main school site location?

a. Leonardtown Middle School

b. Leonardtown High School

c. Margaret Brant Middle School

d. Virtual Academy

e. Spring Ridge Middle School

f. Chesapeake Charter School

g. Chopticon High School

h. Great Mills High School

5. Years of teaching experience (including this school year)

a. 0-3

b. 4-5

c. 6-10

d. 11-15

e. 16-24

f. 25 or more

6. How many years teaching in this school district at the specified grade level?

a. 0-3

b. 4-5

c. 6-10

d. 11-15

e. 16-24

f. 25 or more

7. What grade(s) do you teach? (Choose all that apply)

a. 6th

b. 7th

c. 8th

d. 9th

e. 10th

f. 11th

g. 12th

h. None of the above (disqualification page)

8. Academic content area(s) taught

a. ROTC/CTE

b. English/Language Arts

c. World Languages

d. Fine Arts

e. Mathematics

f. Physical Education

g. Science

h. Social Studies

i. Special Education

j. Music

j. Other (please specify)

j. None of the above

Do you have knowledge of formative assessment through your teacher education preparation, from professional development, or from continuing education?

a. Yes

b. No (disqualification page)

(If the answer to this question is yes, then the next question will state "You are eligible, are you willing to participate in the study". If the answer is no, then the next prompt will state "Thank you for your time in completing this survey. Currently, you are not eligible to participate".)

## Appendix F

## Consent

**Title of the Project:** Secondary Educators' Experiences Implementing Formative Assessment In Rural Southern Maryland: A Transcendental Phenomenological Qualitative Study
**Principal Investigator:** Bonnie Skinner, Doctoral Candidate, Liberty University, School of Education

### Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, must be 18 year of age or older, a secondary educator (grades 6-12), and must have knowledge of formative assessment through your teacher education preparation, from professional development, or from continuing education. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

### What is the study about and why is it being done?

The purpose of the study is to discover the understood perception of formative assessment from the perspective of secondary teachers in order to develop an understanding of their classroom practices and uses of formative assessment in the classroom.

### What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Answer an online questionnaire by responding to questions that will help me understand your experiences implementing formative assessment with your classes. This questionnaire will be sent through a SurveyMonkey link in an email and will take approximately 20 minutes to complete. After completion of the questionnaire, the next step will be the completion of an individual interview that will be scheduled at your convenience through email.
2. Participate in a one-hour long interview via email. The interview will be scheduled by the researcher at the time and location chosen by the participant. The interview will be audio-recorded f completed in person and audio- and video-recorded if completed through Zoom or Google Meet.
3. Verify the accuracy of the interview transcript.
4. Keep a journal of formative assessment practices and use in your classroom during the specified time for two weeks after completing the questionnaire. The journal can either be written or electronic. Journals can be emailed to the researchers email address at [redacted] if electronic or sent via interoffice mail to the Dr. James A. Forrest Career and Technology Center, or the researcher will make arrangements by email to pick up the written journal in person at the convenience of the participant.

### How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include a contribution to the knowledge about formative assessment practices in the secondary classroom.

**What risks might you experience from being in this study?**

The risks involved in this study are minimal. There are no more risks to this study than the risks you would encounter in everyday life.

**How will personal information be protected?**

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data will be secured in a password-protected computer, on a password-protected drive, and in a locked file cabinet. After three years, all electronic records will be deleted and all physical records will be shredded.
- Interviews will be recorded and transcribed. Recordings will be stored on a password-locked computer for three years and then erased. Only the researcher will have access to these recordings.

**Is study participation voluntary?**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**What should you do if you decide to withdraw from the study?**

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

**Whom do you contact if you have questions or concerns about the study?**

The researcher conducting this study is Bonnie Skinner. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] or [redacted]. You may also contact the researcher's faculty sponsor, Dr. Jerry Woodbridge, at [redacted]

**Whom do you contact if you have questions about your rights as a research participant?**

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

*Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.*

**Your Consent**

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

*I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.*

☐ The researcher has my permission to audio- and video-record me as part of my participation in this study.

_____
Printed Subject Name

_____
Signature & Date

## Appendix G

## Questionnaire

Welcome to the study. Thank you for agreeing to participate. Your answers and experiences are very important.

You are invited to participate in a research study questionnaire related to your experiences implementing formative assessment as a secondary educator. Please take time to read the entire question and give honest and detailed answers.

1. How long have you been a secondary educator in St. Mary's County Public Schools? (Drop down menu: 0-3 years, 4-7 years, 8-10 years, 11-15 years, 16-20 years, more than 20 years)

2. What grade(s) do you teach? (Drop down menu: 6, 7, 8, 9, 10, 11, 12, more than one grade in middle school, more than one grade in high school)

3. What subject area(s) do you teach? (Drop down menu: Science, English/Language Arts, Math, Health, Physical Education, Art, Music, World Language, Social Studies, ESOL, Special Education, Other with fill in the blank, more than one subject with fill in the blank)

4. What is your definition of formative assessment? (Short answer question)

5. How often do you use formative assessments? (Drop down menu: never, rarely, sometimes, always)

6. When using formative assessment, how often do you use the evidence you gather to change your teaching? (Drop down menu: never, rarely, sometimes, always)

7. In your experiences using formative assessment, what do you feel contributed to students making cognitive gains in learning if learning gains were made? (Brief response)

8. How do educators guide learning, in a social context, in your school? (Brief Response)

9. How often do educators in your school/district share formative assessment practices and ideas? (Drop down menu: never, rarely, sometimes, often, always)

10. How does language/linguistics affect your formative assessment experiences? (Brief response)

## Appendix H

## Interview Information and Questions

**General Interview Information:**

Date and time of interview

Name of participant

Location and method of interview (i.e. neutral site, work or school, and face-to-face or video)

Current age, gender, and race/ethnicity

Occupational information including location, full or part time, type of work

**Semi-structured Open-ended Interview Questions:**

The following questions will be used for the interviews to collect informational data about secondary educators experiences implementing formative assessment.

1. Introduce yourself to me and explain what you enjoy about teaching.

2. What is your definition of formative assessment? How do you implement formative assessment as an educator?

3. What was included in your formal education or professional development related to formative assessment? Explain the training and what you learned.

4. What have you experienced in terms of formative assessment in the classroom?

5. What context or situations have typically influenced or affected your use of formative assessment practices?

6. Please describe the types of formative assessments you most frequently use. What do you find most beneficial from the use of these formative assessment practices?

7. Please describe an experience you have had as a teacher with using formative

assessment. Be as specific and detailed as possible. Please include the grade level and content area of the students you were teaching.

8. What influence has your understanding of formative assessments had on your teaching and overall assessment practices? What, if any, adjustments to your instruction have you made?

9. Describe a time when formative assessment practices have been most successful with your students. Please include what you think made them successful.

10. If applicable, describe a time when formative assessments have not been successful and include why you think they were not successful.

11. Please describe an instructional situation where you would use formative assessment and one where you would not. Explain your reasoning. Does culture or language influence your use of formative assessment? Do students with special needs or special population students (like gifted and talented or learning disabilities) affect your use of formative assessment?

12. Please think about a lesson or standard you taught recently and describe how you knew if the students did or did not master the learning target or objective.

13. Can you describe any specific ways your grade level, school, or district use formative assessment to adjust instruction? What, if any, is your role in these aspects of formative assessment practices?

14. What additional resources would help you use formative assessment practices more consistently?

15. Consider that professional development refers to any learning experience where your school leadership, an outside consultant, your school district, state or some other

professional instructed or taught you. Did this experience help you implement formative assessment practices? Why or why not?

16. Can you describe any negative experiences related to formative assessment or anything that hindered you from implementing formative assessment? What made this experience negative or prevented you from implementing formative assessment?

17. What other information have I not asked about that might clarify secondary teachers' experiences with formative assessment?

# Appendix I

## Journal Prompts and Guidelines

All participants will be asked to keep a self-reflective journal for reflections about their daily experiences with implementation of formative assessment in their natural context. Journals can be kept electronically or in paper format and submitted at the end of the indicated time frame. All journals will be protected on a password protected computer or in a locked cabinet. These journal prompts may be used to help with reflection. The journal should be free response writing so the prompts are not required.

1. Can you tell me five positive things about formative assessment, no matter how small you think it is?

2. Using your experience with formative assessment, if you were responsible for selling it to other educators what key point would you stress?

3. If you were the moderator, what would be the next question you would want to ask your fellow educators?

4. What would you tell a best friend or family member about your experiences with formative assessment?

# Appendix J

## Figures and Tables Permissions

**Swetha (Edulastic Support Team)** Wed, Sep 1, 8:06 AM

to me

##- Please type your reply above this line -##

Your request (165916) has been updated. To add additional comments, reply to this email.

---

**Swetha** (Edulastic)
Sep 1, 2021, 8:06 AM EDT

Hi Bonnie

Yes, you can upload and use it however. Let me know if you have any questions.

Best Wishes,
Swetha| Edulastic Support

DiVall, Margarita [redacted]
Wed 9/29/2021 3:45 PM
To: Skinner, Bonnie [redacted]
You don't often get email from [redacted]. Learn why this is important
[ EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust
the content. ]
Bonnie, thank you for reaching out. You have my permission and best of luck with your dissertation!

**Margarita DiVall, PharmD, MEd, FNAP, BCPS**
Associate Dean for Faculty Affairs, Diversity, Equity and Inclusion | Bouvé College of Health Sciences
Clinical Professor | Department of Pharmacy and Health System Sciences | School of Pharmacy
[redacted]
For scheduling requests please use [redacted] or contact Sakeena Sheare [redacted]
Bouvé Faculty Affairs SharePoint Site