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Elementary School Teacher Perceptions of Using Formative Strategies To Improve Instruction

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2015

Abstract

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Standardized test data from a southern suburban elementary school showed lagging student scores behind those of students from similar settings. These scores suggested a disconnection between teachers' understanding of and practice in formative assessment. Bloom's revised taxonomy, backward design planning theory, and differentiated learning theory guided this study, which focused on how elementary teachers use formative strategies in the classroom to inform instruction. Data collected through face-to-face interviews from 10 teachers were transcribed and organized in codes and themes. Member checks were then used to ensure credibility of interpretations. The key results showed that these 10 teachers used many formative assessment strategies with their students, yet they were unfamiliar with backward design theory and did not use peer feedback or self-assessment as strategies. The proposed project focused on providing professional development in 3 modules addressing professional learning community norms, backward design theory unit planning, and strategies for peer feedback and student goal setting. This project may lead to positive social change by empowering teachers to design curriculum and assessment with authentic learning experiences and providing students with goal-setting strategies to become responsible for learning. The project's positive social change may lead to this school and district closing the identified achievement gap. It is recommended that further research on teacher perception of formative assessment should include more elementary and middle schools.

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Dedication

I would like to dedicate this project to my family for their support, patience, love, and encouragement.

- To my husband, Gary, who encouraged me to go for my goal and who gave up countless weekends of entertainment to allow me to work on my doctoral study.

- To my daughter, Katie, who, with Gary, did whatever I needed her to do around the house, allowing me to concentrate on this mammoth task. Thank you for cheering me on.

- To my mom and dad, who always believed that I could do anything I wanted to do and who always supported my efforts.

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Section 1: The Problem

Introduction

I designed this study to examine elementary school teachers' perceptions at an elementary school in a southern suburban school district regarding formative assessment to influence future teaching and learning. District personnel indicated a renewed focus on formative assessment districtwide. However, the practice is not used routinely to inform instruction. The school's state report card indicated an achievement gap in all content areas when compared with similar schools. If used appropriately in making instructional decisions, formative assessments can improve student learning and performance on state assessments (Wilson & Barenthal, 2006). Formative assessment has the potential to help both teachers and students regulate teaching and learning and lower the achievement gap (Fisher & Frey, 2007).

I conducted this study in a suburban, southern school district containing approximately 40 schools. The district is composed of 19 elementary schools serving pre–kindergarten through fifth grade. The primary participants in the study were purposefully sampled from one elementary school in the district containing 40 teachers. Of these 40 teachers, 77.3% had advanced degrees and 84.2% had returned from the previous year (district administrator, personal communication, October 16, 2014). The school's principal had served as principal for numerous years and has her doctor of education degree (district administrator, personal communication, October 16, 2015). My purpose was to examine whether teachers at this elementary school use formative data in

all subject areas to plan and implement adjustments to instruction for individual students to lower the achievement gaps and improve student learning.

Definition of the Problem

District leadership implemented renewed focus on formative assessment in a local southern, suburban elementary school (district administrator, personal communication, September 17, 2013). The school's 2013 state report card indicated the standardized test scores lagged behind other schools with similar student populations. An achievement gap existed for students in all tested content areas. One solution to reducing the achievement gap could be properly using formative assessment strategies focusing on learning and growth to improve future instruction.

The Elementary and Secondary Education Act (ESEA) reauthorization in 2010 and the Common Core State Standards (CCSS) implementation increased the need for formative assessment practices in classrooms (Davidson & Frohbieter, 2011; Dorn, 2010). Research has indicated formative assessment can affect student learning and help improve scores on state assessments (Wilson & Barenthal, 2006). The state's adoption and use of the CCSS necessitates using formative assessment data to ascertain whether students meet the standards (workshop presenter, personal communication, November 13, 2013). Therefore, properly using formative assessment can help teachers increase standardized test scores and lower the achievement gap.

Nationally, the No Child Left Behind (NCLB) Act of 2001 produced a level of instructional accountability that places higher expectations on teachers. However, under NCLB, assessments have been summative. Whereas teachers use summative assessment

to identify instructional weaknesses, formative assessment affords feedback which both

educator and student can employ immediately and in the future (Black & Wiliam, 1998;

Popham, 2008; Wolf, 2011). Edman, Gilbreth, and Wynn (2010) found many teachers are

not using formative assessment data to inform future instruction. In addition, Dorn (2010)

described a gap between the knowledge of formative assessment and using formative

assessment. Locally, a push by district administration to bring these practices to routine

use was stressed to increase student learning and lower the achievement gaps of

standardized test scores between this school and schools with similar populations.

However, district collaborations on formative assessment had unveiled difficulty in

bringing the practice of formative assessment to routine use. I studied the elementary

teachers' perception with regard to using formative assessment strategies to improve

future instruction as the possible cause of this problem.

Rationale

Evidence of the Problem at the Local Level

This school's 2013 state report card indicated that the South Carolina Palmetto

Assessment of State Standards (SCPASS) scores lagged behind other schools with

comparable student populations. This was true for scores in all tested subject areas. The

following achievement gaps existed: 3.9% in reading, 7.2% in math, 4.5% in science, 3%

in social studies, and 3.3% in writing. One solution to lowering the achievement gaps

could be properly using formative assessment strategies that focus on learning and

growth to improve future instruction. Local curriculum leaders and teachers were

responsible for ensuring formative assessment strategies had been implemented daily in

classrooms (district curriculum administrator, personal communication, September, 17, 2013).

National decrees, such as the reauthorization of the ESEA of 2010 (United States Department of Education, 2010) and the Individuals with Disabilities Education Act (IDEA) of 2004 (Individuals with Disabilities Improvement Act, 2014) as well as state guidelines, have encouraged using formative data in schools and districts to decrease achievement gaps and advance student products. Formative assessment is a critical element of the Smarter Balanced Assessment Consortium (SBAC) system, as well as a summative assessment and benchmark assessments used to communicate student improvement during the academic school year (Smarter Balanced Assessment Consortium, 2012). Recently, the state decided against using the SBAC assessments owing to financial considerations. However, teachers were expected to use formative assessment methodology that heightens daily instruction (district curriculum administrator, personal communication, 2013). The loss of SBAC further amplified need for teachings to use formative strategies and data effectively. Because formative assessment is an essential component of the assessments of the CCSS, it was important to know how teachers used formative assessment data to prepare students to meet these standards and lower the achievement gap. In this local elementary school, some formative assessment strategies that provide feedback to the learner were not used routinely. District collaborations on formative assessment had unveiled the difficulty in bringing formative feedback to routine use. An achievement gap of standardized test scores between this school and schools with similar populations had occurred.

Evidence of the Problem From the Professional Literature

Formative assessment can provide useful feedback to teachers. Research specified the three important components of formative assessment are useful purpose, information, and the fine–tuning of lessons (Wolf, 2011). Educators include formative assessment into day–to–day lessons by planning intervals for students to rehearse new skills or to exhibit their awareness of an idea or practice used in class. Whereas summative assessments are used primarily by the teacher to determine student weaknesses, formative assessments provide feedback to both the student and teacher to be applied immediately and in the future (Black & Wiliam, 1998; Popham, 2008; Wolf, 2011).

Formative assessment is more collaborative, allowing students to check their own knowledge before receiving the results of an exam (Black & Wiliam, 2009). Formative assessment also provides students several occasions to either demonstrate grasping the content or demonstrate past performance on a standardized or written test centered on their capabilities. The instantaneous feedback these strategies deliver permits both the instructor and the student to regulate learning to address the weaknesses of learners (Burns, 2011; Wolf, 2011). If used appropriately in making instructional decisions, formative assessments can improve student learning and performance on state assessments (Wilson & Barenthal, 2006).

Heritage (2011) stressed formative assessments come in diverse presentations. The system of formative assessment an educator uses should be carefully chosen and aligned with the lesson's objectives. It should be planned, methodical, and provide information that can be used by both the instructor and learner to improve growth

(Heritage, 2011; Shea, Murray, & Harlin, 2005). Therefore, formative assessment can include formal and informal observations, deliberations, examination of written work, plans for checking improvement, self–assessment actions, and peer–assessment undertakings (Wiliam, 2011; Heritage, 2011). In addition, technologies such as wikis (Joshi & Babacan, 2012), handheld devices (Bennett & Cunningham, 2009), online formative assessment programs (Takas, 2010), e–portfolios (McLaren, 2012), and blogs (Oloffsson, Lindburg, & Hauge, 2011) can aid teachers and students formatively. However, Daly, Pachler, Mor, and Mellar (2010) indicated that technologies do not, in themselves, foster formative results.

Researchers have studied formative assessment. However, a disconnection among teachers seemed to exist concerning the understanding of formative assessment and the practice of formative assessment use and analysis (Wilson & Barenthal, 2006). Yet, the most powerful single modification teachers can make to increase student achievement is to provide feedback (Hattie, 1992, p. 9). To be effective, this information must be descriptive and must guide the student through his or her next steps to improve learning (Hattie & Timperley, 2007; Wiliam, 2011). Feedback should also be specific, clear, and related to the standard (Black &William, 2009; Heritage, 2010; Song & Keller, 2001). Teachers can provide this information by providing thoughts, approaches, and exercises that students can adopt to master learning (Heritage, 2007). In addition, blogs providing peer feedback and exemplars can afford students with information to successfully improve learning (Arslan, 2014). However, Lu and Law (2012) found that peer feedback may be more beneficial to the evaluator than to those who are assessed.

Thus, the ways teachers used formative data to plan subsequent instruction were important in determining instructional coaching delivered to teachers. The perceptions and beliefs of teachers informed the intervention selected to address the teachers' needs. This professional development was designed to help teachers and students use formative data successfully to improve student learning and decrease achievement gaps.

Definitions

Feedback is information about how the learner is doing in his or her efforts to reach a goal (Wiggins, 2012).

Formative assessment is an intentional practice wherein strategies are used to provide feedback to the teacher to inform instruction and provide feedback to the student to improve learning (Popham, 2008).

Summative assessments are assessments that occur after learning is thought to have occurred to establish whether learning occurred (Stiggins, Arter, Chappuis, & Chappuis, 2007).

Significance

The findings of this study informed how curriculum leaders can help teachers better adjust instruction based on formative data to lower the achievement gap. This study showed how the formative assessment process is perceived within one particular school and provided valuable data that helped identify pedagogical strategies to implement formative assessment in this school. The results of this study identified trends in the school and areas in which the formative assessment process can be improved for these elementary classrooms. The study helped fill the gap between teachers' knowledge and

practice of formative assessment. The study helped progress the local discussion on how to bring formative assessment practice to routine use in this school's classrooms. The stakeholders of this study included school and district curriculum leaders, teachers, and students.

Guiding/Research Question

In this local elementary school, formative assessment strategies that provide feedback to the learner were not used routinely. District collaborations on formative assessment had unveiled the difficulty in bringing the practice of formative feedback to routine use. An achievement gap in standardized test scores between this school and schools with similar populations had occurred. Past research had indicated that by using formative data, teachers and students were able to better regulate teaching and learning.

Historically, teachers had been provided little or no direction in how to use the results to improve student learning. Past research had indicated that when teachers determine future lessons by using formative assessment data and providing feedback to the learner, student learning is improved. However, research had shown many teachers were not using formative assessment data to improve future instruction. Past research indicated a disconnection between how teachers use formative assessment and how well they understand formative assessment. In addition, there was a gap between research and the practice of formative assessment largely owing to the summative assessments of NCLB.

Aligned with the research problem and purpose, the following research question was posed: What are the perceptions of the elementary teachers at a southern, suburban

elementary school regarding the use of formative assessment strategies in the classroom to inform instruction? Subquestions included:

1. What experiences do elementary teachers have in providing feedback to students?

2. What experiences do elementary teachers have planning formative assessment strategies?

3. What experiences do elementary teachers have with implementing formative assessment strategies that help students improve performance on standardized tests?

4. What experiences do elementary teachers have in using technology to support formative assessment?

Review of the Literature

The following is a review of the literature on key ideas explored for this study. The literature on *Bloom's taxonomy*, *backward design theory,* and *differentiated learning theory* were reviewed and placed in the theoretical/conceptual framework section. A synthesis of literature follows addressing *use of feedback*, *format*, *formative assessment strategies, use of technology in formative assessment*, and *use of formative assessment data*.

Theoretical and Conceptual Framework

Bloom's taxonomy of high–level thinking. Bloom's (1956) taxonomy is a theoretical framework that helps educators gain insight into student capabilities and broaden the depth of student learning (Bloom, Engelhart, Fürst, Hiss, & Krathwohl,

1956). Bloom based his taxonomy on high–level thinking (Murphy, 2007). The taxonomy entails six graduated intensities of thinking. These levels include knowledge, comprehension, application, analysis, synthesis, and evaluation (Eber & Parker, 2007). Each of the echelons in the taxonomy denotes an important skill for students to become problem solvers (Murphy, 2007). Bloom considered evaluation the highest level because it contains elements of all of the other levels of thinking (Murphy, 2007). Teachers should script questions that coordinate with all levels of Bloom's taxonomy to use in formative assessment (Valcke, De Wever, Zhu, & Deed, 2009).

Anderson, Krathwohl, and Bloom (2001) presented a reconsideration of Bloom's taxonomy that was intended to assist teachers in employing standards–based curriculums. The revision incorporated two dimensions, concentrating on knowledge and cognitive processes. Together, these two processes describe what students are anticipated to gain knowledge of in school. This new taxonomy allows educators to link scholarship in all extents of curriculum. The two–dimensional outline differentiates between the sort of knowledge being attained and the type of cognitive process being employed. This framework will inform this study, because Bloom's revised taxonomy promotes the process of formative assessment.

Backward design theory. Wiggins and McTighe (1998) presented a system for schools that offers educators a methodical design of planning and teaching. In this plan, teachers decide the important concepts students need to know, comprehend, and use as a consequence of the teaching and learning. The planning starts with the desired outcomes in mind and concentrates on the importance of learning. The principal objective of this

strategy is transfer. In other words, the students' application of knowledge in real life context is the key outcome. Teachers align their teaching around standards and objectives that they want students to be able to master and apply to real life settings.

Backwards design theory is central to formative assessment practice. Teachers can promote and impact student learning positively through the result of learning goals becoming viable learning outcomes. They can use formative assessment and data analysis to offer instruction based on the identification of student weaknesses (Fisher, Grant, Frey, & Johnson, 2008). Formative assessment increasingly shapes students' metacognitive ability to use information and expertise and frames essential understanding (Childre, Sands, & Pope, 2009). This practice must be ongoing and diagnostic to prevent the practice from becoming summative in nature (Herman, Osmundson, Ayala, Schneider, & Timms, 2006). This framework has provided a substantial improve to the literature by describing a way for diagnostic practice.

Differentiated learning theory. Comparable with backward design planning, differentiated learning theory is a necessary scaffold in formative assessment. Differentiated learning emphasizes a learner's individual learning necessities to determine deliberate instruction and assessment to meet the learning needs (Tomlinson, 2008). By using ongoing formative assessment and then analyzing the data, teachers can adjust individual goals and make the most of students' strengths. Anderson (2007) advised that when differentiated instruction is used and appreciated, students take charge of their learning metacognitively through self–assessment. Furthermore, teachers are flexible and innovative when reacting to student strengths and weaknesses.

Search Strategies

This literature review assembles a body of research journal articles, professional writings, and collegial communication concerning formative assessment practices acquired through university library resources, online databases, books, and specialized discourse. Saturation of the literature occurred using the search topics of *formative assessment*, *feedback*, *professional development*, *formative assessment technology*, *assessment for learning*, *backward design planning*, *differentiated instruction*, and *Bloom's taxonomy*. Research focused on peer–reviewed literature predominantly within the past five years, with the exception of work contributing to the historical viewpoint that spanned the past 40 years. During the literature review process, studies and books suggested by colleagues, presenters at seminars and workshops, and experts added to information acquired via university media resources.

Synthesis of Literature

Using feedback. Feedback is a crucial aspect in improving the learning process. There are three features of feedback to aid in student performance. First, learners come to differentiate for themselves whether they are performing well or not (Li, 2009; Littleton, 2011). Second, more feedback helps students to take corrective action to develop and achieve an acceptable level of performance (Hino, 2006). Third, feedback serves as an indication of the progression of a student's writing skills and, therefore, helps teachers in identifying a student's weaknesses (Hino, 2006). Black and Wiliam (1998) pointed out that providing specific, descriptive feedback over judgmental feedback promotes motivation and conveys what students' strengths and weaknesses are. Elshirbini and

Elashri (2013) stated that direct teacher feedback improved students' writing performance. Feedback played a critical role during the writing process.

Student–centered formative assessment is individualized and requires students to take charge of their learning. This type of formative assessment is focused on learning and development. Andrade, Huff, and Brooke (2012) posited that student–centered assessment is encouraging, reflective, and empowering to students. Such an assessment approach fosters meaningful learning for students (Black & Wiliam, 1998; Popham, 2008). By reflecting on their learning, students assemble their understanding of the world (Ormrod, 2006; Solomon, 2009). The richest student learning and ownership happen when students see each other's work, make comparisons and connections, provide feedback, and ask the questions (Di Teodoro, Donders, Kemp–Davidson, Robertson, & Schuyler, 2011). This high–order thinking practice requires them to think for themselves and use metacognitive strategies to learn.

Studies have shown providing feedback to students by explaining student misconceptions leads to significant gains in learning (Poe, 2012; Popham, 2010). Teachers should plan instruction addressing common misconceptions to help strengthen the concept of the learning goal. Teachers can also use formative feedback relating students as allies as a strategy to build understanding and learning practice (Fluckiger, Vigil, Pasco, & Danielson, 2010). For example, peer assessment helps students receive feedback from each other, but also affords them the ability to learn as they assess a classmate. This feedback is meaningful, because they discover the information without being told the information. Conversely, Chueachot, Srisa–ard, and Srihamongkol (2013)

concluded feedback for primary school students should be given to improve performance after the learning unit. Using feedback is critical to the formative assessment process.

Formative assessment strategies. Formative assessment practice can enrich learning and promote a deeper development of core content (Clark, 2011; Madison–Harris & Muoneke, 2012).There are many strategies and devices to aid teachers in the practice of formative assessment. The use of checklists and rubrics help inspire learning and metacognition strategies (Burke, 2011; Wiliam, 2011). These checklists and rubrics help students regulate their learning and help teachers provide feedback connected to the learning goal. A teacher's ability to create such devices spotlights learning and helps learners take charge of their own learning (Wiliam, 2011). In addition, Valcke et al. (2009) suggested that Bloom's taxonomy is a successful scripting methodology for teachers to promote students' advanced level of personal responsibility for learning in relation to preparation, achieving precision, and monitoring which are fundamental ideals behind the use of rubrics.

Assessment becomes formative when the collected data is used to modify the lesson or give feedback to students to meet student requirements. Teachers should use answers to questions to make conclusions about instruction grounded on the needs of the student (Burns, 2011). Student weaknesses in math concepts or math procedures led teachers to modify their lessons to address either specific need. Burns (2010) indicated that teachers modify their instruction on the spot when students do not understand a concept. The data received through questioning helps the teacher regulate the learning process to assist teachers in modifying the direction of the lesson and providing

immediate feedback. In addition, Friesland (2010) found that teachers perceive their regulation of instruction, after formative assessments, increase student performance and improve student learning. However, Buck and Trauth–Nare (2009) found that classroom, multiple choice assignments, did not offer the educator a true picture of students' ideas. Therefore, this study indicates that the type of strategies a teacher uses during the lesson is critical in determining what the student weakness is and how to respond.

One process of formative assessment is a strategy called CARP: "collect, analyze, report data and plan instruction" (Shea et al., 2005, p. 3). Teachers do not always do all of the steps in the CARP strategy (Poe, 2012). Teachers need to collect the data and analyze it for strengths and weaknesses. Then, they should offer explanatory feedback to allow students to modify their actions. In addition, the teacher should modify the lesson based on the analysis of data. When instruction is informed by formative assessment, learning improves in the classroom.

When formative assessments are incorporated into regular classroom instruction, students are permitted to track their own growth towards meeting their learning goals (Defining Formative Assessment, 2009). Students take charge of their own learning and begin to understand how to improve their own learning. Fisher and Frey (2013) found that teachers should focus on formative assessment systems that rely on purpose–driven instruction with systems to collect student work and organize and analyze student errors. This intentional practice of formative assessment stems back to backward design theory in which teachers design instruction with the desired student outcome in mind.

Formative assessment research clearly describes the importance of formative assessment practices. Teachers should use formative assessment every day to guide learners to content mastery (Keeley, 2011; Lingo, Barton–Arwood, & Jolivette, 2011; Liu, 2013; Wormeli, 2007). Teachers should also use data to monitor student learning. The monitoring of student practice is a crucial part of the lesson planning, decision–making process (Hojnoski, Gischlar, & Missall, 2009). Gathering and analyzing student data is at the forefront of successful formative assessment, but can be difficult to implement. Capturing the frequency of discrete behaviors is often the easiest form of data collection, because teachers can denote the behavior on a checklist during observation (Alberto & Troutman, 2012). A data collection strategy that allows teachers to use data continuously for student progress and provides provisions that inspire a schoolwide, data culture is essential (Hamilton et al., 2009).

Black and Wiliam (1998) named the use of formative assessment skills as assessment for learning. Assessment for learning enables teachers and students to regulate instruction to promote student growth. Educators should focus on how the teacher regulates the learning, the feedback, the student–teacher collaboration, the use of descriptive feedback specific to the learner, and the student's involvement in the process (Black & Wiliam, 2009). Additionally, Love (2009) posited that educators should establish time for collaboration and analysis of data to improve practice and student learning. This study will focus on these processes when examining how teachers use formative assessment in their classrooms.

Use of technology in formative assessment. Several research studies show that technology can aid teachers and students formatively. The wiki afforded professionals the opportunity to publish practices and collaborate to improve their assessment practice (Joshi & Babacan, 2012). Bennett and Cunningham (2009) found that when used consistently, teachers perceive handheld devices useful in facilitating the collection of formative data. Additionally, Takas (2010) revealed that there was a significant difference in the students' mathematical performance for total student assessment and multiple–choice questions using the online formative assessment program after educator formative assessment training and data analysis within professional learning communities (PLCs). Peterson and Siadat (2009) found the use of recurrent, timed, selected–response quizzes with instant feedback exposes the intensity of understanding. McLaren (2012) showed e–portfolios can make a significant contribution in terms of supporting learning, teaching and assessment. Olofsson, Lindburg, and Hauge (2011) found blog exercises turned into an informal formative peer assessment provided a reflective technology–enhanced learning design.

Some research studies show technology is not the reason for positive formative assessment results. Daly et al. (2010) indicated technologies do not in themselves foster formative results. Peers must use both social and technological resources to learn how to manage their learning. In their study, Beebe, Vonervell, and Boboc (2010) found online learning demands greater discipline from the educator and the pupil in the formative assessment process. Successful online experiences may be aligned to the discipline of the instructor spent in giving feedback to students.

Use of formative assessment data. Formative assessment has the possibility to help both teachers and students regulate teaching and learning (Fisher & Frey, 2007). The challenge, however, is that historically teachers have been provided little or no direction in how to use the results of formative assessment to positively improve student learning (Tienken & Wilson, 2001). Curriculum specialists should provide professional development and time that allows teachers the resources they need to plan for practice of formative assessment. Research has indicated that formative assessments where teachers determine future lessons by considering classroom observations, interactions with students, conversations with students, and providing feedback to the learner, may be one way in which they can effectively improve student learning positively (Black & Wiliam, 1998; Popham, 2008).

However, Edman et al. (2010) found that many teachers are not utilizing formative assessment data to inform future instruction. In a survey given by Edman et al., teachers described that they know that formative assessment is an important practice, but the implementation of the practice is sometimes difficult. Additionally, Volante and Beckett (2011) found that many teachers conveyed tensions in using approaches such as peer assessment and self–assessment. Teachers described that students' lack of objectivity and mastery of the content was at the center of this tension. Furthermore, Gates (2008) revealed no statistically significant differences between teachers by grade level, content area, or years of teaching experience in the use, preparedness, and confidence of assessment techniques.

Dorn (2010) accounted a gap between research and the application of formative assessment. Although many teachers believe they use formative assessment, the application and the definition of formative assessment are not defined consistently. In addition, Dorn described that little attention has been given to the implementation of structured formative assessment and its purpose. Dorn suggested that many principals use formative assessment data inappropriately to formulate decisions about student retention and teacher evaluation. On the other hand, Hollingworth (2012) posited that the principal can serve as an agent for constructing teacher awareness and enactment of formative assessment practice. Further, the achievement of the adjustments relied on associations of educators. The principal should model the usage of formative assessment data.

Public standardized test data indicated that students in the local setting lagged behind students from similar settings. The utilization of formative assessment strategies that is focused on learning and growth and improves future instruction can improve student achievement significantly to lower this achievement gap. This study attended to the use of formative assessment strategies in the classroom to lower the achievement gap and positively improve student learning.

Implications

Locally, the implications for social change were decreasing or eliminating the achievement gap in standardized test scores. Teachers and students may also adjust practices to increase learning based on feedback received. Students may begin to determine how they achieve best, regulate their learning, and use the feedback to be successful. Possibly this study could provide strategies that provide better feedback to

students and teachers to positively improve student learning. This study could affect all elementary students within the district studied, if the prescribed professional development is shared with them. The results could improve students of other grade levels as well. The study's implications for social change for students and teachers across our state and country could illuminate the need for better feedback and use of formative data to inform instruction and student learning. Studies involving teachers of other age–groups and specific content areas may be a result of this study.

Summary

This research examined the way elementary teachers at one elementary school in a suburban district used formative assessment to improve future instruction and learning. The district personnel indicated that a renewed focus on formative assessment was a district goal. A review of literature indicated that teachers should plan daily formative assessment with the outcome in mind to lead students to content mastery and ensure greater gains in learning. Collecting data, providing descriptive feedback, and monitoring student practice are critical steps in the formative assessment process. Technology can aid teachers in the formative assessment process, but does not in itself foster formative results. While many teachers utilized formative assessment strategies, there was a gap in practice in using the data to inform instruction. Section two will address the methodology of the study. The research design, sampling procedures, data collection and analysis procedures, and efforts to ensure validity and ethical practice will be discussed.

Section 2: Methodology

Introduction

I designed this study to examine how formative assessment strategies improve instruction. In Section 2, I discuss my case study design and its components. In addition, the procedures I used for data collection and data analysis are explained in detail in this section. Next, I expose a synthesis of thematic findings and overarching findings. Finally, I propose a professional development project as a means to address the findings of the study.

Research Design and Approach

I used a qualitative case study approach to answer the research questions offered in this study (Bogdan & Biklen, 2007; Creswell, 2012). My case study design aligned with the problem and the research question in that I tried to explore the teachers' experiences of using formative assessment. The case study design is a comprehensive investigation of a bounded system that contains a rich depiction from the participant's viewpoint (Lodico, Spaulding, &Voegtle, 2010; Merriam, 2009). I used an instrumental case study (Stake, 2005) to seek a thorough description of the formative assessment techniques and application in the research question. In an instrumental case study, the case itself is not as significant as understanding the particular phenomenon (Stake, 2005). In instrumental case study research, the center of the study is more likely to be known beforehand and planned around reputable theory or methods (Stake, 2005). Even though this elementary school played a supportive role, I used my study to facilitate a rich

description and understanding of the disconnection between formative assessment knowledge and practice. The case study approach is also inductive and permitted me to explore, through interviewing, formative assessment from the educator's outlook.

The case study design was more effective than other qualitative designs. For example, ethnography was not appropriate because I did not focus on the cultural characteristics of the participants in the study. Researchers use phenomenological studies to understand the underlying structure of the study, but this did not align with the needs of understanding the teachers' perceptions. The case study design aligned with this study because I sought to understand the teachers' formative assessment knowledge and practices from their own perspective.

Participants

Population

I focused on a population of 40 teachers in one elementary school. Of the 40 teachers in the population, 77.3% had advanced degrees and 84.2% had returned from the preceding school year (administrator, personal communication, October 16, 2014). The principal had been at the school for 13 years and had a doctor of education (district administrator, personal communication, October 16, 2014). The school is a highly diverse school with a student population that is majority African–American (district administrator, personal communication, September 27, 2013). The teachers were provided time to collaborate on formative assessment and its implications. The school

was situated in a residential, southern school district with almost 26,000 students

registered in 40 schools comprising 19 elementary schools.

Sampling Strategy and Sample Size

Teachers were purposefully sampled with consideration to race, gender, teaching

experience, grade level, and content areas taught. When purposefully sampling,

participants are selected for a particular characteristic and their ability to provide rich

information (Patton, 2002). The participants in this study were selected because of their

affiliation with the school studied. The teachers selected represented teachers from all

grade levels, exploratory classrooms, and special education classrooms.

A sample of 10 teachers selected for this study is described in Table 1.

Table 1

Characteristics of Participants in Study

Sex	
Male	1
Female	9
Years of teaching experience	
1 year	3
2–5 years	3
6–10 years	1
>10 years	3
Level of education	
Bachelor's	4
Master's	6
Grade taught	
Kindergarten	1
First	1
Second	1
Third	1
Fourth	1
Fifth	1
All	4

Holosko and Thyer (2011) defined *saturation* as the phase in data collection where all new data is duplicated and the investigator is totally submerged in the data. Redundancy was determined in this study when no new material transpired from data collection (Lincoln & Guba, 1985). By using a sample of 10 participants in this study, I realized data saturation and began to recognize duplication of ideas in the data.

The participants were teachers employed by a school district in which I had no supervisory role. The association between the participants and me was confidential, and all information was coded to afford confidentiality. Bogdan and Biklen (2007) indicated using discretion allows the participants to respond more generously. In addition, a letter of informed consent detailed the participants could exit the study, if they decided to, at any phase. As an employee of this district, I separated partialities by reflecting on potential prejudice and revealing bias in the account.

I took measures to certify minimal risk to participants. The participants chose the location of the interview site to maximize confidentiality. In addition, the location was a quiet place with minimal distraction that was opportune for the participant. I ensured participant anonymity in the data and findings of the study by using identifiers such as Participant 1, and Participant 2.When dealing with participants, I ensured perceived coercion to participate was minimized. No material rewards were given for participation in the study.

Data Collection Methods and Instruments

The data gathered in this study were responses to one–on–one interview queries unfolding the formative assessment practices. The questions stemmed from the guiding research questions in this study. I used probing questions to gain further information and clarify ideas. I gained authorization from the participants to audio record the discussions to ensure a precise recording of what was stated. At conclusion of data collection, the data included transcriptions of 10 interviews and my notes of observations I made during the discussions. Data were organized in a three–column format. The data were collected during a time convenient for the participants to interview. Most participants were interviewed after school or on a teacher workday. I provided an option of location to ensure confidentiality and convenience. The interviews took place in a quiet, comfortable environment free of distractions.

Interview Protocol

The interview questions used were open and inductive in nature. The open–ended questions were not leading and did not confine the explanations of the participants (Creswell, 2012). I followed with probing questions used for embellishment and interpretation. Further, I employed a strategy of active listening and reserving judgment (Creswell, 2012). The queries used encouraged the participants to convey their viewpoint with detailed accounts on the topic (Creswell, 2012). I wrote the interview protocol questions and aligned them with the main topics addressed in the literature review including Bloom's taxonomy, backward design theory, differentiated learning theory,

using feedback, formative assessment strategies and practice, and technology use with

formative assessment (See Appendix B). I tried to remain open and unbiased with those

interviewed (Bogdan & Biklen, 2007).

Process for Data Collection

At the opening of the interview, I explained the purpose of the conversation and

asked for agreement from the interviewee to audiotape the discussion, explaining the

reason for audiotaping was to record precisely what was said. Throughout the interview, I

noted ideas and observations made. A procedure described in the next section permitted

me to bring together the data collected from each participant and was used in

documentation of developing understandings. Following each interview, I used a research

log to reflect about the interview site, participant interviewed, and observations made

during and after the interview. My observations made included nonverbal feedback

relayed by the participant. I also completed the notes on each conversation directly

following the interview to help heighten the description. The interviews were transcribed

by me for future examination.

Systems for Keeping Track of Data and Emerging Understanding

I kept track of emerging understandings through the use of this protocol and a

reflection log. I used a three–column format of note taking during the interview. I used

the first column to record the question. I used the second column for the transcribing the

participants' responses. Finally, I used the third column to record observations about

gestures, connections I made during the interview, and the coding of responses. This allowed me to record notes about observations, and connections made during the interview. I typed the transcriptions of the interviews from the audiotapes onto the three–column interview documents into the second column. I typed the comments into the document and transferred reflections from the research log to the end of each interview. This structure enabled me to code the data later by highlighting and using abbreviations. I sent the transcriptions to the participants and asked them to perform member checks. I detailed the reason for member checking and the approximate amount of time it would take to complete the task in the letter of consent.

Procedures for Gaining Access to Participants

The institutional review board (IRB) application was submitted to Walden University (Walden University, n.d.) and approved for research (IRB approval # 09–19–14–0321827). I received permission to perform the study from the assistant principal over research and the district review board. Letters of support were acquired from the district and school where the data were collected. Once IRB approval was obtained, letters of informed consent were sent to teachers inviting them to volunteer to participate in the study, detailing the requirements of being a participant and member checking the transcription for accuracy. The letter of consent clarified the study and its potential risks. I read the interview protocol to participants, detailing the potential risks and description of the study and clarifying for participants as needed. All participants signed the letters of consent.

Role of the Researcher

As a curriculum specialist in a middle school in the district and as a former math teacher in a neighboring district, I did not have a supervisory role with the participants in this study. This relationship helped maintain the integrity of the data collection. A reflection of my experiences with formative assessment revealed I felt formative assessment strategies were prevalent in the district and professional development had been delivered to teachers in the district. Although no bias was noted prior to the study, I noted bias as the interview process ensued. My bias included feelings of formative assessment being more prevalent in the core area classrooms. My bias became apparent during an interview with a non–classroom teacher. This reflection helped me minimize bias as more interview data about formative assessment strategies were being collected from teachers.

<div align="center">

Data Analysis

</div>

Transcripts

Data analysis began as the interviews were taking place with the denotation of explanations of the location and developing ideas in the second column of the protocol. I composed a rich depiction of the surroundings and teachers in the study. Following each discussion, I placed the transcript, observations, and codes in three columns as Creswell (2012) advocated. The transcription process entailed my listening to participants' responses on the audiotapes several times and transcribing the interview responses into the second column of the protocol. I gave participant identifiers such as Participant 1 and

transcripts were labeled by this identifier to protect anonymity. Negative feelings, gestures and laughing were denoted in the observation column of the transcription. The transcriptions were set aside for a few days to allow for reflection. This practice allowed me to make new observations about the data as the coding took place.

Coding and Theming Strategies

I used codes predetermined by categories suggested by the literature review. These codes included backward design theory planning, higher–order questioning, Chromebooks, use of checklists, use of rubrics, differentiated formative assessment, formative assessment strategy, feedback, small groups, goal setting, reteaching, pretest used, technology used, mention of professional development, negative feelings, and limited awareness or knowledge. I created a list of codes to use during the data analysis and grouped these codes in categories. These categories included formative assessment strategies and use, feedback, standardized testing usage, and technology. As the coding took place several emerging themes arose which were categorized as emerging themes. Each category was assigned a color and I highlighted the data by category and then labeled the data by appropriate code. Some of the data aligned with multiple codes and were given multiple codes. I manually color–coded the transcript and matched the codes on hard copies of the transcriptions.

I used levels of codes by placing codes in categories. Creswell (2012) advised researchers tier codes in ranks relative to each other. The codes supported proposed research questions and the formative assessment experiences. These codes served as

ordinary themes. These were themes I anticipated to be in the information based on the literature review. I then pinpointed any discrepant cases which seem to differ from the primary codes or themes in the data. Finally, I evaluated the data within each category and then across categories to determine overarching themes.

Procedures to Assure Accuracy and Credibility of Findings

Numerous strategies were used to establish accuracy and credibility. First, Creswell (2012) recommended investigators use member checks to determine the credibility of conclusions. Thus, I asked the interviewees to check the transcriptions to confirm accuracy of transcription. In addition, the findings were used for peer–review for ensuring credibility of this study (Shenton, 2004). In addition, the findings were reviewed by members of my doctoral committee to ensure credibility of this study (Shenton, 2004). Each of the reviewers has their doctoral degree in a field of education and offered their diverse perceptions and educational expertise as related to my study. My doctoral committee chair has her PhD in educational research and the second member of my committee has her EdD degree in curriculum and instruction. Finally, my university research reviewer has his PhD in information science and learning technology. In addition, members of the IRB reviewed my research study proposal and interview questions and the chief academic officer reviewed the capstone before it was published.

In addition, I confirmed saturation of data by questioning 10 teachers in the school and considering redundancy of themes (Lincoln & Guba, 1985). I included a wide range of participants from the school, providing a rich description of perceptions

(Shenton, 2004). As previously mentioned, teachers from kindergarten through fifth grade, a special education teacher, music teacher and a physical education teacher were included in the sample. In addition, the sampling criteria included diversity in race, gender, education, and experience. Participants were also encouraged to be frank and told there were no right answers to questions (Shenton, 2004). Questions asked were open–ended and directed at discovering the participants' experiences with formative assessment (Creswell, 2012; Shenton, 2004).

To ensure transferability of research findings, I sought to provide a rich description of the school and of formative assessment to allow readers the capability of determining if the study is useful to their situation (Lincoln & Guba, 1985; Merriam, 2009). I also endeavored to show similarity, dissimilarity, redundancy and variety within the transcriptions to gain better understanding of the wider group (Stake, 2005). I tried to be objective and disclose any bias (Patton, 1990). Finally, I addressed dependability by reporting the processes within the study in detail and providing a reflective summary, to enable a subsequent researcher to duplicate the work and trace the decisions made during the study (Shenton, 2004).

I reported discrepant cases in the data analysis results. Discrepant cases are those not similar to other data. By searching for discrepant data, it decreased the possibility of my clinging to an initial hunch and failing to examine counter evidence.

Data Analysis Results

A sample transcript of an interview is available in Appendix C. The thematic categories summarized in Table 2 emerged from the participants' common responses to the interview questions aligned to the research questions. Transcripts were sent to participants for member checking. All transcripts were found to be accurate. In addition, the findings were reviewed by members of my doctoral committee to ensure credibility of this study (Shenton, 2004). Each of the reviewers has a doctoral degree in a field of education and offered their unique perceptions and educational expertise as related to tenets of my study. My doctoral committee chair has a PhD in educational research, while the second member of my committee has an EdD degree in curriculum and instruction. Finally, my university research reviewer has a PhD in information science and learning technology. In addition, IRB members reviewed my research study proposal. The chief academic officer reviewed the capstone before it was published.

The inductively developed thematic categories for this study are described in Table 2.

Table 2

Inductively Developed Thematic Categories

Thematic category	Summary of findings
Experiences of elementary teachers providing feedback to students (RQ1)	
Feedback strategies	All participants felt descriptive feedback improved student growth compared to evaluative feedback.
Use of checklists/rubrics	Use of checklists and rubrics was confined to teacher use or ineffectively used by students.
Experiences of elementary teachers planning formative assessment strategies (RQ2)	
Differentiated formative assessment	AVID strategies and goal setting use was limited.
Backward design theory	90% of participants did not understand the concept of backward design theory planning.
Bloom's taxonomy	One half of the participants indicated higher–order questions were unattainable for some students.
Small group composition	One half of participants use formative data to determine small groups.
Experiences of elementary teachers implementing formative assessment strategies that help students improve performance on standardized tests (RQ3)	
Reteaching	Standardized test performance was not the primary reason for reteaching a concept.
Experiences of elementary teachers using technology to support formative assessment (RQ4)	
Classroom technology	All participants indicated use of technology in the classroom in a variety of formats.

Note. AVID = Advancement Via Individual Determination.

Experiences of Elementary Teachers Providing Feedback to Students (RQ1)

Responses for the interview questions related to the first research question that targeted the experiences elementary teachers have in providing feedback to students revealed most teachers felt they were constantly giving feedback. Three major themes were identified, feedback strategies, use of checklist, and use of rubrics and are explained as part of this thematic category.

Feedback strategies. When probed about the types of feedback given to students, many participants shared they feel feedback that praises the student is beneficial to boosting student morale. One instance of this finding is when Participant 8 revealed:

I guess it's good for morale when you tell a group of them that they did a

good job or proud of you, way to go, but it can't replace how helpful it is

to tell them what it is they are doing right. I think it's a combination of

both.

Participant 10 specified, "I think all teachers probably have said good job or awesome to students. I think it motivates those students and others to try to do better."

Even though many participants supported the use of praise, all participants indicated descriptive feedback allows students to grow academically was beneficial to the student. Participant 2 shared one example of descriptive feedback: "Hey, I noticed that you're making an inference about this character trait. I would love to see you include a quote from the book to support that." In addition, Participants 4, 7, and 9 suggested they had received professional development on giving feedback tied to the standard. Participant 9 went on to state:

With descriptive feedback, well this year, we've been getting some
professional development on providing feedback that's tied to the
standard. And so we've been working on providing feedback that specific,
timely, and measurable and I can't remember what the other thing was.

Student–peer feedback practices. Eighty percent of the participants indicated
they used student–peer feedback in their practice, but all stated they were not satisfied
with their practice. A variety of methods were revealed including the use of checklists
and rubrics, two pluses and a wish strategy, using Google Drive to give comments to
peers on writing, critiquing a videotape of a peer's skill in physical education using a
checklist of cues, using think–pair–share to help a peer come to correct understanding,
and using whiteboards to help a peer with understanding. Participant 9 indicated an
extensive use of student–peer feedback strategies:

Well, with peer feedback I use that checklist that I talked about with peer
feedback as well. So, the students would use that checklist to assess
themselves and then they ask their partner or a friend to look over and
assess their information and they're usually more even tougher on them
that I would be. I've also done something called think–pair–share in the
class. So that's something where they share their understanding about
something and they help each other come to the, what they think is the
right understanding and then they share with the class. That's about all the
peer feedback that we do unless they are working together as pairs. That
reminds me, when I do the activity with the white boards, I'll have one

person do the writing and the other person do the talking through the

problem and so they kinda have to help each other assess each other.

Besides this extensive use of these strategies, three other participants indicated

they had used checklists with students to monitor behavior or learning. One other

participant explained how she had students give peer feedback using Google

Documents.

Two participants had revealed they had not used student–peer assessment due to

inexperience or lack of maturity within their classrooms. Both of these participants

indicated they were not comfortable allowing students to use the strategy of student–peer

feedback, because they felt the strategy would not be productive or a positive learning

experience. Participant 1 stated:

> No, I have not written those lovely rules and um, procedures for having
>
> them grade each other's work. We're still building our community. I've
>
> got some people that are, um, learning to say what the right thing is and
>
> not say anything at all, so I am not (chuckles) too comfortable with peer
>
> feedback just yet.

In addition, two participants revealed inexperience with student–peer feedback. For

example, Participant 6 revealed:

> I know going back to that Native American regions rubric, I was actually
>
> given that, and part of that was for peer feedback that we just honestly we
>
> never got to that part. And we're still trying to learn how to complete

projects at this point in the year. That is something that I think I definitely

want to focus on, but I don't have much experience with it right now.

Another participant indicated she was waiting to use the strategy until the community of

learners was more positive. She indicated she felt she needed to place more trust in her

students and use the strategy:

> And even when you put kids with pairs that are more similar to one
>
> another, I guess I was scared of what would happen, but I should trust
>
> them more. But I am not doing a good job of peer feedback in reading and
>
> I don't see that happening in the class for a while, until our community is
>
> stronger.

> Ninety percent of participants were unsure of how to strengthen the practice of

student–peer assessment. These participants did not indicate they provide examples of

appropriate student–peer feedback, provide rules for giving student–peer feedback, nor

provide activities where students could role play giving appropriate feedback. Participant

7 was the only participant to mention using a role–playing strategy to teach students how

to give appropriate student–peer feedback stating:

> I guess if the students are doing like peer editing in their writing, giving
>
> author's chair, if they are doing buddy reading. Anytime that they are
>
> having conversations like helping provide them examples of like how to
>
> interact with one another, like what does appropriate feedback look like,
>
> and modeling it for them in role–playing a little bit, you know, having
>
> them try it out themselves.

Although no other mention of intentional instruction of students in giving student–peer feedback, Participant 3 indicated her students are good at helping each other socially stating, "…, so for me like a lot of my classes revolve around centers, because they can help each other socially in centers." Additionally, Participant 2 indicated she had heard of the use of interactive checklists for self–assessment and student–peer feedback, but admitted she had not used them with her students. Moreover, Participant 9 mentioned she had used checklists with her students, but indicated they tended to rush through them without giving the criteria in them much thought.

Self–assessment feedback. The topic of self–assessment feedback was also probed by the researcher. Some of the participants indicated they used it to help students behaviorally. In support of this finding, Participant 3 specified:

The only checklists that I've provided for students to do were probably behavior checklists and they're only my severe behaviors. I am certified special needs, so a lot of my behavior checklists were more as if like for holding themselves accountable for their behavior or as a checklist of what's coming next in the day so they know what to expect. But as for academic checklists, they don't do academic checklists.

In addition, one participant indicated she used checklists to guide the discussion about behavioral plan for improvement with the student. As sustenance of this finding, Participant 5 indicated:

Self–assessment, also for my position is really good for kids who are working on specific behaviors to talk about, because also use your

behavior checklist. And so, you know, if you have your behavior checklist, then it may have a column for your assessment and then a column for the teachers assessment. And so that's really good, because I think one of the steps towards improving behavior is recognizing when you are not doing the right thing. And so when we have it where the teacher and the student are rating the child's attention or whatever at the same rate then we can make a plan, then the child conferences to make a plan to improve it, if it needs to be improved.

One participant, Participant 8, indicated he had not done self–assessment with his students as ". . . at this point in the school year, I don't know if I have done that self–assessment. I don't know if I have done self–assessment with my students yet." Conversely, Participant 9 indicated she had used numerous types of self–assessment strategies including thumbs up, 3–2–1, exit slips, writing, checklists, and rubrics. Even though a school administrator had indicated the school was becoming an Advancement via Individual Determination (AVID) school, very few AVID self–assessment strategies were mentioned by participants.

Use of checklists. When asked how they differentiate formative assessment strategies, all participants indicated they had experience using checklists. However, the level of experience varied from participant to participant. Participants 1 and 4 revealed none or very limited use of checklists. Additionally, Participant 2, 3, 5 and 6 indicated they had their students use checklists for behavior improvement. Interestingly, Participant 2 and 3 used checklists as a teacher to determine student mastery, but did not have their

students using checklists. Conversely, Participant 6 shared she had students using a checklist to grade a Webquest on explorers.

Participants 5, 7, 8, 9 and 10 disclosed various use of checklists for student self–assessment. Participants 5, 7 and 9 said they had students use checklists for writing. In addition, Participant 7 also shared she had students use math checklists as students were demonstrating a particular skill in math. Additionally, Participant 8 explained he had students use a checklist once for students to examine a peer's execution of skill and give feedback. Moreover, Participant 9 revealed she liked to have students use checklists to self–assess as they go through the inquiry process, write about a math lesson, or go complete an algorithm in math. Finally, Participant 10 also revealed she had given students checklists for self–assessments on projects. However, both Participants 9 and 10 clarified sometimes their students did not use checklists effectively. Participant 9 elucidated: "I like using checklist, but I do have a problem with some students racing through the checklist and not really giving it much thought." Participant 10 explained her belief using the checklist is a useful metacognitive strategy, and her struggle with managing her students to utilize it effectively when she mentioned:

> When they are able to evaluate their own work, they recognize more what
> needs to change as long as they are doing it effectively. Sometimes when I
> give them a checklist, they just check off the items without really thinking.

One of the participants discussed the necessity of having grades for the gradebook the practice of using checklists makes difficult. On the other hand, Participant 7 lamented her

struggle with grading, "I think it's harder to do checklists when you're having to constantly search for things to grade."

Use of rubrics. I also used probing questions to reveal the participants use of rubrics. The use of rubrics was very limited and inconsistent. Participant 1 revealed she had her students use a rubric when working on a text–features book for self–assessment. In addition, Participant 2 shared she loved rubrics to maintain consistence and fairness in grading stating:

> I love rubrics, because you know when you read you know 45 papers, you
>
> know it might be this one I am reading at the beginning of the morning
>
> and this one I am reading at the end of the morning.

She also shared she liked having her students create rubrics to be used. However, she was the only one to discuss using student–created rubrics. Participants 3 and 4 stated they did not use rubrics instructionally, but did use them for determining grades for report cards. Moreover, Participant 4 stated she currently didn't use rubrics, but used them last year when she had students work on projects. Similarly, Participant 6 also stated she once gave her students a rubric as she assigned projects. In addition, Participant 7 used exemplars in addition to rubrics. No other participant indicated using exemplars as feedback for students.

She stated:

> I've done rubrics for lots of different things that started out using rubrics
>
> like only for projects. But then as I got into more of the writing workshop
>
> style of doing things, I might give them a writing workshop rubric.

Something where this body of work looks like this and then the next body

work looks like this. You know like a visual rubric for younger children

and then maybe like a more verbal and written rubric for older children.

On the other hand, Participants 8, 9, and 10 indicated they did not use rubrics very

often. Participant 8 shared he had only used rubrics with students during student teaching.

Finally, Participant 9 shared she had used them while teaching writing and in keeping

parents informed of assignment requirements, but preferred using checklists for math

saying:

I have use rubrics in the past. I really don't like them so much for math,

because some of the students don't care to be all the way over in the fourth

column on the rubric. They are satisfied with just being in the center. And

that's not really the expectation I have for them. I want them to aspire to

be fours, so I like using the checklist better.

Only one participant discussed difficulty in creating an effective rubric.

Participant 10 described the difficulty of writing effective rubrics stating:

As long as the rubric gives the student a realistic goal for achieving the

best grade possible. The highest grade should not be hard to get, but

should require work and critical thinking to achieve it and the rubric

should be able to set that up. I haven't really done them very well.

Although Participant 10 was the only participant to mention the difficulty in

writing effective rubrics, the limited practice with utilizing rubrics by the other

participants suggests these teachers would benefit from professional development on creating and using effective rubrics.

Experiences of Elementary Teachers Planning Formative Assessment Strategies (RQ2)

Responses for the interview questions related to the second research question explored the experiences elementary teachers have planning formative assessment strategies, revealed all participants indicating they use formative assessment strategies. A wide variety of formative assessment strategies were detailed by participants. These strategies included questioning, teacher observation, and the use of multiple–choice computer programs including Kahoot, Socrative, IXL, ABC Mouse, Raz–Kids, Moby Max, Big Universe, Aims Web Suite, and Study Island. In addition, participants revealed interactive notebooks, student response whiteboards, anchor charts, think–pair–share, thumbs up, checklists, rubrics, anecdotal notes, exit slips, iPods, iPad apps, and Pavlet. Very few AVID formative assessment strategies were shared by participants as strategies they used in the classroom.

Backward design theory planning. When probed about their use of backward design theory planning, most participants did not fully understand that concept. Six participants stated they did not know what backward design theory planning was and asked the researcher to explain the theory of backward design. Uncertain of their answer, three of the four participants did respond without asking for the meaning of backward design theory asked me if their response was correct or were not sure if they understood. For example, Participant 1 shared:

> I feel like I have tried to do backwards design and I can't recall. I know that sounds really stupid, but I can't recall if I have ever done it intentionally. So I feel like I have, but intentionally no.

Similarly, Participant 6 shared: "I have no idea what that is." In addition, Participant 9 seemed to indicate backward design theory was teaching to a test and the instructor could not deviate from the test even if the intent was to provide scaffolding:

> I do, well, the curriculum and the instruction is driven through the set of standards that the state gives us to teach. So I look at those standards, and I align my instruction to those standards. When I first started teaching I would teach and then I would design a test to match that instruction. But now I have some tests already made and so I tried to match the instruction to the tests. But sometimes you have to sway from the test, because you have to provide scaffolding. Because some students don't have the necessary foundational skills.

Even the participant that indicated understanding of the theory, Participant 7, revealed she had very limited experience in using the strategy as she shared:

> I wouldn't say I have a lot of formal experience with backward design planning. I have always, not always, but as the years have gone by, have gotten better at thinking about the end result that I'm looking for a student to have and then planning my instruction to try to get to that end result. I guess. But not a lot of formal experience with that.

This lack of experience or knowledge of backward design theory planning indicates professional development on backward design theory planning would be useful to this faculty.

Goal–setting practices. Goal–setting practices were shared by four of the 10 participants. The participants teaching grades kindergarten, first and second as well as the special education teacher shared they had used goal–setting practices with their students. Participant 2 shared: "I think that with every child we have a goal that we're really focusing on in reading or math or sometimes even science." One participant, Participant 3, indicated she used charts and graphs to help her students monitor their progress with their learning:

Part of some of our data notebooks are graphs and charts and things like that. So if you set a goal on a chart for a child, say um, uppercase letters, because you have 16 uppercase letters how many more do you need before we reach our goal?

 In addition, Participant 5 spoke about using goals and assessment to focus students on their learning by sharing students ". . . have a goal that we have set that they're working through all the stories with that specific goal and that I do a cold timing." Finally, Participant 10 discussed using goals to plan future instruction by stating: "We had goals that they needed to reach at certain time periods and then we planned the lessons after we figured out the guidelines for their progress and success." The limited use of goal–setting strategies suggests professional development is needed to utilize these strategies school–wide.

Bloom's taxonomy use. All participants indicated they had used Bloom's taxonomy to intentionally generate high–level questions during lesson planning and spontaneously during lesson delivery. For example, Participant 7 offered:

> I would say it was like a really focused lesson, a shared reading, or
> interactive reading, something like that, that I would probably plan like
> two or three intentional questions and the rest of them would kinda be spur
> of the moment kinda based on what the kids were telling me.

However, Participant 8 shared using higher–order thinking questions at the end of the lesson or when giving a test:

> Is that the hierarchy of questions? I don't know if I have much experience
> making questions that. Most of it will be checking for understanding when
> presenting a test and then at the end, the questions I asked are usually
> strategy–based, like what worked in the game and what did you find was
> helpful to be successful in accomplishing the task.

In addition, 90% of the participants mentioned experience with some type of professional development or college coursework involving Bloom's taxonomy. All of the participants also reported they had practice writing questions using Bloom's taxonomy. For example, Participant 2 related:

> In college, we did a lot, or I guess grad school. We did a lot of that in my
> social studies class. My social studies teacher loved Bloom's, the revised
> Bloom's, the one skill versus concept, that thing. In this district, it's more

like higher–order text dependent. But, honestly, if you are using the higher

level Bloom's that is a higher–order text question.

Similarly, Participant 4 revealed: "Well, I mean that's been around since I was in

college." Likewise, Participant 9 shared she "… actually, had professional development

on writing questions. When you first start, it's kind of hard to develop the questions that

address the higher levels of Bloom's." Conversely, Participant 8 seemed unsure of his

using Bloom's taxonomy to develop questions: "Is that the hierarchy of questions? I

don't know if I have much experience making questions that." However, later in the

interview he recalled, "I plan for probably two or three of those types of questions."

     A theme of using Bloom's taxonomy to increase the rigor of instruction emerged

in the data. The participants were split on their perception of the benefit of using Bloom's

taxonomy with all students. Participants 7, 9, and 10 shared a perception of importance in

using Bloom's taxonomy to allow all students to develop thinking skills. On the other

hand, five of the other participants revealed they felt some of the higher–order questions

were unattainable for their students. As an example, Participant 5 stated:

> I have used Bloom's taxonomy, not as much in the [this class], because usually
>
> for example, if I'm teaching reading I'm looking to find the main idea to help
>
> children make inferences, but in terms of the higher levels of Bloom' s in
>
> generalization that kind of thing I don't really go there.

In line with this theme of answering, Participant 2 indicated she felt her students were

incapable of successfully responding to higher–order questions:

Whereas [my class] last year, we could do more of that independently,

here it's more a group effort and providing that structure for them to build

on and finding success rather than creating something that is unattainable

for them right now.

Finally, Participant 4 revealed she knew which students would be more successful in answering the higher–order questions and targeted those students for these types of questions. She stated, "I kind of know where their level is, and so it's easy to, to ask the ones that are more prone to the higher–level questions."

The participant's perception of her students' lack of ability to answer to the higher–order questions seems to indicate bias when choosing students for high–order thinking questions.

Differentiated formative assessment. Ninety percent of the participants revealed they differentiated their formative assessment. One of the types of formative assessments indicated was the use of checklists to provide students with feedback on their performance. In addition, Participant 6 suggested her formative assessment was differentiated, because her classes were determined by ability level. With regard to this scheduling of classes she states:

I guess that goes back to differentiating, too between my blocks, because I

know like I just gave them a weather test. And for one class I did fill in the

blank questions and had a word bank, but other class I just didn't give

them a word bank. It was more of just kind of testing. They were really

having to pull out information, instead of having choices.

Use of formative assessment to create small groups. One half of the participants shared they used formative assessment or pretests to determine small group composition. Participant 3 shared "most assessments are differentiated to small groups for doing the instructional part and all my centers are differentiated for math and reading." When asked about how she determined small group composition, Participant 5 replied: "It's the formative data at the beginning, but it's also the data that is gathered along and along." Further, Participant 7 indicated she used formative data to determine what skill the groups would be working on:

> Another example might be some sort of math checklist where I'm asking students to demonstrate they can do a particular skill or strategy in math. And if they show that they can do that skill, I might not have that group focusing on that. Where if they show that they need some help with that, I would use that to say this group is going to spend a little more time on, you know, place value or something like that.

Participant 9 indicated she had used formative assessment data to tier students by ability when she shared, "I have tiered the students based on their MAP scores and the subtopics on MAP. I've also tiered them based on how they've performed on one of my tests." Finally, Participant 10 stated she used teacher observation and pretests to determine small–group composition.

Experiences Elementary Teachers Have Implementing Formative Assessment

Strategies To Improve Student Performance on Standardized Tests (RQ3)

Responses for Research Question 3 involved experiences elementary teachers have with implementing formative assessment strategies to help students improve performance on standardized tests revealed one participant had negative feelings regarding standardized tests. Although the teacher did not actually state she did not like standardized testing, Participant 2 detailed:

Sure you want to ask me about standardized tests? Well, I think that if a standardized test is truly reflective of the standards, then any formative assessment that I give that helps them learn should inherently help them on the standardized test.

Seventy percent of participants shared the reasons they retaught concepts or used formative assessment was not necessarily to improve performance on standardized testing. Evidence of this finding includes when Participant 7 stated:

I can't say that I would change my instructional plan to help them improve their performance on standardized tests. But I would change my instructional plan based on the data that I have to help them master concept or understand how to do something.

However, some participants shared if students master the concepts, they should do well on the standardized tests. In support of this finding Participant 6 shared:

Everything I plan aligns directly to the standards which is on the standardized test. So I feel like if I'm giving them feedback about how

they're doing in my class, then that should automatically improve their

performance on standardized tests.

Similarly, Participant 9 held she was more interested in how the students would

perform in real life, but did give additional instruction on areas the data indicated was

needed in preparation for standardized testing. She stated:

Sometimes before the standardized test, I use the PASS Coach books as a

tool to see how they understand the different topics in there and then if I

need to I will give them more practice and a refresher on that topic. I'm

really more interested in how the instruction is gonna help them perform

in real life that I am on the test.

In addition, Participant 8 also disclosed he used standardized test data to inform his

instruction and individualize instruction. Additionally, Participant 4 conveyed she also

focused instruction on areas other teachers indicated were areas of concern during the

previous year.

Experiences Elementary Teachers Have Using Technology To Support Formative Assessment (RQ4)

Responses for Research Question 4 which involved experiences elementary

teachers have in using technology to support formative assessment revealed technology

was utilized by all participants. Several technologies were used by many of the

participants for formative assessment including Kahoot, Socrative, iPad apps, Study

Island, and Pavlet. Four participants indicated they used Google Documents to provide

students comments on their work or writing. All participants except Participants 4 and 8

indicated they had used Chromebooks for formative assessment. However, Participant 4 indicated she was able to use note monitor to provide corrective feedback to her music students. Finally, Participant 5 shared she used IXL and Aims Web Suite to provide feedback to her students.

However, Participants 6 and 10 felt somewhat overwhelmed with the amount of apps or programs available to them. To illustrate this finding, Participant 6 stated:

That is something that I feel that I am constantly learning new things

about technology, because at the school I student taught at it was not

one–to–one and so, that's very new to me still. I feel like I hear about a

new app, a new website every week, and so it is kind of overwhelming.

Furthermore Participant 10 stated, "There is just so much technology available. I am still learning how to use it and what is available."

Synthesis of Thematic Analysis

These findings of the data collected in this study appear to necessitate further professional development in the areas of formative assessment. The overarching themes associated with research question one include feedback, use of checklists, and use of rubrics. First, participants felt feedback which is evaluative in nature was beneficial to students to increase morale, however descriptive feedback was found to be most beneficial to ensure academic growth. Some of the participants had indicated teachers had been receiving professional development on descriptive feedback. Many of the participants discussed using checklists and rubrics to assess mastery, but few teachers actually used these practices with students for peer feedback and self–assessment of

academics. Those teachers who did use checklists and rubrics for student peer assessment and self–assessment indicated they had difficulty with students taking the practice seriously. Only one of the teachers indicated they allowed students to determine personal academic goals based on formative assessment data or pretest results. Thus, the reason participants used checklists and rubrics varied greatly from behavior to teacher assessment to student peer assessment to student self–assessment.

Several overarching themes were identified for the second research question. These themes included differentiated formative assessment, backward design theory planning, student goal–setting practices, use of AVID formative assessment strategies, Bloom's taxonomy for creating high–order questions, and using formative data to create small–group compositions. First, 90% of the participants did not fully understand the concept of backward design theory planning. Many of the participants asked the researcher to explain backward design theory planning. In addition, sixty percent of the teachers indicated they did not use student goal setting in their practice to empower students to take responsibility in their learning. Third, although a school administrator indicated this school was in the process of becoming an AVID school, the use of AVID formative assessment strategies and goal setting was limited (school administrator, October 13, 2014). In addition, although all participants indicated they had been involved with professional development regarding Bloom's taxonomy to construct high–order questions, half of the participants indicated they felt some students lacked the ability to answer higher–order questions.

The overarching themes which arose concerning the third research question pertained to the reason participants retaught concepts. Most participants in the study indicated preparation for standardized testing was not the reason they performed formative assessment. Seventy percent of participants shared content mastery was the primary reason for reteaching a concept or using formative assessment strategies.

Finally, three overarching themes emerged regarding the fourth research question. These themes included use of technology, use of Chromebooks, and use of Google Documents. All of the participants indicated they used technology in their instruction for formative assessment in some manner. Eighty percent of the participants stated their students used Chromebooks for formative assessment, whereas only 40% indicated they used Google Documents formatively in their classrooms.

As an outcome of the results of this research study, a project of professional development is proposed in utilizing formative assessment for meaningful teacher practice to address these needs. The project will be comprised of one three–day module. Because many of the participants felt high–order thinking was not attainable for some or most of their students, the first day will entail the participants undergoing an awareness of cultural proficiency in grade–level PLCs. The art, music, and physical education teachers will be assigned to a PLC by the researcher. The first day will entail the development of PLC norms, data analysis, and reflection on what a culturally proficiency means. Participants will work together to discover barriers may exist. Day 1 of the professional development will provide a foundation for the other two days of the professional development.

To address the lack of awareness of backward design theory, the second day of the project will provide awareness of the first four steps of the backward design theory process. In addition, participants will work together in PLCs to analyze test data pinpointing important standards and search for the major ideas across the curriculum. The teachers will create checklists for instruction and develop a performance task. Teachers will revisit the norms and tenets of culturally proficient PLCs addressed in previous day's session.

The final day of the project will entail the teachers working in PLCs on Steps 5 and 6 of the backward design theory planning process. These steps involve teachers in creating student checklists and rubrics for student peer feedback, self–assessment, and goal setting. The day will commence with a reflection on the preceding session's activities. A brief presentation on each of the steps will be presented and then teachers will work collaboratively on these activities in professional learning communities. The session will conclude with a reflection on the day's activities and the PLC planning a schedule for routine collaboration using this process. In Section 3, I will discuss the project in full.

Section 3: The Project

Introduction

The purpose of this project study was to examine the perceptions elementary teachers have at one elementary school in a southern, suburban district regarding their use of formative assessment to improve future teaching and learning. District personnel had indicated a renewed focus existed on formative assessment districtwide; however, the practice was not being used routinely to inform instruction. The school's state report card indicated an achievement gap in all content areas when compared with similar schools. In addition, the literature review associated with the research study revealed many teachers use formative assessment data to inform future instruction. Further, Dorn (2010) described a gap between teacher's knowledge and their use of formative assessment (as cited in Edman et al., 2010). I used interviews to gather information on 10 teachers' use of formative assessment strategies. The information I collected from these teachers— along with literature on formative assessment, backward design theory, and adult learning theory—provided me with information to create a professional development model to address professional learning community norms, backward design planning implementation, and peer and self–assessment strategies for students.

Description and Goals

In Section 1, the problem I identified was an achievement gap for students in all tested content areas. The school's 2013 state report card indicated the standardized test scores lagged behind other schools with similar student populations. Two solutions which may aide in lowering the achievement gap could be deep reflection on the tenets of

culturally proficient PLCs and the proper use of formative assessment strategies which focus on learning and growth to improve future instruction. By bringing awareness of and time for experimentation with backward design theory, formative assessment strategies, student goal–setting strategies, self–assessment strategies, and peer–feedback strategies, teachers can bring these strategies to routine use throughout the school.

Several goals will direct the professional development execution. The main goal will be to increase teacher understanding of backward design planning theory and formative assessment practices. If used appropriately in making instructional decisions, formative assessments can improve student learning and performance on state assessments (Wilson & Barenthal, 2006). Using formative assessment helps both teachers and students regulate teaching and learning and lower the achievement gap (Fisher & Frey, 2007). In addition, the conventions of PLCs and reflecting on them will assist educational leaders in cultivating a common vision, cultural proficiency, and clear accord for an action plan to serve all learners (Lindsey, Jungwirth, Pahl, & Lindsey, 2009; Schlechty, 2011). The information I collected during these discussions and reflection allows curriculum leaders to refine practice and change the culture of the school.

The project is composed of three professional development modules lasting one day each. Each day will contain five hours of professional development activities. I will include additional time for lunch and breaks.

The first day of the project addresses PLC norms and cultural proficiency for PLCs. The second day of the project will provide awareness of the first four steps of the backward design theory planning process. Participants will work together in PLCs on

these steps to analyze test data and target the grade level content standards, find the major ideas within and across the standards for instruction, create teacher checklists for instruction, and develop a performance task. Teachers will revisit the norms and tenets of culturally proficient learning communities addressed in the previous day's session. The final day of the project will entail the teachers working in PLCs on Steps 5 and 6 of the backward design theory planning process. These steps involve teachers in creating student checklists and rubrics for student peer feedback, self–assessment, and goal setting. The day will begin with a reflection on the previous day's activities. During Day 3, I will present a brief presentation on each of the steps and then teachers will work collaboratively on these activities in professional learning communities. The day will conclude with a reflection on the day's activities and the PLC planning a schedule for routine collaboration using this process.

Therefore, the expectation of my professional development is the scores in this school will improve when teachers use the strategies of the professional development in a consistent manner. To accomplish this primary goal, several other goals will be established. The first goal will be better use of common planning for teachers. The next goal is to bring backward design theory to routine use in this school. The third goal is to bring the use of peer feedback strategies, self–assessment strategies, and student goal setting to routine use.

Rationale

I designed this project to bring awareness for backward design theory strategies and time for planning and collaboration with other teachers. I will address themes

uncovered as a result of the research study discussed in the first part of this project study. Furthermore, district curriculum leaders expressed concern over the lack of routine use of formative assessment strategies within the classroom. My project provides opportunities for teachers to collaborate on the strategies and theory delivered each day in the professional development. Through this collaboration, teachers can apply the knowledge gained from the project's professional development activities and bring the practice of using effective formative assessment to routine use.

I based this professional development project on the Learning Forward standards (Learning Forward, n.d.). These standards provide a framework for professional learning which promotes best practices, accommodating leadership, and better student outcomes. The first Learning Forward standard calls for PLCs to share accountability and be committed to constant progress and goal alignment. The second standard advises curriculum leaders provide the essential provisions and encouragement for the PLCs to work appropriately.

I chose the project genre to help the teachers in the school studied share responsibility for continuous improvement in formative assessment strategies. The goal was not only chosen to inform teachers, but also to empower teachers through collaboration to bring the themes of the project to routine use. This project will serve as a solution to the problem discussed, because it will provide a model collaboration teachers can continue to use during their scheduled common planning time.

Review of the Literature

The following is a review of the literature on key ideas explored for the project in this study. The literature on *adult learning theory* and *positive school climate* were reviewed and placed in the theoretical/conceptual framework section. A synthesis of literature follows addressing *use of PLCs, student peer feedback,* and *student goal–setting and self–assessment strategies.*

Theoretical/Conceptual Framework

Adult learning theory. One of the main variances in normal learning theory and adult learning theory is established in the course of action (Knowles, Holton, & Swanson, 2005). Doran (2014) established participants appreciated professional development which addressed content, teaching strategies, and interactions with students. Doran also found teachers conveyed positive involvements with casual learning experiences with peers, in addition to more formal professional development. In adult learning the learner's experience is as important as the learner's understanding (Knowles et al., 2005). Studies on inservice professional development stress student participation and reflection (Knowles et al., 2005; Casteel & Ballantyne, 2010; Cochran–Smith, 2011). Research has indicated teachers prefer professional development which contains active learning (Doran, 2014; Knowles et al., 2005; Jones, West & Stevens, 2006). Teachers also value working in professional learning communities involved in curriculum improvement plans (Burke, Marx & Berry, 2011). Taylor, Yates, Meyer, and Kinsella (2010) found structuring teacher leadership may augment professional development for both the leaders and for those with whom they coach.

Positive school climate. Educators established positive school climate encourages safety, welfare, motivation, and school improvement practices (Cohen & Geier, 2010). School climate is centered on patterns of people's experiences of school life and reveals principles, goals, ideals, associations, instruction and scholarship, and systems within the school (Allodi, 2010). Positive learning situations stimulate scholarship, assist students in becoming successful citizens, and create a sense of environs (Allodi, 2010). Four key areas of concentration should be considered when reviewing school climate: safety, relationships, instruction and scholarship, and school setting (Cohen & Geier, 2010).

Creating a positive culture for learning enables a positive climate for teachers and students to work collaboratively. Allodi (2010) showed positive social climate of a school is necessary for learners to take the incentive to learn. A positive climate embraces respect for all cultures and aptitudes including a number of perceptions and involvements each brings. Teachers should utilize an assortment of approaches to address varied student requirements and ways of learning (Cegielski, Hazen, & Rainer, 2011). Teachers should also recognize students' different learning styles, cultures, and interests and plan instruction for them (Kalefe, 2009; National Education Association, 2011).

Marzano (2011) acknowledged four extents of an educational leader. These facets include resource contributor, coach, communicator, and observable existence. As a resource contributor, the educator delivers tasks and resources required for tasks (Marzano, 2011). As a coach, the teacher simulates actions sought after from students and gives importance to instructional concerns (Marzano, 2011). As a communicator, the

teacher sets clear objectives for the students and articulates the goals (Marzano, 2011).

As an observable existence, the teacher contributes to group dialogue and is available to

students during projects and other classroom instruction (Marzano, 2011). When

employing these four dimensions of instructional leaders, the educator produces a prime

learning setting which is open to all students.

Search Strategies

This literature review assembles a study of research journal articles, professional

text, and collegial communication concerning backward design theory professional

development acquired through university library resources, online databases, books, and

professional discourse. Saturation of the literature occurred using the search topics of

backward design theory professional development, formative assessment professional

development, professional development, professional learning community professional

development, self–assessment professional development, peer assessment professional

development, and student goal–setting professional development. Research focused on

peer–reviewed literature predominantly within the past five years, with the exception of

references contributing to the historical which spanned the past two decades. During the

literature review process, professional reports and books suggested by peers, presenters at

seminars and workshops, and investigators were added to those acquired through

university library resources.

Synthesis of Literature

Use of PLCs. Teacher learning has undergone changes recently as current

credence associates superior professional development to excellent teaching and excellent

teaching to student success (Borko, 2004; Smith, 2010; Desimone, 2009; Darling–Hammond, Wei & Andree, 2010; Yoon, Duncan, Lee, Scarloss & Shapely, 2007). Suitable situations and features of professional development were found to enhance the prospective for deepness of understanding which leads to transformation in instructional practice. This is a move from passive and sporadic professional development to professional development that is more dynamic, sound, related to teaching situation, and reinforced by colleagues in a PLC. PLCs revealing triumph contained teachers within the same school who are empowered to choose their standards and instructed on how to communicate in PLCs (Mindich & Lieberman, 2012). A teacher with effective communication skills has the potential to influence others and lead them to success (Majid, Jelas, Azman, & Rahman, 2010).

Knight (2011) suggested six organization values which detail a strong group scholarship setting in which educators are individually motivated. These principles embraced equality, choice, voice, reflection, praxis, and reciprocity. Spotlighting these principles was proved to aide group discourse and enables a nonthreatening working atmosphere. This discussion permits contributors to build a learning setting which is pertinent to each person.

Following the PLC creation, collaboration should occur regularly as educators work together to find essentials for excellence and work toward those essentials. These individuals must commit to collaboration for a semester or longer with the objective of professional advancement. The amount of time is imperative, but more significant is the process. Educators should analyze student effort and information to find exact needs in

instruction. Preferably, educators collaborate in phases to review instruction and implement it with scrutiny and feedback (Jaquith, Mindich, Wei, & Darling–Hammond, 2010). The undertaking of a PLC is to arrive at a profound realization of the way students acquire knowledge and then to relate knowledge to methods needed for instruction.

Desimone (2009) offered a system with five important components of professional learning leading to complexity of instructional practice: content focus, active learning, coherence, duration, and collective participation. When these components are fused into a task, a sequence of incessant development can occur. Smith (2010) charted a list of actions and their effect on the complexity of educators' learning. Stewart (2014) advised reading and attending training lead to awareness to information, but do not influence an educator's practice unless they are enhanced through additional investigation and practice. Passive learning unaided does not generate variation in instructional practices (Borko, 2004; Joyce & Showers, 2002; Smith, 2010; Stewart, 2014; Wei, Darling–Hammond, & Adamson, 2010). Finally, the conventions of PLCs and reflection assist educational leaders in cultivating a common vision and clear accord of what the action plan should be (Lindsey et al., 2009; Schlechty, 2011).

Student peer feedback. Teachers should facilitate student peer assessment as a strategy to build understanding and learning (Fluckiger et al., 2010). Peers receive feedback from each other, but they also increase own understanding as they assess a fellow classmate. Furthermore, research has shown peer assistance during the writing process has an impact on the final paper (Beaglehole, 2014; Graham, McKeown, Kiuhara, & Harris, 2012). Sato (2013) indicated students were hesitant to make errors

with teachers, but their hesitancy was diminished when they worked together with their peers.

Sato (2013) specified the classroom needs to be a place where students are required to communicate with their classmates. Several norms are essential for good peer collaboration (Wiggins, 2012). First, students should make sure they are kind to each other. Second, students should be specific in their feedback to each other. Finally, students should be helpful when giving feedback.

Student goal setting and self assessment. Costa and Kallick (2004) stated the significance of students' self–directing learning. Setting clear and precise goals for writing was also found decidedly effective (Beaglehole, 2014; Graham et al., 2012). Reflective thinking helps provide students the ability to build knowledge (Rovai, Ponton, & Baker, 2008; Eccarius, 2011). Students and adults can develop the strategies required to become self–managing, self–monitoring, and self–modifying. However, most students do not possess the metacognitive skillset required and necessitate support articulating their goals (Coon & Walker, 2013). AVID provides the strategies required by students to be academically successful (Bernhardt, 2013; Peabody, 2012). Peters (2012) suggested educators could augment the character of lessons using goal setting and self–monitoring of student work during inquiry. Moeller, Theiler, and Wu (2012) revealed a noteworthy positive association linking the goal–setting process and language acquisition.

Some of AVID's metacognitive strategies include Cornell note taking, learning logs, and reflective journals (Advancement Via Individual Determination, 2014). Burke (2011) suggested checklists provide the scaffolding students require as they practice the

procedures until they are capable of completing the steps without assistance. Checklists were effective formative assessments, because they provided detailed feedback as it was needed in a timely fashion and helped students become educational citizens (Burke, 2011; Coon & Walker, 2013). The advice explained the standards for success, advanced the learner, and encouraged students to take charge of their own learning (Leahy, Lyon, Thompson, & Wiliam, 2005). Fisher and Frey (2009) discussed the need of providing individual feedback to students about their work tied to the standard. Further, Popham (2008) offered a step–by–step development of skills students need for mastery of learning goals. Successful checklists provided the steps students needed in chunks and contained the language of the standards (Burke, 2011; Marzano, 2009). In addition, Stiggins (2009) suggested assessments should be more than a one–time event and should keep students posted on their progress toward their learning goal.

Using checklists and rubrics helped inspire learning and metacognition strategies (Wiliam, 2011). These checklists and rubrics help students regulate their learning and help teachers provide feedback connected to the learning goal. A teacher's ability to create such devices centers on learning and helps students take charge of their learning (Wiliam, 2011). Students need a framework to help them navigate the process. Teachers can provide this framework through using checklists to provide scaffolding for students (Burke, 2011).

Wiggins and McTighe (1998) discussed the use of checklists within their six–step process of designing curriculum units. This progression originates with teachers finding the essential standards by examining the data. Next, educators work together to examine

the standards and locate the major concepts and essential questions students need to cognize. Next, teachers explain key terms and place information into checklists to guide their instruction. Teachers work together to generate interesting projects connected to the standards and real life situations. In constructivism, individuals assemble new understanding by building on their present understanding (Allen, 2011; Musa et al., 2010). Consequently, learners learn significantly through the practice of exploring, scaffolding, interpreting, negotiating, and creating products required in their task (Musa et al., 2010). Next, teachers chunk the new material into small increments enables teachers to check for understanding before advancing (Marzano, 2009). The final two steps involve developing student checklists and designing a rubric for students to attain excellence as indicated on the rubric.

Burke (2011) specified these checklists begin with the end in mind so the standard is the target, allowing students to self–assess work and improve final products and helping them become resources for other students through peer support. These checklists can also aid the teacher in creating rubrics. Several studies identified the usefulness of the rubric as a way to assess student work and provide feedback (Cope, Kalantzis, McCarthey, Vojak, & Kline, 2011; Mansilla, Duraisingh, Wolfe, & Haynes, 2009; Peden & Carroll, 2008). Teachers should avoid criteria containing expressions such as "exceptionally clear," "effectively organized," "carefully chosen," and "strong control" because such language may cause them to use their own knowledge to make conclusions when scoring (Fang & Wang, 2011). Eisenkraft and Anthes–Washburn (2008) suggested assessment should directly address the learning goals and should begin from a basis of a

skilled level of performance with indicators for students to attain higher orders of thinking.

Project Implementation

My project will be implemented initially during the summer period on the teacher swap professional development days. I will conduct the professional development at the school. After the initial professional development, PLCs will continue the cycle during common planning time. A more detailed description of the implementation plan follows.

Potential Resources and Existing Supports

Potential resources for this project are minimal. Whereas no resources are necessary, materials found online from Burke (2010) and Burke (2011) for each PLC, administrator, and curriculum coach would be beneficial. These resources provide exemplars and templates for teachers as they move forward in the design phase.

Potential Barriers

There are several potential barriers to this project implementation. First, the school may have other professional development planned for the suggested implementation period. By including the school–level curriculum leaders in the planning phase, this barrier can be minimized. Second, teachers may feel overwhelmed with the six steps of moving from standards to rubrics. By structuring the professional development in small sections which cover one step at a time, this feeling will be lessened. Also, since summer swap days are not mandatory professional development days, some teachers may not be in attendance. This may impede the initiative from being a school–wide implementation. This can be overcome by empowering the teachers in

attendance to become teacher leaders within the PLCs and assist those teachers not in attendance to adopt the strategies learned and the unit planned during the professional development. Another barrier may be negative statements and questions used during PLC meetings by some teachers. These questions and statements can cause a barrier to moving forward and improving educational practice. However, the strategies learned in Day 1 of the professional development may be useful in overcoming these negative ideas.

Additionally, the interviews revealed some teachers were more advanced in some of the formative assessment strategies. To encourage the topics of the professional development to be adopted, I will include these teachers to share their experiences. In addition, these teachers will model these strategies. I will encourage these teachers to become a mentor to other teachers after the project has concluded.

Proposal for Implementation and Timetable

The implementation of this project will take place during three consecutive summer teacher swap days. On the first day of the project, I will provide an overview of the tenets of PLCs, the characteristics of breakthrough and barrier questions in PLCs, and PLC norms. A total of 40 teachers will be divided in seven PLCs. Of seven PLCs, the PLCs for grade levels one through four will include the five regular education teachers and one special education teacher each. The kindergarten PLC includes six regular education teachers and the fifth grade PLC includes four regular education teachers and one special education teacher. Finally, the last PLC will include five exploratory classroom teachers.

The 40 teachers involved in this professional development have prior experience working in PLCs. I will guide teachers through specific training tasks and reflective activities which will be integrated into the presentation. Teachers will reflect on their mission, beliefs and practice and whether these beliefs are shared by all teachers in the PLC. Sample barrier questions and their breakthrough question counterparts will be given. I will guide practice changing barrier questions to breakthrough questions. Finally, teachers will work in PLCs to practice asking breakthrough questions when examining data.

I will include a brief overview of Steps 1 through 4 of the backward design theory process on Day 2 of the implementation. Following the overview, PLCs will progress through the four steps using exemplars provided by me and identified teacher leaders at the school. I will go into more depth for each step, guiding teachers through specific collaborative activities. Each participant will work in PLCs to go through the first four steps of from standards to rubrics using Burke (2011) and a grade level appropriate writing standard. First, teachers will analyze the data and target the needed standards. Next, teachers will unpack the standards to find the major ideas and essential questions to guide their instruction. I will provide examples and facilitate this process. The next activity will involve teachers working collaboratively to organize instruction in a developmentally appropriate, sequential order. Finally, I will facilitate the PLCs in creating performance tasks which will motivate students and will tied to current, real–world topics that will be of interest to students. Those teachers identified in the

interview process as teacher leaders in formative assessment will share their work to the whole group at the end of each day's session.

The final day of the project will entail the teachers working in PLCs on Steps 5 and 6 of the backward design theory planning process. These steps involve teachers in creating student checklists and rubrics for student peer feedback, self–assessment, and goal setting. I will present peer feedback norms and strategies, self–assessment strategies and goal–setting strategies. The day will begin with a reflection on the previous day's activities. During Day 3, I will be present a brief presentation on the last two steps and then teachers will work collaboratively in PLCs on activities for Steps 5 and 6 which will support the performance task they created on second day of this training. The day will conclude with a sharing by teacher leaders of the work they have done during the day. Teachers will also reflect on the day's activities and the teachers of each PLC will plan a schedule for routine collaboration using this process.

I will be available for support as needed. Teachers will be requested to complete a survey administered as a Google Form analysis to relay their experiences with backward design theory and formative assessment during the professional development. I will meet with PLCs after school to clarify points of confusion identified from the Google Form. During the first year after the professional development training, I will be available for consultation after school hours. Because the teachers of these PLCs already have common planning in place, grade–level PLCs will be encouraged to continue to meet twice per week to go through the six–step process and design curriculum and materials which support the process.

Roles and Responsibilities of the Investigator and Others

The responsibilities of the investigator include designing the professional development, delivering the overview and facilitating the stations and PLCs. In addition, the investigator will provide all materials used and be available for consultation during the first year as needed after school hours. The teachers will be responsible for meeting in PLCs using the norms to collaborate on data and design the material.

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Project Evaluation

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The evaluation design and approach will be outcomes–based. The main goal of the proposed professional development project will be to increase teacher understanding of backward design theory and formative assessment practices. To determine the success the proposed project, select questions previously asked during the interview will be asked again on a Google Form document at the end of the training. Specifically, I will ask the teachers to reflect on their experiences with backward design theory and formative assessment during the training. The information received from the reflection will help determine areas in the professional development which need to be revised. The conventions of reflection assist educational leaders in cultivating a common vision and clear accord of what the action plan should be going forward (Lindsey et al., 2009; Schlechty, 2011).

Formative data on the professional development will be collected along the way to ensure clarity of sessions. The participants, to provide feedback on the usefulness and clarity of each session, will complete a Google Form with questions concerning the

professional development. I will incorporate open–ended questions to discover other resources and training useful to the participants.

The key stakeholders include the school's teachers, parents, and students. The administrators at the school and district level are also stakeholders in this study. The administrators include an academic coach who assists teachers with curriculum planning and observes teachers and delivers professional development and an assistant principal and principal who also observe teachers and deliver professional development. The teacher leaders help teachers in planning and assist in the professional development implementation.

Administrators, academic coaches, and other teacher leaders will provide assistance and information on teacher implementation of materials developed in the PLCs. I will administer a short–term evaluation of this project at the end of the professional development requesting information about teacher perception and attitude towards the professional development and how they will use the new strategies in their planning and instruction. Observations in concurrence with lesson plans will be joined with weekly assessment data to measure student achievement and the impact of professional learning communities on a long–term goal of raising standardized test scores. This evaluation method is appropriate to evaluate the success of the project because the problem identified an achievement gap between the school studied and schools similar to it. The formative collection of information will allow the researcher and school administrators to lend support to PLCs as needed.

Implications Including Social Change

Local Community

I hope to empower teachers through this project with the ability to examine data to design curriculum and assessment strategies and provide authentic learning experiences for students. Using self–assessment strategies and student goal setting strategies created by the PLCs, students will become responsible for their learning. Parents can use the materials in this project to help their students, since the checklists chunk the learning in small units and give specific feedback to the learner. I hope to use the project as a vehicle to motivate student learning and provide relevance in the learning given the tasks are designed around real–life situations useful to the student. Students will become critical thinkers and engage in metacognition strategies by using the resources in this project. Teachers may lower the achievement gap for students in this school as a result of the professional development in this project.

Far–Reaching

My study could be the impetus of professional development for other elementary schools within the district and state. Teachers may lower achievement gaps for students in schools similar to this school as a product of my project. In addition, other professional development initiatives may be more successful with the establishment of PLC norms which will be delivered and used during my project.

Conclusion

I designed this project to provide teachers and administrators the necessary strategies needed to implement backward design theory planning with the use of student

self–assessment strategies and peer–feedback strategies. By implementing my professional development, I may enable more teachers to the successful use of peer feedback and metacognitive strategies with their students. I will help teachers design units using backward design theory planning and will help teachers provide students with the metacognitive skills necessary for academic success as an outcome of this professional development project.

Section 4: Reflections and Conclusions

Introduction

I designed this study to examine how formative assessment strategies inform instruction, and I then addressed the breakdown in the process with professional learning modules. In Section 4, I evaluate the modules of this project. I discuss suggestions for potential investigation and the implications. I also include a summary of the strengths and confines of the study. Last, I provide a self reflection on the research progression and analysis of the outcome of the project.

Project Strengths and Limitations

The strength of this project was it was grounded in the literature review and research findings. Further, my project gave teachers a voice on what tools they were missing to successfully help students become better academic citizens and reduce the gap in achievement. In addition, my case study method allowed teachers, through interviews, to provide feedback on strategies they were and were not using in instruction. The interview participants' identities were kept anonymous. The remarks declared by participants were aligned with the research offered in the literature review. I centered this project on explicit best practice strategies helpful in reducing the gap in achievement.

Recommendations for Remediation of Limitations

The research was conducted during the school year, which made it difficult for some teachers to commit to participation owing to time limitations. By conducting the research during the summer months when teachers do not have instructional duties, more teachers may be more apt to volunteer to participate in the study. Further, using other

types of data such as teacher observation and lesson plans may also provide valuable information to better triangulate the data and give insight into teacher practice.

Recommendations for Alternative Approaches

An alternate project to address the results of the research study could have been implemented in the form of a curriculum plan. In the plan, I would have described the purpose of the plan, scope and sequence, the materials, units and lessons in detail. A minimum of nine weeks of curriculum would have been included. I decided to empower teachers to learn how to work together to create the necessary materials and curriculum to amplify the likelihood teachers would adopt the practices. My professional development promotes the learning of all teachers at this school.

Scholarship

After finishing this project, I am more comfortable with the research and best practice regarding formative assessment. As an outcome of conducting this project study, I acknowledged a problem in the district where I work and conducted an extensive literature review on the topic of formative assessment. I also became familiar with case study design and conducting interviews to gather data. Prior to the project study, I had little experience with these practices. As a result of this project, I have become more of a research consumer. I am also more likely to conduct the scholarly research needed to address a problem, instead of relying on other colleagues to provide the research for me. Finally, I have become familiar with the scholarly approach to writing. My capacity in the area of scholarly writing will continue to grow as I practice it in my profession.

I faced many challenges in my doctoral study. First, finding a school allowing me to use its facility as my research site was difficult. Although other schools in the district had not brought formative assessment to routine use, some principals did not want to give me access to their teachers because of time limitations. However, the school I studied did not hesitate to provide me access. Also, finding sufficient and current peer–reviewed research articles on formative assessment, then analyzing them, took several months. The research is extensive on formative assessment. This reinforced my desire to give teachers a voice on their practice and to learn why they were having difficulty bringing the practice to routine use. Next, I did not recognize initially I had bias with regard to teacher assessment practices. However, as the interviews progressed, I realized I did have bias with regard to the extent exploratory teachers used formative assessment. This realization made me reassess my bias as a curriculum specialist at another school within the district.

I was challenged in the methodology section of the project study as well. As a scholar, I have learned the research design of a study depends on the problem and research question. I have also learned the interview questions stem from the problem, research question, and literature review. I have also learned the importance of using a common language within the study and defining the terms used. My knowledge helped make sure the components of my study were in alignment.

When I entered the doctoral process, I was assessed to have adequate writing skills and was not required to take additional coursework on writing. After going through this project study process, I know my scholarly writing skills and focus were very limited. One of the areas needing improvement was my ability to draw conclusions from

research as opposed to simply summarizing the research. My knowledge about formative assessment has grown significantly as well as my knowledge of the leaders within the area of formative assessment. As an outcome of the project study, I have bettered my research and writing skills and am now able to apply the skills to other areas of need in education.

Project Development and Evaluation

The process of developing a project study has provided me insight into the method of substantiating practices based on research. My involvement with this process helped me realize the necessity of aligning all components of the project study and how the problem drives the study when selecting research methods and questions. I now realize the project study process is the process curriculum leaders should use to identify and delve deeper into areas of need and then implement a research–based action plan to address the areas of need. I also learned about different methods of evaluating projects and how to select the most appropriate method for the project design. I understand now the process of the evaluating the project should be aligned to the interview questions and research question guiding the study.

Leadership and Change

Delivering new professional development which changes the way teachers design curriculum and approach assessment requires strong leadership. Developing students into academic citizens where they become more metacognitively aware of their learning goals and practices and share responsibility for their learning is an impressive shift of norms. This sort of alteration requires a creative leader willing to commit to this type of

approach. For this professional development on backward design theory and student goal setting to be successful, the school administration must be willing to provide teachers with the needed time for professional development and development of curriculum and assessment tools. Without this commitment, it would be difficult for teachers to implement this change in the planning of curriculum and assessment.

Reflection on the Importance of the Work

The implementation of backward design theory planning and peer feedback and student goal–setting strategies can help the school lesson the achievement gap and raise test scores. It can help students take charge of their learning and self–directed. The focus on student goal setting allows students to gain relevance in their learning and draw connections to real life and future goals. The backward design theory six–step format allows the teacher to design real–world problem scenarios which motivate students to become involved in their learning. It also provides students with information on progress through the use of checklists and rubrics. Based on the research, the single most vital aspect in learning is using feedback. By designing curriculum with the end in mind, teachers can break down the instruction and the process to give students the necessary information to meet the standard. In addition, teachers will be able to provide students the tools facilitate peer feedback, student goal setting and self–assessment. This change can help schools meet student needs and lower the achievement gap. Further, if teachers design problem scenarios with service learning opportunities within their performance tasks, students can improve the community through their participation in the performance tasks.

As a result of this project study, the skills addressed in the professional development will also be available to students and teachers at my school. Similarly, the strategies within this professional development would be useful at the middle school level and could help lessen the achievement gap at my school as well. The strategies I have learned and researched can be used to help students become more responsible learners and academic citizens. The skills learned are life skills they will be able to apply for the rest of their lives in many contexts. Potentially, the skills can lead to a more evenhanded learning environment.

The research skills I have learned as a result of this project study will transfer to other areas. These skills will help me identify problems within my school and school district, determine the most appropriate research method to address the problem, and then conduct the literature review and data collection. Moreover, the experience gained will help me design a project to attend to the weaknesses identified in the data analysis. This experience will help me be an instrument and catalyst of change based on research for the teachers and students of my school. Having gone through this process will lend credibility to my efforts as well.

Implications, Applications, and Directions for Future Research

My professional development delivered on backward design theory and student goal setting has the potential to transform the way this school and school system operates. The teachers' shift in curriculum design not only changes the face of the way schools operate, but it has the potential to change individual lives by illuminating the relevance of learning. The teachers' shift also empowers students to be proactive and self–directive in

their learning. By changing the lives of individuals which were formerly considered to be at risk of failing and empowering them, this change in responsibility has the potential of changing school and community as a whole. The success of this project will illuminate the importance of investigating a problem qualitatively to give voice and rich detail associated with problem. By investigating this problem qualitatively, I was able to pinpoint specific areas teachers needed more professional development. This allowed me to fine tune the professional development to speak to the requirements of the teachers of the school.

It would be worthwhile to extend the research to include middle school settings to determine if there are different teacher perceptions at the level. Another recommendation for future research would involve using teacher observation data and lesson plans artifacts to provide valuable information on teacher practice. In addition, because the research was conducted during the school year making it difficult for some teachers to commit to participation due to time limitations, another recommendation would be to conduct the interviews during the summer months. By conducting the research during the summer months when teachers do not have instructional duties, more teachers may be more apt to volunteer to contribute to the study.

This professional development can be applied to all educational settings and content areas. All teachers and students would benefit from the shift to backward design of curriculum and assessment tools. This shift allows the teacher to pinpoint important standards and chunk the information necessary for meeting the learning target. The teacher then creates the checklists for students to assist in providing peer feedback and

self–assessment. Each content area in all levels of education can benefit from the knowledge of how to apply this to their classroom to help empower their students.

Conclusion

The professional development created for this project has the potential to help schools close the achievement gap. My project was created to provide teachers and administrators the necessary strategies needed to implement backward design theory planning with the use of peer feedback and student metacognitive strategies. As an outcome of the professional development created, teachers may more successfully use peer feedback and metacognitive strategies in their classrooms. By using this professional development, this school may be able to bring these strategies to routine use and change the culture of the school.

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Appendix A: Formative Assessment Professional Development

(PowerPoint Slides Outline)

Formative Assessment Professional Development

Session One: Professional Learning Communities
   A. Session One Goals
      1. To provide the tenets of professional development communities.
      2. To provide time to examine barriers that may exist for PLCs.
      3. To allow teachers practice in devising the questions to ask during PLC meetings.
      4. To provide a foundation for subsequent sessions of professional development.
   B. Session One Agenda
      1. 8:00 am   Welcome and refreshments
      2. 8:30 am   Tenets of PLCs
      3. 9:00 am   Overcoming the Barriers to Cultural Proficiency
      4. 10:00 am Break
      5. 11:00 am The Guiding Principles of Cultural Proficiency
      6. 12:00 pm Lunch
      7. 1:30 pm   The Cultural Proficiency Continuum
      8. 2:30 pm   The Five Essential Elements of Cultural Competence
   C. Composition for Professional Development Sessions
      1. The members of the PLCs will be shown.
   D. Presentation of Knight's Principles for PLCs
      1. Equality
      2. Choice
      3. Voice
      4. Reflection
      5. Praxis
      6. Reciprocity
   E. The Guiding Principles of Cultural Proficiency Presentation
      1. Culture is a predominant force in schools and in people's lives.
      2. People are served in varying degrees by the dominant culture.
      3. People have group identities and individual identities.
      4. Diversity within cultures is vast and significant.
      5. Each cultural group has unique cultural needs.
      6. The best of both worlds enhances the capacity of all.
   F. Presentation of the Barriers to Cultural Proficiency
      1. Breakthrough Question Activity on a Barrier to Cultural Proficiency
   G. Gallery of Principles

1. The posters used for this slide's activities will be the 7 posters PLCs created of The Guiding Principles of Cultural Proficiency as part of this professional development.

H. The Cultural Proficiency Continuum of Healthy and Unhealthy Practices Presentation
   1. Discussion Activity – In your PLC, discuss the following questions openly and respectfully using the Continuum from the previous slide and your experiences.
      a. What practices are at the lower end of the continuum for this school and why do you feel this way?
      b. What practices are at the upper end of the continuum for this school and why?
      c. How could you and your school use this continuum for professional learning?

I. The How of Our Work Presentation
   1. Activity – PLC will create a product which will teach the assigned element to the participants of this workshop.
   2. PLCs will share ideas for bringing the element to routine practice and share what problems may arise.

II. Session Two – Backward design theory
A. Session Two Goals
   1. To inform teachers of the backward design theory for curriculum and assessment.
   2. To provide resources to assist teachers in implementing backward design.
   3. To provide teachers time to review data, unpack the standards and design units using backward design theory.

B. Session Two Agenda
   1. 8:00 am Welcome and Refreshments
   2. 8:30 am Rationale/Alignment to Common Core State Standards
   3. 9:00 am Overview of Backward Design process
   4. 9:30 am Collaboration on Steps 1 – 3
   5. 11:30 am Lunch
   6. 1:00 pm Collaboration on Step 4

C. Rationale for Authentic Learning Presentation
   1. Authentic learning focuses on what is real.
   2. Authentic learning provides relevance, purpose to learning, and motivates students.
   3. Students engage in their learning and become active participants.
   4. Authentic learning prepares students for their lives beyond school.

D. Common Core Standards Instruction Presentation
   1. The Common Core Standards call for students to be able to know and do in depth and apply their knowledge to the real world.

2. Many educators feel the demands of covering the standards to perform on standardized tests. However, this can cause lack of engagement in students.

3. Teachers should focus on key concepts, instead of superficial exposure (Burke, 2011).

4. Teachers can chunk the standards into meaningful clusters by their connectedness within and across disciplines (Wiggins & McTighe, 1998).

5. Teachers should align standards to assessments and use formative assessments to determine mastery (Phillips & Wong, 2010).

6. Common Assessments are effective tools created in PLCs which can redefine the function of assessment in school improvement (Stiggins & Dufour, 2009).

E. Teaching Methods and Retention Rate
1. Presentation and discussion of the various teaching methods and their effect on student retention.

F. Using the Six–Step Process Presentation and Discussion Topics
1. Teachers can target the standards and address real problems following a six–step process.
2. Teachers unpack the standards to find the big ideas and essential questions to guide their instruction.
3. Teachers should organize their teaching in a developmentally appropriate sequential order and create a performance task which will motivate students.
4. Teachers provide students with interactive checklists and rubrics to improve the quality of their work.

G. Step One: Target the Standards Presentation
1. Authentic standards–based teaching means embedding the language of the standard into curriculum, instruction, and assessment (Burke, 2011.)
2. Teachers should review assessment data to target standards of low performance and determine a few measurable goals.

H. PLC Activity for Step One
1. In PLCs, work together to review the assessment data to determine weaknesses which need to be addressed.
2. Determine the standard which addresses this weakness.

I. Step Two: Find the Big Ideas Presentation
1. Big ideas are key concepts which focus on universal themes.
2. Teachers work together in this step to unpack the standard into key ideas and essential questions.
3. Step Two Activity: Using the standard identified previously, participants complete a table as a PLC on what students should understand and do when they have mastered the instructional standard.

J. Performance Task Presentation and Activity

1. The following items of the performance task should be completed by the PLC by the end of this step.

        a. Primary Standard(s) identified.
        b. Secondary Standards identified.
        c. Key concepts identified.
        d. 3 essential questions listed will guide teaching and motivate students.

K. Step Three Overview: Teacher Checklists Presentation
1. Teacher checklists resemble multi–step lesson plans because they show chunks teachers must cover as the introduce steps developmentally to help students make sense of the standard.
2. Teachers reflect on the criteria needed for mastering the standard.
3. Teachers examine the language of the standards for instruction.

L. Teacher Checklist Activity

1. The following steps should be completed by teachers by the end of this step.
        a. Teachers will review the indicators under the target standard.
        b. Teachers will write each criteria/indicator on a sticky note and post them on the chart paper and create a vocabulary list for each criterion listing the nouns students will need to know and the action verbs found in the standard.
        c. Teachers will classify the criteria into main topics and label on chart paper.
        d. Teachers will use smaller sticky notes to add details such as examples, definitions, and pictures in kid–friendly language.
        e. Teachers will sequence the chunks in the order the skills will be taught.
        f. Teachers will create a checklist using the provided template.

M. Step 4: Create a Performance Task Overview
1. The task should necessitate the expansion of core knowledge and use of processes.
2. The task assesses standards at Webb's Level Four in his Depth of Knowledge.
3. The task should be authentic, relate to things people do in real life, and center around a problem scenario.
4. The next three slides provide sample problem scenarios for performance tasks.

N. Sample Science Problem Scenario Presentation and Discussion
1. Science Standard: Students will explain the weather cycle.
2. Problem Scenario

O. Sample Math Problem Scenario Presentation and Discussion
1. Math Standard: Represent the prime factorization of numbers using exponents.
2. Problem Scenario

P. Sample Social Studies Problem Scenario Presentation and Discussion

          1. Social Studies Standard: Students will understand the culture of the ancient civilizations.
          2. Problem Scenario

   Q. Performance Task Scenario Activity – Complete in 30 minutes.
          1. In PLC, develop a problem scenario which would hook and motivate your students. Refer to the previous three slides for sample problem scenarios.
          2. Determine the whole–class instruction needed for content and process necessary.
          3. Determine the group work products to be completed by student groups using a variety of multiple intelligences.
          4. Determine the individual work students must complete which aligns with the standards.
          5. Place all these items in the provided Burke (2011) template.

   R. Teacher leaders will present work created during the training to the whole group.

III. Session Three – Backward Design Steps 5 and 6, Using Peer Feedback, Self–assessment Strategies, and Student Goal–setting

   A. Session Three Goals
          1. To provide awareness of peer feedback, self–assessment, and student goal setting strategies.
          2. To provide time and support for teachers to collaborate on creating assessment items for Backward Design unit from Session Two.

   B. Session Three Agenda
          1. 8:00 am Welcome and Refreshments
          2. 8:30 am Looking Back on Steps 1 – 4
          3. 9:00 am Step 5: Developing Student Checklists
          4. 10:00 am Using Student Checklists, Goal Setting
          5. 11:30 am Lunch
          6. 1:00 pm Step 6: Developing, Designing Teaching Rubrics
          7. 3:00 pm Planning the Next Steps

   C. Reflection – Looking Back
          1. Using the Performance Task Checklist provided from Burke (2011), teachers will review performance task and self–assess performance task created in the previous session.
          2. Teachers will make any revisions PLC needs to complete on performance task.
          3. Teachers will discuss how PLC differentiated the content, process and products used.

   D. Step 5 – Developing Student Checklists Overview
          1. Effective checklists list the steps students need to take in sequence and contain the language of the standards needed to master the standard (Burke, 2011).
          2. Students need a framework to help them navigate the process. This provides scaffolding for students.

3. Checklists provide guidelines for applying, monitoring and evaluating performance for self–directed learning.
4. Teachers should create student checklists which help students assess in the categories of process, product, and progress.

E. Activity: Creating the Student Checklist
1. Using a provided student checklist template, teachers will create a student checklist for process, product, and progress for the PLC's performance task.
2. This checklist will be used in both self–assessment and peer feedback.

F. Self Assess
1. Teachers will use a template in Burke (2011) for reflection and critique the student checklist together as a PLC.

G. Peer Feedback and Goal Setting Presentation and Discussion
1. Wiggins (2012) describes helpful feedback with characteristics.
   a. Timely
   b. Ongoing
   c. Consistent
   d. Specific
   e. Actionable
   f. Goal–referenced
   g. Tangible and transparent

H. Student Feedback Presentation
1. Establishing Norms Presentation
   a. Be Kind Discussion
   b. Be Specific Discussion
   c. Be Helpful Discussion
2. Activity on what each norm looks like in practice.

I. Goal Setting Presentation
1. Using the peer feedback which students receive and their own self–assessment checklist information, students should keep a reflective journal and set specific goals for learning.
2. Peters (2012) suggested educators could enhance the nature of instruction using goal setting and self–monitoring of student work during inquiry lessons.
3. Moeller, Theiler, and Wu (2012) revealed a significant positive correlation between the goal–setting process and language acquisition.

J. Goal–setting Strategies Presentation
1. Reflective journals for self–regulation
2. Learning logs
3. Cornell notes
4. Reflection at the bottom of checklists
5. Goal–setting worksheets

K. Step 6: Creating a Teaching Rubric Presentation

1. Guidelines for Rubrics
   a. Use specific numbers rather than vague words to quantify learning (Burke, 2011).
   b. Use specific descriptors like vivid rather than good and excellent (Burke, 2011).
   c. Use the language of the standards. (Burke, 2011).
   d. Arrange the scores in a continuum from high to low with equal intervals.
   e. Use the score of 3 to show meeting the standard and 4 to show exceeding the standard (Burke, 2011; Goodwin & Howell, 2013).
   f. Develop level 3 of the rubric first. This level is an acceptable score and shows proficiency. Build the rest of the rubric around these expectations (Goodwin & Hubbell, 2013).
   g. State clear expectations for work (Burke, 2011; Eisenkraft & Anthes–Washburn, 2008).
L. Activity: Creating the Rubric
   1. In PLC, teachers work together to create a rubric from the student checklist for performance task using the template on page 131 of Burke (2011).
   2. After you completing rubric, teachers will use the rubric checklist on pages 133–134 to assess their rubric and revise as needed.
M. Planning the Next Steps
   1. Teacher leaders will present work created during the training to the whole group.
   2. Within PLC, teachers will devise a regular meeting schedule which will help the group stay on track. Include the following in your schedule:
      a. Time for data analysis.
      b. Time for asking the tough questions for cultural proficiency.
      c. Time for planning performance tasks.
      d. Time for developing checklists and rubrics.

[Formative Assessment Professional Development PowerPoint Presentation](#)

Appendix B: Interview Protocol

- I am a doctoral student studying elementary school teacher perception of their use of formative strategies to improve instruction. I am studying this topic to help determine what types of formative assessment are used and if there are limitations which prevent teachers from using formative assessment effectively. I hope to use this information to determine future professional development needs to help teachers use formative assessment and impact student achievement.

- I have a letter of informed consent which needs to be signed before we proceed with the interview. The letter explains the study. Your participation is will be confidential. I will be audiotaping the interview and then transcribe it to make sure I accurately record your information. I will be asking questions about formative assessment and how you use it in the classroom. I will be asking you to review the transcription of your interview later, to check to make sure I am accurately recording what you say. If you decide later you do not want to participate in the study, you may drop out at any time and I will not use your data. Ask participant to sign the informed consent. Thank you for agreeing to participate in the study.

    1) What experiences do you have planning formative assessment strategies?

        - What experiences do you have differentiating formative assessment?

        - What experiences do you have in backward design planning?

        - What experiences do you have in creating questions using Bloom's taxonomy?

    2) What experiences do you have in providing feedback to students?

- What experiences do you have with providing evaluative feedback?

- What experiences do you have with providing descriptive feedback?

- What experiences do you have with providing checklists?

- What experiences do you have with providing rubrics?

- What experiences do you have with providing focusing feedback?

- What experiences do you have with facilitating peer feedback?

- What experiences do you have with facilitating self—assessment?

3) What experiences do you have using formative assessment data to help students improve performance on standardized tests?

- What experiences do you have in providing feedback to help students improve performance on standardized tests?

- What experiences do you have in reteaching to help students improve performance on standardized tests?

- What experiences do you have in grouping students for focused instruction to help students improve performance on standardized tests?

- What experiences do you have in changing instructional plan to help students improve performance on standardized tests?

4) Tell me about how you use technology in regards to formative assessment.

- Tell be about how you use wikis.

- Tell me about your experiences using blogs for formative assessment.

- Tell me about your experiences using handheld devices for formative assessment.

- What experiences do you have using online multiple choice quizzes for

  formative assessment?

Appendix C: Sample Transcript

Researcher: I am a doctoral student studying elementary school teacher perception of their use of formative strategies to inform instruction. I am studying this topic to help determine what types of formative assessment are used and if there are limitations which prevent teachers from using formative assessment effectively. I hope to use this information to determine future professional development needs to help teachers use formative assessment and impact student achievement. I have a letter of informed consent which needs to be signed before we proceed with the interview. The letter explains the study. Your participation is will be confidential. I will be audiotaping the interview and then transcribe it to make sure I accurately record your information. I will be asking questions about formative assessment and how you use it in the classroom. I will be asking you to review the transcription of your interview later, to check to make sure I am accurately recording what you say. If you decide later that you do not want to participate in the study, you may drop out at any time and I will not use your data.

Participant: Okay

Researcher: Thank you for agreeing to be in this study. So let's go ahead and get started.

Participant: No problem.

Researcher: Tell me about your experiences using formative assessment strategies.

Participant: Well, let me see. I feel like I've been using formative assessment for a while without really knowing what it was. It started out I think with my questioning students for their understanding and then adapting my instruction to improve their understanding or moving on if they had understanding. I've been told I'm a pretty good questioner, but I do work on my questioning techniques and try to plan ahead for a few questions that assess

their understanding and then adapting my instruction to improve their understanding or

moving on if they had understanding. I've been told I'm a pretty good questioner, but I

do work on my questioning techniques and try to plan ahead for a few questions that are

higher–level. Then I started using some things like thumbs up and thumbs down to check

for overall understanding, and not sure what they're called, but they're like stoplight cards

and the student puts a green light flash card on their desk if they understand something

and a red light on their desk if they don't understand something. But that one was hard for

me to manage so I really don't use it. I also use something well I use the whiteboard and

dry erase markers with students and my students really like that. And that's where will do

some problems and everybody will have their own whiteboard or maybe pairs will have

their own whiteboard and I give them a problem and they work the problem out and then

they hold the whiteboard board up for me to see. I like that because I can see quickly

where everybody is without really grading give them more practice. This year I've started

using something called Kahoot and that's the program is kind of a game format that I use

for review and the students can from their chrome books I respond to which

multiple–choice answer they think the answer is in the sky like above it rate you know it

gives a percentage in that also tells me who's in the lead in and so it is kind of cool kids

really like that.

Researcher: What experiences do you have differentiating formative assessment?

Participant: I don't really differentiate formative assessment. I differentiate the

instruction, and then sometimes give checklists to students and then they can use it with

whatever format of product that they are using. Such as if somebody decides to do a

poster, they can use the checklist or if somebody decided to do a PowerPoint, they could

checklist, or if they did, say an audio recording of something they could do use the

checklist.

Researcher: What experiences do you have in backward design planning?

Participant: Backward design. I really haven't had any formal training with backward

design planning. I do, well the curriculum and the instruction is driven through the set of

standards that the state gives us to teach. So I look at those standards and I align my

instruction to those standards. When I first started teaching I would teach and then I

would design a test to match that instruction. But now I have some tests already made,

and so I tried to match the instruction to the tests. But sometimes you have to sway from

the test because you have to provide scaffolding because some students don't have the

necessary foundational skills. So, I guess to answer your question I really don't have a lot

of formal training with backward design planning.

Researcher: Okay, what experiences do you have in creating questions using Bloom's

taxonomy?

Participant: Well, as I said earlier, I've been told I'm pretty good at questioning by

administrators. And as a math teacher, I'm really interested in my students knowing how

and why something happens. So I'm always quick questioning and having them write

about how and why they did something in math. I've actually, had professional

development on writing questions. When you first start it's kind of hard to develop the

questions that address the higher levels of Bloom's. I try to plan ahead for those levels

and work them into the lesson so that students are really having to think about how they

apply the learning and make connections. And after you've been practicing the questioning for a while, it does seem to get easier. I guess it's like anything in life, practice makes perfect.

Researcher: What experiences do you have with providing evaluative feedback?

Participant: I'm not sure what do you mean like praise? (Researcher nods.) Well, I think all teachers give praise. I'm I know there's some research that says that that can be bad for students that they taught they need to tie it to the effort that they are giving. If that's the only kind of feedback you're giving there's a problem with that.

Researcher: What experiences do you have with providing descriptive feedback?

Participant: With descriptive feedback well this year, we've been getting some professional development on providing feedback that's tied to the standard. And so we've been working on providing feedback that specific, timely, and measurable and I can't remember what the other thing was. Oh well. But now I tried to when I'm answering a student tell him why he did something well and really tie it to the standard. Like when we're doing a task of some type and I give students a choice to represent their work with a graph, I might go around and notice somebody who's done a great job with their bar graph. So, I would point that out to the class and the student and hold it up and say so and so did a great job with their scale their horizontal scale. I like the way they have equal intervals and have their numbers right beside the tick mark. Something like that. Or another example might be, so and so did a great job of lining up the columns when they are multiplying and putting the zero down on the second row. I really like the way their they are paying close attention to precision. I think that descriptive feedback takes a little

more thought on the part of the teacher, but it really can help the student understand what they're expected to do.

Participant: I use checklists pretty frequently. I use them when I do some types of

Researcher: What experiences do you have in providing checklists for students?

problems on inquiry in math. And I like to put things on there that I expect to see them have completed before they bring it to me to be looked at. There might be something about the writing that I expect them to do with the task, like I have used five academic words correctly, and I have explained how and why. I even put break it down and put sometimes put the algorithm on the checklist to make sure that the students are going through the algorithm as they work a problem. I like using checklist, but I do have a problem with some students racing through the checklist and not really giving it much thought. But for those students that really care, the checklist works well. Especially to catch careless errors.

Researcher: So that leads us to what experiences do you have with providing rubrics for students?

Participant: I have used rubrics in the past. I really don't like them so much for math, because some of the students don't care to be all the way over in the four column on the rubric. They are satisfied with just being in the center. And that's not really the expectation I have for them. I want them to aspire to be fours, so I like using the checklist better. I have used the rubric when I have given them a project to turn in and that was okay. It helped me as much as it did help them to be fair with the assessment. And it helped the parents understand the requirements. Oh, I've used it when I've had to teach

writing. I've used the PASS writing rubric with students. That was helpful, because it helped both the student and I remember all the parts of writing. When I am a student, and I am given a rubric, sometimes I feel like they're a little vague so I think you have to be very specific in your rubric for it to be effective.

Researcher: What experiences do you have with focused feedback?

Participant: Well like I said earlier, this year we're focusing on giving specific feedback tied to the standards. So we're really thinking about the feedback that we give to our students to really help them pinpoint how they can improve and grow as a student. And so sometimes in my lesson plans, well as I lesson plan, I think about what it is that I want the student to do and how that looks. So as I teach I'm constantly telling them you know you need to make sure that you do this or you need to make sure that you're bringing the ruler all the way over to the edge of the item that you're measuring and reading it on the other end. Or that you're really using the right academic language or I like the way that you used the word numerator instead of top number. I think we just have to retrain how we tell kids that they're doing what we expect them to do and really focus it.

Participant: Well, with peer feedback I use that checklist that I talked about with peer feedback as well. So, the students would use that checklist to assess themselves and then they ask their partner or a friend to look over and assess their information and they're usually more even more tough on them that I would be. I've also done something called think–pair–share in the class. So that's something where they share their understanding about something and they help each other come to the, what they think is the right understanding and then they share with the class. That's about all the peer feedback that

we do unless they are working together as pairs. That reminds me, when I do the activity with the white boards, I'll have one person do the writing and the other person do the talking through the problem and so they kinda have to help each other assess each other.

Researcher: What experiences do you have with facilitating self–assessment?

Participant: Well, the checklist also helps students self–assess. When I am closing up a lesson, I'll sometimes ask them to answer the question the essential question of the lesson or I will ask them to write down three things they understand two things that they learned and maybe one thing they really don't understand or they really want to know. So, that's kind of like self that is self–assessment, too. When students have to do their writing that helps them process their understanding of the concept. So I asked students to write about what we've done in class give me a connection in an observation that they may make in class. That really helps them process the information as well and self–assess. The thumbs up or thumbs down strategy helps them assess, also.

Researcher: What experience do you have providing feedback to improve performance on standardized tests?

Participant: Well, as I said I give the feedback to help them improve their performance because I want them to understand and be able to apply the knowledge that I give them in during instruction. And bottom line the test is important to both students and the school, so I do give them feedback as to what they're doing right and wrong so that they can correct their misconception or correct the way they are completing the procedure that I taught.

Researcher: What experiences do you have reteaching to improve performance on standardized tests?

Participant: Well, when I'm reteaching I go back first and look and see if the problem is the conceptual problem. For example, do they understand the academic language, can they describe what they're supposed to do. Or if it's a procedural problem, can they carry out the algorithm, or are they making careless mistakes or are they leaving out a step, or are they forgetting to simplify. So, I try to identify that and then give them that feedback and design a lesson that meets that need. And maybe it's more than one lesson. Maybe it's they just need practice, because we have so many standards. Sometimes there's just not enough time for guided practice in class or independent practice that helps them refine their skill.

Researcher: What experiences do you have using formative assessment data to help students improve performance on standardized tests?

Participant: Most of the time when I'm doing formative assessment, I'm really not thinking about their performance on standardized tests. When I am doing the formative assessment, I'm more interested in what their understanding is, but I guess that leads to their performance on PASS and being able to demonstrate their understanding on the test.

Researcher: What experiences do you have in grouping students for focused instruction to help students improve performance on standardized tests?

Participant: I have tiered the students based on their MAP scores and the subtopics on MAP. I've also tiered them based on how they've performed on one of my tests. And then I differentiate the instruction for each tier and pair them with students accordingly.

So I guess that would help them improve their performance on standardized tests. But I was mostly interested in improving their understanding and performance in class.

Researcher: What experiences do you have in changing instructional plan to help students improve performance on standardized tests?

Participant: Well, I think changing the instructional plan is a daily, weekly occurrence. Especially in math. You can't move on unless they understand how to do some of the fundamental things. There's just no point. So if the way that I taught the lesson isn't reaching most of the students, I will ask some of my friends how they taught it and then maybe try that. Or I'll try to differentiate to meet all the different learning styles in the classroom, because maybe that's why they're not understanding. Because I haven't taught it the way they need taught. I don't think you can be very successful, if you don't change your instructional plan. And then sometimes you have to change your instructional plan because different things come up it during the day, like the administration needs you to do something, or somebody gets sick, or lots of people in your class are sick that day, or it's a certain celebration day and nobody wants to really be on task. So as a teacher, you always have to be flexible and be willing to change your instructional plan, whether it's for improving performance on standardized tests or just improving understanding which probably go hand–in–hand.

Researcher: Tell me about how you use technology in regards to formative assessment.

Participant: Well, I use technology like Kahoot. They enjoyed that. Like I explained earlier. I also use the scores from MAP which is the computer–based assessment to look at student need and trends in the classroom. I have used something like Study Island

which is a computer program. That can give me information to help me know where my students need more work, so that I can design more lessons to meet those needs or give them more practice. So we're a one–to–one school and here I can have them do their writing on the Chromebook and then share it with me as a Google Doc. Then I can comment on their writing and clear up any misconceptions that they have. That's a pretty powerful tool. That's about it.

Researcher: Thank you so much for your time.

Participant: No problem.