ABSTRACT

DOFFERMYRE, JANET JACKSON. Formative Assessment in the Classroom: Getting it Right. (Under the direction of Dr. Lance D. Fusarelli.)

Formative assessment, assessment for learning, involves checking in with students during the learning process to see if they understand concept or standard, before holding them accountable for mastery and moving on to the next concept or standard. This process can be used in the classroom during the lesson or across a subject area as teachers of the same subject create and administer common formative assessments and then use the data to make instructional decisions before moving on. Research has shown increases in student achievement with the use of formative assessment. The problem with formative assessment, however, is that it is defined in different ways. There is not one consistent definition across the educational spectrum. In addition, at the classroom level, teachers tend to be more comfortable with traditional ways of teaching and hesitant to incorporate new strategies that enable them to check in with every student throughout the lesson. Across the subject area, there are issues such as a lack of a collaborative structure within the school that allows teachers to regularly work together on assessments and data analysis. There is also the problem of teachers not knowing how to analyze the data and draw conclusions. For some, there is a lack of comfort in the sharing of data with colleagues.

The purpose of this qualitative study was to explore the use of formative assessment and the resulting data to drive instruction in the classroom. The researcher sought to understand the experiences of classroom teachers as they implement formative assessment in the classroom, use the assessment data to see where the students are in the learning process, and, ultimately, use the data to make decisions about what to do next for the learners.
This study involved six middle school teachers at two schools in a rural school district who were identified by their principals, testing coordinators, and instructional coaches as the best in the school for implementation of formative assessment in the classroom. The researcher used observations and interviews to investigate the following research questions:

1. How do teachers implement formative assessment in the classroom?
2. How do teachers use formative assessment data to make instructional decisions?
3. How were the teachers trained in the use of formative assessment?

The study revealed the same issues found throughout the literature on formative assessment. A variety of definitions exists, even among teachers in the same school and district. Some teachers are still tied to tradition in the way they deliver lessons and check for understanding. There is a lack of collaboration among colleagues, which prevents effective use of formative assessment across subject areas. There also exists a lack of training on the use of data to make instructional decisions.

The study revealed the need for school leaders at all levels to learn about and embrace the concept of formative assessment and build cultures within schools where formative assessment is an expectation and in which instructional leaders facilitate the process.
Formative Assessment in the Classroom: Getting it Right

By

Janet Jackson Doffermyre

A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Doctor of Education

Educational Leadership

Raleigh, North Carolina

2016

APPROVED BY:

Dr. Lance D. Fusarelli
Chair of Advisory Committee

Dr. Colleen G. Paeplow

Dr. Andrew Jackl

Dr. Bonnie C. Fusarelli
DEDICATION

With love and appreciation, I dedicate this work to my husband, Randy, and my three sons, John Paul, Jacob, and Jerrod, along with my four-legged children, Maxi, Randoff, and Oliver. Without the love and support of each of you, I would not have been able to accomplish this work. You are amazing!

I also dedicate this work to my sister, Johnna, who was a perfect example of strength, determination and perseverance during her recent battle with and victory over breast cancer. Thank you for the life lessons and for your constant support.
BIOGRAPHY

Janet Jackson Doffermyre is veteran educator of over thirty-three years. She has served as a high school classroom teacher, instructional coach, and school administrator. She is now in her second year serving as principal of a middle school in a rural school district.
ACKNOWLEDGEMENTS

I would like to acknowledge my advisor and dissertation chair, Dr. Lance D. Fusarelli, for his patience, wisdom, and valuable support and feedback through coursework and the dissertation process.

I also acknowledge my committee members, Dr. Colleen Paeplow, Dr. Andrew Jackl, and Dr. Bonnie Fusarelli, for the impact they had on my studies and for their participation and support through the dissertation process.

With much appreciation, I acknowledge Mr. Brooks Matthews, my former principal, present assistant superintendent, and friend, with whom I have traveled this degree journey from the first day of the first class. Thank you for supporting me as a colleague, friend, and as a fellow student.

Finally, with lots of love and appreciation, I acknowledge my mother and stepfather, my sisters, June and Johnna, and the many friends and colleagues who have loved, supported, and encouraged me during this degree journey. I love all of you!
# TABLE OF CONTENTS

CHAPTER 1 .........................................................................................................................1

Introduction ......................................................................................................................1

Formative Assessment: A Brief Introduction .................................................................2

Statement of the Problem .................................................................................................3

Tied to Tradition .............................................................................................................4

Resistance to Change ....................................................................................................4

Lack of Collaboration ...................................................................................................5

Data Overload and Resistance .....................................................................................7

Purpose of the Study and Research Questions ................................................................10

Definition of Terms .......................................................................................................11

Significance of the Study ...............................................................................................12

Overview of Methodological Approach ........................................................................13

Organization of the Study .............................................................................................14

CHAPTER 2 .......................................................................................................................15

Introduction ....................................................................................................................15

Overview .......................................................................................................................15

Review of the Literature ................................................................................................19

Formative Assessment ...................................................................................................20

Common Formative Assessments ..................................................................................23

Using Data to Make Decision .......................................................................................24

Collaboration ................................................................................................................26
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tradition</td>
<td>29</td>
</tr>
<tr>
<td>Conclusion</td>
<td>31</td>
</tr>
<tr>
<td>Summary of Chapter</td>
<td>32</td>
</tr>
<tr>
<td>CHAPTER 3</td>
<td>33</td>
</tr>
<tr>
<td>Overall Approach and Rationale</td>
<td>33</td>
</tr>
<tr>
<td>Qualitative Study</td>
<td>34</td>
</tr>
<tr>
<td>Research Questions</td>
<td>34</td>
</tr>
<tr>
<td>Site and Population Selection</td>
<td>35</td>
</tr>
<tr>
<td>Data Collection</td>
<td>36</td>
</tr>
<tr>
<td>Data Analysis Procedures</td>
<td>41</td>
</tr>
<tr>
<td>Research Validity and Reliability</td>
<td>43</td>
</tr>
<tr>
<td>Subjectivity Statement</td>
<td>44</td>
</tr>
<tr>
<td>Ethical Issues</td>
<td>45</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>46</td>
</tr>
<tr>
<td>Summary of Chapter</td>
<td>47</td>
</tr>
<tr>
<td>CHAPTER 4</td>
<td>48</td>
</tr>
<tr>
<td>Introduction</td>
<td>48</td>
</tr>
<tr>
<td>Overview of Sample</td>
<td>48</td>
</tr>
<tr>
<td>Learning Focused Training</td>
<td>50</td>
</tr>
<tr>
<td>Definition of Formative Assessment</td>
<td>50</td>
</tr>
<tr>
<td>Formative Assessment Used in the Classroom</td>
<td>53</td>
</tr>
<tr>
<td>Collaboration and Common Assessments</td>
<td>60</td>
</tr>
</tbody>
</table>
CHAPTER ONE

Introduction

As a result of the implementation of the No Child Left Behind Act of 2001 (NCLB), and more recently, the Race to the Top initiative, there continues to be an increasing demand for schools to improve in their quest for higher achievement for all students. Assessment has come to play a major role in the lives of students and teachers. The state imposes different tests on students throughout the year, with a major focus at the end of the school year to measure how students have learned the curriculum. Students continue to take End of Course (EOC) and End of Grade (EOG) tests. This year, in response to federal dollars received through the Race to the Top initiatives, students in North Carolina will be taking North Carolina Final Exams, previously named Common Exams and Measures of Student Learning (MSL), in addition to EOCs and EOGs. Students are also being tested with the Explore, Plan, and ACT assessments in the ninth, ten, and eleventh grades respectively, as well as WorkKeys in the twelfth grade to test for college readiness.

Assessment has become such a large entity that school districts have had to create assessment departments and hire employees who deal solely with assessment. Each school must have an assessment coordinator who is responsible for the security, training, organization, and administration of the many assessments. Much time is invested by many people to implement assessment programs that offer data on how students perform at the end of a unit or course. Traditionally, however, there has been little focus on how students are assessed at the classroom level throughout the year to check and see where they are during the learning process and to see what adjustments, if any, are needed to ensure students are being successful, as opposed to finding out at the end of the year or semester with summative
assessments. Stigler and Hubert (1997) contend, “A focus on standards and accountability that ignores the process of teaching and learning in classrooms will not provide the direction that teachers need in their quest to improve” (p. 19).

**Formative Assessment: A Brief Introduction**

Formative assessments, or assessments *for* learning, are valuable tools used while learning is occurring. The results help teachers identify students’ learning needs so that adjustments in instruction can be made immediately to ensure student success with the learning targets. Thompson and Wiliam (2007) define formative assessment as, “Students and teachers using evidence of learning to adapt teaching and learning to meet immediate learning needs minute-to-minute and day-by-day” (p. 191). Black and Wiliam (1998) assert that assessment becomes *formative* when the evidence is actually used to adapt teaching to meet students’ needs. They claim that formative assessment is at the heart of effective teaching and is an essential component of classroom work that can raise standards of student achievement. The authors depict the classroom as a black box on which inputs such as high-stakes tests are imposed and from which outputs such as high test scores are expected. Little attention is given to what goes on inside the box. In advocating for the use of formative assessment, the authors state, “There is no other way of raising standards for which such a strong prima facie case can be made” (p. 139). According to Wiliam and Black (1998), gains in student achievement of 0.4 to 0.7 standard deviations can be realized through the regular use of classroom formative assessment.

In a review of research on the topic of formative assessment, the Assessment Training Institute (ATI) found that improving formative assessment produced “significant and often substantial learning gains” (Arter, Chappius, Chappius, & Stiggins, 2005, p. 11). The study
also revealed that formative assessment had a greater impact on lower achievers than on other students, which is significant in addressing and reducing achievement gaps. Wiliam (2007) states that research reveals that teacher use of day-by-day and minute-by-minute formative assessment is the most cost-effective strategy for raising student achievement.

**Statement of the Problem**

Teachers, in general, constantly assess their students through observation, discussion, and reviewing student work. However, the idea of gathering assessment data during the learning process, not for a grade, but for the purpose of informing instruction and guiding decision-making and feedback has been slow to be embraced by educators. For many who have embraced the idea of administering formative assessments, the process tends to come to a halt after gathering the data and reviewing the results. The most important step in the process is missed when teachers fail to make changes in instruction based on what they have learned from the student data. Instead of taking the time to review or reteach a concept to ensure students master it, teachers tend to move on to the next concept, leaving students with a gap in learning and a foundation that is not solid.

The researcher has experienced teachers struggling with the process of using formative assessment. They have no problem creating and administering assessments and gathering the data from the assessments. The struggle comes when the teachers try to make instructional decisions based on what they learned. Ainsworth (2007) states, “the true value of assessment is its ability to help educators make accurate and timely inferences about student progress so that they can modify instruction accordingly” (p. 80).
There are several barriers to the effective use of formative assessment by teachers in the classroom, the first of which is tradition. The teaching style and methods of most teachers today are a reflection of the teachers they had when they were students. They see nothing wrong with continuing to teach in the same way and with the same tools, even though the student of today is different from the students from years ago. The attitude often is, “It worked for me,” or “I taught it. They just didn’t get it.” However, classrooms today are filled with students who bring baggage and pressures with them that are unlike those of students years ago. Today’s students are bored sitting in yesterday’s classrooms. Outside of school, students constantly have technology devices at their fingertips, and they engage in electronic games and activities that provide immediate feedback. They need this type of feedback in the classroom. Reeves (2007) asserts, “Effective feedback not only tells students how they performed, but how to improve the next time they engage the task. Effective feedback is provided in such a timely manner that the next opportunity to perform the task is measured in seconds, not weeks or months. Students need for their teachers to change and to meet them where they are” (p. 229).

The effective use of formative assessment, whether the minute-to-minute and day-to-day type in the classroom or common assessments given across subject areas, requires deep change in the way teachers do business. To many people, no matter the profession, change is uncomfortable. Teachers, in general, are deeply ingrained in long-established teaching traditions and some are unwilling to voluntarily embrace change, especially if it affects what takes place in their classrooms. To use formative assessment effectively, teachers must not
only gain knowledge and change practice, they must also change habits and rituals and break away from traditional teaching structures (Wiliam, 2007).

In a two-year study of formative assessment with technology in a North Carolina public school system, Troy and Bulgakov (2013) found that even after training on the components of formative assessment and the provision of SMART Boards, teacher implementation was inconsistent. Teachers were cognizant of the value of gathering evidence of student learning frequently and in a variety of ways and adjusting instruction according to the evidence gathered. In fact, when surveyed, the teachers identified “adjusting instruction in response to evidence about learning” as the most valuable component of formative assessment, but they admitted and demonstrated that following through on these practices was difficult and challenging. The study revealed that teachers in the high school had the lowest rate of observation of “collecting evidence of student learning” in the classrooms. This component was observed most frequently in the elementary school. These findings are consistent with the researcher’s experience in a public high school. Teachers understand the value of formative assessment and the steps involved in the process, but are reluctant to change.

*Lack of Collaboration*

Another barrier to effective implementation of formative assessment in schools is the lack of collaboration among teachers, especially those who teach the same subject. Many teachers still teach in isolation, behind closed doors, doing business the way they always have. Wiliam (2007) argues that in order for teachers to raise student achievement through the use of formative assessment and to change from their traditional methods in the classroom, they must be part of building-based learning communities in which effective
Formative assessment strategies are used and teachers support each other and hold each other accountable. At the course level, this type of collaboration takes place in what is frequently referred to as professional learning communities (PLC) or professional learning teams (PLT), where teachers focus on and are committed to the learning of each student (DuFour, 2006).

Collaboration is effective when people are focused on the right issues. DuFour (2006) describes effective collaboration as “a systematic process in which teachers work together interdependently in order to impact their classroom in ways that will lead to better results for students, for their team, and for their school” (p. 3). He asserts that learning teams must be results-oriented, committed to developing and pursuing measurable improvement goals that are aligned with school and district goals for learning. Effective learning teams that are results-oriented create and administer common formative assessments multiple times throughout the year to gather data on student learning. Members of effective PLTs review the data and identify areas of concern where students are struggling with the curriculum. The teachers also use the data to discover their own strengths and weaknesses with delivery of the curriculum. They have discussions about teaching and learning, wanting to know what their colleagues did differently in delivery of the curriculum when the data reveals their own students did not achieve mastery. They share ideas and strategies that worked in their own classroom to help other teachers whose students failed to achieve mastery. The most important step in the process is when teachers identify students who need additional time and support for learning and then immediately provide that time and support. Together, teachers plan intervention strategies and create enrichment activities to address student needs as a result of the common assessment data, and then, they implement and evaluate these strategies.
and activities. DuFour (2006) describes frequent common formative assessments as “one of the most powerful tools in the PLC arsenal” (p. 5).

Data Overload and Resistance

Barriers to using data prevent many teachers from buying into the process of using common formative assessments. Teachers are often overwhelmed with the amount of data available to them from benchmark assessments, summative end-of-the year assessments, Education Value-Added Assessment System (EVAAS) data, surveys, etc. While all of this data are valuable and can be very revealing and informative, the massive amount of data hinders its effective use. These data are often not received in a timely manner and the value of it is lost because it comes too late after the learning did or did not occur. Militello (2010) asserts, “The data schools receive are usually normative and summative in nature, lack strong curricular links, and arrive too late to be useful for instruction. That is, assessments schools have access to do not provide timely, diagnostic-level data that could be used within the school year for educators” (p. 2). Asking teachers to assess at the classroom level, during the learning, and sit down with colleagues within the same subject area to analyze and compare results and make decisions on what to do next with instruction is a new idea for many—an idea that comes with expectations for some that are too high and too demanding.

Educators and researchers, having realized the need for more useful data that can help increase student achievement through changes in pedagogy and decision-making, are now looking for assessment systems to support their efforts and inform their work (Militello, 2010). Numerous assessment programs have been created in the field of education. There are online tools that create assessments, administer them to students on the computer, and give immediate feedback to the students and the teacher. Different programs generate reports in
different ways. Some programs compile the data in tables, charts, and graphs, by class or individual student. Assessment specialists and companies, capitalizing on the need for more useful data are creating an ever-increasing number of assessments that are for sale to schools and school systems as formative, decision-making tools. The tools enable student achievement data to be available to educators in a timely manner. Militello (2010) contends, however, that there is huge diversity in the characteristics of the assessment systems. This diversity creates a critical need to assess the fit between the intended use of the assessments and the characteristics of the assessment itself. To many educators, the number and variety of assessment tools, as well as the amount of data generated, though informative and valuable, is overwhelming. In addition, frustration is occurring where teachers train on one assessment system and create a bank of assessments, only to find that their district has changed vendors and is now requiring them to train on new systems for creating and administering common assessments.

Some assessment tools are forced on teachers by the district and come with many frustrations such as the assessment does not align with the pacing guide and encompasses concepts not yet taught or learned in the classroom. In addition, the results, when provided come late with no drill-down to identify the concepts students missed. Teachers become frustrated after working with and building assessments from one program, only to have a new one thrust upon them. Often, the data are only for the district’s analysis. This type of frustration impedes the success and enthusiasm for the formative assessment process where it counts the most, in the classroom.

Many teachers and administrators lack the skills needed to translate the data into useful information and are not confident in their attempt to do so. There is a lack of
professional development to help them understand the importance of data and how data can make a difference in their teaching and, ultimately, in the success of students. Some educators do not see the importance of data analysis and are not on board with school initiatives involving data use. They see data collection and analysis as a waste of time and another thing to interfere with their teaching (Bernhardt, 2004). Some view making decisions with data alone as demeaning and precarious because it devalues the wisdom of educators and because research data are fallible (Kowalski, Lasley, & Mahoney, 2008). With the demands on today’s teachers to teach the curriculum in a limited period of time, many feel they do not have time to sit down and analyze data with or without their colleagues. They may also feel intimidated or threatened by the data, or they may have administrators who lack the resources or the will to provide the time for data analysis, decision-making, and goal setting.

The demand for educators to use assessment data, along with fear of results and inadequate training, can unfortunately shift the focus from teaching and learning to the assessments themselves (Militello, 2010). The researcher has observed this shift of focus when working with professional learning teams on a new initiative of creating and implementing common formative assessments in a public high school. Teachers become consumed by the assessment itself and sometimes fail to ensure that it best serves its intended purpose as they stop short of using the data collected to give feedback to students and adjust teaching. Many view the creating and administration of the common assessment as a hoop through which they must jump to satisfy administrative expectations instead of a valuable tool for increasing student success.
In spite of the slow acceptance of the practice of formative assessment in schools, there are some teachers and administrators who understand the value of this aspect of assessment and have made the process a part of the vision of their school and of daily life in the classrooms. Administering common formative assessments across the subject area has become standard procedure in these schools. In some schools, teachers of the same subject meet regularly as a PLT to identify which concepts to teach during a particular time, and they create common assessments to administer to all students enrolled in the subject. Once the assessment is given the teachers compile the data and analyze it together to identify students’ strengths and weaknesses with the curriculum. The teachers also identify their own areas of success or weakness in delivery of the curriculum and learn from each other strategies and processes that worked in the different classrooms. The teachers then go back to their classes and review or reteach the concepts for students who failed to grasp them while adding enrichment for those who did. They create strategies for reassessing the students to ensure mastery of the concept.

The researcher in this study will seek to understand how educators come to value the process of formative assessment and the steps they undertake to learn about, implement, and monitor the process in their schools.

**Purpose of the Study and Research Questions**

The purpose of this qualitative study is to explore the use of formative assessment and the resulting data to drive instruction in the classroom. The researcher will seek to understand the experiences of classroom teachers as they implement formative assessment in the classroom and, then, use the assessment data to see where the students are in the learning
process, and, ultimately, use the data to make decisions about what to do next for the learners.

The researcher in this study will seek to understand how these educators come to value the process of formative assessment and the steps they take to learn about, implement, and monitor the process in their schools. The researcher will seek to answer the following research questions:

1. How do teachers implement formative assessment in the classroom?
2. How do teachers use formative assessment data to make instructional decisions?
3. How were the teachers trained in the use of formative assessment?

Through this study, the researcher hopes to discover how teachers overcome the barriers identified in the literature: tied to tradition, resistance to change, data overload and resistance, and lack of collaboration. The researcher will also identify structures and supports that are in place in schools where teachers value and implement formative assessment in the classroom, and where they use it to make instructional decisions. This information will not only be beneficial in the researcher’s own educational role, but will provide valuable insight to schools and leaders attempting to implement and sustain the use of formative assessment in the classroom.

Definition of Terms

**ACT** - The ACT is a curriculum- and standards-based educational and career planning tool that assesses students’ academic readiness for college.

**Explore** - The ACT Explore is designed to help 8th or 9th graders explore a broad range of options for their future. It prepares students not only for their high school coursework but for
their post-high school choices as well. ACT Explore can serve as an independent program or as the entry point into ACT’s College and Career Readiness System.

EVAAS- The Education Value-Added Assessment System is provided by SAS Institute, Inc. to all school districts in North Carolina. The system, through a secure website, offers reports to help teachers, administrators, and policymakers assess students’ growth through value-added reports, plan for student success through student-level projections, and gain additional insight through diagnostic reports, user-based queries, feeder pattern reports, administrator summaries, etc.

**Plan**- The ACT Plan serves as the midpoint of ACT’s College and Career Readiness System. The Plan helps 10th graders measure their current academic development, explore career/training options, and make plans for the remaining years of high school and beyond.

**Race to the Top**-Race to the Top is a competitive federal grant program initiated by the Department of Education to promote innovation and reform in K-12 education. North Carolina obtained its $400 million dollar grant award in the fall of 2010, with funds covering a four-year grant cycle lasting through 2014.

**WorkKeys**- ACT WorkKeys is a job skills assessment system that helps employers select, hire, train, develop, and retain a high-performance workforce. This series of tests measures foundational and soft skills and offers specialized assessments to target institutional needs.

**Significance of the Study**

Information gained from this study will lead to an understanding of the strategies used by teachers on a daily basis in the classroom to assess for learning, as well as an understanding of how teachers across subject areas are working in effective teams to create, administer, and analyze data from common formative assessments. The researcher hopes to
understand the actions and thought processes of the teachers, especially as they pertain to the steps taken after analysis of the assessment data.

The study will add to the limited research on formative assessment. Dunn and Mulvenon (2009), in their review of the literature on formative assessment, found a very limited body of scientifically based empirical evidence existing to support positive educational outcomes occurring as a direct result of the use of formative assessment. The authors attribute this lack of evidence, in part, to the absence of agreed upon terminology related to the term “formative assessment.” They found in the literature that the definition for formative assessment was vague because it has been defined not only by its inherent characteristics, but also by the use of the assessment.

The experience of the researcher has revealed some confusion among educators in understanding the concept of formative assessment. Can the same assessment be used formatively and summatively? For the purposes of this project, the term formative assessment will be tied to the use of the assessment.

This study will be valuable for school leaders as they make decisions about training needs for themselves and for their teachers. The results of the study will also inform teacher education programs at the university level as decisions are made about skills needed upon entry into the classroom.

**Overview of Methodological Approach**

In order to gain a deep understanding of teachers’ perspectives and experiences with formative assessment, the researcher will conduct a qualitative study.

The researcher will create an interview protocol of approximately ten open-ended questions related to the use of formative assessment in the classroom. Upon recommendation
of the middle school principals, testing coordinators, and instructional coaches, the researcher will select six middle school teachers for the study. Recommendations will be based on classroom observations in which the principals, testing coordinators, and instructional coaches have witnessed teacher use of formative assessment in the classroom. The researcher will interview teachers during planning periods or after school on pre-arranged dates. The researcher will observe teachers in the classroom after the interview stage is complete. The researcher will also collect documents such as lesson plans, PLT minutes, and the School Improvement Plan.

The unit of analysis for this study will be six classroom teachers from two middle schools in a North Carolina school district.

**Organization of the Study**

Within this chapter, the researcher introduced the topic and purpose of the study, as well as discussed the potential significance and the framework for the study. In addition, the researcher identified the research questions that guided the study. In the following chapter, the researcher will presented a literature review, drawing from research in the field of education, particularly the role of formative assessment in the classroom.

In Chapter Three, the researcher described the overall design and methodology of the study, justified the selection of a qualitative study approach and discussed the methods chosen for data collection and analysis. In addition, the researcher explained how she ensured trustworthiness of findings. The chapter closed with a personal biography of the researcher and a discussion of ethical and political considerations that were integrated into the study.
CHAPTER TWO

Introduction

In the previous chapter, the researcher introduced the topic and purpose of the study, and discussed the potential significance and the framework for the study. In addition, the researcher identified the research questions that will guide the study.

In this chapter, the researcher will present a literature review, drawing from research in the field of education related to the role of formative assessment in improving student achievement. The researcher will describe what the experts say about the use of formative assessment in the classroom. Next, the researcher will address what is found in the literature concerning the barriers to the use of formative assessment: using data to make decisions, collaboration, and tradition. The researcher will close with a summary of the chapter as well as an introduction to Chapter Three.

Overview

The 2002 enactment of No Child Left Behind (NCLB) ushered in a new era of accountability in American education. Practically overnight, teachers and administrators went from working in isolation within their own schools to having their students’ test scores analyzed and published for all to see. The recent Race to the Top federal program has added more accountability with teacher evaluation now tied to student performance.

The pressure to reform schools is being felt from the top to the bottom of the educational spectrum. School districts are enthralled in learning to analyze school and student data. Classroom teachers are being asked to analyze student data before making decisions involving teaching and learning. Educators who did not begin their career in an age of high stakes accountability and who have traditionally made decisions “from their gut” are
now being asked to use data in decision-making (Fusarelli, 2008). The call for data-driven decision-making has created an aspect of school culture that did not previously exist.

Data analysis has traditionally been more a part of the culture of the business world (Bernhardt, 2004). Due to increased competition and increased public dissatisfaction, organizations in the public sector have been forced to turn to research-based best practices to help in decision-making and to better ensure survival and the ability to compete. Schools have been slow to adopt research-based best practices as a tool for improvement. Educators who have turned to research-based practices have generally focused on traditional concepts such as brain research or emotional intelligence. Rarely have they focused on data as a tool for strategic school improvement (Fusarelli, 2008).

However, in recent years, data are being viewed as a vital ingredient in school reform and accountability. Administrators and teachers now have more and more data at their fingertips and are encouraged, if not mandated, to become “data-driven” as they make decisions about student learning and continuous school improvement. Mason (2002), suggests that effective data use enables school systems to learn more about their schools, pinpoint challenges and successes, identify areas where improvement is needed, and evaluate the effectiveness of programs and practices.

The amount of data available to educators today is mind-boggling. In addition to the quantitative student achievement data, there is now a plethora of qualitative data available for educators to analyze perceptions of stakeholders, school processes, and demographics (Bernhardt, 2004). The states produce student achievement data in different formats, including data disaggregated by subgroups, to indicate proficiency and growth. North Carolina conducts a teacher survey of working conditions every two years and makes results
available to schools and districts. In addition, districts are conducting surveys of parents, teachers, and students each year to learn stakeholders’ perceptions of their school and the learning environment. The district makes these results available to teachers and administrators. At the school level, data are collected through common assessments and benchmark tests in addition to the regular classroom data. Data are also collected on demographics and school processes such as parent conferences, open house attendance, and staff development. There are many other data sources available to educators to the point of data saturation. According to Bettesworth, Alonzo, and Duesberry (2009) teachers and administrators are too often caught floundering in the depths, as waves of data threaten to drown them.

Barriers exist today that keep educators and schools from reaping the benefits of the massive amount of data available to them. Often educators are overwhelmed with the amount of data and limit themselves to analysis of student achievement data, failing to take advantage of other types of data that, when used along with student achievement data, can be very revealing and informative. Many educators lack the skills needed to translate the data into useful information and are not confident in their attempt to do so. In many districts, there is a lack of professional development to help teachers understand the importance of data and how data can make a difference in their teaching and, ultimately, in the success of their students. Some educators do not see the importance of data analysis and are not on board with school initiatives involving data use. They see data as a waste of time and another thing to interfere with their teaching (Bernhardt, 2004). Some view making decisions with data alone as demeaning and precarious because it devalues the wisdom of educators and because research data are fallible (Kowalski, Lasley, & Mahoney, 2008). Finally, few educators are
adequately trained in data collection and analysis, and many are uncomfortable with it or see it as just another mandate taking time away from the real mission of educating students (Fusarelli, 2008).

With the demands on today’s teachers to teach the curriculum in a limited period of time, many feel they do not have time to sit down and analyze data with or without their colleagues. They may also feel intimidated or threatened by the data, or they may have administrators who lack the resources or the will to provide the time for data analysis, decision-making, and goal setting. Finally, in many situations, data are not made available in a timely manner preventing teachers from using the data in instructionally effective ways (Lasley, 2009, p. 256).

Some teachers, awash in an ever-deepening sea of data, are finding that the most powerful data they can have at their fingertips come from formative assessments used within their classroom and subject area teams throughout the year during the learning process. These teachers have come out from behind their own classroom doors to collaborate with teachers who teach the same subject, overcoming the fear of having their data exposed and embracing new ideas and strategies that are working in other classrooms. These teachers implement changes in instruction and provide interventions and enrichment activities to ensure students master the curriculum objectives they missed before moving on to new ones. These strategies have the power to influence results of all of the data sources mentioned above. However, teachers, in general, are unable and in some cases, unwilling, to step outside of the box and break through the chains of tradition that hold them captive to doing things the way they have always been done when research has proven there is a better way to approach teaching and learning to greater ensure student success.
Review of the Literature

A review of the literature related to formative assessment was conducted using databases available on the website of North Carolina State University as well as books written by the leading authors in the field of assessment. Searches revealed a limited amount of evidence on the effects of formative assessment on student achievement.

Black and Wiliam’s (1998) seminal article on formative assessment, “Inside the Black Box: Raising Standards Through Classroom Assessment,” which piqued the researcher’s interest during earlier degree studies, served as inspiration and as a foundational piece to this research. This work is the definitive study of, and research supporting, formative assessment (Pinchok & Brandt, 2009). The article, which discussed a review of more than 250 empirical studies related to formative assessment, has been cited over one thousand times according to one citation index that denotes all scholarly references. The article has also been referred to in scholarly journals over 194 times (Dunn & Mulvenon, 2009). In the article, Black and Wiliam (1998) concluded that formative assessment improved learning and gains in student achievement were among the largest ever reported, with average effect sizes between 0.4 and 0.7. (p. 61).

Dunn and Mulvenon (2009) challenge some aspects of the work of Black and Wiliam (1998) and contend that the limited scientific evidence on the impact of formative assessment in education is due, in part, to the fact there is no agreed upon definition of formative assessment. Without consensus, the authors contend it is difficult to have a well-formed body of research. The authors also challenge the work of Black and Wiliam (1998) because they claim it relied heavily on a study that included 83% “handicapped” students. The authors assert that higher quality students with a broader representation of the student population
may have led to smaller effect sizes (p. 9). Although the authors raised concerns with a few methodological issues in the article by Black and Wiliam (1998), they concur that there is evidence supporting the use of formative assessment, and they call for more high quality studies to further strengthen the research base (p. 10).

Kingston and Nash (2009) conducted a meta-analysis on studies that were more clearly aligned with K-12 forms of formative assessment and studied their impact. Their study found median effect sizes of 0.25, which they claim are “large enough to indicate formative assessment can be a significant and readily achievable source of improved student learning” (p. 10).

*Formative Assessment*

There are conflicting viewpoints and opinions as to the definition of formative assessment. Some view it as a process for making instructional adjustments based on feedback about student performance. Others see it as a set of tools to monitor student progress during learning. In addition, formative assessment is defined by its usage, which means the activities or tools are formative if the information is used to inform or adapt instruction (Pinchok & Brandt, 2009).

Pinchok and Brandt (2009) analyzed numerous definitions of formative assessment and agreed upon a definition that is consistent with the view of the researcher. They define formative assessment as “a process in which teachers use various tools and strategies to determine what students know, identify gaps in understanding, and plan future instruction to improve learning (p. 2). The formative assessment process can be used with any form of assessment from performance-based to multiple-choice items. The process can also include
written papers, journals, checklists, rubrics, graphic organizers, and other evidence-eliciting techniques (p. 2).

The term “formative” was used, along with the term “summative,” by Michael Scriven in 1967 to suggest two different ways assessment could be used to evaluate a curriculum program in order to justify its adoption by a school system. Two years later, Benjamin Bloom suggested using the terms “formative” and “summative” to evaluate or assess student learning (Wiliam, 2006). Acknowledging the traditional role of summative assessment in judging and classifying students, Bloom suggested the formative use of assessment to provide feedback and correctives at each stage in the teaching-learning process. He also suggested that formative assessment is more effective when it is separated from the grading process and used primarily as a teaching aid (p. 283).

Formative assessments, or assessments for learning, are given for the sole purpose of informing instruction. The main idea is for teachers not to assign grades to the assessments, but to use them to inform the next steps in the teaching and learning process. Ainsworth and Viegut (2006) assert that formative assessments provide teachers an understanding of which standards students have learned and to what degree, and they help teachers determine which minor modifications or major changes in instruction are needed in order for all students to be successful. In addition, the assessments drive teachers to create appropriate lessons and activities for individual learners or groups of learners and provide feedback for students about their current progress and help them set goals for improvement (p. 23).

Whether an assessment is formative or summative is not dependent on the test itself. The same assessment can be used for formative or summative purposes. How the assessment is used determines if it is formative or summative. Whether one is assessing a curriculum
program or student achievement, the assessment is formative if the information gained from it is used to make changes and alter what would have happened in the absence of the information (Wiliam, 2006). Wiliam (2006) states, “The crucial feature of formative assessment is that evidence is evoked, interpreted in terms of learning needs, and used to make adjustments to meet those learning needs” (p. 285).

According to Wiliam and Black (1998) assessment includes all activities students and teachers use to get information that can be used diagnostically to alter teaching and learning. These activities can include teacher observation, classroom discussion, and analysis of student homework and classwork. Assessment becomes formative when information from the assessments is used to adapt teaching and learning to meet student needs (Boston, 2002). This type of assessment informs instruction and aids teachers in knowing when to reteach concepts, try alternate instructional practices, and when to give students more opportunities to practice. The process allows teachers to continually monitor and differentiate instruction throughout the learning process. Reeves (2004a) states, “Great educators use assessment data to make real-time decisions and to restructure their teaching accordingly” (p. 26).

McManus (2008) studied teachers in two North Carolina high schools as they trained on formative assessment and implemented the process in their classrooms. The author found that teachers’ views about assessment changed to be more accepting of students as partners in the assessment process and, as a result, students’ self-efficacy increased as evidenced by their increased commitments to the learning process, use of metacognitive strategies, and levels of engagement. The author identified four steps in the assessment process that are needed to ensure successful implementation: identification of learning targets and criteria for success, elicitation of evidence of learning, recognition of a gap in understanding, and implementation
of action(s) to close the gap. McManus contends that teachers’ beliefs must be challenged, and they must understand the need and importance of formative assessment.

*Common Formative Assessments*

Common formative assessments are developed collaboratively in grade level or department teams. In high schools, these assessments are created and administered in subject areas by teachers who all teach the same content standards to their students. Building the assessments collaboratively allows for incorporation of collective wisdom, knowledge, and experience in the selection, design, and administration of the assessments (Ainsworth & Viegut, 2006).

Ainsworth and Viegut (2006) suggest that following administration of a common formative assessment, the subject team evaluate the assessments and determine the students’ levels of proficiency. Team members then chart the student performance data, analyze the data together, and use the data to make decisions about instructional strategies and interventions to implement to ensure all students achieve success on the content with which they struggled.

The researcher has observed teachers struggling with the idea of not assigning grades to formative assessments. The teachers contend that students will not do their best if they know they are not being assigned a grade. It is the researcher’s hope that through this research project, strategies will be revealed by the target teachers that indicate how they came to value the meaning of formative assessment and how to communicate this value to their students as well as any ideas or strategies they use to involve students in the data analysis and feedback process.
Recent experience of the researcher in working with subject teams to use common formative assessments and the resulting data to make decisions in instruction has revealed hesitation and resistance in the step that requires them to do something different as a result of the data. Teachers often feel hard-pressed to deliver all of the curriculum objectives in a limited period of time and some feel they do not have ample time to create intervention and enrichment activities, thereby falling short in the true implementation of and the failure to realize the full impact of the use of common formative assessments.

*Using Data to Make Decisions*

Teachers generally use assessments to determine levels of student proficiency and to assign letter grades. Ainsworth and Viegut (2006) contend, however, that the true purpose of assessment must be to inform instructional decision-making. The NEA (2003) concurs, stating, “Assessment must be seen as an instructional tool for use while learning is occurring and as an accountability tool to determine if learning has occurred” (p. 22).

Castelleni and Carran (2009) assert that there are few questions about data availability in education. DuFour (2005) states that with all the data schools have at their disposal, they are “data rich and information poor” (p. 40). The real issue is how to understand and use the data to improve student learning and to support educators to enhance student performance. According to Reeves (2004a), “We all have the data we need. What we are missing is a systematic process for using that data to inform and differentiate our instruction (p. 94).

This idea was also noted by Lasley (2009), who found that teachers lacked sufficient technical skills needed to use and interpret data, and that teachers are provided too little time to make thoughtful data-based decisions. Lasley also found data overload as teachers were provided too much disaggregated and untimely data. He named two essential factors for
teachers and administrators to become effective data-based decision makers. One factor is an appreciation of the process, and the other is empowerment to act on the acquired knowledge (p. 253).

Data-based decision-making might never be widely adopted in schools because it is misunderstood, asserts Kowalski (2009), possibly because it is politically or philosophically unacceptable, or possibly because schools and districts lack required resources (p. 16).

The lack of assessment literacy among teachers, principals, and educators, in general, is at the heart of the issue. This point is argued by Stiggins (2002). Teachers and administrators are graduating from certification programs lacking the necessary skills to make formative judgments about students. Stiggins advocates for colleges and universities, along with educational agencies, to improve and redesign how teachers and administrators learn about assessment.

Leithwood, Aitken, and Jantzi (2006) stressed the importance of school leaders helping the group develop shared understandings of the organization. They identified leading with a vision, creating a collaborative culture, providing an appropriate model, providing instructional support, and frequent and regular monitoring of school progress as a few of the requisites of leadership in a data-driven culture. The authors, in their design of a monitoring system for school improvement, stressed that systematic collection of information is critical to school maintenance and improvement and that decisions regarding the stream of problems associated with school improvement initiatives are distributed among many teachers and administrators and are not the sole purview of the principal (p. 93).

The following themes were identified by Raths, Kotch, and Gorowara (2009) as they examined the research on data-driven decision making:
1-School climate must “honor” the use of evidence in making teaching decisions.
2-Evidence should be “curriculum sensitive” and should align with the teacher’s instructional objectives.
3-Teachers need to have access to evidence close to the time it is collected.
4-Teachers need to “buy-in” and have faith that the process is worthwhile, and that data will not be used punitively.
5-Teachers need to acquire new skills and improved understandings about evidence and/or understandings about assessment and how to respond to assessment results.
6-Teachers should use a conceptual approach to interpret the data.
7-Teachers need time in the school day to interpret evidence and to plan instruction based on the evidence.
8-Evidence should be interpreted collaboratively and instructional decisions should be arrived at in conjunction with colleagues. (pp. 213-217)

The authors did not find a certain set of required skills or understandings teachers should possess to make data-driven decisions. They did, however, find that some teachers are more effective in interpreting data from student learning than other teachers (p. 209).

**Collaboration**

Teachers have traditionally worked in isolation as they work with the curriculum and prepare lessons. Using their own energy and resources, they do it all from identifying the lesson objectives, preparing and delivering the lessons, and creating and administering assessments. Results of student work are privately recorded in a grade book and submitted at the end of the grading period. Fortunately, however, in recent years, some teachers have
come to see the power of working together, and have come from behind the doors of their classroom to collaborate with their colleagues on teaching and learning.

One collaboration model, Professional Learning Communities, introduced by Rick DuFour, has spread throughout the international education community. The model defines how teachers should collaborate, including the importance of collaborating around student assessment (Ainsworth & Viegut, 2006). The model provides guiding questions for teachers as they meet in their professional learning teams (PLT):

1. Exactly what is it we want all students to learn?
2. How will we know when each student has acquired the essential knowledge and skills?
3. What happens in our school when a student does not learn? (DuFour, DuFour, Eaker, & Karhanek, 2004, pp. 21-27)

DuFour (2004) states, “The professional learning community model flows from the assumption that the core meaning of formal education is not simply to ensure that students are taught, but to ensure that they learn” (p. 6). He adds that when schools begin functioning as professional learning communities, teachers become aware of the incongruity between their commitment to ensure learning and the lack of a coordinated strategy to respond when students are not learning. In a collaborative culture, educators see the need to work together to achieve their collective purpose of learning for all. This creates collaborative conversations calling on team members to make public their goals, strategies, materials, pacing, questions, concerns, and results—things that have traditionally been private (p. 8).

DuFour (2004) asserts that teachers must stop making excuses not to collaborate. Typical excuses include not having ample time, lack of buy-in from staff members, and a
lack of training on collaboration. Once this obstacle is overcome, teachers will begin to see the value of having conversations with colleagues about best practices and assessments. Through the common formative assessment process, teachers see how their students performed compared with other students and are able to call on colleagues to help them address areas of concern. Instead of working and problem solving in isolation, teachers have access to the strategies, materials, ideas, thoughts, and talents of the entire team.

According to Ainsworth and Viegut (2006), the small learning communities, or PLTs, provide the foundational structure needed to fully implement common formative assessments. The small group of subject area teachers eventually becomes a data team, focused on examining student work in order to accurately diagnose the needs of the learners and plan instructional improvements to ensure student success (p. 79).

The beauty of an effectively functioning PLT is that teachers have a safe environment in which they recognize and respect the needs of each individual to learn from his or her colleagues without fear of judgment or criticism from colleagues or administration. The collaborative environment makes it possible for a teacher whose students did not achieve desired results on a common assessment to safely ask for and receive ideas and input from those teachers whose students were successful.

Ainsworth and Viegut (2006) advocate for collaborative planning as it provides teachers with support for one another and ensures “a safe and restorative place for the sharing of best practices, for requesting professional help or advice, and for creating a sense of community that cannot help but carry over into the classroom to positively impact student learning” (p. 39). Working collaboratively helps teachers to work smarter, not harder, as they focus on teaching and learning amid the many demands on their time as well as with the
ever-increasing pressure of accountability for student success. The teachers of a subject teach the exact same standards, so it only makes sense to collaborate. With synergetic thinking, quality assessments can be produced that will measure what teachers need to know: How did students do relative to the standards in focus? (p. 39)

Militello (2010) recognized the value of collaboration as teachers gain new knowledge from assessment data and use the data to transform pedagogy. He asserts that under the norms of collaboration, data can be used in a non-threatening and effective manner and that through a data-driven professional learning community with assessments centered on instruction, student diagnostics, and teacher professional development, teacher efficacy results.

*Tradition*

Change is difficult. Teachers are being asked to change the way business has always been done in the classroom. Being deeply ingrained in the mold of their own teachers, they are now being asked to approach the teaching and learning process in a different way than what they experienced as students and, for the most part, how they were trained in the educational process. They are being asked to come out from behind their classroom door and collaborate and be transparent with their colleagues.

The researcher has experienced teachers’ reactions at this stage in the educational reform process. Anger, frustration, and tears go along with the process as teachers are expected to sit down with colleagues to discuss teaching and learning. They argue that their students are doing okay if the proficiency level for the class at the end of the year is above 70 percent. However, they do not engage in critical conversations about the other 30 percent who were not successful.
Reeves (2007) asserts that fear of change can create an impenetrable barrier to the opportunity for improvement. Many educators are reluctant to change because they can’t see up front that the new initiative will work. He argues that even the most rigorous scientific research can yield inconsistent results. For example, he notes that chemotherapy works for some patients while yielding negative results for others. Bridges built with precision may fail, and unsinkable ships may hit icebergs. Reeves contends that change has risks, and demands for proof upfront are smokescreens designed to prevent change. Instead of asking for proof, he suggests we ask, “What is the risk if we engage in this change compared to the risk of continuing our present practice?” (p. 7).

Guskey (2007) states that the best assessments for guiding improvement for instruction and student learning are the quizzes, tests, writing assignments, and other assessments teachers use on a regular basis in the classroom. The results are immediate, relevant, and easy to analyze at the student level. However, Guskey argues that in order to use classroom assessments to make improvements, teachers must change the way they view assessment and the way they interpret results.

Asking teachers to adopt a new approach to assessment involves deep change and a departure from the practices they experienced as students. Most teachers, having not been formally trained on assessment, do what they recall their own teachers doing. They rely on assessments generated by publishers of textbooks or instructional materials, or they create their own assessments that resemble those of their previous teachers. They treat assessments as evaluative devices tied to grades at the end of the learning (p. 16). In order for assessments to become an integral part of the learning process, Guskey (2007) insists that teachers must change their approach in three ways: “They must 1) use assessments as sources of
information for both students and teachers, 2) follow assessments with high-quality corrective instruction, and 3) give students second chances to demonstrate success” (p. 16).

DuFour (2004) asserts that educators must change traditional practices and revise prevalent assumptions to a renewed focus on continuous improvement and results. Embracing the idea of data serving as a useful indicator of progress is a must. Teachers must honestly face facts that are sometimes brutal instead of disregarding or excusing data that are not favorable. DuFour adds, “Educators must stop working in isolation and hoarding their ideas, materials, and strategies and begin to work together to meet the needs of all students” (p. 9).

Fusarelli (2008) notes that the idea of teachers working collaboratively to make instructional adjustments and develop targeted interventions contrasts sharply with the traditional culture of working in isolation, which has been so common in teaching. He asserts that using data in decision-making is a common characteristic of high-performing schools. The data-driven concept, however, requires a paradigm shift from process- to results-focused outcomes, and it must be incorporated into school improvement planning process in order to produce long-term results. Fusarelli (2008) adds that in order to create a culture of inquiry where data-based decision making is fostered and encouraged, school leaders must become data literate. He stresses the need for school boards and the community to be educated on the concept as well.

Conclusion

Although formative assessment is not consistently defined within the research literature, there seems to be a general consensus that when done correctly, formative assessment will have a major impact on student achievement. Common formative
assessments foster collaboration among teachers and create consistent expectations across subject areas regarding standards, instruction, and assessment. The effective use of formative assessment requires change and a break from tradition. Teachers must collaborate, and their conversations must change from a focus on teaching to a focus on learning. Teachers need help in this endeavor. They need to be able to determine which data are most relevant and useful for the students presently sitting in their classroom and react when the data informs them that students have not learned. They need effective staff development on the creation of assessments and on data analysis. Teachers must overcome their fear of data and embrace analysis of the data as a safe and effective process for ensuring the success of their students.

**Summary of Chapter**

In this chapter, the researcher has presented a review of the literature related to the role of formative assessment in improving student achievement. The researcher has discussed formative assessment and the use of common assessments, and addressed what is found in the literature concerning the barriers to the use of formative assessment: using data to make decisions, collaboration, resistance to change, and tradition.

In Chapter Three, the researcher will describe the overall design and methodology of the study, justifying the selection of the qualitative study approach and discussing the methods chosen for data collection and analysis. In addition, the researcher will explain how she plans to ensure the trustworthiness of findings. Finally, the researcher will include a personal biography and a discussion of ethical and political considerations that will be integrated into the study.
CHAPTER THREE

Methodology

The purpose of this study was to explore the use of formative assessment and the resulting data to drive instruction in the classroom. The researcher sought a deep understanding of the teachers’ perspectives and experiences as they implemented formative assessments, analyzed the resulting data, and used the data to make decisions about instruction.

Overall Approach and Rationale

Qualitative researchers seek to understand the human experience and treat the uniqueness of individual cases and contexts as important to understanding (Stake, 1995). Qualitative researchers also seek to understand the meaning of events, occurrences and interactions through the eyes of participants in specific situations. Through becoming a part of the participants’ world, the researcher gains a genuine understanding of the meaning participants attach to the events or situations (Creswell, 2007; Gorman & Clayton, 2005). The researcher sought to understand how people felt, what they believed, and how they interpreted events in order to record and describe the beliefs, feelings, and interpretations with accuracy. Creswell (2007) advocated for the use of qualitative research when a detailed understanding of an issue was needed that could only be gained by talking directly with people, going to their homes or places of employment and allowing them to tell their stories (p. 40). By design, the participants are able to tell their stories without influence of the researcher’s opinions or perspectives and without the influence of prior research found in the literature. The quantitative researcher, although interested in context, remains detached from the research, only focused on a few contextual factors thought to be important or relevant,
and uses numerical representations to quantify occurrences or experiences as opposed to the written word used by qualitative researchers (Gorman & Clayton, 2005). Because this study looked for a deep understanding of how teachers came to value and utilize the process of formative assessment and the steps they took to learn about, implement, and monitor the process in their schools, from their distinct frames of reference, a qualitative design was most appropriate for this study.

**Qualitative Study**

The researcher sought to answer the research questions through a qualitative study. The data for the study was collected through multiple sources such as interviews, observation, documents, and journaling. With a qualitative research approach, the researcher has the opportunity to review and revise the instruments and procedures during the study (Wildemuth, 2009). Stake (1995) emphasized the importance of interpretation in qualitative inquiry. He asserted that the researcher, while in the field, must observe the workings of the case and record objectively what is happening, while at the same time examining its meanings and redirecting the focus to substantiate the meanings. In order to have a thorough understanding, the researcher might have to modify the research design and, possibly, modify or replace the research questions.

**Research Questions**

The researcher sought answers to the following research questions:

1. How do teachers use formative assessment in the classroom?

2. How do teachers use formative assessment data to make instructional decisions?

3. How were the teachers trained in the use of formative assessment?
Site and Population Selection

The population, or unit of analysis, for this study consisted of six public middle school teachers in a North Carolina school district. The six teachers were studied to show different perspectives on the use of formative assessment. Gall, Gall, and Borg (2007) defined purposeful sampling as “the process of selecting cases that are likely to be information-rich with respect to the purposes of a qualitative research study” (p. 650). Using purposeful sampling, the researcher chose six teachers from two middle schools in a North Carolina district. Using this type of sampling allowed for the strategic selection of teachers who had been identified by their school principal, testing coordinator, and instructional coach as effective in the use of formative assessment in the classroom. The researcher was prepared to incorporate snowball sampling if the participants identified other teachers who were using formative assessment effectively in the classroom. Snowball sampling is the most common type of purposeful sampling. This strategy involves locating a few key participants who meet the established criteria for the study. Those participants refer the researcher to other participants, causing the number of people in the study to snowball, become bigger and bigger and resulting in more information-rich cases (Merriam, 2009). The teachers in the study did not suggest other teachers who they felt were strong with formative assessment. The researcher chose to forego the use of snowball sampling as the interviews and observations took place and the levels of expertise of the targeted teachers with formative assessment were revealed.

Stake (1995) suggested the first criterion for selecting the cases should be to maximize what can be learned. Because time and access for fieldwork is limited, it is necessary to select cases easy to get to and hospitable to inquiry (p. 4).
A critical step at the beginning of the study was to identify the site and the person with whom initial contact would be made in order to gain entry into the field setting (Gall, Gall, & Borg, 2007). Yin (2011) asserted that gaining access to a field setting is a process, not an event (p. 114). The researcher had to manage her access throughout the time in the field, not taking it for granted. She had to avoid actions that would wear out the welcome. Once the superintendent granted approval for the research project, the researcher contacted the principal, testing coordinator, and instructional coach from each of the two middle schools and asked each of them to submit a list of six teachers who used formative assessment effectively in the classroom. The researcher then compared the lists to look for high implementers who showed up on all three lists. Using the results of the comparisons, the researcher identified the three subjects for the study from each of the two schools.

The researcher contacted each potential participant by e-mail to request participation in the study. Each teacher immediately agreed to participate. Through e-mail, the researcher scheduled a time and date for a visit to discuss the purpose of the study, interview the teacher, and observe a class. The researcher met with each teacher before the interview to explain how the teacher would be contributing to research and to discuss and sign the informed consent form.

**Data Collection**

The researcher is the primary measuring instrument in the qualitative study, carrying out the data collection and interacting closely with research recipients (Gall, Gall, & Borg, 2007). A variety of data collection methods are utilized in qualitative research. Creswell (2007) identified extensive forms, such as documents and records, interviews, observations, and physical artifacts as forms of data typically collected. He also recognized other forms
such as journaling, using texts from e-mail messages, and observing through videotapes and photography as forms of data collection that have emerged in recent years (p. 129). For the purpose of this study, data collection methods included semi-structured interviews, observation, document review, and journaling.

Before entering the field, the researcher tried to be as prepared as possible having reviewed available documentation to become familiar with the participant schools and their vision and focus and by having an interview protocol that was tested with colleagues before the study began. The researcher made notes during the data collection process. There was no need for additional data collection. Merriam (2009) suggested that even while collecting data, the researcher is already beginning to analyze it. This proved to be true for the researcher in this case.

Researchers often choose semi-structured interviews because they realize that individuals understand the world in different ways. Semi-structured interviews involve predetermined questions, but the researcher has the liberty to modify the order of the questions based on his or perception of what was appropriate. The interviewer is also free to change question wording and give explanations (Wildemuth, 2009). The interviews for this study were face-to-face encounters at a predetermined time and place, as opposed to methods like telephone or e-mail. Using the semi-structured type of interview, the researcher gained each participant’s unique perspective on the research topic in a way that was less rigid than through the structured interview process. Probing questions were allowed to encourage participants to clarify or elaborate on their answers. Using semi-structured interviews in this qualitative study provided the researcher with the structure needed to ensure cross-case comparability.
For this study, the researcher utilized an interview guide with ten open-ended questions. The interview protocol, which is located in Appendix A, included questions such as, “How do you define formative assessment?” and “What training have you had on the analysis of assessment data?” The questions, based on the barriers identified in the literature: tied to tradition, resistance to change, data overload and resistance, and lack of collaboration, delved into the actual process implemented by the teachers with the formative assessment process.

In designing the interview guide, the researcher considered Berg’s (2001) suggestion that several different types of questions should be included in the interview guide. Essential questions are those that address the central focus of the study. These questions may be clustered together or spread throughout the study. Throwaway questions are those that the researcher will use to establish rapport at the outset of the interview. Extra questions are those that use different wording to restate the essential questions in the event of the participant’s confusion or lack of clarity. Probing questions like “Can you elaborate on that?” or “Would you please explain more fully?” were used to elicit more information from the interviewee (p. 234).

To ensure the quality of the interview guide, the researcher followed two steps recommended by Berg (2001). First, the researcher sought input from instructors at North Carolina State University, who are experts in the field of qualitative research, who reviewed the guide, examined the questions and offered feedback. The researcher then conducted a pilot test with colleagues to make sure the questions and procedures were applicable in a real study setting (p. 234). Upon completion of these two steps, the interview guide was ready for use in the study.
The researcher conducted the six interviews during the fall semester. Once the participants and locations were confirmed and the interview guide refined, the researcher contacted each participant by e-mail to schedule the interviews and observations. The researcher was prepared to follow up with additional questions through e-mail or arrange for a second interview, if needed. This step was not necessary as all questions were sufficiently answered during the site visit.

Robson (2002) offered specific steps for conducting an interview. The researcher considered these steps in each of the scheduled interviews. The first step called for the interviewer to introduce herself and explain the purpose of the study. During this phase, the researcher explained how anonymity would be assured, got permission to audiotape the interview, and answered any questions the participant had about the study. Using the interview guide, the researcher asked the essential questions of the study. Once satisfied that the participant has answered each essential question, the researcher brought the interview to a close and thanked the participant for his or her participation. The researcher then uploaded the digital file to the computer for transcription and analysis. The researcher transcribed the full text of the interviews to prepare for analysis.

The researcher also incorporated observation into the study. Following the interviews, the researcher observed each of the six teachers in the classroom. Observation takes place in the setting where the phenomenon of interest naturally occurs instead of in a location designated for the purpose of interviewing. Observation data represent a firsthand encounter with the phenomenon of interest as opposed to a secondhand account obtained in an interview (Merriam, 2009, p. 117). The researcher assumed a nonparticipant role during the observation period writing descriptive notes throughout the period. The researcher
transferred the notes to narrative format as soon as possible after the observation. Merriam (2009) suggested that field notes should be highly descriptive and should include the participants, the setting, and the activities and behaviors of the participants (p. 130). The researcher also drew and labeled a diagram of the setting, recorded direct quotations, and wrote observer comments during the observation to record thoughts about what was going on in the classroom. The observation period lasted the length of a 50-minute class period. Each teacher offered to be of more help if questions arose following the visits.

Another method of data collection utilized in this study was researcher journaling. The researcher maintained a journal throughout the study, making notes about her own experiences, actions, and reactions, as well as notes about the actions and reactions of others involved in the study. Stake (1995) stressed the importance of planning for ample time and space immediately following an interview to write down key ideas and interpretive commentary. The researcher planned for thirty to forty-five minutes for reflection after each interview while the information was fresh in her mind.

Document review was to be the final method of data collection incorporated into this study. The researcher planned to request copies of formative assessments given to students as well as minutes from meetings of professional learning teams in which the student data are discussed and plans are made for interventions. However, neither of these events took place. No formative assessment was given during the observed periods, and minutes of professional learning team minutes were unavailable. Therefore, the researcher was unable to secure student formative assessment and plans for interventions as a response to the data. The researcher secured a copy of each school’s School Improvement Plan (SIP) to look for an emphasis on and procedures for implementation of and monitoring of the use of formative
assessment throughout the school. No emphasis on formative assessment was found in either plan.

**Data Analysis Procedures**

Stake (1995) identified two ways in which researchers reach new meanings about cases. The first way was through direct interpretation of the individual instance, and the second way was through aggregation of instances until something can be said about them as a class (p. 74). Data analysis for this study involved intense analysis of data from each teacher in each school and then a comparison of data across teachers and schools.

Data analysis began with preparing and organizing the data, reducing the data to themes through coding and condensing the codes, and then representing the data in a discussion (Creswell, 2007). Realizing that the data collected in a qualitative study can be massive, the researcher in this study organized the data from the outset as it was collected. Maxwell (2005) pointed out that often researchers start the data analysis by reading the interview transcripts, observational notes, or documents to be analyzed. He suggested listening to interview tapes prior to transcription as an alternate method to begin the process. The researcher should write notes on what he or she hears in the data and develop tentative ideas about categories and relationships (p. 96). This initial step added another layer of analysis. The researcher generated verbatim transcripts of the interviews as opposed to notes on data deemed significant. This step contributed to the collection of rich data, data that were detailed enough to provide a full and revealing picture through the lens of the participants (Maxwell, 2005). As outlined by Creswell (2007), the researcher reads the interview transcripts and observational notes in their entirety several times, writing notes and memos in the margins throughout the process. Using the themes from the conceptual framework, the
researcher sorts the text into “prefigured codes” (p. 152). The researcher, however, does not limit the analysis to the prefigured codes, but allows additional codes to emerge throughout the data analysis. The researcher used the constant comparative method during the coding process, looking for similarities and dissimilarities among the data (Creswell, 2003; Yin, 2011). The researcher read and re-read the transcripts to saturate the categories until the information no longer provided new insight in the categories.

Gall, Gall, and Borg (2007) referred to the process of examining data closely in order to identify constructs, themes, and patterns as interpretational analysis. They identified the process of developing categories that adequately encompass and summarize the data as one of the most critical steps of interpretational data analysis (p. 467). Some researchers develop their own categories directly from the data, while others used a list of categories developed by other researchers. Ryan and Bernard (2003) advocated for using literature reviews as rich sources for themes and adding more themes and subthemes as the study progresses. The researcher in this study used the barriers found in the literature: tied to tradition, resistance to change, lack of collaboration, and data overload and resistance, as the categories for comparison. Additional categories of comparison included participation in professional learning teams, methods of providing interventions and assessments when discovering that students did not learn the concept or standard, and participation in training programs that support formative assessment.

Through this study, the researcher hoped to contribute to an understanding of how teachers overcame the barriers to using data to drive instruction. The barriers identified in the literature included: tied to tradition, resistance to change, data overload and resistance, and lack of collaboration. After conducting the interview/observation process with individual
teachers, the researcher analyzed the data and searched for themes that arose across the sets of data.

**Research Validity and Reliability**

Yin (2011) identified three objectives for building trustworthiness and credibility of a qualitative study: transparency, methodic-ness, and adherence to evidence. Based on Yin’s objectives, the researcher described and documented the research procedures in a way that others could review and understand. The data was organized and readily available for close scrutiny by others. The researcher conducted the research in an orderly fashion, following procedures and minimizing carelessness and unexplained bias. The researcher also incorporated cross-checking of procedures and data. The researcher served as the research instrument and maintained a journal documenting ideas, mistakes, confusion, and problems that arose. Finally, the researcher drew conclusions from data that were collected and analyzed in a fair manner.

Lincoln and Guba (1990) recommended activities for the researcher to incorporate to help ensure trustworthiness: prolonged engagement in the field, persistent observation, triangulation, negative case analysis, checking interpretations against raw data, peer debriefing, and member checking (p. 313). They also recommended data collection strategies that adequately solicit representation and methods of coding and drawing conclusions that are transparent. The researcher used triangulation and member checking of data to ensure validity and reliability of the study.

Stake (1995) contends that for accuracy the researcher needs discipline and protocols that do not depend on mere intuition and good intention to get it right (p. 107). In qualitative research, these protocols are referred to as “triangulation.” When triangulating data, the
researcher looks to see if what is being observed and reported carries the same meaning if found under different circumstances (p. 113).

Triangulation is a strategy that involves collecting information with a variety of sources and methods. This process helps to deal with validity threats by reducing the chance for systematic biases or limitations of specific sources or methods (Maxwell, 2005). Triangulation allowed the researcher to gain a broader and more secure understanding of the issues studied. Triangulation assured that the researcher had created a picture as clear and as meaningful as possible, free of personal bias, and not likely to mislead the reader (Stake, 2006). Collecting information from multiple sources allowed for data triangulation, which addressed the trustworthiness and validity of the results.

The researcher used member checking to help triangulate the data in this study. With member checking, the participants were allowed to view the transcripts and analysis of their interviews to check for accuracy and offer feedback. The transcripts were sent electronically to each participant for their review, but none offered additional comments or requests for revision. Finally, the researcher avoided sharing personal experiences with the participants during the interview process. The researcher bracketed areas of potential bias to minimize potential influence on the research. Failure to do so would have reduced the information shared by participants (Creswell, 2007).

**Subjectivity Statement**

The researcher was a 33-year veteran educator who taught Spanish for twenty-three years, served as instructional coach for one year, served as assistant principal for curriculum and instruction for two years, served as a high school media coordinator for two years, served
as a high school assistant principal for two additional years, and is presently serving in her second year as principal of a middle school.

The researcher served in a leadership position with school reform efforts at the high school level before assuming the role of principal of a middle school. She has learned a lot about instructional leadership, creating a student-centered culture, and maintaining professional learning teams and a culture of collaboration in the school. The researcher has trained under a consultant who is a high school principal and strong instructional leader. This principal led the formative assessment process in his school and has been instrumental in creating a culture of collaboration in his school with a common focus on student learning and achievement.

The researcher has worked with teachers through the steps of aligning the curriculum, setting the pace of curriculum delivery, creating common assessments, and analyzing the data, only to watch teachers freeze when it comes to doing something differently based on the results of the data. The researcher believed strongly about the power of formative assessment when teachers are able to cross the hurdle and make adjustments in how they do business to bring about the opportunities for student success. The researcher did not interview teachers from the middle school in which she served as principal.

**Ethical Issues**

The researcher prepared a detailed overview of the objectives of the study to be discussed with the Institutional Review Board (IRB). The researcher discussed how she planned to protect human subjects participating in the study, how interaction would take place between the researcher and participants, and the instruments that would be utilized during the study.
Because this study dealt with contemporary human affairs, ethical standards required the researcher to ensure the protection of human subjects (Yin, 2009). Because of this obligation, the researcher obtained formal approval for the research. A first step was to gain informed consent from all participants by informing them of the nature of the study and the reason their volunteerism was needed. Avoiding the use of deception provided another layer of protection in the study. The researcher protected the privacy and confidentiality of all participants and avoided placing them in an undesirable position.

The researcher demonstrated integrity by disclosing conditions that might influence the study. These disclosures not only addressed issues like choice of methods and selection of participants, but the researcher was up front about personal roles and characteristics that might have affected the study (Yin, 2011). For example, the researcher was a veteran educator who was serving as a school administrator and instructional leader. In addition, the researcher has mentored teachers for over twenty years. These roles and the knowledge gained by serving in them placed the researcher in a good position to conduct this study. However, the researcher remained objective throughout the study and minimized the effects of her experiences on the study.

**Limitations of the Study**

Qualitative studies are not as strong a base for generalizing to a population of cases as other research designs (Stake, 1995). This study was limited to six public school teachers from two middle schools in the same school district. Therefore, the potential for generalization was limited.

There were limitations with the use of interviews in a study. For example, the interviewee might have avoided delving deep into his or her answer due to feeling restrained.
by time. Sitting down face to face with an interviewer might have been uncomfortable for some of the subjects, which might have prevented them from being totally focused on the question at hand and unable to answer with the thoroughness they might have if they were sitting alone filling out a survey question. In addition, when being interviewed about their own school and colleagues, the subjects might have worried about confidentiality. This fear might have caused the subjects to give socially acceptable answers—answers he or she felt the researcher wanted to hear—instead of being totally up front with the answers.

Observation of the teachers during one class period limited the amount of possible information gained as to how the teachers used formative assessment on a regular basis. The teachers, knowing that an observer would be present, may possibly have used the best formative assessment strategies in their toolboxes on the day of the observation. It was also possible that no evidence of intervention or enrichment activities, based on formative assessment data, would be taking place due to the time frame in which the observations fell as it relates to course pacing and curriculum delivery.

**Summary of Chapter**

In this chapter, the researcher described the overall design and methodology of the study, justifying the selection of the qualitative study approach and discussing the methods chosen for data collection and analysis. In addition, the researcher explained how she planned to ensure trustworthiness of findings. Finally, the researcher included a personal biography and a discussion of ethical and political considerations that were integrated into the study.
CHAPTER FOUR

Findings and Analysis

Introduction

In the three previous chapters, the researcher defined the purpose of the study, analyzed the body of literature on the topic of formative assessment, and gave an overview of the methodology to be used to conduct the research.

In this chapter, the researcher will discuss findings of the study that explored the use of formative assessment and student data to drive instruction in the classroom. The qualitative study was guided by the following research questions:

1. How do teachers implement formative assessment in the classroom?
2. How do teachers use formative assessment data to make instructional decisions?
3. How were the teachers trained in the use of formative assessment?

The researcher sought to understand the experiences of classroom teachers as they implemented formative assessment in the classroom and used the assessment data to see where the students were in the learning process in order to make decisions about what to do next for the learners. The researcher in this study also sought to understand how these educators came to value the process of formative assessment and the steps they took to learn about, implement, and monitor the process in their schools.

Overview of Sample

After gaining permission to conduct research in the two middle schools, the researcher requested from the principal, testing coordinator, and instructional coach at each school a list of teachers who they felt were strong in the use of formative assessment in the
classroom. The researcher cross-referenced the three lists and identified the three teachers from each school whose names appeared most frequently across the lists.

Teachers A, B, and F teach at a rural middle school with a population of approximately 1100 students. Teachers C, D, and E teach at a rural middle school with approximately 700 students. Both schools are in the same North Carolina school district, which consists of 17 elementary schools, six middle schools, and four high schools. Both schools have principals with over 25 years of service in education and over 10 years as a school administrator. In addition, both schools have been designated this year as low-performing by the state due to not meeting proficiency on last year’s state tests and not exceeding growth for the year.

Teacher A is a veteran teacher of 19 years. She holds a Bachelor of Science degree in Middle School Education with Language Arts and Social Studies. She has been teaching English Language Arts at her present school for 19 years.

Teacher B has a Bachelor of Science degree in Zoology. She worked as a scientist for five years and then took time off to just be a mom. She decided to go back to school to take courses to become a middle school teacher. Teacher B has been teaching for seven years, serving at her present school for four years. She teaches 8th grade science.

Teacher C attended a community college and received an Associate of Arts degree before transferring to a university to obtain a degree in teaching. She is in her fourth year of teaching language arts.

Teacher D attended college in a northern state where double majors are required. She earned degrees in Childhood Education and Special Education. She became certified for grades one through six in both areas before moving to North Carolina where she became
certified in K-12 Special Education, K-8 Math and Language Arts, and K-6 for all subjects. She has been teaching math at her present school for seven years.

Teacher E majored in Education, Government, and Journalism before becoming a teacher. She has been teaching English Language Arts at her present school for sixteen years, and plans to retire at the end of this school year.

Teacher F earned a Bachelor of Science degree in Middle Grades Math Education with an endorsement in Academically or Intellectually Gifted (AIG) Services. She is in her 25th year of teaching, serving in her 24th year at her present school. She teaches Advanced 8th Grade Math.

Learning Focused Training

A common thread among the six teachers in the study is prior training on the Learning Focused instructional model. This training was provided by the district and was required of all teachers in the district. The model is a framework for thinking about, planning, and delivering instruction using exemplary practices with a focus on learning. Teachers are trained on previewing and accelerating student learning, planning acquisition lessons for activating prior knowledge, planning for extending and refining student levels of learning, and planning units that include creating and implementing formative assessments for evidence of student learning.

In 2013, the school district asked principals to choose early adopters for training on the Learning Focused Model who would pilot the program during the 2013-2014 school year. The pilot took place the year before full district training and implementation. In June of 2014, all teachers participated in an all-day mandatory training on the first aspect of the Learning Focused model. The other three mandatory days were scheduled throughout the
2014-2015 school year in site-based sessions. All teachers and administrators were trained by the end of the 2014-2015 school year. Access to the Learning Focused online program, was also provided to teachers. The program provides strategies, videos, examples of high-yield strategies, lesson plans, and templates for graphic organizers.

**Definition of Formative Assessment**


The six teachers in this study defined formative assessment in a variety of ways. Teacher A stated, “To me, formative assessments are teacher-made tests and the end-of-grade type testing.” She stated that students receive a grade for the formative assessments. Teacher A also stated, “at a state level or federal level, I wish there was not as much formative assessment. I wish the powers would go back to local power so that we as a school system had the power to go back and say ‘Okay, this is working for our county’ or just give us the power to make and decide which tests to give and which tests to get rid of, because some are literally just in our way of quality instruction.”

Teacher B defined formative assessment as “something you can look at with the kids and know if they understand the concepts that you are teaching, and it does not have to be a tests, like a pen and paper or multiple-choice test.”

In defining formative assessment, Teacher C stated, “I think it is a quick check-in with students throughout the lesson, just to kind of make sure everybody is still with you. I
actually use them frequently as a refocus to help with my students who struggle with paying attention. It’s a quick way to remind them to come back to me, and I try to do them theoretically and ideally every 10 to 15 minutes.”

Teacher D stated, “Formative assessment can be about anything. It is just kind of like on-the-spot, where they’re at, if they’ve got it, or if they don’t have it.” She added, “It’s like walking around the classroom. If I have noticed, you know, we’re working on a problem and a child is, you know, if the child’s got it, that’s perfect. If the child is struggling with something, look for the steps they’re struggling with, and fix that.”

Teacher E defined formative assessment as “that final culminating thing after you have taught something.” She added, “I try to limit that. I try to give the children lots of chances to learn before they get to that point. But, I just think of that as a final evaluation.”

Teacher F stated, “Formative assessments are when I look to see when the kids are getting it or not getting it. Sometimes it is ‘aha’ moments when they’re nodding their heads, and they are agreeing. Sometimes it is work they turn in, and sometimes it is quizzes. I also give tickets out the door. All of those things are formative assessments, because then I can re-evaluate where I need to go from there. This morning I saw that they didn’t quite get it on their homework assignment, so I had to back up and revamp before we could move forward.”

Four of the teachers defined formative assessment at the classroom level, checking in with students during the learning process. Two teachers referred to formative assessments as culminating, or summative, activities at the end of the learning process. They failed to mention assessing “for” learning during the lesson. The power of formative assessment is revealed when educators stop periodically during the teaching and learning process to check for learning of all students. Formative assessment assesses “for” learning as opposed to
“summative assessment,” which comes at the end of a lesson or unit, becoming an assessment “of” learning. Teachers A and E seemed to rely mainly on summative assessment and did not show evidence of assessing for learning during lessons. Summative assessment involves a recorded grade that basically sorts or ranks students on knowledge of the content. The value of formative assessment is evident when teachers elicit responses from all students in the class, whether it be an oral answer, a written answer, or a hand gesture, to check for learning, without penalty. This allows the teacher to immediately address missed concepts before moving on and gives all students the chance to add future new ideas and concepts to a more solid foundation of learning.

The researcher anticipated richer conversation with the teachers about the use of formative assessment in the classroom. Through training on the Learning Focused model alone, all of the teachers in the study should be well-equipped with a plethora of strategies for quick formative assessment during a lesson.

**Formative Assessments Used in the Classroom**

Interviews and observations of the six teachers in the study revealed different levels of implementation of formative assessment strategies.

Teacher A, in spite of defining formative assessment as a negative process imposed on students at the end of the year and throughout the year as graded unit tests, shared formative assessment strategies she uses in the classroom. She gave credit to Sheltered Instruction Observation Protocol (SIOP) and Learning Focused training for the strategies she uses in daily instruction. She stated that use of SIOP and Learning Focused strategies “leads me to see the end result so that I can formulate my tests.” She described using individual white boards, putting students in cooperative learning groups, using think-pair-share
activities to help determine if students have grasped certain concepts. She referred to the activity during the observation period as a formative assessment strategy. She stated, “even though it is not paper and pencil, it is a way for me to gauge if they got the concept of what I was teaching.” She added, “So, I guess it’s not always just teacher-made, it could be something that is visual for teachers to gauge.”

During the observation of Teacher A’s lesson, the classroom was transformed into the setting of Edgar Allen Poe’s, “The Raven.” Costumes and props were used as four students acted out the literary work. The remaining students sat on the floor and watched the performance. Teacher A stated that activities leading to the performance included a study of the biography of Edgar Allen Poe, assigning a YouTube production of “The Raven” for students to watch, and then giving students a copy of “The Raven” for students to annotate in their own words. Although the setting and the performance of “The Raven” was well done by the four students involved, it was not clear to the researcher how the performance of “The Raven” informed the teacher of the success of the entire class in grasping the element of theme and the message of the literary work.

Teacher B credited Learning Focused training, provided by the district, and beginning teacher training at the university she attended with helping her to know the difference in types of assessments and her knowledge of different types of formative assessment strategies. In describing formative assessment strategies she implements in the classroom, Teacher B referred to a vocabulary activity she uses periodically to review important terms. Students pick up a card as they enter the classroom, then the teacher calls on them randomly to define the word. Sometimes, she has the students switch cards with a neighbor and teach each other. She reteaches words that are frequently missed and tries to incorporate unlearned concepts
into hands-on learning activities. Teacher B also described a “Throwback Thursday activity in which she creates an online ten-question assessment of science vocabulary and concepts from the beginning of the year. She continues to include questions they miss a lot as the Throwback Thursday activities progress throughout the year, hoping that “by the end of the year they will know it.”

At the beginning of the observation of Teacher B’s class, students picked up a worksheet as they entered the classroom as the teacher directed them to look at the SmartBoard and complete the Table of Contents activity. She then helped students find an electronic book on watersheds using their Chromebooks. The entire observation period was used with having students complete a scavenger hunt using links they found in the Teacher B’s Google Classroom. During the activity, the students were talkative and frequently off-task. The teacher monitored and helped at times, but stopped frequently to speak to the researcher as she observed student activity. Teacher B indicated that the class was “low, disruptive, and hard to teach.” She added that the students “can’t recall information.” Teacher B also brought an example of the interactive notebook she required students to maintain throughout the year, indicating she also keeps an interactive notebook for students to refer to when they have questions. After class, the teacher indicated she would not grade the activity and provide student feedback. She indicated, “That is one of my downfalls.”

When asked about training on the process of formative assessment, Teacher C stated, “I have been SIOP trained which, you know, encourages a lot of formative, not summative, but formative check-ins.” She added that the university she attended pushed formative assessment a lot in the education curriculum and encouraged new teachers to break the class period apart instead of lecturing students for 50 minutes and sending them out the door.
Teacher C described using a number of formative assessment strategies such as ticket-out-the-door and hand check-in, where students give an indication of one through five to indicate their grasp of the concepts. She also described having students check in with each other during paired activities. Teacher C stops and says, “Okay, let me think of a different way to say it,” when she notices that students are not understanding.

Teacher C started the observation period by immediately engaging students in a warm-up independent reading activity using an online reading program. Students were all engaged on their Chromebooks in an activity that allowed them to create an Avatar and earn coins as they completed a reading assignment. The teacher was allowed to monitor student activity electronically and offer feedback to ensure students were on task with the assignment. The teacher then led students through a brief review of prefixes, suffixes, and root words in which the students and teachers used hand gestures to illustrate meaning. The teacher called out words for students to define using their knowledge of the prefixes, suffixes, and root words. Teacher C then gave students feedback on a quiz they took the day before. She gave examples of common mistakes and explained how it was clear that many of the students did not read the assigned passages. The remaining portion of the class period included a review of articles describing the stance of presidential candidates on certain issues. The teacher reviewed the theme of perception versus reality and the definition of bias. Students found the articles in Teacher C’s Google Classroom. Students read the articles, completed a compare and contrast graphic organizer, discussed the articles with a neighbor, and then decided their own stance on the issue. After discussing seven political issues and reading the remaining candidate biographies, the students voted for president using paper ballots. Teacher C used an anonymous ticket-out-the-door activity to learn how students used
the comparison chart to make a decision about their choice of a political party. Throughout the observation period, the teacher was engaged with the students, offering assistance and interjecting teachable moments with vocabulary and literary concepts.

Teacher D credited different training activities with her knowledge of formative assessment. She mentioned Learning Focused, Kahoot (an online assessment tool), and Google Apps, which have provided numerous strategies for implementing formative assessment in her classroom. Teacher D described numerous ways she checks for learning using questioning, problems of the day, showing the boards, and games of Jeopardy and Survivor. She stated that she incorporates End-of-Grade type assessment questions as frequently as possible to ensure students are prepared for the end-of-year assessments.

Teacher D explained how she uses assessment data to group students based on questions they got right or wrong and how she reacts to homework assignments when it appears that students did not understand, incorporating strategies that help re-teach the concepts.

Teacher D’s students started the observation period by solving a problem of the day. The purpose of the problem of the day was to review and reinforce the technique for completing gridded response problems on the end-of-grade test. The teacher not only guided the students through solving the problem, but had students review the technique and strategy for solving the type of problem. Teacher D then led students through a review activity using the online program, Kahoot. Students used their Chromebooks to answer multiple-choice questions displayed on the SmartBoard by the teacher. Results of student answers were displayed on the SmartBoard when the timer sounded that all students had answered. The teacher was able to assess immediately how many students were correct or wrong and immediately worked each problem to ensure student understanding.
Interestingly, the teacher remained at the front of the room as students responded. The researcher, seated at the back of the classroom, was able to identify immediately a particular student who struggled with each problem because of the “X” that appeared on the screen when the student missed the problem. The teacher was only able to ascertain from her viewpoint the results of the class as a whole. A viewpoint from the back of the room helped to identify the individual students who were struggling as well as those who were successful with each of the concepts. Before leaving the room, the students were required to write an explanation to a friend who was absent that day of how to convert fractions to decimals, decimals to percents, and percents to decimals. These were the topics reviewed through the Kahoot activity. The teacher planned to read the explanations before the next class period to guide her next steps in instruction.

Teacher E stated that she has taken advantage of all of the staff development the district has offered on formative assessment, with Learning Focused being the most recent. She added that there are some aspects of Learning Focused that she really likes. When asked how she implements formative assessment strategies in the classroom, Teacher E stated that she gives weekly spelling tests, not only requiring students to spell the words, but also requiring them to use the words in a meaningful sentence. She stated that for reading comprehension, “I follow Common Core Standards, trying to teach my students how to answer those type questions. So I just basically use whatever Common Core type it is.” When asked if the weekly assessments are for a grade, the teacher replied, “Yes.” When asked to describe strategies she uses to make adjustments in instruction when she finds out students have not learned a concept, Teacher E stated that most of the time she can tell from a child’s response whether or not he or she understands. If they are not understanding, the
teacher stated, “A lot of times, I will come back and revisit that.” She added that she tries to adjust instruction as they go along.

Teacher E stated that one of her main strategies is her “no fail policy.” She offers student opportunities not to fail, for example, by having student write words “X” amounts of time, turn it in, and get at least a passing grade. Teacher E added that if she sees that students continually are not understanding the concept, she “pulls Mama and Daddy in” and says, “We need to take a look at this for after-school opportunities.”

The observation period of Teacher E involved students reading a poem found in the teacher’s Google Classroom and then drawing a picture to depict the meaning they drew from reading the poem. After a brief discussion of the poem, with several students sharing their interpretations, the teacher introduced a new novel and had students predict what the novel would be about, based on the title. The teacher read Chapter 1 aloud to the students for the remainder of the class period, stopping at different intervals for students to make notes of terms or ideas.

Teacher F attributed her knowledge of formative assessment strategies to in-service trainings provided by the district. She credited the Learning Focused model for including many formative assessment strategies such as “Ticket-Out-the-Door” to “drive your instruction and guide you where to move next.” Teacher F stated that she uses strategies “ticket-out-the-door, quizzes, and homework assignments” as formative assessments. She added, “Honestly, I get the majority of my feedback from the students, in their responses—the furrowed brow that tells you they are not getting it, the repeated questions, and you realize, it’s just not clicking. That’s my biggest form of formative assessment.” When asked about strategies she uses in the classroom to make adjustments in instruction as she finds out
students have not learned a concept, Teacher F stated, “Reteaching is one of the biggest things—saying it in a different way.” She added that peer tutoring is another strategy she uses, allowing students to work with a partner because she feels that a child can “get it” when hearing another child explain a concept.

As students entered the math classroom at the beginning of the observation period, Teacher F told them to grab their calculator and take out a pencil and paper. She told them she had received much e-mail from students the night before with questions about the word problems on the homework assignment. She took the time to reteach the methods for setting up word problems and continually checked as she worked through examples to make sure students were gaining a better understanding of the process. Before introducing the new concept for the day, graphing linear inequalities, Teacher F reviewed previously learned concepts on graphing inequalities with a number line. When finished, the teacher stated, “That was to help you make connections. Tell me, did you get that? Yes, no, maybe, kinda?” The students responded affirmatively, and Teacher F began walking students through graphing the inequalities using the calculator. Class ended with an explanation of the evening’s homework assignment.

Collaboration and Common Assessments

Teachers A, B, and F are employed in the same school. However, the researcher found different levels of collaboration among the subject areas. Teacher A shared that her English Language Arts PLT meets weekly to brainstorm ideas off of each other. The teachers plan units and search for resources together to support their efforts in teaching all aspects of the ELA curriculum, including writing, listening, and speaking. There was no evidence of the creation, administration, and analysis of common formative assessments within the ELA
PLT. Teacher A stated, “There is just not enough time in our day. We would have to—for it to be in a perfect world—we would have to spend hours after.”

Teacher B and her science colleagues do not meet regularly as a PLT to collaborate and create common formative assessments. She described how in previous years, the teachers tried to give online formative assessments, but some teachers would fail to administer the assessment on the determined day, and some did not administer the assessment at all. She felt that some teachers, having access to the questions ahead of time, made sure their students knew the answers, which made their scores be higher. Teacher B stated that this year, the science teachers do not use the same assessments, and “there is nothing wrong with that at all.”

Teacher F meets weekly with her math colleagues on the designated day for PLTs. However, she shared that there is usually something required of teachers by administration during that PLT meeting, so she and her math colleagues meet at other times to bring to the table strategies that have worked in their individual classrooms. She stated, “What I teach becomes a hodge-podge of what everybody else uses, because what I say may not click, but the way somebody else presents it might click for a student.” Teacher F stated that she and her colleagues do not build many common formative assessments together because most of their assessments are summative. She feels this helps to get them ready for the end-of-grade assessments.

When asked to explain how she and the other ELA teachers collaborate on the creation and administering of common formative assessments, Teacher C was not familiar with the term “common formative assessments.” Once the term was explained, Teacher C stated that she and a colleague used a pre-test from the beginning of the year to see where the
students where in relation to their knowledge of the standards. She added that they have created and administered a common assessment since then to see if students have grown in mastery of the standards.

Teacher D explained how she and her colleagues sit down together every day to create lesson plans and look through resources that would be beneficial to the students. They also build assessments together and compare results once the assessment has been administered. Teacher D stated that if her students didn’t do well on a concept, she will ask the other teacher how she taught they concept and then discuss what Teacher D should do differently. She added, “I think that’s beneficial. We all teach different ways. We may teach the same thing, but we teach it differently. I love being able to collaborate with her.”

Teacher E stated that “last year” she and her colleagues met at regular times during the year by subject area. She explained that the teachers would use School Net or some other resource to build a common assessment that reflected what had been taught in previous weeks.

Sharing of Data with Colleagues

All six of the teachers in the study expressed that they were not uncomfortable with sharing their students’ data with their colleagues. One teacher described how she and her colleagues meet, share out, and see if students “got it” or “did not get it.” She added, “We are a strong team of ELA teachers, and we go back and we reteach. We see what did not work the first time. We may pull in visuals from the Internet, YouTube, or use hands-on manipulatives.”

Teacher B stated that she didn’t mind sharing her students’ data during PLT meetings. She mentioned one class that “drives me insane.” She stated, “I’ll share their data to show
that because they are losing about fifteen minutes of instruction every day because they can’t get settled, it is actually hurting their grades.”

Teacher C said she was fine with sharing her students’ data. She added that her “walls are down now at this point.” She added that there is too much for teachers to gain from one another to be embarrassed about the data. She added, “It is what it is. We all understand the nature of those tests, and we have to acknowledge that when we have our daily discussions. I don’t think it is a reflection of me as a person or as a teacher in the bigger scheme of things.”

Teacher D has no problem sharing her students’ data during PLT meetings. She stated that if she has a child struggling in math and learns that he or she is being successful in reading, it is beneficial for her to know that data so that she can have a conversation with the child about what is making him or successful in reading. She added, “I think that it’s important that everybody knows where each child is at. I don’t think it should be hidden.”

Teacher E, when asked how she feels about sharing her students’ data with her colleagues simply stated, “I don’t have a problem with that.”

Teacher F stated that she does not mind sharing student data at all. She explained that she teaches all of the academically gifted students who typically score fours and fives on their end-of-grade tests, which makes her data difficult to compare with that of other teachers. She added, “If all of our kids were homogeneously grouped, I think that part would be easier. But, when you have kids that started in the 95th percentile, their scores are going to look better. That makes it hard sometimes to share in a PLT.”

**Interventions and Reassessment**

The researcher, in an effort to learn how teachers react to formative assessment data, asked the teachers how students are reassessed following the implementation of intervention
strategies. Teacher A indicated that she and her colleagues give a unit test and record the grade in the grade book. Teacher B allows students to do test corrections. She stated that she will later pull questions with which the students struggled and ask them again on “Throwback Thursdays” She cycles the material back through future lessons to be sure students have mastered it by the end of the year.

Teacher C explained that she and her colleague do a lot of reteaching of the concepts with which students struggle. She stated that she and her colleague administer common assessments monthly, and they incorporate competition to keep students engaged and interested in doing their best.

Teacher D and her colleague regroup students based on mastery of concepts to reteach or explain the concepts again. They also meet individually with students to discover the reasons for their struggle with the concepts. At Teacher D’s school, there is an intervention period built into the school day. Therefore, she is able to implement targeted interventions and reassessments during that period.

Teacher E and her colleague are planning to “change up” or regroup students for a period of time to reteach a concept, especially if “one teacher is really good at teaching a certain thing.” She stated that they would “give another assessment” to find out if students have learned the concepts following the interventions. She added that the grade on the reassessment would be recorded.

Teacher F’s school also has an intervention period built into the school day. She described interventions as having students work on computer-based programs or participate in peer tutoring or small-group instruction. As for finding out if students mastered the
concepts after the interventions, Teacher F explained that with math, one thing builds on the next, so there is a constant cycling of concepts through the lessons and assessing of mastery.

Teacher Observations

The six teachers involved in the study were aware that the researcher would be observing the class and focusing on the use of formative assessment in the classroom. The researcher found few formative assessment strategies used during instruction.

Teacher A’s classroom had been converted into the setting of Edgar Allen Poe’s, “The Raven.” Five students were involved in reading and acting out the literary work, while the other students sat on the floor and watched. The performance was the culminating activity of a unit on theme and covered the entire observation period. The researcher was not able to observe any type of questioning or assessing of students.

Teacher B’s students picked up a worksheet as they entered the classroom. The teacher explained to students that during the class period, they would read informational text, a manual on river basins, to discover facts about the river basins in North Carolina. She instructed students to go to her Google classroom using their Chromebooks and find the links for their research. Teacher B walked around as students worked, and, at times, stopped to share thoughts with the researcher about the class. She indicated that the class is “low, disruptive, hard to teach, and can’t recall information.” The activity lasted for the entire observation period. Many students were off task, talking and socializing. Others worked diligently to complete the assignment. When the bell rang, the students exited the classroom. When asked how students would receive feedback on the assignment, Teacher B stated that she probably would not grade the assignment and give feedback. She added, “That is one of my weaknesses.”
Teacher C’s students entered the classroom and immediately started to work on an independent reading activity using an online reading program as their warm-up activity. The teacher monitored their work on her computer after silently checking attendance. This ten-minute reading activity was part of a school-wide reading initiative. The teacher then led students through an energetic review of prefixes, suffixes, and root words. All students responded verbally and with hand gestures. The teacher then gave feedback on a quiz from the day before, pointing out to the students where they went wrong in the assignment.

Teacher C directed the students to her Google classroom and reminded them that they were studying the theme perception versus reality. She indicated that this theme causes blurred lines in literature and in politics. The standard addressed in the lesson called for students to analyze the interactions between individual events and ideas.

Teacher C led her students through an interesting activity in which they read short passages about different presidential candidates and the recent debates and used the informational passages to decide their own stand on the issue. Students were able to talk with a partner about each issue before making their decision. The students discussed and chose sides on issues like gun control, economic ideas, global warming, and the Affordable Care Act. After hearing the teacher read aloud a short biography on Ben Carson, the students were asked to consider the different candidates they had heard about, some on previous days, and cast their vote on a paper ballot. Their votes would be tallied with the other classes, and they would hear the results the next day. The teacher informed students that they would analyze the next day what impact it had on their decision that Ben Carson was the last candidate they heard about. They would also analyze how their choices matched up with what they had read.

Teacher C assigned a ticket-out-the-door activity in which students had to anonymously tell
the teacher which side they chose, based on the comparison chart they had created about the
candidates and their issues.

Teacher D immediately engaged students with a “Problem of the Day” activity as they entered the classroom. She starts each lesson with a math problem that requires a gridded response in order to get students prepared for the math end-of-grade test. Once students were finished, the teacher modeled solving the problem and reminded them of test-taking strategies involving gridded response answers. Teacher D then began an activity that engaged students in preparing for an upcoming assessment using an online formative assessment program called Kahoot. The program displayed one question at a time on the SmartBoard with four possible answers. Students, after entering a nickname for themselves, made their choices and waited for a graph to appear showing their success in choosing the correct answer. Teacher D worked each problem out for the students to let them know where they went wrong, and then moved on to the next question. All students were engaged throughout the activity and entered their answers with excitement and a spirit of competitiveness. The teacher, maintaining a position in front of the class during the entire activity, could only see the nicknames of students who were in the lead displayed on the board. The researcher, however, was seated at the back of the classroom and could see all student laptop screens. When students missed the question, the screen was red, and when they answered the question correctly, the screen turned green. The researcher was immediately able to identify students who were struggling with the different concepts being assessed as well as those who were being successful with the answers. After class, the researcher asked Teacher D if she ever stationed herself at the back of the classroom so that she can connect particular students with the incorrect answers. She indicated, “Sometimes, I
Teacher D ended class with a ticket-out-the-door activity in which students had to write a note to a friend who was absent from class explaining to them how to convert fractions to decimals, decimals to percents, and percents to decimals.

Teacher E directed her students to her Google classroom as they entered the room. She asked them to read a poem by Robert Frost entitled, “The Road Not Taken.” Students read the poem several times silently and then began to illustrate on paper their interpretation of the poem. After a few minutes discussion of the poem with several students sharing their interpretations, Teacher E passed out a new novel and asked the student what they thought the novel, a work of historical fiction, was going to be about, based on the title. The teacher led students through a discussion of their feelings about change, leaving their homeland, and risking their lives to save a friend. Teacher E then began to read Chapter 1 aloud to the students, stopping to ask questions and guide students through note taking. Teacher E read and discussed Chapter 1 for the remainder of the observation period, with no closing activity to assess for learning.

Teacher F instructed students to get a calculator, paper, and pencil ready before the bell. She shared with them that she wanted to start class by addressing issues they had with homework problems from the previous night. She stated that she had received numerous e-mails the night before from students asking for help. She reviewed with students the steps she had taught them previously for three different ways to set up the problems. She modeled working some of the homework problems and continuously checked for student understanding. She directed students to complete the problems for homework and turn in on Monday. Teacher F then began a lesson on graphing linear inequalities. She reviewed concepts previously learned about graphing and shading using a number line to help students
make connections to the new concept. After modeling several examples, Teacher F passed out a homework sheet with several problems for students to work that night. Class ended with students returning calculators to their proper place and packing up to leave. There was no activity to check for understanding of all students.

Summary of Findings

The six teachers in this study defined formative assessment in different ways. They implemented formative assessment in the classroom in different ways, if at all. Several teachers described or implemented formative assessment strategies to check for understanding during the class period. Rarely, however, did the researcher observe a strategic use of the data to make adjustments during the lesson. All teachers were trained on an instructional model that incorporated the use of formative assessment in the classroom with lots of strategies for teacher use. However, during the interviews and observations, a commitment to the model was not evident.

One of the two teachers who seemed most knowledgeable in conversation about the use of formative assessment was observed using a very good formative assessment tool in her math class, but she missed out on immediate knowledge of which students were missing the questions because of the position she maintained in the classroom. It was obvious to the researcher, sitting in the back of the classroom, which students were struggling with each concept because of the color and image on the laptop screens. The teacher never walked around the classroom to view responses. This observation raised the question of fidelity in the implementation of formative assessment and further highlighted the researcher’s concern about the lack of teachers viewing student assessment data and responding to it. This
particular teacher said all of the right things in the interview, but failed to capitalize on a resource that offered a large amount of student data that was practically ignored.

The teachers with less years of experience seemed to have embraced the idea of formative assessment in a stronger way than the teachers who have been teaching longer. The teachers with more experience in the classroom seemed to be tied to the traditional ways of teaching, not yet embracing some of the best practices for teaching today’s learner. Although there were good indicators of knowledge of formative assessment strategies, there did not seem to be a strategic implementation of the formative assessment process in the classroom and across subject areas for the purpose of collecting data on learning and reacting to the data to make immediate changes in teaching to improve student performance and mastery.

The researcher had anticipated discovering strong professional learning teams in which teachers administer frequent common formative assessments and then analyze, compare, and respond to the resulting student data. This was not the case as most of the teachers referred to the process as something they tried in previous years or something in which they did not participate. Fortunately, there was a level of collaboration for some of the teachers with planning of lessons and administration of assessments. Perhaps these professional learning teams are ripe for guidance and facilitation by instructional leaders who can help to strengthen the collaboration process to allow for better response to student learning data with interventions and enrichment activities that are followed by reassessing for learning.

**Conclusion**

This qualitative study investigated how teachers implement formative assessment in the classroom and how they use formative assessment to make instructional decisions. The
researcher used interviews and observations to learn from six teachers who had been identified as the high fliers in each school in the area of formative assessment. In this chapter, the researcher has shared the findings of the investigation through descriptions of the classroom observations and teacher interviews. In the next chapter, the researcher will discuss the implications of the findings for research and practice.
Chapter Five

Discussion and Conclusions

Introduction

In the previous chapter, the researcher shared results of the investigation into how six middle school teachers implemented formative assessment in the classroom and used the data from the process to make immediate instructional decisions about teaching and learning. The research was guided by the following questions:

1. How do teachers implement formative assessment in the classroom?
2. How do teachers use formative assessment data to make instructional decisions?
3. How were the teachers trained in the use of formative assessment?

Review of Results

The researcher found that all six teachers defined formative assessment in a different way. This is a problem discussed in the literature on the topic of formative assessment. For this study, the researcher used Pinchok and Brandt’s (2009) definition of formative assessment. After studying the many different definitions of formative assessment throughout the literature, Pinchok and Brandt (2009) defined formative assessment as “a process in which teachers use various tools and strategies to determine what students know, identify gaps in understanding, and plan future instruction to improve learning” (p. 2).

The researcher found a lack of consistency among the six teachers in defining formative assessment. Several alluded to finding out what students have learned while others saw formative assessment as the summative assessments given at the end of the units and even at the end of the year. In one case where a teacher’s definition of formative assessment
was incorrect, there was evidence through the interview, however, that the particular teacher does use formative assessment in some ways.

**Research Question 1: Implementation of Formative Assessment in the Classroom**

The six teachers in the study were at different levels of formative assessment implementation. Two of the teachers demonstrated a clear understanding of the concept of formative assessment and regularly incorporated a variety of strategies to use formative assessment to check in on the learning of all students. They described their use of a number of effective formative assessment strategies. One of the strong teachers had been an early adopter in the district-mandated Learning Focused implementation. This meant that she had additional trainings on the model as compared to her colleagues. The other strong teacher stated that in her education classes at North Carolina State University, instructors had pushed the concept of formative assessment.

One teacher defined formative assessment as “teacher-made unit tests” and end-of-grade tests. She described the activity for the observation period as a formative assessment to see if her students understood a literary work. However, this activity did not inform her of the learning of her entire class, only the few who were involved in the production. This teacher did, however, mention strategies such as using individual white boards that let the researcher know that formative assessment does sometimes take place in her classes. There seemed to be some confusion with the term formative assessment.

One teacher, a veteran math teacher, stated that her main method of formative assessment is gauging her students’ reactions during the class period. She stated that she sometimes uses formative assessment strategies such as tickets-out-the-door to check for student understanding, but added that she mostly relies on homework and quizzes. There was
no evidence of using formative assessment to inform her of the learning of all of her students on a regular basis in the classroom.

The final two teachers were unable to give a solid definition of formative assessment, and they offered no evidence of its use during the classroom observation period or during the interviews. One of the teachers stated that this was probably her last year of teaching, and it seemed obvious that she is tied to tradition as far as teaching is concerned. The other teacher continually complained about her students’ behavior, stating, “I have one class that just drives me insane. They are exhausting.” She stated that she loses lots of instructional time due to student behavior. She did, however, share one good strategy for ensuring students know key vocabulary terms. She did not give any evidence of daily formative assessment in the classroom.

Although some of the teachers were using formative assessment strategies with their students, it was unclear as to what they would do with the information they learned from some of the strategies. For instance, assigning students a ticket-out-the-door activity is an excellent formative assessment strategy in which the students answer a question from the day’s lesson on a card or sheet of paper and turn it in to the teacher as they leave. The idea is for the teacher to read the students’ answers to inform him or her as to where the next day’s lesson should begin. Does he or she need to reteach a concept that students didn’t master, or is it time to move on to another concept? If the teacher fails to act on the information or if he or she assigns a grade to the exit activity, the real purpose of formative assessment has been defeated.
Research Question 2: Using Formative Assessment Data to Make Instructional Decisions

A common thread throughout the teacher interviews was to reteach when finding out students did not learn a concept. The teachers who were better trained and versed in the use of formative assessment referred to reteaching or “saying it a different way” throughout the teaching and learning process. Most of the teachers, however, referred to reteaching as something they do after administering an assessment for which the students received a grade. The researcher did not see instructional decisions being made during the lessons observed other than several teacher reactions to student questions with re-explaining the concepts being taught. This took place in the math classroom.

Four of the teachers indicated that they do not create and administer common formative assessments with their subject colleagues. The two teachers who are strong with formative assessment talked of administering common formative assessments, analyzing the data with their colleagues, and planning interventions such as reteaching and regrouping. They also mentioned how the process allowed them to compare instructional strategies with their subject colleagues to identify what worked best for students.

Two of the teachers indicated that the common formative assessment process was tried in previous years, but was not presently taking place within their department. One teacher explained how the process failed in the past while another stated that there wasn’t enough time in the day to sit down and analyze the data.

Ideally, a classroom teacher would use formative assessment daily to check in with students for understanding and master of concepts. This could be through a variety of methods such as using individual white boards, fist to five show of hands, turn and talk, exit
tickets, and many other activities that are quick and that check for understanding of all students. The teachers in the studies were trained on formative assessment strategies through the learning focused model, and through SIOP, and were given a large number of strategies and resources for effective formative assessment.

An ideal subject teacher team would sit down together as a PLT and create frequent common formative assessments that they administer on the same day for the purpose of gathering student data for analysis. They would then check the assessments and analyze the percent wrong for each question, discuss which students missed the questions and then create interventions to target those students to ensure their mastery of content. The interventions might call for reteaching, regrouping, working with the students individually, among other strategies. A grade would not be given to students for the assessment. The information would be for the purpose of informing the teachers where the students are in the learning so that he or she could make the proper instructional decision before continuing to deliver the curriculum. In situations where there is only one teacher of a subject, the teacher could analyze data comparing results from his or her individual classes.

The researcher did not find in either school a structured system of professional learning teams. Some of the teachers stated that they meet regularly with colleagues; others indicated they did not. Collaboration among teachers is an essential part of a professional learning community. DuFour (2004) asserted that teachers must stop making excuses not to collaborate. Through regular collaboration in professional learning teams, teachers can see how their students performed compared to other students and then call on their colleagues for help in addressing their areas of concern. The researcher noted in several of the teacher interviews a reluctance to change from isolation to collaboration. Change is difficult in any
profession. It just seems logical that if teachers were well-trained and well-informed of the value of using formative assessment in the classroom as well as in subject professional learning teams, they would embrace the idea to incorporate this research-based strategy that is proven to increase student achievement.

The researcher looked and listened for indicators that school leadership was involved instructionally with expectations for the use of the Learning Focused model or subject common assessments other than the twice-per-year district benchmark assessments. No administrative oversight of the instructional process was observed. The school improvement plans did not indicate plans for instructional monitoring of the instructional model or formative assessment, in general. As Fusarelli (2008) stated, the data-driven concept must be incorporated into the school improvement planning process in order to produce long-term results.

Fusarelli’s assertion that school leaders must become data literate became evident during this research project. School leaders must model data literacy as they work to bring teachers on board with the process. Teachers who witness their leaders involved with and placing a value on the use of student achievement data are more likely to rise to the challenge.

**Research Question 3: Teacher Training in the Use of Formative Assessment**

The six teachers in the study had all been trained on Learning Focused, a district-mandated instructional model that involves the use of formative assessment in the classroom. The researcher had also experienced training on the instructional model that offers teachers many formative assessment strategies to use during the lesson to check for learning. Observations and interviews indicated low implementation and buy-in of the instructional
model. Two teachers, however, demonstrated their buy-in of the instructional model. One of the two had been an early-adopter, having additional training on the model as district implementation began. Both incorporated Learning Focused strategies in their lessons.

In addition, two of the teachers had previously been trained on the Sheltered Instruction Observation Protocol (SIOP), an instructional model that was originally designed for implementing best practices for working with English Language Learners. The model was used in previous years in the district to train regular education teachers on best practices. The model is rich with formative assessment strategies. Interestingly, the two teachers who were trained on SIOP in addition to Learning Focused were two of the weak teachers on formative assessment implementation.

The teachers in this study had been exposed to many formative assessment strategies through training on the Learning Focused model. They have a plethora of strategies at their fingertips. However, the level of buy-in and implementation is low. Do they need more guidance and support on the process? Are they refusing to effectively and consistently use formative assessment with their students? Lasley (2009) asserted that there must be an appreciation of the process for teachers to become data-based decision makers, and they must be empowered to act upon the information revealed to them from the data. District and school leader involvement is vital to student success. Follow-up training and support and layers of accountability at both the district and school levels might prove to be the keys to successful implementation and buy-in of formative assessment in our classrooms and schools.
Implications for Practice

This study yielded some of the same results as previous studies on the topic of formative assessment. McManus (2008) found that when asked to define assessment, teachers answered, “Evaluation of what someone knows and does not know,” “test scores such as pass or fail,” and “a tool used by stakeholders.” The author stated that no responses in her study indicated that the participants viewed assessment as something that would be used to promote learning. She noted that terms like “tool” and “test scores” focused on a product rather than a process. She added that phrases like “pass” or “fail” and “knows or does not know” focus on a summative view of assessment rather than a formative view.

Ruland (2011) in his study of formative assessment noted that the teachers in the study had been trained on formative assessment attributes and how to systematically use them in the classroom on a daily basis. He added that because someone outside of the school conducted the training, the amount and fidelity of use were subject to self-reporting.

The teachers in the target schools had all been trained by outside trainers on an instructional model that calls for daily formative assessment. However, there did not seem to be a district- or school-wide emphasis on formative assessment as evidenced by the low level of implementation of Learning Focused in the classrooms. One had to question the level of instructional leadership in the building and the level of expectation and oversight for best practices in the classrooms. For effective implementation of any program, there must be follow-up support and training for teachers. Administrators must be on board and knowledgeable about all aspects of programs teachers are expected to implement in the classroom. Administrators must be a part of conversations with teachers about the implementation and the resulting effects on student achievement. One cannot expect teachers
to be trained on a program or intervention and then implement fully in the classroom without follow-up conversations, observations, and administrative oversight. The same applies at the district level. District leaders must ensure that school leaders are trained and then oversee implementation at the school sites, holding school administrators accountable for effective implementation and follow-through.

Stewart (2011) found a “poverty of practice” among teachers in the few that fully understood how to effectively implement formative assessment in the classroom. Stewart’s research involved his own creation and leadership of a Formative Assessment Academy in a middle school. He recognized that, for years, teachers have instinctively practiced formative assessment. He noted that much of the practice was unintentional checking for understanding. Stewart described formative assessment as an intentional, thoughtful practice to raise student achievement in ways that are measurable. He stressed the need for a stronger collaborative culture.

This research study supported Stewart’s (2011) assertions. There was obviously not a clear understanding among teachers of the meaning and value of formative assessment. There was a definite need for training on a strong formative assessment model. Chappius, Commodore, and Stiggins (2010) placed the blame on administrators at the school and district levels for failing to provide professional development and educational opportunities in the area of assessment.

Stewart (2011) found that the professional learning community structure played an important role in the effectiveness of his Formative Assessment Academy. At the end of the project, participants explicitly referenced the professional learning community structure as a positive factor in helping them increase the use of formative assessment in the classrooms.
Participants reported a new understanding of formative assessment as a process and a new willingness to share strategies with colleagues.

Although this research involved a small sample, it clearly revealed the need for training at all levels on the topic of formative assessment. Reeves (2004) asserted that a systematic process for using data to inform and differentiate instruction is missing in our schools. The literature on formative assessment reveals the positive impact implementation of the process can have on student achievement. Leaders in higher education involved in teacher training must agree on what formative assessment is and train prospective educators on all of the components necessary for implementing the process with fidelity. From gathering data with various assessment strategies to analyzing the data for a particular class or across the subject area, to using the data to adjust instruction to ensure mastery of the topic for all students in the class, educators and school leaders need to know and understand the process.

District school leaders and boards of education need to know and understand the process of formative assessment as well. They need to be able to have conversations with school leaders and teachers about implementation and results of implementation of the process. There needs to be district-wide training and follow-up to ensure teachers are constantly checking on the learning of all students and making immediate adjustments, as needed, to bring all students to mastery of the standards for which they will be held accountable on summative assessments.

Teachers must be trained to speak a common language on formative assessment. They must be trained on the process and equipped with many strategies to check for all students’ understanding of what is being taught. School leaders should showcase teachers
and administrators who have grasped the concept of formative assessment and are implementing it effectively in their schools and classrooms. School leaders should ask those teachers to share best practices with the staff at meetings or small training sessions. They should nurture and celebrate the teachers’ accomplishments so that step-by-step other teachers will observe and embrace this research-based approach for improving student achievement. Teacher buy-in is vital to successful implementation of any instructional model.

Effective implementation of formative assessment in schools requires intentional actions on behalf of teachers and school leaders. Using formative assessment must become an expectation for teachers during their daily lessons and for teacher teams across subject areas. Dedication to implementation with fidelity should be evident in the School Improvement Plan (Fusarelli, 2008). Structures must be in place in the school in which the daily schedule allows teachers time during the day to meet and collaborate on teaching, learning and assessment. School administrators must become a part of the PLTs, facilitating, reviewing minutes of meetings, conducting classroom observations, and supporting teachers with suggestions and timely feedback. Teachers must understand how to use the data from common formative assessments given across subject areas to not only find the weaknesses in their own students’ learning, but to learn from the strategies used by colleagues whose students are showing more success on certain concepts or standards. Most importantly, teachers must learn to use the data from formative assessments to identify their next moves in the teaching process. Continuing to move forward without feedback, remediation, or reteaching when finding out some students did not master a concept only leads to frustration and failure.
Implications for Future Research

This research was limited to six middle school teachers in one school district. The study involved one observation of each teacher and one interview. Perhaps more formative assessment strategies would have been observed with a larger sample group or a larger number of observations. However, these teachers were identified by their principals, their instructional coaches, and their testing coordinators as leaders in formative assessment at their schools. This indicates a concerning disconnect between school leadership and the classroom. All administrators were required to participate in Learning Focused training and should be knowledgeable on the model and its components. The testing coordinators in the district are assistant principals. They, along with the principals and instructional coaches have ample opportunities to observe teaching and learning in the classrooms. This calls into question not only the knowledge level of school leaders on the meaning and use of formative assessment, but the expectation and oversight for its use in the classroom. With the present day pressure for school administrators to be strong instructional leaders in addition to being good managerial leaders of the school, it is vitally important for administrators to be better trained in the areas of curriculum and instruction. The researcher has observed in over 33 years in the field of education, administrators who only focused on the managerial aspects of the school. Teachers participated in staff development to learn new strategies and resources, but administrators did not participate. There was little to no follow-up after staff development activities, and eventually, teachers reverted back to their old habits in the classroom. Now, administrators are expected to lead curriculum and instruction in the school, and in many cases they lack the appropriate training and skills to do so. Perhaps a future study could involve investigating the level of instructional leadership among school administrators and
even district leaders. Another interesting study might be to investigate the level of instructional leadership at the school board level. These studies could gather valuable data for school districts and universities as to the needs for resources and training for school administrators. Data gathered through future surveys, interviews, and observations would be very informative.

The two schools in this study have been designated as low-performing due to failing to meet proficiency on state assessments and failing to exceed growth for the past school year. An interesting future study would be to investigate implementation of formative assessment in schools that have been designated as high-performing. The teachers in the two low-performing schools exhibited weak implementation of formative assessment. If these six teachers have been identified as the best at formative assessment, it is possible that implementation of formative assessment is very low throughout the schools and perhaps may contribute to low student proficiency and growth and, ultimately, the designation of “low-performing.”

The teachers in the study knew in advance that the purpose for their involvement in the research was their use of formative assessment in the classroom. They readily agreed to be involved, but, overall, did not exhibit the expected buy-in and implementation level anticipated by the researcher. A future study is needed to investigate teacher perspectives as to why they do not use formative assessment regularly and more effectively in the classroom. Perhaps they feel overloaded with too much required of them in too many areas. Maybe they have not learned about the value of formative assessment and how research shows it can help students improve academically. Perhaps they have participated in training, but there has been no have not follow-up to support and encourage them with implementation. Much can be
learned from this small study as to the need for training at all levels on the meaning of and successful implementation of formative assessment in the classroom as well as the tools for administrative training and supervision on instructional matters.

This study revealed the need for more research in the area of formative assessment, with many questions needing to be answered. How are teachers across the educational spectrum defining formative assessment and using it in their classrooms? What training is offered to prospective teachers at the university level on the use of formative assessment? What training is offered to district leaders and boards of education on the value and process of formative assessment? What are districts expecting (and inspecting) of their district principals and teachers regarding the use of formative assessment in the classroom? How are teachers assessing for learning in the classrooms and across their subject areas? How are they reacting to the data in support of all students? The topic of formative assessment is ripe for additional research. Much knowledge can be gained through more qualitative studies that investigate the training backgrounds of all leadership stakeholders in instructional matters such as formative assessment, as well as the implementation of the process at the school and district levels. Gathering of information through interviews, observations, and surveys of larger numbers of stakeholders will add tremendously to the growing body of research on the value of formative assessment.

Conclusion

This purpose of this study was to investigate teacher knowledge of the process of formative assessment and the level of implementation of the process in the classroom. Interviews and observations of the sample revealed a great need for more training on formative assessment.
There is emerging consensus in the literature on the benefits of formative assessment. Scholars generally agree that formative assessment is the process of using information about student learning during instruction to make decisions to improve learning. The struggle comes in the classroom as many teachers hold tight to the idea that assessment comes at the end of the lesson or unit and is recorded as a grade for each student’s level of mastery of what he or she taught. It is difficult for many experienced teachers to break away from the traditional “I taught it. They didn’t learn it.” mindset. Teachers are slow to embrace the idea that assessment can be a part of instruction, not to sort or rank students, but to find out who has and who has not learned the concept being taught. Combining this information with solid feedback and immediate interventions can level the playing field for all students and ensures that no students are left behind in the learning.
References


APPENDIX A - Interview Protocol

For this study, I will conduct semi-structured interviews. This type of interview, which has predetermined questions, allows the researcher some flexibility in questioning. Additional questions may be added as themes emerge. The interview questions will be related to formative assessment and how it is utilized to ensure student mastery of curriculum. I have listed the proposed questions below:

1. Please describe your educational background.
2. What subjects are you presently teaching?
3. How do you define formative assessment?
4. Describe any training you have had on the use of formative assessment.
5. Describe some of the formative assessment strategies you use in the classroom.
6. Describe strategies you use in the classroom to make adjustments in instruction, before moving on, as you find out students have not learned a concept.
7. Describe the process for collaborating with your colleagues on the creation of and administering of common formative assessments.
8. How do you feel about the sharing of your students’ data within your PLT?
9. How do you and your colleagues decide on and implement intervention strategies when you find out students did not learn certain concepts?
10. How do you find out if students have mastered the concept(s) after the intervention strategies have been implemented?
APPENDIX B- Observation Protocol

Observation Protocol

Teacher ______________________  School ____________________________

Date ___________ Beginning Time ___________ Ending Time ____________

Description of the classroom setting:

Description of the class:

Topic and goals of the lesson:

How were the goals communicated to the students?

Agenda displayed/discussed:

Curriculum materials used:

Structure of the lesson:

Formative assessment strategies used to check for student understanding:
Examples of feedback provided to students:

Use of self- or peer-assessment:

Examples of teacher adjusting or differentiating instruction based on evidence of student learning:

Evidence of student reflection on the learning: