Collaborative Assessment Teams: Influence on Teachers' Perceptions Toward Development and Usage of Common Formative Assessments in the Classroom.

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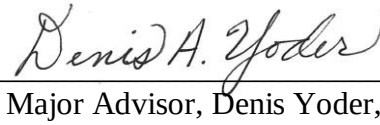

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Abstract

To improve student achievement on End-of-Course summative assessments, teachers must be able to provide supplemental instruction during the learning process when students fail to meet proficiency targets. Common formative assessments that are created collaboratively, allow teachers to engage in shared data analysis and apply corrective instruction (Vagle, 2015). As part of the Every Student Succeeds Act (ESSA), High School XYZ implemented common formative assessments developed within Collaborative Assessment Teams (CAT) as a building-wide initiative to close the student achievement gap. The current phenomenological, qualitative study sought to explore the perceptions of secondary science teachers who had participated in Collaborative Assessment Teams (CAT) regarding the development and usage of common formative assessments in their classrooms. The purposive sample included eight secondary science teachers working in Biology and Physical Science CATs, in an urban Georgia school district. Multiple forms of data were collected including CAT meeting observations, individual interviews, and review of archival documents. Data analysis supported that teachers recognized efficiency when using common formative assessments developed in CAT to identify specific common formative assessments for efficiency, CAT encouraged shared-analysis of student data results and provided students with immediate feedback that encouraged student involvement in the assessment process. However, it was also found that teachers continued to struggle with reverting back to traditional practices, such as, developing a proficiency benchmark for determining student proficiency, and connecting common formative assessment practices developed within CATs as a direct link to closing the student achievement gap school-wide.

Dedication

First, I would like to thank Jesus Christ for ordering my steps and putting everything in place at this perfect time. Second, to all the people in my life who anchored me to this process, my parents Henry and Ruth, my siblings Krystosha and Ammina, my husband Martin, and my sweet baby Ruthielynn. It was your encouragement, patience, and desire to see me achieve my goals that kept me pushing forward to completion. I would also like to dedicate this accomplishment to all of my extended family members, my nieces, nephews, aunts, uncles, and cousins, we did this together! Third, I would like to dedicate this accomplishment to all the women in my tribe. To Mrs. Watson, Mrs. Peoples, Korri Hall, Dr. Diamond Howell, Dr. Brenda Barnes, Dr. Anna Barnes, Dr. Eva Tucker-Nevels, Naketa Philius, Kurtina Williams, LeVisa Simpson, Dr. Sherry Johnson, my past and present colleagues, my sorors Joan Domingeaux, Kondra Gibson-Dingle, Ann Moss, Elaine Johnson, and all my sisters in Delta Sigma Theta Sorority, Inc., LAC. Last, I would like to dedicate this degree to some remarkable people who have personally impacted my life, they started this journey with me, but left this Earth before they could see me walk across that doctoral stage:

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Chapter 1

Introduction

A Nation at Risk (National Commission on Excellence in Education, 1983) declared that the country's public-school graduates were too poorly educated to compete in the global marketplace because America's education system was being eroded "by a rising tide of mediocrity" (Fullan, 2014, p. 23). As a whole, the report was met with criticism, but the urgency for school reform had been brought to the forefront. American schools were strongly perceived as being in crisis even though many of the broad accusations outlined in the report have since been proven false (Senge, Cambron-McCabe, Lucas, Smith, Dutton, & Kleiner, 2012, p. 9). The meaning of education can be perceived differently according to cultural values and related issues like ethnicity, gender, and socioeconomic status (Robinson & Aronica, 2015). Regardless of those differences, student learning remains at the heart of education. According to Littky and Grabelle (2004), the goal of education has been to help students to become continuous lifelong learners. Over time, the focus has shifted from student learning to a focus on standardized testing. Schniedewind and Sapon-Sheviin (2012) proclaimed that institutions had reduced learning to an irrelevant routine of drill and skill, passing along predigested, often inaccurate curricula. Learners need teachers who clearly understand the curricular standards and implement data-driven instructional strategies. Wagner and Dintersmith (2015) found that the American education system has failed our students and current attempts by our schools to remedy the issue have failed to address the problem, ignoring the skills needed for life-long success.

The American educational system underwent scholastic adjustments to develop more effective approaches to closing the gap between targeted standards and student mastery. Through collaboration and collective efforts, teachers can improve the quality of their

instruction. Kramer and Schuhl (2017) stated that "teachers and administrators must be ready to implement any necessary changes so that students can reach proficiency and beyond" (p. 3). Curriculum, teaching, and assessment are the foundations of formal education. Students are often required to demonstrate learning on summative standardized assessments administered near the completion of the course, leaving no opportunity for teachers to provide the additional instruction needed to address achievement gaps. Curricular standards are put in place by local school districts, but instruction is left to the interpretations of individual classroom teachers. Bambrick-Santoyo (2012) found that until teachers define how to assess standards, they become meaningless while rigor is strengthened when assessments are used as a road map.

Individual teachers use both formal and informal assessment information to make adjustments to daily instruction (William, 2011). Assessments can include summative assessment, formative assessment, and/or common formative assessment. According to Robinson and Aronica (2015), summative assessments are used to make judgements on overall performance at the end of the program work. Formative assessments are used within a classroom as a form of feedback to improve instruction and increase learning (Sprenger, 2005). Teams of teachers can utilize common formative assessments as a strategy to monitor student progress and implement the appropriate corrective instruction.

Formative assessments are tools used to evaluate student performance through data collection, essentially improving teacher instruction. Wagner and Dintersmith (2015) stated, "formative assessments would reinforce the goal of helping students to prepare for life, helping them learn and develop essential skills and character traits" (p. 83). Formative assessment practices provide teachers a method for identifying students who were unable to hit the learning targets, and subsequently provide corrective instruction for students who have not mastered the

content while providing enrichment opportunities for those students who have demonstrated mastery. Formative assessments are critical in closing the gap between students' current level of learning and the grade-level standards they are expected to master during an academic year (Whitaker, 2007). A 2000 study conducted by Tomlinson and Allan found that when content-area teachers worked collaboratively to construct common formative assessments, instructional planning had a more defined focus on the state's standards of learning.

Researchers have continued to establish evidence that teachers' formative assessment practices in the classroom can substantially contribute to improved student learning (Gareis & Grant, 2008). Teachers are bombarded with new teaching strategies during professional development, but without the time and continued guidance to implement these strategies, they may be abandoned. William (2011) linked teacher cynicism to the lack of time provided to practice and adopt new initiatives. Therefore, no notable changes to instruction could occur. Most teachers do not receive regular feedback on their teaching, and thus, do not improve (Fullan, 2014).

Through the collaborative development of common formative assessments, teachers are able to use assessment-for-learning practices to gather data while still within the learning window. As teacher teams work to develop and implement common formative assessments and then look at student results collectively, teams could establish a common goal for student achievement. The collective scrutinization of student results could then be used to develop targeted corrective instructional procedures to implement in the classroom. Formative assessment data drives instruction by helping teachers decide what and how to teach instead of following a set of curriculum topics in an inflexible order (Winebrenner & Kiss, 2014). For these reasons, it is important that teachers gain a better insight of how to use formative

assessments collectively and apply these practices to daily classroom teaching in an attempt to apply corrective instruction and enhance student learning through the development and usage of common formative assessments.

The 1998 publication of *Inside the Black Box: Raising Standards Through Classroom Assessment* by Black and Wiliam shifted the dynamics of student assessment within the classroom. Their meta-analysis included 250 articles and book chapters upon which to construct their baseline quality standards for the adoption of formative assessment as a tool for advancing student comprehension. Black and Wiliam (1998b) advocated for a change in focus from the restrictive properties of tests toward a focus on the interactions between assessment and classroom learning. Formative classroom assessments can be used as a tool to identify instructional gaps and fill those learning gaps prior to the end of the instructional learning window. Advancements to student learning can materialize when formative assessments are combined with quality student evaluations (Black & Wiliam, 1998; Heritage, 2010). Teachers working collaboratively to study personal instruction methods can create a culture of learning for all stakeholders (Erkens, 2016) that establish common formative assessment practices. Stronge (2007) agreed that effective teachers do not rely on a single strategy, but rather a broad repertoire of approaches for utilization with students of varying abilities. Teachers who work collaboratively can accomplish more when working together than they could independently. Collaboration, as defined by Ackerman and Mackenzie (2007), is an environment where decisions are made within a team of teachers who embrace ownership; the different ideas and perspectives of every teacher is harnessed toward the goal.

Background

The formative assessment initiative is still as relevant in 2021 as it was in 1998. As of 2010, school districts were beginning to incorporate formative assessment strategies into a collaborative framework, but teachers continued to lack mastery in order to take ownership of the formative assessment cycle. In 2018, Georgia passed Senate Bill 362, which ended high-stakes testing and allowed districts to use local formative assessments as a means of measuring student achievement. Georgia Senate Bill 362 was based on the Every Student Succeeds Act (ESSA), a federal law passed in 2015 under the Obama administration. ESSA granted states flexibility regarding the requirements of the 2001 No Child Left Behind (NCLB) legislation and allowed states to construct their own customized plans to close achievement gaps, strengthen instruction quality, and increase proficiency school-wide. When the bill was passed, Georgia Lt. Governor Casey Cagle stated that "freeing our educators to focus on individual students instead of teaching to the test will allow us to transform our schools into engines of economic opportunity that prepare every student for a rewarding career" (gwinettdailypost.com, 2018). Additionally, the passage of State Bill 362 placed accountability for individual student success on teachers, establishing a link between the assessment of student learning and teacher evaluations. This connection has emphasized how critical it is for teachers to incorporate formative assessments into classroom instruction in order to yield the greatest academic gains for each student.

The Georgia Milestone Assessment System (GMAS), also referred to as Georgia Milestones is an assessment structure that represents an individual system of summative assessments testing standards for all K-12 students. Georgia Milestones provide information about student mastery on the state-adopted content standards in the areas of English language

arts, mathematics, science, and social studies. Georgia Milestones' results are also used for improving teaching practices, and subsequently increasing student learning. Students participate in both End-of-Grade (EOG) and End-of-Course (EOC) summative examinations on standards specific for each course, subject and/or grade tested. Table 1 outlines when students participate in the Georgia Milestones summative measures.

Table 1

Georgia Milestones Assessment Measures by Grade Level.

Georgia Milestones	ELA	Mathematics	Science	Social Studies
End-of-Grade (EOG)	Grades 3 – 8	Grades 3 – 8	Grades 5 & 8	Grade 8
End-of-Course (EOC)	American Literature and Composition	Algebra I/ Coordinate Algebra	Biology	U.S. History

Adapted from Georgia Department of Education, Curriculum and Instruction (2021).

Additionally, the Georgia Milestones Assessment System (GMAS) provides valuable information about Georgia's statewide accountability measure, the College and Career Ready Performance Index (CCRPI). The CCRPI is a platform for all students, teachers, and parents to assess school improvement accountability and communication. The CCRPI system was developed to promote college and career readiness for all public-school students in Georgia. The CCRPI system provides an annual report used to gauge the quality of the educational services and opportunities provided throughout the state; more specifically, it helps to ensure that all students are provided the opportunity to engage with eminent standards, receive elevated instruction, and surpass academic expectations (Georgia Department of Education, 2021). The CCRPI gathers information in six areas: closing the achievement gap, content mastery,

graduation rate, progress, readiness, and school climate (Georgia Department of Education, 2021). Based on the Georgia Milestones and other educational indicators, all Georgia public schools receive a raw score of 0-100 on the CCRPI as part of Georgia's state plan under the Every Student Succeeds Act (ESSA). The CCRPI scores are derived using a calculation approved from the previous academic year and are used to set instructional goals for the next academic year, and the target score is calculated using the following formula: (100- previous year score) x 0.03.

The current study was conducted at an urban high school in the state of Georgia, henceforth referred to as High School XYZ. During the 2018-2019 academic year, as a new policy of practice, High School XYZ required all content teachers for grades nine through twelve to implement one common formative assessment strategy per content unit in order to identify instructional gaps and provide targeted instruction for students. High School XYZ not only accepted the increased use of formative assessments as outlined in the passage of Bill 362, but also added the collaborative action of common formative assessment.

High School XYZ is one of five high schools located in a public-school district, henceforth referred to as District A, which serves approximately 29,770 K-12 students. High School XYZ is comprised of the traditional high school grade configuration with grades nine through twelve. For the 2018-2019 academic year, total school enrollment was 1,741 students with the race/ethnicity distribution at 58.7% White, 27.1% Black, 7.0% Hispanic, 5.1% multi-racial, 1.75% Asian, and 0.1% of American Indian identification. High School XYZ did not have Title I status in 2018-2019, but 32.7% of the students qualified for free and/or reduced lunch, 0.6% were classified as English Language Learners, and 11.9% were students identified as having learning disabilities (Georgia Department of Education, 2021).

Teachers at High School XYZ actively participated in Collaborative Assessment Teams (CAT), engaged in job-embedded professional learning (JEPL), and participated in a book study using *Owning It: Proven Strategies to Ace and Embrace Teaching* by Alex Kajitani in order to increase the ownership of any new initiative put in place to achieve the goal established from the CCRPI score. After the release of the 2017-2018 CCRPI scores, the master schedule at High School XYZ was aligned so teachers would have a common plan time. In the case that teachers taught multiple courses, their Collaborative Assessment Teams (CAT) were determined by the course with an End-of-Course summative assessment. For example, if a teacher taught Biology and Environmental Science, the teacher was placed in the Biology CAT in order to prepare for the Biology End-of-Course summative assessments because there is no End-of-Course summative assessment for Environmental Science. Each secondary science CAT was charged with establishing norms to use during the weekly meetings, assigning individual roles for meetings, unpacking standards, and establishing the pacing guide for each content unit. Throughout the year, teachers also worked to create common formative assessments, review assessment data, identify students in need of additional supports, create opportunities within the school day for students to receive support or enrichment, and develop corrective instruction. Job-embedded professional development (JEPL) became the responsibility of teacher members on the collaborative assessment team. Each content-specific CAT was responsible for creating and presenting one of the professional development sessions on the JEPL calendar to their teacher colleagues at High School XYZ. Presentations could cover anything from proper CAT meeting behaviors, the use of common formative assessments, developing effective common formative assessment material, analyzing student data, to information provided from *Owning It: Proven Strategies to Ace and Embrace Teaching* by Alex Kajitani.

For the 2017-2018 academic year, High School XYZ received an overall CCRPI score of 83.6%, and by using the previously stated calculation, the target score set for the 2018-2019 school year was 84.09%. The use of common formative assessments was put in place to aide teachers in meeting the target score. As High School XYZ underwent a shift in instructional school culture, the administrative team worked with the staff to assist in the transition. When the CCRPI scores were released for the 2018-2019 academic year, High School XYZ received an overall score of 86.5%. Although the general target goal had been exceeded, the achievement gaps were far from being closed. When the individual content area scores were released, the average score for Mathematics was 84.35%, Social Studies received an average score of 88.98%, English Language Arts received an average score of 90.3%, and Science received an average score of 79.34%. Students who participated in the science End-of-Course improved by an average of 9.58%, but still scored lower in the 2018-2019 than students in other subject areas.

For the 2019-2020 academic year, secondary science teachers' goal was to improve the prior year's CCRPI science score by a minimum of three percent. It was essential that science content teachers collaborated with one another to develop at least one common formative assessment per unit and examine student data to identify instructional deficiencies and close the learning gaps. In secondary science, content units could last one day to 2 weeks depending on the depth and weight of the standard. Closing achievement gaps supports the idea that all students and student subgroups will reflect academic improvement. Unfortunately, due to the COVID-19 pandemic, public schools in District A were closed as of March 16, 2020 and students moved to online learning for the remainder of the 2019-2020 academic year. Superintendent Richard Woods received a waiver of standardized testing for the 2019-2020 academic year removing EOC requirements for students. Based on those circumstances, the

target score set for the 2019-2020 academic year was used for the 2020-2021 academic year. Black, Harrison, Lee, Marshall, & Wiliam (2003) believed when formative assessments are used to alter instruction, student learning is more effective. Secondary science teachers at High School XYZ not only benefit from understanding the need to transform instructional practice, but the continuous use of common formative assessments help to improve instruction in science content, specifically, and education in general. Understanding the practices that support common formative assessment development and usage would allow teachers to identify gaps in student learning, review student data collectively, and collaboratively identify areas where corrective instruction is needed.

Statement of the Problem

High School XYZ made decisions regarding how to improve instructional strategies based on the End-of-Course summative data from the CCRPI. When scores were reported based on the summative assessment data, the administrative team for each high school in District A set a target score for the next academic year, in each academic content area. High School XYZ failed to meet the 71.71% CCRPI target score for the 2017-2018 academic year scoring 69.76%. The problem was that by the time the CCRPI scores were released, students were no longer in those tested courses and teachers had moved on to a new academic year. Teachers no longer had the ability to provide additional instructional support needed to help fill in educational gaps. For this reason, teachers needed to evaluate and revise their individual instructional strategies and provide further instruction in order to improve content mastery of all students before participation in their respective EOC summative assessment.

When students master curriculum content, teachers gain an understanding of student preparedness for the next grade, college, or career. For the 2018-2019 academic year, High

School XYZ received an overall content mastery score of 85.7%, with science having the lowest content area score at 79.34%. Administrators at High School XYZ set the CCRPI target score at 70.63% on the secondary science End-of-Course (EOC) summative assessment for the 2019-2020 school year and the 2020-2021 school year due to the COVID-19 pandemic. In an attempt to increase student learning for all students, High School XYZ implemented their new assessment plan that required all teachers to participate in collaborative assessment teams, develop common formative assessments, and use one common formative assessment strategy per unit across all content areas and all grade levels. Teachers worked collaboratively in teams to review data and make recommendations regarding corrective instruction needed to improve student content mastery.

The CCRPI scores for the 2018-2019 academic year showed that students surpassed the target score of 70.66% with 79.34% in secondary science EOCs, but the problem was that secondary science students scored 5% lower than the other tested areas demonstrating the need for improvement in classroom instruction and an increase of student content mastery. Table 2 illustrates the 2018-2019 CCRPI scores by content area. Table 3 illustrates the science scores for ninth graders who took the Biology End-of-Course summative assessment and tenth graders who took the Physical Science End-of-Course summative assessment.

Table 2

CCRPI, 2018-2019 Content Mastery scores for High School XYZ

CONTENT MASTERY	**85.7%**
English Language Arts	90.3%
Mathematics	84.35%
Science	79.34%
Social Studies	88.98%

Adapted from Georgia Department of Education, Curriculum and Instruction (2021).

Table 3

CCRPI, 2018-2019 Science breakdown for High School XYZ

SCIENCE	**79.34%**
Physical Science	74.48%
Biology	83.6%

Adapted from Georgia Department of Education, Curriculum and Instruction (2021).

Research has shown teachers work effectively when they continue to examine day-to-day classroom practices with the intent to improve classroom instruction and alter teaching behaviors accordingly (Camburn & Han, 2015; Stronge, 2007). In order to implement a school-wide plan centered around common formative assessment practices, High School XYZ developed a framework to strengthen classroom instruction which included: (a) weekly Collaborative Assessment Team (CAT) meetings, (b) CAT development of common formative assessments, (c) minimum use of one common formative assessment per teaching unit, (d) documentation of data used to identify students in need of reinstruction, and (e) job-embedded professional development.

Purpose of the Study

The current phenomenological, qualitative study explored the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The first purpose was to examine the role that Collaborative Assessment Teams (CAT) played in teachers' development and classroom usage of common formative assessments. The second purpose of the study was to investigate how teachers perceived the impact of the CAT on formative assessment proficiency indicators and whether the experience assisted with the identification of

appropriate corrective instruction techniques. The third purpose of the current study was to discover how content area CAT members perceived these teams' influence on school-wide classroom instructional strategies for closing student achievement gaps. This research is intended to gain a better understanding of how teachers differentiate formative assessments from common formative assessments as they work within their CAT. Multiple forms of data collection were used to gather information associated with the research questions, including third-party observations of Biology CAT and Physical Science CAT meetings, individual follow-up interviews conducted by a third-party individual, and review of archival documents.

Significance of the Study

Wagner (2014) affirmed that "authority and accountability in education—from state, to district, to school, to individual classroom—are very much top-down and one-way and, as such, create a culture of compliance" (p. 155). Within the school structure, teachers depend upon the means to instruct and access learning targets that extend beyond those measured on state standardized assessments (Senge, Cambron-McCabe, Lucas, Smith, Dutton, & Kleiner, 2012; Tomlinson, 2001). Beginning with the classroom setting, teacher teams could create systems that take back instructional ownership, accept accountability, and highlight the academic needs of students and teachers. Through the lens of classroom instruction, teachers working collaboratively could establish a foundation of common formative assessment usage that extends across classrooms and deepen the culture of learning through the entire school. City, Elmore, Fiarman, and Teitel (2009) stated that "accountability has caused an increase in instructional support and professional development organized around the system's current instructional priorities" (p. 9). Additionally, teachers benefit from focused professional development that helps to define effective common formative assessment implementation, removing

misconceptions (Thacker, D.W., 2016). When teams of teachers who share a common curriculum actualize the principles behind formative assessment usage, that collective knowledge could then be used for the development and usage of common formative assessments within CAT.

The End-of-Course (EOC) summative scores have implications for the following years' students, but not for the students associated with those specific test scores. Based on that rationale, making changes to instructional design in the form of additional or improved common formative assessments would aid in closing the achievement gap for current students as necessary before the EOC summative assessments. Mohammed (2009) asserted that "with the new era of accountability, district leadership demands more accurate and more frequent feedback on student performance" (p. 19). The implementation of CAT and the use of common formative assessments was the building-wide professional development focus for the 2018-2019 academic year at High School XYZ. Similar to assessing the student performance, it is critical for teachers to know what stage of knowledge they possess regarding common formative assessment development and classroom usage before engaging in formative assessment practices as a tool for corrective instruction. According to Black (2007), teachers have continued to experience complications in defining formative assessment:

> A frequent misunderstanding is that any assessment by teachers, and in particular the use of weekly tests to produce a record of marks, constitutes formative assessment. It does not unless some *learning action* follows the outcomes, such practice is merely frequent summative assessment. (p. 1)

In order to identify the most effective tools for educational success, Reeves (2000) suggested that schools gather information using a regular, systematic routine. Teachers must

also be able to implement strategies that are evidence-based and uniform across content areas. Recognizing how teachers' understanding of formative assessment strategies relate to classroom instruction is necessary when implementing a school-wide focus on common formative assessment usage. Conducting this study is germane for researchers linking teachers' interpretation and perceptions of common formative assessments as vital to improve student proficiency (Black & Wiliam, 1998; Sadler, 1989; Stiggins & Chappuis, 2005). Results of the current study may provide insight for the identification of continual professional development needed for teachers to develop and implement effective common formative assessment practices. The results of the current study could be valuable in identifying more effective professional development strategies and monitoring practices for teachers in order to implement common formative assessment practices with fidelity. Investigating teachers' perceptions of common formative assessment practices could allow for an easier transition to those common formative assessments developed through collaboration and used across classrooms.

Delimitations

Delimitations are described as "self-imposed boundaries set by the researchers on the purpose and scope of the study" (Lunenburg & Irby, 2008, p.134). The following delimitations helped focus this study:

1. This study was conducted at one high school in rural Georgia.
2. Participants included eight (8) high school teachers from secondary science CAT who worked together to develop, implement, and administer one formative assessment strategy per content unit.
3. Data analyzed were collected during the Fall 2020 academic school term.

4. Only data from teachers in High School XYZ working within secondary science CAT were included in this study.
5. Data collection methods included observations and individual interviews.
6. Interviews and observations were conducted by a third-party according to the protocols (see Appendices C and E).

Assumptions

Assumptions are "positions, premises, and propositions that are accepted as operational for purposes of the research" (Lunenburg & Irby, 2008, p. 135). These assumptions are not under control of the researcher but could have an impact on data collection and results. For this study the following assumptions were made:

1. Participants understood the questions asked of them and responded honestly.
2. The semi-structured interview protocol included the necessary questions to explore teachers' perception of common formative assessment development and usage within CAT.
3. The third-party interviewer was objective

Research Questions

Johnson and Christensen (2008) described a research question as "a statement of specific question(s) to which the research seeks an answer" (p. 78). While Creswell (2009) stated research questions (RQ) "shape and specifically focus the purpose of the study" (p. 132). This phenomenological, qualitative study sought to understand the perceptions of secondary science teachers who had participated in CAT regarding the development and usage of common formative assessments in their classrooms.

The following four research questions guided this study:

RQ1. What are secondary science teachers' perceptions of the role that Collaborative Assessment Teams (CAT) play in participants' understanding of common formative assessment development and usage in the classroom?

RQ2. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) impact secondary science teachers' perceptions of proficiency indicators?

RQ3. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) assist in the identification of appropriate corrective instructional techniques?

RQ4. How do the secondary science teachers participating in the Collaborative Assessment Teams (CAT) perceive the influence of content area CAT on the school-wide corrective instructional strategies for closing student achievement gaps?

Definition of Terms

Defining the terms used for a specific study is vital to accurately interpret the research. In this section of the study, the definitions are supplied for terms with no commonly known meaning, or risk the possibility of being misunderstood (Roberts, 2010). The following terms will be used throughout the current qualitative study.

Academic achievement. Academic achievement is the acquisition of knowledge successfully accomplished through operation, technique, practice, or endurance (Black & Wiliam, 2003).

Achievement gap. Achievement gap, as defined in the calculation of CCRPI scores for all public schools in Georgia, is the difference in student performance between the lowest

achieving students and those students who meet academic proficiency. (Georgia Department of Education, 2021).

Collaborative Assessment Teams (CAT). CAT is an acronym used for collaborative assessment teams. CAT is similar to professional learning communities, but they are comprised of teachers of the same or similar content areas whose main focus is on data analysis to improve student learning using formative assessment data.

College and Career Readiness Performance Index (CCRPI). CCRPI is a comprehensive school improvement, accountability, and communication platform for all educational stakeholders that promotes college and career readiness for all Georgia public students (Georgia Department of Education, 2021).

Common formative assessment. Common formative assessments are formative assessments that are constructed by a team of teachers working collaboratively to aid in the evaluation of students. These informal assessments are brief, adaptable, and responsive in assessing students agreed-upon knowledge and skills (Ainsworth & Viegut, 2006).

Tickets-Out-The-Door. Tickets-Out-The-Door (TOTD) are also referred to as exit tickets. These are generally one question documents that are used during the last five minutes of class and allow students to summarize a learning concept. TOTD can be used as formative assessments when given by a classroom teacher to inform student understanding or could be used as a common formative assessment if developed and used collaboratively within CAT who review results collectively.

Formative assessment. Formative assessments are assessments given throughout learning to provide feedback to students and teachers regarding the students' acquisition of knowledge and to monitor students' progress (Black & Wiliam, 2003).

Instructional strategy. An instructional strategy incorporates a multitude of teaching and learning practices, such as open-ended questions, lectures, worksheets, virtual learning, group discussions, and group projects (Dick, Carey, & Carey, 2001).

Job-Embedded Professional Development (JEPL). JEPL is an acronym for job-embedded professional development. These are monthly meetings held at High School XYZ where same content teachers make presentations on specific topics to their colleagues during planning periods. These presentations are centered around chapters from the book study, components of formative assessment practices, or improvements to technology use in the classroom.

Pre-assessment. These assessments are administered before instructional content delivery in order to gauge students' prior knowledge, determine their readiness to acquire new material, and to carve a pathway for teacher instruction (Wormeli, 2006).

Summative assessment. Summative assessments are administered at the end of instructional content delivery to determine achievement, performance, or grade (Black & Wiliam, 2003).

Organization of Study

The current study is divided into five chapters, a reference section, and appendices. The background, statement of the problem, purpose of the study, and its potential significance were provided in Chapter 1. The first chapter also presented an overview of the delimitations, assumptions, research questions, and definitions for terms used for the study. Chapter 2 includes a literature review focused on proper implementation of common formative assessment use, and the data collection process necessary to improve student learning. Chapter 3 thoroughly explains the methodology of the study including the research design, setting, sampling procedures,

description of the measurement instruments, data collection procedures, data analysis and synthesis, and limitations of the study. Chapter 4 presents the results of the in-depth analysis of the data collected. The study concludes with Chapter 5, a summary of the study conducted, findings related to the literature, conclusions highlighting implications for action, and recommendations for future research.

Chapter 2

Review of the Literature

The purpose of the current study was to explore the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The first purpose was to examine the role that Collaborative Assessment Teams (CAT) play in teachers' development and usage of common formative assessments. The second purpose of the study was to investigate how teachers perceive CAT's impact on common formative assessment proficiency indicators and the identification of appropriate corrective instruction techniques. Lastly, the current study explored how CAT influence school-wide classroom instructional strategies in closing student achievement gaps. The following literature review supports this research through the examination of student achievement measurement, constructivist theoretical research, teacher perception and student achievement, foundations of assessment practices, and collaboration through collaborative assessment teams. As part of measuring student achievement, the following subtopics were discussed: history of assessing student achievement, and the college and career readiness performance index (CCRPI) measure. As part of foundations of assessment practices, the following subtopics were discussed: formative assessment practices and common formative assessment practices. As part of collaboration through collaborative assessment teams, the following subtopic was discussed: collaborative assessment teams at High School XYZ.

Measuring Student Achievement

Studies have linked improvement in achievement to teaching methods that parallel the learning styles of students (Gardner, 1999; Vatterott, 2007). Another study demonstrated a

relationship between student achievement and the teacher's understanding of student's skills and the appointment of appropriate tasks (Vatterott, 2009). Ainsworth and Viegut (2006) confirmed the fundamental aim of assessment must be to inform decisions regarding teacher instruction. Formative assessment could provide teachers the space to evaluate student learning styles and utilize data to implement corrective instruction matching the needs of the student. Additional research suggests that when teachers make adjustment to their instruction, both student achievement and attitudes about learning can be enhanced (Tomlinson & Allan, 2000). Formative assessments should not be seen as the end of instruction, but integral to the daily process of teaching, learning, and curriculum development (Robinson & Aronica, 2015). Formative assessments can inform instruction by providing data that could be used to redirect instruction while still within the instructional window, therefore improving the quality of teaching.

Studies asserted the association between student progress on standardized tests and teacher efficiency to an improvement of six percentile points per the average student (Nye, Konstantopoulos, & Hodge, 2004; Rivkin, Hanushek, & Kain, 2005; Rockoff, 2004; William, 2011). William (2011) affirmed the greatest impact on student learning was daily intentionality in the classroom and *how* teachers teach rather than by *what* teachers teach. Through assessment, teachers could adjust their instruction based on the data collected from formative assessments thus deepening content mastery.

A History of Assessing Student Achievement. In 1983, the Ronald Reagan administration authored a 36-page federal report titled, *A Nation at Risk: The Imperative for Educational Reform* (The National Commission on Excellence in Education, 1983). This report provided a review of the quality of education, with an unfavorable description of the American

education system. America's population was described as being, "too poorly educated to compete in the global marketplace because America's education system was being eroded by a rising tide of mediocrity" (Fullan, 2014, p. 23). The report described that education in America was characterized by declining student assessment results, elevated teacher turnover, and the lack of educator training programs as a threat to America's technological superiority. *A Nation at Risk* described teacher instruction methods as incoherent, outdated, and a cafeteria-style curriculum that advanced students with minimal effort (Graham, 2013).

Senge, Cambron-McCabe, Lucas, Smith, Dutton, and Kleiner (2012) refuted the accusation of the country's inability to compete in the global marketplace but acknowledged the impression of schools in trouble as "strong and has only been exacerbated by reports of American test scores lagging behind those in other nations, such as Finland and Singapore" (p. 9). Dwindling assessment results, watered-down curricula, and programs that failed to prepare teachers made the American school system the target of improvement in order to ensure schools become more effective in the future (Education Week, 2013). In acknowledgement of *A Nation at Risk*, school districts implemented more frequent testing, and attached negative consequences for those teachers whose students failed to meet expectations. Local control over funding, standards, and curricular content diminished as states attempted to achieve equity and improve student and teacher performance. The public's lack of high-quality education accounted for the increase in state involvement (Kirst, 1988). When control was removed from local educators, assessment practices were weakened (Abeles, 2015; Kamenetz, 2015; Schniedewind & Sapon-Sheviin, 2012). Abeles (2015) proposed that the testing infatuation sustained an antiquated and unscientific vision of learning and the high-stakes potential of failure deterred schools from

trying modernized assessments. It is imperative to find a balance between state and local controls that not only fosters higher standards but allows teacher creativity to flourish.

A Nation at Risk identified content, expectations, time, and teaching as recommended areas of improvement, prompting schools to implement more rigorous and measurable standards for learning. Steps were also taken to develop teacher efficiency, create more time dedicated to teaching essentials, improve academic rigidity, and raise standards for post-secondary admissions (Education Week, 2013). Significant resources are needed to balance high-stakes testing with effective classroom assessments resulting in an instructional intervention that increases student learning (Senge, et al., 2012). Formative assessments provide opportunities to listen to students, ask questions, and learn not only what students understand, but also what is not understood. Even though *A Nation at Risk* had notable weaknesses and was unable to identify the origins of the problems in the public education system; the report led to reorganization of schools, stimulated the academic-standards movement, education policy was directed toward the forefront, and placed prime focus on school accountability (Park, 2004; Weiss, 2003).

The next step in education reformation provided significant changes for public education. The No Child Left Behind Act (NCLB) approved by Congress in 2001 and signed into law by President George W. H. Bush in January 2002 was intended to correct the socioeconomic achievement gap by creating policies that made it mandatory for the education system to address those disparities. NCLB was designed to provide all students with an equitable opportunity to secure high-quality education, and complete state assessment standards with proficiency (U.S. Department of Education, 2018). High-stakes testing was used to aid schools in producing the smartest, most successful workers. The law increased the number of standardized tests required federally and 95% of all students in grades 3-8 in reading and math were to be tested annually.

In addition, test results were to be reported by race, ethnicity, socio-economic status, and disability status (Kamenetz, 2015, p. 85). Regular testing assisted schools in the identification of students in need of extra support, but rather than focusing on true student learning, NCLB encouraged students to score well on assessments. School districts across the nation were held to the impossible benchmark of ensuring 100% student proficiency on all state tests regardless of race, gender, learning ability, and/or socioeconomic status by 2014. When universal proficiency was not achieved by 2014, the federal government was forced to provide waivers to 43 States and the District of Columbia, freeing schools from complying with NCLB stipulations and resulted in the failure of hundreds of thousands of students (Jackson, 2015; Schneidewind and Sapon-Sheviin, 2012). Since the outset of No Child Left Behind (NCLB), combined results of standardized test scores were proven that NCLB was not effective in improving education, especially in high school.

NCLB legislation helped to reinforce the expectation that schools serve *all* students and required educators to assess how instruction was being provided (Brock & Hundley, 2017). Due to strenuous testing, No Child Left Behind (NCLB) brought about test preparation strategies opposed to strengthening curriculum or practices that aid in assessing student comprehension (Harvey & Gouvis, 2007). Harvey and Gouvis (2007) continued that authentic assessment could provide teachers with information related to students' learning progress, past instruction, and future instruction. Eaker and Keating (2012) affirmed that students perform better on standardized tests when assessments are used to regularly monitor their progress. Fullan (2014) also acknowledged that rigidity of NCLB outlined four areas for improvement in our education systems: new standards and assessments, improvements to assessment and data systems, highly qualified teachers and principals, and the turn-around of the bottom 5% of schools. Resources

that help educators to become assessment literate could help balance high-stakes testing with effective classroom assessments with the use of instructional practices that broaden the range of learning targets beyond the narrow margin of those measured on high-stakes accountability tests (Senge et. al, 2012, Tomlinson, 2001; Wormeli, 2006).

In 2009, the Obama administration introduced Race to the Top to address concerns with prior education legislation. Race to the Top adopted the same test-based accountability as No Child Left Behind, but rather than holding schools solely responsible for low test scores, teachers were also held accountable. Data systems were created to link assessment scores of individual students with their classroom teachers. If the student's scores improved, the teacher was labeled as a "highly-qualified" teacher, but if the student's scores did not improve, the teacher was deemed as "ineffective" (Ravitch, 2013, p. 99). This initiative strengthened the connection between standardized testing and federal funding. If school districts wanted to receive federal funding they had to agree to: (1) evaluate teachers based on their students' summative scores, (2) adopt college and career readiness standards, (3) and to test students on content standards annually (Abeles, 2015, p. 101). Under those conditions, collaboration among teachers is replaced by competition resulting in student adversity (Schniedewind & Sapon-Sheviin 2012).

Attaching consequences such as teacher evaluations, school funding, and college admissions to standardized test scores could create a system of a one-size-fits-all education eliminating from the curriculum what is not being tested in order to concentrate on standards-based test content (Abeles, 2015). Schniedewind, and Sapon-Sheviin (2012) contend that the neoliberal goal for education is to give students the experience and knowledge essential for productive workers, but the education being provided to students will most likely only prepare them for low-paying jobs. Fear of job loss has made teachers fearful of trying new instructional

strategies, preventing them from stepping outside their own instruction styles and trying new innovations that could focus on deepening understanding for all students (DuFour et al., 2006; Abeles, 2015). Successful improvements to education can never be sustained when they are imposed on teachers, it can only be accomplished in partnership with teachers (Hargreaves & Fullan, 2012).

Currently in Georgia, school systems view assessment through the lens of Every Student Succeeds Act (ESSA). In December 2015, the United States Congress passed Every Student Succeeds Act (ESSA), a reauthorization of the Elementary and Secondary Education Act originally passed in 1965. ESSA redefined the role of the federal government in K-12 education which varied from the previous NCLB, and Race to the Top (U.S. Department of Education, 2009). ESSA provisions allowed schools in individual states to regain control of student learning. For the first time in many years, school districts had the ability to establish their own goals, standards, curriculum, and evaluation methods. The College and Career Readiness Performance Indicator (CCRPI) is the annual report utilized to gauge the quality of educational duties and opportunities supplied to all students throughout the state of Georgia. The CCRPI seeks to ensure all students are prepared to interact with standards, are provided with rigorous instruction, and surpass academic expectations (Georgia Department of Education, 2021). All Georgia public schools receive a raw score of 0-100 on the CCRPI, applying a calculation approved under Georgia's state plan for ESSA. Every school in Georgia is scored in the areas of content mastery, progress, closing achievement gaps, graduation rate, and post-secondary readiness. Content mastery carries a weight of 20%, progress 40%, closing achievement gaps 10%, graduation rate 15%, and post-secondary readiness 15%.

Theoretical Research

Herron (1996) identified the most important factor to influence learning is the learner's prior knowledge. The constructivist approach to learning allows the student to construct new information that builds upon their prior experiences (Teaching & Education, 2020).

The constructivist model is important for classroom instruction as it requires teachers to shift and reshape their perspective from teacher to facilitator as well as incorporate questions and problem-solving that help guide students with direction (Herron, 1996; Lynch, 2016).

High School XYZ is in the process of shifting the focus from instruction-based learning to students being the central focus of the learning process as stakeholders in their own learning. Under the lens of the social constructivist theory there is a connection between the transformation of teacher instruction to the focal point of student-centered learning. In a constructivist classroom, teachers should create a collaborative environment where students actively participate in their own learning. Teachers should also adjust their instruction to match the learner's level of comprehension (Teaching & Education, 2020). Students are more suited to practice, discern, and master instruction when they have had an opportunity to provide their own input in building knowledge (Ertmer & Newby, 1993; UKEssay, 2018). Gardner (1991) explains that when students can relate to the material, they want to learn rather than memorize the content because they are being told to do so. When teachers adhere to constructivist approaches, the teacher facilitates rather than conveys learning. Effective long-lasting learning that is purposeful must include: practice, knowledge, and context (Brown et al., 1989).

Teaching from the social constructivist viewpoint parallels common formative assessment use or development in that teachers are held accountable for student learning through classroom instruction. Shepard (2000) connected formative assessment ideology and the

constructivist movement suggesting an active process, expanding upon prior knowledge, practices, and interest and how formative assessment appropriately supplement this cycle. The development of common formative assessments within Collaborative Assessment Teams (CAT) works well when teachers employ social constructivist theories to identify gaps in student learning by analyzing their own teacher instruction strategies. Within the constructivist theory of learning, science teachers should highlight the quality of student knowledge opposed to assessment scores. Science instruction should concentrate on this conceptual realization (Cakir, 2008). In constructivism, the role of education is to facilitate the construction of knowledge for students, to encourage peer collaboration, and to reach self-identified stance (Cunningham, 1991, p. 14). The constructivist theory outlines that students receive feedback continually throughout the learning process. The use of common formative assessments provides opportunities to provide students with ample feedback as well as respond to learning deficiencies within collaborative teams.

Crooks conducted a study on formative assessments in 1988 and proclaimed that formative assessments used effectively could concentrate student learning, broaden intrinsic motivation and teach students the underlying at the root of education. Crooks (1998) also concluded that formative assessment has a formidable influence on education. UKEssays (2018) defines *authentic learning experiences* as experiences that create a pathway between the curriculum standards and real-world practices. Research suggests learning within the school environment can be supported through the use of formative assessments that can exceed students' acquisition of knowledge opposed to teacher's subject knowledge or class size (Wiliam & Thompson, 2008). Although the research conducted by Wiliam and Thompson (2008) analyzed learning within mathematics, formative assessment strategies can be used to monitor

students' progress across all content areas and grade levels (Orlich, Harder, Callahan, & Gibson, 2001). When teams of teachers working together to collaboratively identify critical standards, develop common formative assessments, use across content classrooms, and analyze results conjointly, they could also cooperatively create corrective instruction.

Teacher Perception and Student Achievement

In a traditional classroom setting, the teacher is answerable for the preparation, supervision, and delivery of content in which students will be assessed for mastery. Classroom assessment plays an important role in determining whether learners have acquired the skills, knowledge, and competencies outlined by the essential standards (Office of Standards in Education, 2014). Campbell and Evans (2000), as cited in Michael Jarrett's 2016 study, viewed classroom assessment as data provided to teachers to bring forth elements of classroom instructional practices that could monitor student achievement. By examining the purpose of assessment and administering the appropriate assessment tools, classroom teachers can determine the instruction needed to match students' achievement levels in the classroom. The U. S. Department of Education accept the solution to student learning, attentiveness, and interest lies within assessment practices in the classroom (Department of Education, 2012). Too often there is a disconnection between classroom instruction and teacher's perceptions and understandings of formative assessment strategies (Doubet, 2012; Frey & Schmitt, 2010; Thacker, 2016). Gaining an understanding into teachers' perception of assessment literacy and how instructional practices are translated into daily classroom practice would help to evade Stiggins' (2014) ideology about teaching and assessment being separate entities. Jane (2013) asserted teachers' prior beliefs influence their perception and judgment, in turn affecting their classroom behavior. Based on evidence gleaned from the study, teachers' perception of

assessment was affected by multiple pressures including time management, assessment interpretation and implementation, support, and professional development (Jane, 2013). Stiggins (2014) also believed teachers have been kept from developing the assessment skills needed to enhance student learning. It can be surmised that although education reform focused on assessment, very little emphasis has been placed on the development of assessment skills needed to enhance student acquisition of knowledge. The use of common formative assessments could positively influence student learning and achievement when used within an assessment cycle. This study seeks to understand teachers' perception about how Collaborative Assessment Teams (CAT) could be utilized in the development of common formative assessments, the identification of learning gaps, and how to use collaborative assessment data to guide corrective instruction practices.

Yao (2015) agreed teachers' perceptions of assessment and their classroom practices may not be fully aligned while understanding the methods teachers use to implement assessment strategies in the classroom is beneficial. Gaining insight into the rationale and perceptions of teachers who have utilized assessment practices may bring about changes in all classrooms. Jane (2013) conducted a study of South African teachers' perceptions of classroom assessment practices identifying frequent use of standard tests and quizzes as the preferred method of classroom assessment. In that study, the items selected for the test and/or quiz were determined by the teachers' knowledge, values, and beliefs. Shepard (2000) stated that for assessment tools to facilitate student learning, they must be reconstructed in two critical ways: a) improving the content and quality of assessments, and b) embedding the collection and usage of assessments into the ongoing learning process (p. 5). The transformative approach to formative assessments as activities to change instructional practices rather than activities for compliance must be in the

forefront of teachers' ideology of common formative assessment implementation. It is imperative for teachers to consider the role of CAT and the school's vision for assessment by identifying the characteristics of successful common formative assessments, and how assessments are utilized to increase student achievement. Ellwein and Graue (1996) pinpoint lack of professional development, external pressures of standardized tests, and the inability to assess student comprehension as barriers to changes in assessment practices.

Teachers are the catalyst to transforming education. Many classrooms still resemble those of 100 years ago, but by using knowledge developed about how students learn, teachers can change their instructional practices, and apply the leading principles of instruction in their classrooms. Improvements to teaching and learning could be actualized if teachers understood the theories that guide formative assessment practices and connect those theories to the collective blueprint developed by CAT members at High School XYZ to implement common formative assessments as a way to monitor student learning. Research suggests there are circumstances that cause teachers to embrace and implement assessment strategies including, but not limited to the culture of learning, changes in curriculum, a collaborative school environment, accountability systems, and the perception of stakeholders (Adamson, 2011; Alotaibi, 2019; Hui et al., 2017; Verger et al., 2013). Teachers' perceptions of these factors are essential to remove the barricades in embracing common formative assessments and bridge the gap between theory and assessment practices (Alotaibi, 2019; Frunza, 2014; Hondrich et al., 2015). Furthermore, understanding teachers' perceptions of common formative assessments could affect the quality of teacher instruction and the progress of comprehending student learning.

Assessment

It could be said that veteran teachers may more likely deliver classroom instruction within their own comfort zone, using an authoritative teaching style typical of a traditional classroom setting. With the imminent need to improve education and provide evidence of improvement, schools encourage teachers to take ownership of the paradigm shift toward a student-centered classroom. Education reformation elevates the classroom teacher as the most critical component of the learning process, therefore an examination into teachers' perceptions of and use of common formative assessments in the classroom and the collaboration process utilized is essential. According to Greenstein (2012), most changes to teaching and learning are driven by assessment. Teachers have been responsible for providing a viable curriculum and ensuring student mastery; this cannot be achieved by simply providing information without any accountability. Erkens (2016) proclaimed that through assessment, teachers can discern the discrepancy between a student's present understanding and the desirable performance level.

Glickman (1993) focused on the need for schools to evaluate how they assess individual students, how they use individual assessments, and how they report assessments to students based on their influence on teaching. Assessments revolve around inference-making and research suggests the immediate reason for student assessment and analyzing results is to determine the next steps in student learning (Ainsworth, 2010; Popham, 2003). In Ainsworth's 2010 study, the following six steps for utilizing assessment results to make decisions about instruction were adopted from Rigorous Curriculum Design:

1. Know your purpose
2. Determine the appropriate assessment to reach the identified purpose
3. Select or create a quality assessment
4. Administer and score the assessment; analyze the assessment results
5. Make an accurate inference

6. Reflect and adjust instructional decisions in a timely manner (p. 137-138).

Helping students learn requires a collaborative effort from teachers and administrators who stand in need to implement any necessary changes making student proficiency attainable (Kramer & Schuhl, 2017). Teacher leaders have the heightened responsibility to influence the professional practice of other teachers by advocating for and, by providing professional development opportunities in assessment (Gareis & Grant, 2008). In addition, Gareis and Grant (2008) addressed the need for teachers to collaboratively construct assessments, advocate for teachers' ongoing professional development and influence policy for which teacher leaders could constructively influence professional practice of others in their school and district.

The word "assessment" comes from the Latin verb "adhere" meaning "to sit with"; in assessment the teacher engages with students, performing tasks with and for them, instead of teaching directly to students (Heritage, 2010). Currently, there is no unified definition of assessment in the field of education. As cited in Baynard's 2011 study, Popham (2003) defined assessment as any observable action that exposes skills, competence, or proficiency. Teachers use an array of assessments to examine student learning: standardized, teacher-created, summative, formative, formal and informal (Erwin, 2016). Wiggins and McTighe (2005) viewed assessment as a broad term for the intentional use of multiple methods used to collect evidence of students meeting the desired results on state standards and objectives. Educators should recognize assessment as a larger role in teaching than in earlier years and the incorporation of assessments as "an integral part of instruction, rather than the end of instruction" (Danielson, 2007, p. 86). Research showed that assessment is a learning tool used for learning and to support decision making about reinstruction practices (Diller, 2007; Gabriel, 2005; Senge et al., 2012).

By expanding teachers' definition of assessment and considering how they are used advantageously, teachers do not have to wait for state test results to demonstrate student academic growth. Wagner and Dintersmith (2015) acknowledged critics who viewed assessments as inhibiters of learning by decreasing student curiosity and motivation. However, assessments have been fundamental in concluding whether students have grasped proficiencies integral for learning, while informed assessments fortify the goal of student achievement (Wagner & Dintersmith, 2015). Both students and teachers must have immense commitment and willful effort toward understanding assessments for practices to be used effectively. Looking at assessment as part of the total school system enables the school community to take advantage of overlapping efforts and gather data efficiently in light of the desired outcome and provide educational opportunities (Danielson, 2007; Dick, Carey and Carey, 2001).

Tomlinson (2001) stated that teachers should view assessment as a blueprint for thinking and outlining as assessments are "an art of teaching for success and a way to extend rather than measure learning" (p. 20). The assessment as verb lens ensures teachers view assessment and instruction not as separate silos, but as two halves of the same whole (Erkens, Schimmer, Vagle, 2018). Valentine (2009) emphasized when assessments are presented, teachers must demonstrate their connection to the expectations and learning targets, and continually work to clarify the expectations and learning targets.

Formative Assessment Practices. Formative assessments, as defined by Airasian (1994), are interactive strategies that helped to form the ongoing processes of learning. Formative assessments could bestow teachers the ability to identify student achievement on content standards as well as focus on learning gaps. Moss and Brookhart (2015) valued formative assessment data collected within the classroom more than summative assessments or

standardized tests because they illustrate the full perspective of a student's learning needs; however, without the time to appropriately use formative assessments collaboratively, teachers lack the contingency to maximize student achievement (Stiggins, 2005). Research shows that formative assessments could support all students in learning standards-based content when teachers find those practices that work for them and use continual methods to strengthen the belief that students can succeed through principles of formative assessment (Forbes, 2007).

Function and time of application is what separates formative assessment from summative assessment; formative assessments are used during instruction and contribute to student learning occurring opposed to the end of the instruction period (Chauncey, 2009). Michael Scriven (1967) first coined the term formative assessment, defining it as a method that allows teachers to collect student data to make real-time decisions about instruction. Researchers agreed that the foundation of formative assessments help to shape classroom instruction and provide ongoing feedback to students and teachers (Ainsworth & Viegut, 2006; Bell & Cowie, 2001; Black & William, 1998; Reeves, 2007). Formative assessments help determine where students are academically, where students need to be, and the strategies implemented to meet the pre-determined learning targets (Greenstein, 2012; Stiggins, 2007). For assessments to be formative, they should not be graded, rather provide informative data for teachers to adjust their instruction and provide growth-producing feedback to students based on student strengths and learning deficiencies (Gabriel, 2005; Moore, 2001; Rutherford, 2014; Winebrenner & Kiss, 2014).

In the Bailey and Jakicic 2017 study, Popham (2008) described the implementation of formative assessments in four levels: 1) modification of classroom instruction, 2) redressing students' learning approaches, 3) transforming the climate of the classroom, and 4) continue formative assessment practice school-wide. During this formative assessment process, teachers

can acknowledge the background of students, use data to guide additional support and as a mechanism for improvement. Effective formative assessments are utilized when students are still exploring the content, they highlight students' academic strengths and weaknesses, and should be used to modify curriculum to advance learning before summative assessments are administered (Missett et al, 2014).

While students are learning new content, they need the space to process what they are expected to learn, as well as receive helpful feedback about their performance (Dick, Carey, & Carey, 2001; Thompson, 2013; Wiebrenner, & Brulles, 2008). When formative assessments are used before and during the acquisition of knowledge, the data collected could refine instruction rather than determine grades (Moore, 2001). Moore (2001) promoted that teachers should consider the requirements for retention of learning when skills from one instructional unit are subordinate to those in the next unit. Formative assessments provide feedback on whether students have met current curriculum standards when assessments are used formatively, and students receive constructive feedback and are able to make adjustments to their work based on that feedback (Orlich, Harder, Callahan, & Gibson, 2001; Rutherford, 2014). Published research studies have shown that teachers' formative assessment practices can lead to improved student learning (Dean, Stone, Hubbell, & Pitler, 2012; Jensen, 2013; Marzano, Pickering & Pollack, 2001; Vatterott, 2009).

Formative assessments can be utilized in the following ways: peer reviews, exit tickets, multiple-choice, intrinsic feedback, extrinsic feedback, portfolios, rubrics, anecdotal notes, questionnaires, checklists, guided-practice, and one-minute writing, just to name a few. When assessing students, teachers must choose formative assessment items that meet the intended learning goals considering both effectiveness and efficiency (Vagle, 2015). For example,

teachers could choose to use multiple-choice tasks when students are describing fundamental details in text, but Socratic dialogue when students must construct an argument as formative assessment practices, "students need to experience these practices prior to being asked to do so on summative assessments" (Vagle, 2015, p. 39). Table 4 provides an outline for teachers to link student actions, appropriate formative assessment for the learning goals, and level of complexity.

Table 4

Matching student actions to appropriate formative assessment.

Method	Formative assessment to match student learning goals.	Complexity
Selected Response	Multiple choice, short answer, matching, true or false.	**Simple:** Students are able to recall where to locate relevant knowledge from content or processes.
Constructed Response	Construct a solution, respond to prompts or scenarios, write an essay	**Medium:** Students are able to engage in mental processes above recall of knowledge, apply or make sense of content, and connect to new learning.
Performance	Writing a paper, preparing a speech, producing a video clip, making brochures, and presentations.	**Complex:** Students are able to create or produce new artifacts that integrate content and thinking using evidence.

Adapted from Design in 5: Essential Phases to Create Engaging Assessment Practices, Vagle, 2015

In order to implement formative assessments with fidelity, teachers should be trained on how to correctly use formative assessments in their classrooms. When teachers engage in steady professional development, evidence suggests an increase in student achievement (Stronge, 2018). However, research suggests teachers do not receive enough training or support with the implementation and use of formative assessments, and often must rely on trained peers to fill in the gaps (Black & Wiliam, 1998; Shepard, 2000). Gareis and Grant (2008) affirmed that teacher leaders can constructively influence the professional practices of other teachers by advocating for and providing professional development opportunities regarding the formative assessment cycle. Erkens, Schimmer, and Vagle (2018) emphasized that, "how teachers respond to assessment

results goes a long way toward establishing and maintaining a culture of learning in which students see assessments as an opportunity rather than an event" (p. 22).

Collaboration time alone will not improve student achievement unless collaboration focuses on the right work (DuFour, Reeves, & DuFour, 2018). Dufour (2015) explained that the 'right work' required collaborative teams to embrace an assessment process that included on-going checks for understanding while teaching, and at least one or more team-developed common assessment for each unit of instruction. Formative assessments would allow teachers to provide in-the-minute checks, analyze data, and make decisions to provide corrective instruction or to move forward. Choosing to use formative assessment initiatives to collect data would better inform educators about student learning and provide the skills to implement their own corrective instruction with the purpose of minimizing gaps in student academic achievement.

Common Formative Assessment Practices. Common formative assessment as defined by Ainsworth and Viegut (2006) in *Common Formative Assessments*, are formative assessments that are developed by a team of teachers working collaboratively to aid in the evaluation of students. These informal assessments are brief, adaptable, and responsive in assessing students agreed-upon knowledge and skills (Ainsworth & Viegut, 2006). Common formative assessments act as specialized instructional strategies that educators could use to support students' learning of the standards. Ainsworth and Viegut (2006) continued that the bridge between formative assessments and common formative assessments lies within teacher collaboration and when formative assessments are constructed, applied, and reviewed within professional learning communities, they are more influential.

Stiggins and DuFour (2009) identified four keys to maximize effective common formative usage: serve in numerous functions, give transparency to learning targets, qualify

assessments, and heighten communication. Common formative assessments function to accommodate daily instructional decisions when created collaboratively and used uniformly in all content-specific classrooms. Common formative assessments established in real-time how students advance through learning targets, identify which instructional strategies have and have not worked and which students have and have not met proficiency, informing both students and teacher needs. Common formative assessments provide a clear perspective of learning objectives when standards are unpacked, and teachers communally agree on the critical standards to be addressed, proficiency requirements are outlined, student performance skills are set, and product development capabilities each student must master are decided (Stiggins and DuFour, 2009). Sharing in the process of deconstructing standards ensures each team member shares similar interpretations of the critical standards when developing learning targets for students to master and build upon their collective knowledge when making decisions on the expected schooling for students.

Stiggins and DuFour (2009) attributed high-quality assessment that fosters student learning to common formative assessments developed collaboratively using well-defined learning targets. When using common formative assessments, collaborative teams must establish an agreed-upon benchmark for evaluating student work and continue to use the established criteria until student work is graded routinely. Frequent dialogue nurtures "both greater clarity of the learning standard to be achieved and higher quality assessments" (Stiggins & DuFour, 2009, p. 644). Not only must teachers clarify what students are supposed to comprehend, but students must also understand what it is they are supposed to learn. Common formative assessments are designed to strengthen communication about performance demands. Involving students in the collaboration process can help identify the next steps in student learning. When

teachers translate learning targets into student-friendly language, and communicate those targets from initial implementation, data results could be more immediate and effortless when being conveyed to and appreciated by students.

Common formative assessments work in the collaborative way by utilizing the judgment of individual CAT members on skills that are difficult for students to understand, but are essential for student academic success (Vagle, 2015). Bailey and Jakicic (2017) found that teacher teams need to spend the majority of collaboration time focused on the design and use of assessments that directly impact teacher instruction including, but not limited to, common formative assessments. Bailey and Jakicic (2017) continued that when teachers align instruction and assessment to the standards, and assure all students master the content of each unit, then teams will pave the way for success on summative assessments.

Common formative assessments can provide quick checks for student understanding of learning. When teachers understand how common formative assessments are properly constructed and the necessity of each of their components, they are able to maximize classroom-level common formative assessment usage (Ainsworth, Briggs, Wiggs, Besser, & Almeida, 2012, p.27). Collaborative Assessment Teams (CAT) have the ability to create a professional dialogue around standards and examine common formative assessments results that identify students' learning needs (Erkens, 2016). In doing so, CAT members are able to establish a culture of learning school-wide. The benefits of using common formative assessments as outlined in Ainsworth et al. (2012):

1. regular and timely feedback
2. multiple-measure assessments using multiple formats
3. ongoing feedback for grade-level, course, and department teachers

4. consistent expectations within grade level, course, and department regarding standards, instruction, and assessment
5. agreed-upon criteria for proficiency achievement within each individual classroom, grade-level, school, and district
6. deliberate alignment classroom, school, district, state assessment to better prepare students for success on high-stakes assessment
7. predictive value as to how students are likely to do on each succeeding assessment in time to make instruction modifications p. 26-27.

Common formative assessments must begin as a teacher-owned process and are only achieved when teachers design those assessments firsthand and when data used by teams of teachers to check in with students about their progress in achieving an essential learning outcome (Vagle, 2015). Common formative assessments are tools used to plan instructional responses, but when the teacher fails to implement instructional responses, the assessment becomes summative in nature (Vagle, 2015). Common formative assessments allow teachers the opportunity to respond to student data by addressing gaps in learning or deepen their current understanding. Research suggests that when teacher teams collaborate monthly, they are able to increase assessment administration, data analysis, and corrective instruction two or three times per year. Weekly collaboration has shown to improve incidence of those actions to every three or four weeks, but daily collaboration would allow for the assessment administration, data analysis, and corrective instruction to occur every one to two weeks (Vagle, 2015). Secondary science teachers at High School XYZ engaged in weekly CAT meetings intended to discuss student data regularly, target corrective instruction to student needs, provide more opportunities for students to receive remediation that would close learning gaps, or provide enrichment

activities to extend what students already learned. When students have been identified and corrective instruction planned, collaborative teams must address how to assess the new learning to ensure the gaps in learning have been filled.

Collaboration through Collaborative Assessment Teams

Traditionally, teaching has been a lonely profession where work conducted to improve students' standardized test scores was done in isolation, behind a closed classroom door, and the results are not known in a timely manner (Fullan, 2014; Wagner, 2014). Teachers are the constant factor in any classroom and meeting the needs of all learners will require new ways of working as educators where collaboration is a must, not an option (Peery, 2011). Researchers stated that schools must develop a culture of collaboration and the most effective schools organized teachers into collaborative teams (DuFour, DuFour, & Eaker, 2008; Mohammed, 2009; Fredericks, 2017). The increase in communication, focused conversations, and opportunities for teachers to interact with one another could produce practical results through the process of collaboration. Fullan (2014) proposed when people work together they identify with and become committed to an entity larger than themselves.

Vagle (2015) placed "teams of teachers" at the center of common formative assessment usage. As a team, common formative assessment should be used to check-in with students about their progress in achieving essential learning outcomes. Using that data, teams could also identify students in need of remediation or advancement. When teams collaborate regularly, the opportunity to respond to student needs increases. Response to instruction is essential if common formative assessments are to improve achievement. After the analysis of common formative assessments, collaborative teams must bring the assessment back to the group and

categorize students according to mastery level. Reinstruction strategies could then be devised to fill-in student achievement gaps.

Collaborative Assessment Teams (CAT) are essential data teams that engage in professional collaboration, with the intention of molding instructional practices to advance student achievement. Collaborative Assessment Teams (CAT) work within Professional Learning Communities (PLC) with the primary focus on assessments. In PLCs, teachers share the responsibility for student success and are accountable through continuous development of curriculum that are refined based on assessment results, but collaborative teams are the driving force behind school improvement in PLCs (DuFour, DuFour, & Eaker, 2008; Schmoker, 2011; DuFour, DuFour, Eaker, & Thomas, 2016). Teachers who are provided with time and resources to collaboratively discuss classroom strategies, could create more opportunities for students to improve their academic performance. The core beliefs that guide the work of collaborative teams stems from Richard DuFour, Rebecca DuFour, Robert Eaker, Thomas Many, and Mike Mattos 2016 book *Learning by Doing: A Handbook for Professional Learning*. Teachers should start by identifying the essential standards in the course being taught, unpack the standards into learning targets, create a year-long pacing guide for the newly created learning targets, and develop instructional units with embedded common formative assessments (DuFour, et al., 2016).

Gareis and Grant (2008) stated that assessments designed collaboratively could be purposive weapons used to reinforce grade-level, content-specific, or departmental teams to construct common assessments that include quizzes, unit tests, and EOCs. As collaborative teams develop assessments, the items written should match the concepts intended to be learned by all students. This could be achieved by unwrapping the standards and creating an assessment

plan prior to the development of common formative assessment items. Collaborative Assessment Teams (CAT) share a common focus, use common formative assessments as a measurement tool, and a common way to evaluate student performance (Ainsworth & Viegut, 2006). Common formative assessments are checkpoints that could be used to ensure students are meeting academic measurement targets. Having collaborative assessment teams that focus on assessment data could help to identify academic achievement gaps supporting the development of reinstruction strategies for teachers. Popham (2008) affirmed that teachers can alter instruction for remediation when formative assessments are used to access data that accommodates instructional practices.

Collaboration done well consists of team meetings where teachers draw on one another's content and pedagogical expertise and to be recognized for their professional knowledge. This process provided greater accountability, as teachers "articulated their beliefs and justified their actions to one another" (Oaks, Quartz, Ryan and Lipton, 2000, p. 199). Collaborative teams help individual teachers work outside the parameters of their individual interpretation about classroom instruction. In the collaborative working environment, teachers embrace working together to select proper instruction, generate high-quality input, and endorsement of the process (Ackerman & Mackenzie, 2007). The focus of a team meeting is the work on the table and not on the student or teacher who produced it (Wong & Wong, 2009, p. 286). Wong and Wong (2009) went on to state that when teachers work in teams they highlight lapses in instruction, it is not an attack on the individual teacher, but an approach to identify deficiencies in the team approach to effective instruction. Collaborative Assessment Teams (CAT) allow teachers to work with one another to construct common formative assessments, to draw authentic and reliable assumptions regarding student achievement; and make informed decisions about

selecting the appropriate content and strategies to advance student achievement (Gareis & Grant, 2008).

Time to collaborate will not improve student achievement unless collaboration focuses on the right work (DuFour, Reeves, & DuFour, 2018). DuFour (2015) identified the right work is when collaborative teams plan together to carry out common goals, establish and implement a guaranteed and viable curriculum, establish common pacing guides for each unit, embrace an assessment process that includes ongoing checkpoints, and provide time during the regular school day to support struggling students or supply enrichment for students who understood the standards.

Collaborative Assessment Teams at High School XYZ

For systemic change to be implemented building-wide, the principal must be confident in the potential of teacher teams and possess the dexterity to develop a collaborative community of learners (Senge et al., 2000). At High School XYZ, the principal put in place a structure that every Collaborative Assessment Team (CAT) must adhere to regardless of content or grade-level. Each CAT must meet in the same meeting location, establish meeting norms, assign roles, unpack standards, follow a pacing guide, create common formative assessments collaboratively, assess formative assessment results, develop interventions, and put in place remediation and enrichment opportunities to help students in need within the school day. During the weekly CAT meeting, members may assign one person or share the responsibilities of completing the PLC Collaborative Records (see Appendix A). Researchers found that the most logical team structure to establish and the most effective in improving both adult and student learning were composed of three to seven individuals that are course-specific or the same grade-level (DuFour & Marzano, 2011; Gallimore, et. al., 2009; Hargreaves & Fullan, 2012). Every teacher at High

School XYZ was a member of a CAT, but for the purpose of this study, data was only collected from secondary science CAT members. There were four secondary science CAT including Biology, Environmental Science, Physical Science, and Chemistry. This study focused on CAT with End-of-Course summative assessments including Biology and Physical Science. Regardless of content or size, all CAT followed a uniform Assessment Cycle Plan, followed the collaborative assessment norms, and completed the PLC Collaborative Records (see Appendix A). Vagle (2015) found that deep implementation of collaborative assessment practice that fosters a culture of learning requires collaborative teams to prioritize their work and intentionally plan why, when, and how that work will happen (p. 113).

Providing a collaborative assessment team structure that is uniform building-wide could help school systems to increase instructional supports and professional development. Ackerman and Mackenzie (2007) understood that collaborative leadership requires a restructuring of the current status quo, and it would require space for collaboration and mutual access to instructional planning in order to become ingrained in school culture. It could be difficult for teachers to assess student learning when teachers focus on getting information to students instead of considering how students will retrieve the information. When teachers accept the fact that students struggle despite our best efforts, they can take advantage of corrective instruction opportunities when they work together in collaborative teams that open communication around data. When teachers use emerging evidence to identify lapses in learning while within the instructional window, they can make informed decisions about their next steps (Erkens, Schimmer, & Vagle, 2018).

Farmer (2007) held that when schools look at assessment as part of the total school system, it permits the school community to take advantage of overlapping efforts and gather data

regardless of the desired outcome. Ainsworth, Briggs, Wiggs, Besser, and Almeida (2012) asserted that when teachers understand the benefits of using formative assessments and how formative assessments are constructed, they can maximize common formative assessment use in the classroom. With the provided Assessment Cycle Plan science teachers in their respective CAT could create ownership and remain focused on the task of common formative assessment development.

During weekly CAT meetings, secondary science teachers were expected to complete the following sections as part of the PLC Collaborative Records (see Appendix A): a) essential standards, b) data analysis, c) response to data, d) collaboration, e) note/follow-up, and f) celebrations. Prior to any instruction, CAT members collaboratively construct a blueprint for how each unit would be taught. The first couple of CAT meetings were designed to unpack state content standards, establish a pacing guide for lessons to be taught, and work together to construct a minimum of one common formative assessment per unit in order to collect data to share at each subsequent CAT meeting. When colleagues work collaboratively to sort out the meaning of learning goals, how the goals are developed, how the goals would be measured, and how students would practice skills, teams build confidence in designing formative assessments (White, 2017). White (2017) went on to say that the learning continuum is the basis of strong formative assessment design and instructional agility develops when teams work to write assessments before they begin instruction. The collaborative construction of common formative assessments is the binding component of the PLC Collaborative Records (see appendix A) as common formative assessments are critical to the work of collaborative assessment teams as they focus on improving student learning (Kramer & Schuhl, 2017). CAT must also consider what

assessments are being utilized in between the collection of data from common formative assessments.

Summary

This chapter has reviewed several factors that influence teachers' perceptions of common formative assessment development and classroom usage within collaborative assessment teams. The chapter provided a synopsis of student achievement, the theoretical framework at the root of the study, teacher perception and student learning, foundation of formative assessment practices, collaborative assessment teams, and job-embedded professional development. The methodology used in this study is presented in Chapter 3 along with the research design, population and sampling procedures, measurement, data collection procedures, data analysis and hypothesis testing and limitations.

Chapter 3

Methods

The current phenomenological, qualitative study explored the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The first purpose of the study was to examine the role that Collaborative Assessment Teams (CAT) played in teachers' development of common formative assessments and usage in the classroom. The second purpose of the study was to investigate how teachers perceived the impact of CAT on proficiency indicators, and whether their participation in CAT improved their ability to identify appropriate corrective instruction techniques. The third purpose of the current study was to explore how content area CAT members perceived the teams' influence on school-wide classroom instructional strategies for closing student achievement gaps. In this chapter, the methodology employed to conduct the current research is described. The chapter includes the research design, setting, sampling procedures, instrumentation, data collection procedures, data analysis and synthesis, and limitations of the research.

Research Design

In this qualitative study, the methodological approach of phenomenology was employed to better understand the lived experiences for a purposefully selected sample of participants. According to Creswell (2009), qualitative research is a "means for exploring and understanding the meaning individuals or groups ascribed to a social or human problem" (p. 4). Creswell (2009) characterized a phenomenological research design by the researcher's interest in defining and observing phenomena from the view of participants. Phenomenological studies are enhanced when researchers compile data from multiple sources and allocate extensive time to

gather data in the natural setting. The current study employed multiple forms of data collection including observations of Biology and Physical Science CAT meetings, individual follow-up interviews conducted by a third-party individual, review of the team's PLC Collaborative Records (see Appendix A), and a review of the CCRPI reports.

Since passage of the Every Student Succeeds Act (ESSA) in 2015, states, districts, and schools have had more control over the standards to which their students are held, as well as creating their own customized plans for how to achieve student learning goals. Locally, school systems in the state of Georgia were strongly encouraged to develop and implement a formative assessment program for multiple grades across content areas (U.S. Department of Education, 2020). Beginning with the 2018-2019 school year, Georgia established an innovative pilot program to examine one or more alternate assessments and accountability systems aligned with state academic control standards. High School XYZ chose to implement the development of common formative assessments within Collaborative Assessment Teams (CAT) and to administer the assessments at least once during the introduction of new material. On average, science teachers would provide instruction for 4-6 units per semester. The results from common formative assessments would allow teachers to make on-the-spot decisions to refine instruction and meet their students' needs to master the content.

Setting

The current study was conducted at one rural high school in the state of Georgia, henceforth referred to as High School XYZ. It is one of five high schools located in a public school district, henceforth referred to as District A, that services approximately 31,656 K-12 students. High School XYZ was selected for the study based on the school's implementation of the common formative assessment initiative during the 2018-2019 academic year and teachers'

elemental experience with the use of common formative assessments within the CAT process. Due to the 2019-2020 COVID-19 pandemic, all in-person sessions for students and teachers at High School XYZ were closed and all End-of-Course summative assessments were halted. As such, the target score for 2019-2020 carried over to the 2020-2021 school year. The current study explored secondary science teachers' perceptions of common formative assessment usage and investigated the development and use of common formative assessments within the collaborative assessment teams. High School XYZ is comprised of the traditional grade levels of nine through twelve. During the 2020-2021 academic year, the school's enrollment was 1,659 students with the race/ethnicity distribution at 60% White, 26% Black, 7% Hispanic, 5% multi-racial, 2% Asian, and 0.1% of American Indian identification. High School XYZ did not have Title I status during the 2020-2021 academic year, but 27% of the students qualified for free and/or reduced lunch (usnews.com, 2021).

For the 2020-2021 academic year, High School XYZ required all content teachers in grades nine through twelve to implement one common formative assessment measure per content unit to identify instructional gaps and provide targeted instruction for all students. According to Bailey and Jakicic (2017), collaborative assessment team members must clearly outline the proficiency, technique, and propensity learners must acquire in each unit of instruction. Systematic interventions could be used to guarantee struggling students receive supplemental space and guidance for student learning. At High School XYZ, secondary science teachers were mandated to participate in weekly CAT meetings for the purpose of development and usage of common formative assessments. Starting with the end in mind, content area teachers unpacked the standards to identify the content that students must master by the end of the learning window. During secondary science CAT meetings, teachers took the data collected from common

formative assessments, identified learning gaps, and collaboratively created corrective instruction that helped to fill in the identified learning gaps. Teachers also created opportunities for students who had mastered the content to deepen their understanding with learning extensions. Bailey and Jakicic (2017) also found teachers could improve instruction and frame professional development when they worked collaboratively to analyze student learning using common formative assessment data.

Sampling Procedures

The sampling of participants for the current phenomenological study was purposive rather than random. Choosing the subjects purposively "involves selecting a sample based on the researcher's experience or knowledge of the group to be sampled" (Lunenburg & Irby, 2008, p. 175). Based on the 2018-2019 College and Career Readiness Performance Index (CCRPI) science score of 79.34%, secondary science teachers had a target score of 81.72% for the 2019-2020 academic year. Due to the closing of all Georgia schools in March 2020 during the COVID pandemic, the target score of 81.72% carried over to the 2020-2021 academic year. The use of common formative assessment strategies and analysis of common formative assessment data was essential for monitoring student progress. In addition, secondary science teachers working in CAT could devise corrective instruction based on common formative assessment results and help to close the gap between the identified learning target and student mastery.

The criterion for inclusion in this study was that participants were members of a secondary science Collaborative Assessment Team (CAT) at High School XYZ. Participants were selected who regularly attended CAT meetings during the time allocated for their respective collaborative assessment team meetings. The participants selected were appropriate for this study because they were secondary science teachers implementing common formative

assessments in their Biology and Physical Science CAT. Only data from teachers instructing Biology, Chemistry, and Physical Science at High School XYZ working within CAT teams were included in the current study.

Instruments

Yin (1994) recommended using multiple sources of evidence that connect the research questions to the data collected and conclusions drawn (Lunenburg & Irby, 2008). The current study employed a qualitative phenomenological methodology that utilized two instruments and two data sources in an attempt to answer the specific research questions and provide a description of how members of Collaborative Assessment Teams (CAT) in High School XYZ perceived and experienced the development and use of common formative assessments. The first form of data collection for the study included two sixty-minute observations conducted by a third-party observer for both Biology and Physical Science CAT meetings. The second form of data collection for the study included individual follow-up interviews conducted by a third-party individual for each of the eight research participants. Archival documents, such as the Collaborative Assessment Team Meeting Observation Guide and Checklists (see Appendix B). and the PLC Collaborative Records (see Appendix A) were reviewed to better understand the experience and perceptions of CAT members.

Third-Party Observations. The observations of secondary science Collaborative Assessment Team meetings at High School XYZ provided the opportunity to collect primary data through both verbal and non-verbal approaches. The Biology CAT observations occurred twice throughout the study and lasted approximately 60 minutes for each observation. The first observation occurred on August 31, 2020, and the second observation occurred the following week on September 8, 2020. The Physical Science CAT observations occurred twice throughout

the study and lasted approximately 60 minutes for each observation. The first observation occurred on November 02, 2020, and the next consecutive meeting was observed on November 16, 2020.

An objective, third-party observer was asked to observe the meetings to mitigate researcher bias. The third-party interviewer was briefed regarding the purpose of the current study, provided a copy of the research questions, and was trained to make a written record of observations during CAT meeting observations. During the training process, the third-party interviewer received a copy of the secondary science CAT members' PLC Collaborative Records (see Appendix A) and Collaborative Assessment Team Meeting Observation Guide and Checklists (See Appendix B). During the CAT meetings, the third-party individual observed members as they worked through the PLC Collaborative Records (See Appendix A). During both CAT meeting observations, the third-party observer noted CAT members' behaviors associated with the opening of the meeting, leadership during the meeting, noted member interaction and behaviors, verbal and non-verbal communication amongst the secondary science CAT members, and observed the process of developing and using of common formative assessments. The CAT meeting documentation and notes from the third-party observations were later analyzed as part of the data collected to help establish the themes.

Third-Party Interviews. Guided by the phenomenological research approach, individual CAT member interviews were chosen as the second data collection method for the current study. Interviews allow researchers to gather valuable information that cannot be directly observed or collected through survey administration. Creswell (2009) stated that "the goal of the research is to rely as much as possible on the participants' views of the situation being studied" (p. 8). A semi-structured interview protocol created for a qualitative study conducted by Alovor in 2016

served as the foundation for the open-ended questions posed in the interviews. A letter was sent to the author of the original open-ended interview questions on February 18, 2019, asking for permission to use and adapt the protocol for the current study. Approval to sample and/or reproduce any version of the open-ended interview questions was granted on March 28, 2019 (see Appendix C). Statements were deleted from the original instrument in order to focus on teacher perception and usage of common formative assessment practices, and corrective instruction practices in order to produce the final draft of the Individual Interview Questions (see Appendix D). In addition, the third-party interviewer could ask clarifying questions, which allowed the interviewer to probe into more details or shift the line of questioning in a direction not predetermined when deemed necessary. Participants were able to elaborate upon their answers while follow-up questions were derived for participant responses which required more complete narrations.

The interview questions were developed based on the research questions and designed to allow participants an opportunity to share their perceptions surrounding the development and the usage of common formative assessments. Collecting teachers' perceptions of common formative assessment development and the actual use of these common formative assessments in the classroom was vital to understanding how CAT could facilitate corrective school-wide instruction. The eight teachers interviewed were asked to share their experiences as members of the CAT and provide first-hand insights as to how Collaboration Assessment Teams (CAT) were being utilized to improve the development and usage of common formative assessments and how those practices led to improved corrective instruction.

An objective, third-party individual conducted the eight individual interviews. Participants were provided with an alias in order to control for biases of the researcher, as well as

to protect the confidentiality of participants. The first step of each interview involved restating the purpose of the study and the role of participants, expected benefits of the study, and a review of the participant consent form (see appendix E). The third-party interviewer received a copy of the Individual Interview Questions (see Appendix D). The individual interviews were conducted between September 9, 2020, and November 30, 2020. Each interview was conducted with participant consent, and the third-party interviewer followed the question protocol and utilized probing questions as necessary. The interviewer offered participants an opportunity to ask any questions or express any concerns regarding the interview process and the participants were informed of their right to stop the interview at any time. Once the interviews were completed, documents were immediately turned over to the researcher and each of the interviews was transcribed.

Data Collection Procedures

Requests for permission to conduct research were sent to the principal of High School XYZ on December 3, 2019, and approval was granted on December 3, 2019 (See Appendix F). Request for permission to conduct research in District A was requested on December 3, 2019, and approval was granted on December 5, 2019 (See Appendix G). The researcher submitted a request to conduct the study to the Institutional Review Board of Baker University on July 16, 2020, and approval was granted on July 27, 2020 (See Appendix H).

On July 28, 2020, all participants were provided with background information regarding the research and their role in the current study. The researcher provided each participant with a copy of the participant consent form (see Appendix E) and reviewed the confidentiality agreement. Participants signed and returned the participant consent forms (see Appendix E) on July 28, 2020, and each received a copy of the signed document for their records. The researcher

assured all participants that the data collected for the study would be stored on a password-protected computer at High School XYZ. The researcher also notified all participants that no personally identifiable information would be shared, and the identity of participants would be kept confidential. All data collected would remain in a secure location for no more than two years after the completion of the study and would then be destroyed.

After both the Biology and Physical Science CAT meetings were observed for two weeks, individual interviews were conducted between September 9, 2020, and November 30, 2020. Each individual interview lasted approximately 30-45 minutes. In addition to the ten main interview questions, follow-up probing questions were asked of participants to help them reflect on their perceptions of common formative assessment development and usage within their respective collaborative assessment teams. Of the thirteen teacher members of the secondary science CAT, eight teachers agreed to participate in this research. An email was sent to each participant to schedule the interview date, time, and location. Participants were also informed of the objective third-party individual who acted as the interviewer. At the start of each interview, the third-party interviewer and participants reviewed their participant consent form (see Appendix E) and verbal permission was obtained. Following the transcription of the interview recordings, a copy of the transcript was provided to each participant for review and their signatures were obtained as a record of their approval of all transcribed text.

Data Analysis and Synthesis

Qualitative data analysis consisted of analyzing the themes that emerged from the data collected during observations of CAT meetings and individual interviews of secondary science teachers. Johnson and Christensen (2008) defined a research question as "a statement of specific question(s) to which the research seeks an answer" (p. 78). More specifically, the purpose of a

descriptive qualitative research question is to collect information related to experiences, interviews, observations, and perceptions of the research subjects in line with the intentions of the investigation (Lunenberg & Irby, 2008). The following four research questions guided this qualitative phenomenological study:

RQ1. What are secondary science teachers' perceptions of the role that Collaborative Assessment Teams (CAT) play in participants' understanding of common formative assessment development and usage in the classroom?

RQ2. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) impact secondary science teachers' perceptions of proficiency indicators?

RQ3. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) assist in the identification of appropriate corrective instructional techniques?

RQ4. How do the secondary science teachers participating in the Collaborative Assessment Teams (CAT) perceive the influence of content area CAT on the school-wide corrective instructional strategies for closing student achievement gaps?

The analysis of indicative statements, formation of meaningful segments, and the development of natural descriptions are what makes research phenomenological (Creswell, 2009). Studying events in their natural environment are the elements of an efficient qualitative researcher (Creswell, 2009; Yin, 2003). The use of the 'natural setting' in connection with participant experiences were the characteristics of qualitative research that guided the current study in seeking to better understand the phenomenon of collaborative assessment teams from their participants' perspectives. Observations of the Biology and Physical Science CAT

meetings, and individual follow-up interviews were the chosen data collection methods to maintain the research focus on understanding the teachers' perceptions of the common formative assessment process and minimize the influence of the researcher's potential biases from distorting the data collection or analysis.

Data analysis suggests decoding text and image data in order to tell a complete story. To begin, the data collected is broad and plentiful and it is up to the researcher to peel back the material until the central perceptions are recognized. Creswell (2009) presented a hierarchical approach that establishes a foundation and data collected with a study is constructed upon that base. The following steps were outlined.

1. Coordinate and arrange data through the transcription of interviews and computation of text into the data analysis software.
2. Thoroughly read all transcribed data to get an understanding of the context, tonality, validity, and usefulness of the data.
3. Begin to code the information gathered by segmenting text and attaching *in vivo* terms.
4. Generate a description of the setting, categories, or themes to be analyzed.
5. Describe the established themes using narration to bring forth findings.
6. Translate data to identify the meaning (Creswell, 2009, pp. 185-190).

The researcher transferred the transcribed interviews into the Quirkos qualitative analysis software to establish codes. Coding is the process of organizing the qualitative data into chunks or segments of text before bringing meaning to the information (Rossman & Rallis, 1998; Creswell, 2009). Quirkos was the computer-assisted qualitative data analysis software utilized

for the current study. Although computer software for qualitative analysis has constraints, Quirkos was selected based on the ability to import text documents, color-code like responses, and merge themes. Codes were developed based on the convergence of CAT observation notes and individual interview transcripts.

Reliability and Trustworthiness

This phenomenological study attempted to establish trustworthiness by implementing eight separate validity strategies recommended by Creswell (2009): triangulation of data, member checking, use of rich description to convey findings, clarification of researcher bias, the inclusion of negative findings, tedious time in the setting for data collection, peer probing, and use of an independent auditor. Triangulation was used to check the accuracy of the findings. Creswell (2007) suggested the researcher triangulate multiple sources of data by considering evidence from the various collection methods and applying consistent arguments for themes.

Data originating from numerous sources were collected and result triangulation minimized the risks to study validity (Merriam, 2002). Triangulation was attained through the merging of the Biology CAT and Physical Science CAT PLC Collaborative Records (see Appendix A), reviews of the Collaborative Assessment Team Meeting Observation Guide and Checklists (see Appendix B), and individual interview transcripts. A qualitative researcher interprets data from the view of participants' instead of formulating assumptions from which to conclude (Stakes, 1995). Member checking helped prevent the incidence of transcription errors and ensured accuracy throughout the process. Participants reviewed the transcripts of their individual interviews, as well as the emerging themes at various stages of the data analysis and were allowed to make corrections in the representations of their perspectives in order to minimize inaccuracies. The findings were presented descriptively and displayed varying

participant perspectives, which added to the validity of the study. To clarify researcher bias, the role and background of the researcher was explained in detail as part of establishing accuracy and integrity for the research results.

Researcher's Role

The current study examined the development and classroom usage of common formative assessments in Collaborative Assessment Teams (CAT). The researcher's purpose was to investigate how teachers perceive Collaborative Assessment Teams' impact on common formative assessment proficiency indicators and the identification of appropriate corrective instruction techniques. Creswell (2009) described the role of the researcher as one that associates a comprehensive perspective at a phenomenon in its natural environment. The researcher for the current study had been in the field of education for fifteen years when the study was conducted and possessed an in-depth understanding of the research topic. The study participants were observed in their regular space, at their regular meeting time, while collaborating on their current secondary science content. The researcher's experiences with the participants in their natural settings contributed to more accurate and valid data. An objective third-party observer conducted both the CAT observations and individual interviews as a strategy for preventing potential researcher bias from entering the data collection process. The CAT openly discussed the components of the PLC Collaborative Records (see Appendix A) while one member typed the information on the document. This phenomenological study explored how CAT could influence school-wide classroom instructional strategies in an attempt to close student achievement gaps. The data collected "focused on learning the meaning that the participants hold about the problem or issue, not the meaning that the researchers bring to the research" (Creswell, 2009, p. 175). To ensure that the data were not analyzed with preconceived

notions, the researcher committed to reporting the data accurately to answer the four research questions that guided the current study with the use of the third-party interviewer and observer.

Limitations

Limitations are factors in a study that "may affect the interpretation of the findings or the generalizability of the results" (Lunenburg & Irby, 2008, p. 133). Limitations to the current study include the inability to generalize due to sampling size and level, geographic location, and demographics. The participant sample for the study may not be representative of secondary science teachers in schools besides High School XYZ, other schools within or outside of District A, or in schools within the state of Georgia or other states in the United States. However, other teachers in those same grade levels and content areas could provide different contexts related to common formative assessment practices. The sample size for the study limits the generalization of its results, despite fitting the specifications of phenomenological research (Creswell, 2013). The geographic location of High School XYZ could provide social and cultural characteristics that are unique and not present in other locations with less demographic biodiversity. According to Creswell (2013) in phenomenological research, significance exists in the "extensive time spent in the field" (p. 25) by the researcher to obtain the communal, lived experiences of the participants. The limitations of this study are as follows:

1. The small sample size included eight out of eleven potential secondary science teachers, and this may not accurately represent the perceptions of other secondary science teachers or other content area CAT at High School XYZ.
2. Participants have less than two years of experience with the current Collaborative Assessment Teams (CAT) format, which may limit the amount of information they have to share regarding CAT.

3. High School XYZ had to halt all in-person learning from March 16, 2020, through August 6, 2020, due to the COVID-19 pandemic.
4. Interviewer/observer presence could have biased participants' behaviors during CAT meetings or their interview responses, which could have caused participants to provide responses that they believe are desirable rather than their natural response.
5. Not all participants engaged equally in the collaborative assessment process, which would lead to differing quality of participant responses to the data collection process.

Summary

This phenomenological qualitative study examined teachers' perceptions regarding the development and use of formative assessment in the classroom. Chapter 3 described the methodology used for the current study, including the research design, setting, sampling procedures, instruments, data collection procedures, data analysis and synthesis, reliability and trustworthiness, researchers' role, and limitations. Also outlined were the data collection procedures utilized including observations of Biology CAT and Physical Science CAT meetings, individual follow-up interviews conducted by a third-party individual, and review of archival documents. Data were analyzed using Quirkos, a qualitative data analysis software, in order to identify themes linked to the research questions underlying this dissertation study. Chapter 4 will present the results of the data analysis.

Chapter 4

Results

The first purpose of this phenomenological, qualitative study was to explore the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The second purpose of the study was to investigate how teachers perceived the impact of the CAT on common formative assessment proficiency indicators and whether the experience assisted with the identification of appropriate corrective instruction techniques. The third purpose of the current study was to discover how content area CAT members perceived these teams' influence on school-wide classroom instructional strategies for closing student achievement gaps. Chapter 4 describes the results of this study, including data collected from Biology and Physical Science CAT members in High School XYZ during the 2020-2021 academic year. Eight secondary science teachers participated in this study: five from the Biology CAT and three from the Physical Science CAT. Participants were provided with an alias in order to control for biases of the researcher, as well as to protect the confidentiality of participants. Participant members of the Biology CAT were referred to as Bio1 through Bio5, and participant members of the Physical Science CAT were referred to as PS1, PS2, and PS4. Participant PS3 was unable to complete the individual interview process due to schedule conflicts as such there will not be any responses from PS3. Data collection methods included CAT meeting observations, individual interviews conducted by a third-party individual, and the review of archival documents. At the time of this study, all participants had been members of their respective CAT for two years and were actively engaged in the district's process for job-embedded professional development.

An objective, a third-party individual observed the Collaborative Assessment Team (CAT) meetings and conducted the individual interviews. The Biology CAT meetings were observed on August 31, 2020, and September 8, 2020. The Physical Science CAT meetings were observed on November 02, 2020, and November 16, 2020. The third-party individual conducted the individual interviews of each participating CAT member between September 9, 2020, and November 30, 2020. Each interview was audio-recorded then transcribed by the third-party individual, presented to the interviewee to check for accuracy, and labeled each with their research participant alias. The anonymized interview transcripts were given to the researcher to be entered into the Quirkos qualitative data analysis software platform. After uploading the interview transcriptions, each transcript was coded to help identify themes that emerged among the interviewees pertaining to the four research questions that guided this qualitative study.

Findings Related to RQ1. What are secondary science teachers' perceptions of the role that Collaborative Assessment Teams (CAT) play in their understanding of common formative assessment development and usage in the classroom?

The first research question investigated how secondary science teachers perceived the role Collaborative Assessment Teams (CAT) play in participants' understanding of common formative assessment development and usage in the classroom. Individual interview questions 1 and 3 asking participants about the purpose of using common formative assessments and how to best use common formative assessments to improve instruction, respectively, aligned with RQ1 (see Appendix D). Interviewees seemed to recognize common formative assessments as a tool to gain a better understanding of real-time circumstances occurring in their classrooms, and how their classroom students are different than or similar to students in the classrooms of their Collaborative Assessment Team (CAT) members. Based on the eight individual interview

responses, three themes emerged as to how secondary science teachers at High School XYZ perceived the role CAT play in common formative assessments usage: identifying instructional practices, analysis of students' common formative assessment data, and next steps for student learning.

Identifying instructional practices. When asked to elaborate on the purpose of using common formative assessments within the classroom, the role CAT play in the development of common formative assessments, and how to use common formative assessments to improve classroom instruction, seven of the eight participant responses concluded that common formative assessment data was a means to highlight characteristics of their instructional practices. Participant PS4 stated, "Data analysis and discussion amongst team members allows for identification of best practices for student learning." Similarly, Participant PS1 discussed the use of common formative assessment data as a means to "improve my practices." The use of common formative assessments is a progressive process that is constantly changing as new formative assessments are given and results discussed by the CAT members. Both Participants Bio1 and Bio2 emphasized the frequent use of common formative assessments during instruction as a way to pinpoint modifications of teacher practices. Participant Bio1 stated, "Formative assessments allow me to make instructional changes as needed to maximize student learning," while Participant Bio2 stated, "The purpose of using formative assessments throughout the lesson also assess instructional methods used by the teacher within the classroom." Seven of the eight participants' responses indicated their belief that common formative assessment data further highlight where instruction can be modified throughout the instruction process, rather than at the end.

The added value of Collaborative Assessments Teams (CATs) is that teachers are encouraged to discuss common formative assessment data results, and detail ways to collectively pinpoint instructional practices that have demonstrated student academic success. Participant Bio1 said that when teachers "discuss strategies that seemingly worked or did not work, CAT members use those discussions to develop new instructional strategies." Participant Bio2 agreed that the shared discussions that happen within their CAT "should lead to the teachers sharing their instructional practices to identify why one strategy seemed to work and another didn't." Common formative assessments and CAT meeting discussions seemed to help decrease teacher isolation and focus the team on identifying what specific strategies to use in the classroom and how those strategies help students learn the content standards. Participant PS1 believed that "if one class proved more successful on a particular standard, that teacher may have a better way of teaching that content." As a CAT, teachers discussed what a specific teacher did in their classroom to facilitate improvement in learning, as well as the actions students used to demonstrate content knowledge. Participant Bio3 provided some compelling insight as to why taking a closer look into instructional practices as a CAT is beneficial, stating that "understanding why certain topics were understood better in some classes more than others allows teaching strategies and techniques to also be evaluated."

Interviewee responses suggested that through the collaborative evaluation of instructional practices, teachers can identify their strengths and weaknesses. Then work together to fill any instructional gaps, as illustrated by Participant Bio5 who believed through identification of student needs, they can "identify gaps in my instruction." Three of the five secondary science teachers from the Biology CAT used terminology such as "revisit teaching," "make adjustments," and "make instructional changes" as actions teachers intended to engage in as a

result of using common formative assessments in the classroom. Participant Bio4 perceived the use of common formative assessments as a tool to assess students over the same content "allowing for re-teaching if necessary," and the "revisiting of teaching topics." Participant PS3 did not address any changes to their instructional practices but did mention that common formative assessments help to identify student content mastery, and therefore, "you don't keep teaching the same thing if they already know it."

Analysis of student data. When asked to elaborate on the purpose of using common formative assessments within the classroom, the role CAT play in the development of common formative assessments, and how to use common formative assessments to improve classroom instruction, six of the eight participants identified common formative assessment development and usage as a tool to identify "what students know." Participants Bio1, Bio2, Bio5, and PS1 stated during the interview that they used common formative assessments to understand the level of student content mastery in their classrooms. According to Participant Bio1, "Formative assessments serve as checkpoints to determine where students are in terms of mastery." Using common formative assessment embedded-instruction served to "assess student understanding," expressed Participant Bio2. Furthermore, Participant PS1 stated, "Common formative assessments are used to monitor the progress of my students."

All interviewees heavily supported the importance of CAT when analyzing student data. Five of the eight participants referenced the need to look at common formative assessment results as a team. In addition, three of the eight participants noted the value of comparing assessment results of all students amongst all the team members within their respective collaborative assessment team. As communicated by Participant Bio5, "Analyzing the data to look for when identifying student needs, weakness, and strengths in the classroom" is the best

way to describe common formative assessments implemented properly. Participant PS4 revealed CAT were purposive and each team member actively participated in "the analysis of data from all of the classes." Participant Bio2 clarified that through the analysis of student data, "teachers may identify concepts certain students did not master, while other students did." When formative assessments are common across classes for the same subject, teachers are "able to compare their progress with that of a student in other classes" as suggested by participant PS1. Participant Bio1 agreed stating that, "Using common formative assessments allows me to compare my students' level of understanding with my colleagues' students."

Establishing what students need to know was noticeably absent in all three participant responses of the Physical Science CAT, and absent from all but two participants of the Biology CAT responses. Participant PS1 mentioned "teachers going over questions together and discussing how or if the question answers the standard" a way to identify when common formative assessments were implemented effectively, but Participant PS1 did not discuss the criteria for determining which standards were essential. Participants Bio1 and Bio2 both mentioned beginning the CAT process with identifying the content standards to be addressed. Participant Bio1 shared that "when done well, common formative assessments are developed by unpacking standards and learning objectives." Participant Bio2 also voiced that the CAT must "first discuss and agree on the content to be assessed." Lastly, both Participants PS1 and PS3 believed that data analysis must be commissioned "prior to the implementation of summative assessments." Participant PS1 specified, "data can be used to improve scores on summative assessments," and Participant PS4 reported using common formative assessments to "determine what students know and what supports they need before the summative assessment."

Next steps for student learners. Although secondary science teachers favorably expressed the relevance of common formative assessments in determining what students have mastered, only four of the eight participants referenced remediation and/or enrichment as actions for helping students improve achievement. One participant from the Physical Science CAT, PS4, stated they understood common formative assessments were necessary to establish responsive supports for students and affirmed that "each team member contributes to the supports needed to enrich students." Within the Biology CAT, Participant Bio2 shared that they used common formative assessment data "to determine enrichment or remediation needs," and claimed, "teachers can reteach as needed." Participant Bio4 also underlined "revisiting teaching topics" as a way to provide remediation to students in need.

When asked to elaborate on the purpose of using common formative assessments within the classroom, the role CAT play in the development of common formative assessments, and how to use common formative assessments to improve classroom instruction, none of the eight participants addressed in their individual interview responses what they did once student strengths and weaknesses were identified. Of the four interview participants that mentioned remediation and enrichment as ways to address student failure to meet proficiency standards, none of the four participants defined what remediation was or how it was used within their classrooms. Additionally, none of the third-party individual's notes from the four observed CAT meetings reflected any collaborative discussion regarding remediation or enrichment exercises used within their classrooms.

Based on the observers' notes taken during the Biology CAT meeting on August 31, 2020, teachers opened with a discussion about formative assessment data for Macromolecules and Enzymes. The CAT leader asked, "How were common formative assessment results from

last week?" and teachers responded with concerns regarding student retention of knowledge related to the quiz content. According to observation notes, teachers continued to discuss specific questions on the common formative assessment but did not discuss instructional practices or include how they would provide opportunities for students to acquire the content knowledge they lacked. As noted in the observation protocol completed by the third-party individual, teachers collectively chose to remove questions from the summative assessment based on the formative assessment data where students did not demonstrate content knowledge. During the following Biology CAT meeting observed on September 14, 2020, the results from the previous week's Macromolecule and Enzyme unit test were summarized. The third-party observer noted in the records that students who did not pass the test after two attempts would be allowed to do test corrections and retest on September 16, 2020. The completed observation notes did not outline a collective protocol for test correction procedures, instructional strategies for remediation, or next steps for students who had not mastered the content. Based on the Biology CAT meeting observation notes, team members decided to begin the next unit on cellular transport with no mention of the standards to be addressed for those specific content standards.

Findings Related to RQ2. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) impact secondary science teachers' perceptions of proficiency indicators?

The second research question investigated how the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) impacted secondary science teachers' perceptions of proficiency indicators. Individual interview question 5, "In your experience, since utilizing common formative assessments developed in CAT teams,

how have you identified students who met the proficiency standard?" and individual interview question 6, "In your experience, since utilizing common formative assessments developed in CAT teams, how have you identified students who had not met the proficiency standard?" directly aligned to research question 2. Based on individual interviewee responses, two themes emerged: equitable student responses on assessments and antiquated numerical value.

Equitable student responses on common formative assessment data. Students' responses to assessment data are impersonal and unbiased. Either students answered the assessment questions favorably or students answered the assessment questions unfavorably. In general, the eight interviewees seemed to judge student content mastery solely based on students having answered the questions correctly. Four out of the eight respondents used the terms "correct or incorrect" during their interviews. For example, Participant Bio1 stated, "I've used the correct/incorrect responses on each assessment to determine proficiency," as well as using the phrase students "who have not met proficiency." Participant PS3 openly replied that, "if they get the questions right they have met the standard" when they were asked how they use common formative assessment to identify when students have met the proficiency standards. Participant Bio4 went beyond individual students correct and incorrect responses by comparing "those who did not get the question correct that the majority of students get right" when determining student proficiency.

Three participant responses used broad language when identifying students who met or failed to meet proficiency standards. Participant PS1 said, "Those who have done well on assessments were considered proficient," and later stated that "those that have done poorly on assessment" was a means to classify students as non-proficient. When students "continually fail formatives," Participant Bio3 reported that they would use that data to initiate remediation. Just

as establishing what students need to know was noticeably absent from interviewee responses to interview questions related to research question 1, few teachers expressed establishing the criteria for standard proficiency within the CAT when addressing how the process of developing formative assessments within CAT impact secondary science teachers' perceptions of formative assessments when identifying proficiency indicators. Surprisingly, only two of the eight participants referenced the "team" when discussing establishment of proficiency standards. One participant from the Biology CAT and one participant from the Physical Science CAT addressed this developmental piece. Participant Bio1 stated, "I tend to look for trends for each assessment based on what the team has determined is proficient/not proficient," and Participant PS4 mentioned that "the team discussion sets the standard for proficiency."

Antiquated numerical value. Outdated, but standard grading markers were used by some participants to determine student success on assessments. Participant PS4 determined student proficiency based on "students who had a numerical value lower than the pre-determined number," but failed to specify which number equaled proficiency or how that score was determined. The data collected from individual interviews reflected that the Biology CAT members were more cohesive in placing a quantitative value on proficiency than were the Physical Science CAT members. Participants Bio2 and Bio4 agreed that students who scored "80 or above" on common formative assessments would more than likely meet the proficiency standards. Participant Bio2 further detailed that "students who make below a 70 on a common formative assessment" would require additional instruction to meet proficiency on standardized assessments.

Based on the third-party individuals notes taken during the observation of the Physical Science CAT meeting on November 2, 2020, teachers made suggestions about how to move

forward in Physical Science after reviewing the results of the Heat and Energy test. The observer noted CAT participants stating that “some students struggled with questions 11, 14, and 20.” CAT members not only identified what students struggled with but offered corrective instruction by offering "remediation over algebraic concepts and arranging formulas" on Wednesday, November 4, 2020. However, the opportunity for students to retest was also scheduled for the same day November 4, 2021. For all science content teams, Wednesdays are set aside for interventions, remediation, or enrichment activities. The observer also noted the team discussion regarding providing a performance-based option for students as a way to provide "extra credit work or to help with grades."

Findings Related to RQ3. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) assist in the identification of appropriate corrective instructional techniques?

The third research question investigated how the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) assisted in the identification of appropriate corrective instructional techniques. Individual interview questions 3, 4, and 7 asking participants about how to ensure success when implementing common formative assessment practices, providing student feedback, common formative assessment efficacy toward determining proficiency on science standards, and the identification of appropriate corrective instruction aligned with RQ3. Interviewees from High School XYZ identified common formative assessments as a tool used to establish real-time checkpoints to identify students’ understanding of standards, determine which students have not met proficiency standards, highlight instructional gaps, and provide academic interventions. Participants were asked about determining the appropriate corrective instructional strategies, but the interview

responses conjointly highlighted how participants pinpointed where their instruction was inadequate. Four themes emerged: selecting the best common formative assessment strategies, whole-group review, peer-influenced remediation strategies, and providing feedback and student involvement on common formative assessments.

Selecting best common formative assessment strategies. Tickets-out-the-door, multiple-choice style quizzes, and constructed-response items were highly selected forms of common formative assessments recorded by the third-party interviewer. Five of the eight participants selected tickets-out-the-door (TOTD) as the tool to measure student learning. Participant Bio2 stated, "Tickets-out-the-door are very revealing about students' real understanding of a topic." Participant Bio5 also selected TOTD because "Tickets-out-the-door was quick, good summarizations of daily lessons." Participant PS3 believed exit tickets "generally work best," while Participant PS4 only used tickets-out-the-door "for students to provide detailed responses for specific topics."

Based on the third-party individuals notes taken during the observation of both the Biology and Physical Science CAT meeting and what was recorded in the PLC Collaborative Records (see appendix A), participants also preferred multiple-choice style quizzes as a common method for assessing secondary science standards. Four out of the eight participants used multiple-choice style quizzes in some capacity within their classrooms. The Participant Bio1 stated, "Carefully selected multiple-choice assessments seemed to work best for common formative assessments." Participant Bio2 agreed, "I find that brief multiple-choice questions work very well when assessing secondary science standards." Lastly, Participant Bio4 used "ten multiple-choice questions" as the best way to assess their classroom students.

Three of the eight participants selected constructed-response items as one of the best practices for student assessment, but not all used them consistently. Participant Bio2 “did not use them (constructed responses) too often, but short-answer style effectively required them (students) to write out their understanding.” When used as part of a lab, Participant PS1 acknowledged that “If students can apply knowledge to a lab setting successfully, they understand the content.” Participant PS4 stated, “I used constructed responses to check for broader and deeper understanding of overarching concepts.”

Whole group review of student data. Seven out of the eight participants referenced in their interviews that they used whole-group review of common formative assessments as a way to provide corrective instruction to their students. Participant Bio1 said, “We go through the trouble spots together as a class.” All three of the Physical Science CAT members agreed they used whole-class discussion in connection with a varying type of correction protocol sheet. Participant PS3 stated, "We go over them (common formative assessments) as a class and students receive assessment correction forms so they can understand what the correct answer was and identify why they may have missed it." Participant PS4 shared that they "review the (common formative) assessment with students, discuss common errors, have students give written discussion on what they performed well on the CFA, and what they did not perform well on the CFA." Test correction forms were also provided to students in Participant PS1's classroom, but there was no further clarification of how students completed the test correction form.

Within the Biology CAT, members chose a verbal approach to whole-group discussions that allowed students to ask the teacher-specific questions over why they did not get the correct answer. Participant Bio2 stated, "Commonly missed items are addressed with the whole group

and those results were used to assign students remediation or enrichment activities." Participant Bio4 said, "We review the common formative assessments as a whole class and talk through each question." Participant Bio3 was the only participant to acknowledge student success when they said, "we cover common misconceptions or celebrate the successes." Based on responses to the interview questions, participants welcomed students to ask questions in order to better understand their missteps but sought their CAT members feedback when looking for ways to implement corrective instruction.

Peer-influenced remediation strategies. Five of the eight participants turned to members within their CAT when selecting corrective instructional strategies. When deciding on the appropriate corrective instructions, participants settled on those that the team discussed which took place after receiving student data from common formative assessments. Participant Bio2 stated, "I have identified corrective instruction strategies by asking CAT team members how they taught a particular concept that my students scored low on the CFA." Participant Bio2 believed those discussions as the discussions led to teachers having "adopted the instructional strategy or developed a new one of my own." Participant Bio5 looked to the CAT meeting stating, "As a team, we look over student data and think of ways in which we can help students better understand the content." Participant PS4 also highlighted CAT meetings by first "identifying the teacher(s) whose strategies worked best for correction" and discuss those strategies collectively. Participant Bio1 explained, "I shadowed a colleague's lesson to see how he presented information to his students on a topic that my students seemed to be underperforming on." Participant Bio1 stepped outside the CAT meeting to get additional help from their team member. This interaction demonstrated that working collaboratively within a team is not limited to the time spent during the CAT meeting time.

Three of the eight participants chose to provide focused corrective instruction. Participants PS1 and PS3 both chose remediation and enrichment as a method for providing corrective instruction to students. Participant PS3 used the CAT's review of common formative assessments to "group them (students) by standard and remediate," while Participant PS2 provided corrective instruction to "review material that students did not do well on through remediation and enrichment days." Participant Bio4 chose to "expose students to test-like questions," but did not clarify how or when those test-like questions were developed.

Providing feedback and student involvement on common formative assessments. Participants were asked, "After administering common formative assessments, describe how you give feedback to your students." Five of the eight participants responded with the timely return of common formative assessment scores as one way to provide feedback to students. In most cases, participants returned common formative assessment results to students within forty-eight hours of the assessment being given. Participant Bio1 provided immediate feedback to students but did not mention the specific time in which the common formative assessments were returned to students. Participant Bio1 and Participant Bio3 reported providing students with their common formative assessment results back within 2 days. While Participant Bio2 and Participant PS1 both stated, "The results of the CFA are provided to students the very next day."

Students were included in the common formative assessment process. Returning common formative assessment results to students promptly allowed participants to involve students in the corrective instruction process. Three of the eight participants stated that they involve classroom students to understand student proficiency. As previously stated, Participant Bio1 chose to "involve students in the process of reviewing their formative assessment data" when "we go through the trouble spots together as a class." Participant Bio2 involved students by providing

"the opportunity to ask specific, individual questions," while Participant PS4 chose to "discuss common errors" students demonstrated on common formative assessments.

During the observation of the Biology CAT meeting on September 14, 2020, the third-party observer used the Collaborative Assessment Team Meeting Observation Guide and Checklists (see appendix B) to record that CAT members had put in place guidelines to determine when students had met the identified learning target. CAT members also put in place support structures for students who had not met the identified learning target and support structures for students who had met the identified learning target. The third-party observer noted the team's decision to remove questions that proved difficult for students, reduced the common formative assessment from 25 to 20 questions in length. Neither of the Biology CAT observation notes included discussions about corrective instruction, student remediation, or student enrichment strategies.

The second observation of the Physical Science CAT meeting occurred on November 16, 2020. The Physical Science Collaborative Assessment Team Meeting Observation Guide and Checklists (see Appendix B) noted CAT members had put in place guidelines to determine when students met the identified learning target, put in place support structures for students who had not met the identified learning target, and support structures for students who had met the identified learning target. However, Physical Science CAT members chose to remove test questions 9, 11, 17, and 19 from the end-of-unit summative assessment after deciding as a team to provide corrective instruction over algebraic concepts and arranging formulas. The third-party observer's notes did not indicate any discussions around the remediation chosen during the November 2, 2020 CAT meeting or enrichment strategies for students who had mastered the learning target. The observation notes reflected the team's decision to move on to the next unit,

but did not note any discussion regarding unpacking the new standards or common formative assessments that had been put in place.

Findings Related to RQ4. How do the secondary science teachers participating in the Collaborative Assessment Teams (CAT) perceive the influence of content area CAT on the school-wide corrective instructional strategies for closing student achievement gaps?

The last research question investigated how secondary science teachers participating in the Collaborative Assessment Teams (CAT) perceived the influence of content area CAT on the school-wide corrective instructional strategies for closing student achievement gaps. Interview question 8, “In your own words can you elaborate on the impact CAT teams play in closing the student achievement gap school-wide?" and interview question 9, "In your own words expand on the impact job-embedded professional development has in closing the student achievement gap school-wide?" addressed research question 4. The following three themes emerged: providing additional resources and tools for teachers, broadening collaboration practices, and no relationship between CAT, JEPD, and closing the student achievement gap school-wide.

Providing resources and tools for teachers. Three out of the eight participants positively identified ways job-embedded professional development provided resources to all teachers. Teachers at High School XYZ assembled with other teachers within the building, who may or may not be a part of their CAT, to discuss predetermined professional learning topics. Respondents discussed working with building colleagues who participated in Collaborative Assessment Team (CAT) practices outside of the secondary science content area. Participant responses focused on the opportunity to attain additional common formative assessment materials, technology incorporation, or instructional strategies. Two participants shared similar perceptions; Participant Bio1 stated, “It (JEPD) provides us with new strategies and up-to-date

interactive sites that can help us reach more of our learners," while Participant Bio4 added, "JEPD provides additional resources and tools for us to use with all students." Participant PS4 stated, "Job-embedded professional development allows teachers to learn the skills necessary to be a more efficient CAT team when we share our experiences and look at examples from other teams."

Broaden collaboration practices. Three of the eight participants shared that job-embedded professional development served as a way to meet with teachers outside of their content area and learn how to implement common formative assessments in new ways. Participant Bio1 stated, "I believe that job-embedded professional development helps to keep us (teachers) from becoming complacent and it (JEPD) ensures that we have a community of educators to bounce ideas around and troubleshoot with as needed." Participant Bio5 responded, "Sharing strategies or knowledge helps other teachers to utilize how to use formative assessments in their classrooms." Job-embedded professional development lends itself to sharing information about individuals or groups of students. Sharing practices with grade-level teachers provided some teachers the opportunity to identify individual students and put in place structures that would help to monitor those students' achievement in their courses at High School XYZ. Participant PS4 acknowledged, "JEPL helps teachers share strategies and conference about common students."

No relationship between CAT, JEPD, and closing the student achievement gap school-wide. Two out of the eight interview participants could not communicate any connection between Collaborative Assessment Teams (CAT) and minimizing the student achievement gap school-wide. Participant Bio3 said, "I am not sure how the use of formative assessments has a direct impact on closing the student achievement gap." Participant PS3 had a similar response,

but added, "I'm not sure that we are working toward closing a gap, but I feel like us planning together makes us better teachers."

Three of the eight interviewees reported that they could not identify any connection between job-embedded professional development and reducing the achievement gap building-wide. When participants were asked what impact job-embedded professional development has to do with closing the student achievement gap school-wide, Participant PS3 replied, “It does not” and Participant Bio3 simply stated, “not sure how job-embedded professional development has a direct impact on closing the student achievement gap.” Participant Bio2 addressed where JEPD could contribute to closing the achievement gap building-wide but highlighted where the professional development lacked. Participant Bio2 provided an insightful view of what they expected from job-embedded professional development, and how they felt about what was being presented to teachers:

> I am not sure I can directly relate job-embedded professional development to closing the achievement gap. Topics like differentiation and how to identify at-risk students should directly help close the achievement gap, but I personally don't recall any job-embedded professional development whose primary purpose was to help close the achievement gap. JEPD has become teachers doing presentations instead of helping us to work through assessments and helping students do better.

The third-party individual’s observation notes did not indicate any CAT meeting discussions about building-level professional development.

Summary

The results of qualitative data collected from eight secondary science teachers from High School XYZ were presented in this chapter. Each study participant agreed to having two

consecutive regular Collaborative Assessment Team (CAT) meetings observed by a third-party observer and agreed to be individually interviewed by a third-party interviewer. Four major findings consisting of twelve themes emerged from the data collection related to the four research questions that guided this study. The themes discovered in the qualitative data converged upon the four major findings: 1) using common formative assessments developed in CAT to identify specific common formative assessments for efficiency, 2) collaboratively analyze student data results, 3) collaboratively review common formative assessment results to assess student proficiency, and 4) provide students with immediate feedback to encourage student involvement in the assessment process.

Chapter 5 will be composed of the overview of the problem, purpose statement, and research questions. The methodology and major findings will be reviewed, as well as a discussion of these major findings related to the literature. Also included in Chapter 5 will be the conclusions which will encompass implications for action, recommendations for future research, and concluding remarks.

Chapter 5

Interpretation and Recommendations

When formative assessments are developed and implemented collaboratively, teachers can conduct shared data analysis, construct strategies for reteaching, and apply corrective instruction (Vagle, 2015). All public schools in Georgia are evaluated using the College and Career Readiness Performance Indicator (CCRPI). The CCRPI gathers information in six areas: closing the achievement gap, content mastery, graduation rate, progress, readiness, and school climate (Georgia Department of Education, 2021). High School XYZ implemented common formative assessments developed in Collaborative Assessment Teams (CAT) as a building-wide practice to close the achievement gap, as part of the Every Student Succeeds Act (ESSA). This phenomenological, qualitative study was conducted to explore the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. Chapter 5 is divided into three sections: the study summary, findings related to the literature, and the conclusion. As part of the study summary, the following subtopics were discussed: an overview of the problem, purpose statement and research questions, review of the methodology, and the major findings. As part of the conclusion, the following subtopics were discussed: the implications for action, recommendations for future research, and concluding remarks.

Study Summary

The purpose of this phenomenological, qualitative study was to explore the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The results from data collected for this study are summarized as four major findings established by twelve

emerging themes. This section revisits the problem overview, purpose statement and research questions, methodology review, and major findings.

Overview of the problem. In 2019, High School XYZ underwent a building-wide shift in instructional practices based on the 2018 CCRPI scores. The CCRPI scores emphasize mastery in the four content areas of English language arts, mathematics, science, and social studies. Secondary science teachers at High School XYZ received a score of 79.34%, which was 8.68% higher than the previous academic year, but the lowest of all the content areas. The issue for teachers is that when the CCRPI scores are released, the tested students have already moved on to the next grade or course level, and teachers are unable to provide additional instruction. Teachers needed to identify student learning deficiencies before the administration of content area End-of-Course summative assessments. Teachers also needed to evaluate and revise their instructional strategies in real-time to provide corrective instruction during the learning process rather than at the end of instruction.

High School XYZ developed a common formative assessment process that placed teachers in Collaborative Assessment Teams (CAT) based on content areas. The current study focused on secondary science teachers who taught Biology and/or Physical Science at High School XYZ. Within CAT, teachers developed and used common formative assessments in their classrooms, reported student data back to the team, identified students in need of remediation or evaluation, and collaboratively created corrective instructional strategies.

Purpose statement and research questions. The first purpose of this phenomenological, qualitative study was to explore the perceptions of secondary science teachers who had participated in collaborative assessment teams regarding the development and usage of common formative assessments in their classrooms. The second purpose was to examine the role that

Collaborative Assessment Teams (CAT) played in teachers' development and classroom usage of common formative assessments. The third purpose of the study investigated how teachers perceived the impact of CAT on proficiency indicators and whether the experience assisted with the identification of appropriate corrective instruction techniques. The fourth purpose of the study was to discover how content area CAT perceived teams' influence on school-wide classroom instructional strategies for closing student achievement gaps. This study was guided by the following four research questions:

RQ1. What are secondary science teachers' perceptions of the role that Collaborative Assessment Teams (CAT) play in participants' understanding of common formative assessment development and usage in the classroom?

RQ2. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) impact secondary science teachers' perceptions of proficiency indicators?

RQ3. How does the process of developing common formative assessments as part of the Collaborative Assessment Teams (CAT) assist in the identification of appropriate corrective instructional techniques?

RQ4. How do the secondary science teachers participating in the Collaborative Assessment Teams (CAT) perceive the influence of content area CAT on the school-wide corrective instructional strategies for closing student achievement gaps?

Review of the methodology. For this study, the methodological approach of phenomenology was selected in order to better understand the linked experiences of the eight study participants. The current study was conducted at a rural high school in Georgia; High School XYZ. The eight study participants were secondary science teachers who participated in

weekly Biology or Physical Science CAT for the development and usage of common formative assessments. This qualitative, phenomenological study used multiple forms of data collection including observations of CAT meetings, individual interviews, and a review of archival documents. A third-party individual observed two consecutive Biology CAT meetings for 60 minutes each and two consecutive Physical Science CAT meetings for 60 minutes each, making observational notes on the Collaborative Assessment Team Meeting Observation Guide and Checklists (Appendix B). The third-party individual also conducted an interview with each participant using the Individual Interview Questions (see Appendix D). The interview questions were designed to elicit participants to share their perceptions surrounding the development and usage of common formative assessments.

Each interview was audio-recorded then transcribed by the third-party individual, presented to the interviewee to check for accuracy, and labeled each with their research participant alias. The anonymized interview transcripts were given to the researcher to be entered into the Quirkos qualitative data analysis software platform. After uploading the interview transcriptions, participant responses were scanned for repeating terms or phrases and coded accordingly. Those repetitive terms or phrases were used to establish themes. In addition, the CAT observation notes and PLC Collaborative Records (see appendix A) were reviewed to triangulate the emerging themes related to the four research questions that guided this qualitative, phenomenological study.

Major findings. The researcher sought to gain an understanding of how Collaborative Assessment Teams (CAT) influenced teachers' perceptions toward development and usage of common formative assessments in the classroom including the determination of student proficiency, the identification of appropriate corrective instructional techniques, and CAT

influence on school-wide instructional practices for closing student achievement gaps. This section reports a thorough summary of the major findings that emerged from the data under the four research questions that guided this study.

The first finding of the study addressed the research question concerning teachers' perceptions of common formative assessment development and usage within CAT as an approach to improve classroom practices. Data collected from participant interviews indicated secondary science teachers were able to firmly connect common formative assessment development and usage as an approach to correct their classroom practices. Through the collaborative modification of instructional practices within the period of student learning, students will have multiple opportunities to demonstrate comprehension. Participants responded with certainty of their abilities to identify students' current levels of understanding using common formative assessments and how collaborative analysis of student data allowed teachers to compare student progress across all classrooms. Participants positively reported using common formative assessments to target students in need of remediation or enrichment. Subsequently, enhancing students' ability to meet targeted learning goals. However, participant responses did not formulate the specificity of how corrective instruction practices were implemented in the classroom or whether students met proficiency with the added instruction. Based on the PLC Collaborative Records (see appendix A), teachers did not assess the impact of corrective instruction using common formative assessments.

The second finding of the study addressed the research question regarding the identification of student proficiency. Participant responses to interview questions determined that CAT failed to establish criteria when resolving how common formative assessments would be graded and only a quarter of the participants named team discussions as the forum in which

proficiency benchmarks were established. However, participants did make generalizations between success on common formative assessments and proficiency on summative assessments. Consequently, when students correctly answered questions on common formative assessments, teachers moved forward with instruction, but students who did poorly on common formative assessments were deemed in need of interventions. The results of this study exposed that secondary science teachers often reverted to traditional methods of assessment by using percentages or letter grades to determine if students were able to comprehend the teaching or demonstrate learning. The data collected from individual interviews reflected that the Biology CAT members were more cohesive in placing a quantitative value on proficiency than were the Physical Science CAT members.

The third finding of the study addressed the research question regarding CAT ability to create appropriate corrective instruction strategies. Participants responded positively to the adjustment of instructional practices around three themes; identifying the best common formative assessments to use in the classroom, sharing remediation strategies during CAT meetings, and student-involved feedback. More than half of the participants identified Tickets-Out-The-Door (TTOD) as their preferred method for collecting formative assessment data, but all participants agreed to the use of multiple-choice format when implementing common formative assessments across classrooms. Collaboration afforded teachers the environment to share-out individual instructional practices and construct cohesive approaches to bridging student achievement gaps. The majority of participants provided students with immediate feedback and engaged in a whole-class discussion to review the results of common formative assessments, allowing students to become active participants in the progression of learning.

The fourth finding of the study addressed the research question related to teachers' perceptions of content area CAT and how corrective instructional practices are used to close student achievement gaps school-wide. The data showed mixed results surrounding three themes; providing additional resources and tools for teachers, broadening collaborative practices, and no association between CAT and JEPD to closing the student achievement gap school-wide. The study found that job-embedded professional development allowed teachers to glean resources and tools from teachers outside of their content-specific CAT. Half of the secondary science teachers interviewed had positive responses to receiving additional resources and broadening collaboration practices. Participants responded to interview questions with uncertainty pertaining to how CAT or JEPD were linked to closing student achievement gaps, but overwhelmingly accepted the development and usage of common formative assessment within CAT as relevant to the improvement of instructional practices.

Findings Related to the Literature

This section reviews the findings of the current study as they relate to CAT development and usage of common formative assessments to monitor student progress and implement corrective instruction that will meet student academic needs. What is the fundamental purpose of Collaborative Assessment Teams (CAT)? A team of teachers must examine the structural intentions of the teams' purpose (DuFour & Eaker, 1998). Research question 1, "What is secondary science teachers' perceptions of the role that Collaborative Assessment Teams (CAT) play in participants' understanding of common formative assessment development and usage in the classroom," sought to answer that question. Data collected from archival documents, PLC Collaborative Records (see appendix A) from both the Biology and the Physical Science CAT noted secondary science teachers acknowledged the purpose of CAT to collaborate and foster

growth in every student and educator, take equitable ownership for best practices, and pursue learning that upheld the standard of excellence. The third-party observer noted that during CAT meetings, teacher teams consistently stated the purpose and objectives, reviewed the meeting agenda, and identified participant roles and responsibilities during the weekly CAT meetings.

The results based on participant interviews conducted by a third-party interviewer concluded that the purpose of the collaborative development and usage of common formative assessment is to analyze and discuss student results amongst team members and collaborate on shared instructional adjustments that maximize student learning. Previous research has studied the relationship between formative assessments and instructional practices (Erkens, Schimmer, & Vagle, 2018; Tovani, 2011; Wiliam, 2011). Participant responses during individual interviews also supported Nichols, Meyers, and Burling's (2009) literature relating to teacher behaviors finding that classroom teachers have an essential role in using common formative assessments to inform teacher behaviors (Nichols, Meyers, & Burling, 2009) and that classroom assessments are used to guide instruction (Erkens, Schimmer, & Vagle, 2018) through the implementation of corrective instruction that targets individual student needs.

Common formative assessment data allows teams of teachers to monitor student progress toward content mastery and utilize assessment results when constructing lessons that provide students another opportunity to demonstrate learning (Vagle, 2015). However, the findings of this study are not consistent with Eaker and Keating (2012) regarding remediation through individualized core instruction, applying grade-level focused interventions, or adopting building resources. The researcher found that only half of the secondary science teachers interviewed could explain how they implemented remediation or enrichment actions to improve student achievement. As documented in the Collaborative Assessment Meeting Observation Guide and

Checklists (see Appendix B), Biology CAT members identified specific areas where students struggled, but rather than devising lesson plans for corrective instructions, the team elected to remove those assessment items from the End-of-Course summative assessment.

The major finding of the current study supported researchers' previous findings regarding the effectiveness of common formative assessments data and the proper use of corrective instruction (Dodge, 2009; Guskey, 2003; Heritage, 2010). Guskey (2003) stated instruction that included appropriate instruction alternatives must reinforce assessments, allowing students another chance to demonstrate their newly acquired competencies. The results from the current study indicated that students could review common formative assessment results, complete an assessment correction document, and take a newly constructed common formative assessment whether or not individualized corrective instructions have been received. This finding syncs with Heritage (2010), whose research highlighted teachers' ability to collect and assess data but did not know how or when to carry out the correct revised instruction. Additionally, the major findings of implementing corrective instruction were also inconsistent with Dodge (2009), who suggested that to utilize assessment-embedded instruction, teachers must immediately provide high-quality corrective instruction, and allow students another opportunity to demonstrate achievement. Guskey (2003) added that providing students another opportunity to complete common formative assessments not only assessed students' new learning, but also helped to regulate the effectiveness of the corrective instruction.

Data from the current study indicated the participating secondary science teachers regularly provided students with feedback within 48 hours of giving the common formative assessment. This finding is consistent with the literature presented by Solution Tree (2018) regarding providing student feedback but does not align with how the data results should be

presented to students. The participants in this study handed common formative assessments results back to students with markings indicating correct or incorrect answers. Data from the current study also indicated teachers engaged students in open discussion to clarify test questions and discuss the process of answer selection. Solution Tree (2018) advised teachers not to score common formative assessments with a grade or even tell students which question was incorrect, but instead tell students the number of incorrect answers and allow students time to identify and correct mistakes. Marzano (2006) suggested teachers provide students with strategies to interpret low scores without the implications of failure and provide evidence that students' scores would improve with effort. Researchers advocate that teachers provide incremental feedback, disburse infrequent praise, and offer scaffolding opportunities instead of stating the correct answers (Solution Tree, 2018).

To strengthen the development of student proficiency, teachers should not only ensure formative assessments are accurate, but also verify formative assessments are reliable (White, 2017). Qualitative data collected regarding research question 2, "How does the process of developing formative assessments within CAT impact secondary science teachers' perceptions of formative assessments when identifying proficiency indicators," showed that CAT did not establish a protocol for determining student proficiency while, instead outdated practices were used to determine if students met the learning target. Approximately 75% of participants did not identify CAT as the setting to establish common formative assessment proficiency benchmarks. Bailey and Jakicic (2017) identified that the failure to predetermine correct and incorrect responses is a common mistake collaborative teams make when using common formative assessments. Current findings help to expound on literature that addressed setting proficiency standards that extend beyond traditional grading scales. Bailey and Jakicic (2017) also suggested

using proficiency-based scoring structures to document student progress rather than using the traditional percentage scale.

Research suggests that teachers should not use percentages on common formative assessments as students may focus on the printed grade (Vagle, 2015). Traditional grading practices do not explicitly tell what students have learned so the collaborative construction of authentic common formative assessment should be created to assess student proficiency. Findings of the current study did not align with the literature presented. CAT members reported continuing to grade common formative assessments and determining proficiency based on student scores. The data collected from PLC Collaborative Records (see Appendix A) and CAT Meeting Observations and Checklists (see Appendix B) indicated that when students scored 70% or above on common formative assessments, teachers classified those students as proficient, but if students scored 69% or below, they were deemed as not being proficient. This finding coincided with Bailey and Jakicic's (2017) literature that addressed not using cut scores when implementing common formative assessment. The issue with cut scores can derive from the common formative assessment document itself. When common formative assessments are used, but target more than one learning target, the cut score reflects the common formative assessment in its entirety. It can be difficult to determine which learning targets were mastered and which students needed additional instruction (Bailey & Jakicic, 2017).

Data from the current study showed that identifying effective common formative assessments, sharing remediation strategies during CAT meetings, and student-involved feedback leads to the development of appropriate corrective instruction strategies. The findings support Ainsworth and Viegut's (2006) results concerning improving student learning with the intentional improvement of teacher instruction. Teachers work more effectively when classroom

practices are examined daily to improve those practices and alter teaching behaviors appropriately (Camburn & Han, 2015; Stronge, 2007). According to Bailey and Jakicic (2017) there are two methods to check for student understanding: (1) those that develop a snapshot of student learning and (2) those that provide work for team discussion. Bailey and Jakicic (2017) reported that teachers should use data collected during the learning process to make decisions about instruction. Results from participant interviews conducted for the current study showed that teachers were engaged in the development and usage of common formative assessments that provided "work" for the team to establish evidence-based instructional adjustments. However, the results of the current study did not align with Wiliam's (2011) finding of enhanced student comprehension beyond what would have materialized, without altering instruction when instructional adjustments were put in place. When teachers did not follow through with a new common formative assessment that assessed student comprehension after receiving the corrective instruction, the validity of the common formative assessment was questionable.

Data from the current study showed secondary science teachers' CAT elected to use the multiple-choice format when implementing common formative assessments, even though a majority of the participants individually preferred tickets-out-the-door. This supports Vagle's (2015) results that students in K-12 schools are predominately assessed using a multiple-choice format, even though multiple-choice failed to aid in assessing instructional practices or identifying students' next steps. Wiliam (2011) suggested that multiple-choice formats can help to interpret student misunderstanding, provoke conversations, and advise instructional practices when constructed well. Vagle (2015) added that well-written multiple-choice assessments include the desired response, the correct answer, and other logical choices that represent various levels of student comprehension. Observation protocol documents reported CAT used common

formative assessment to identify student weakness and constructed corrective instruction strategies but did not implement the individualized corrective instruction created among the team. Wiliam (2018) further described instruction as the central process of formative assessments, and it is teachers' primary role to engineer effective learning environments through the use of assessment. The data collected from the PLC Collaborative Records (see Appendix A) demonstrated a lack of consistency and convention linked with implementing individual corrective instruction practices.

Results of the current study indicated that teachers acquired resources, tools, and additional methods of collaborative engagement from job-embedded professional development but failed to connect JEPD with the building-wide focus of closing student achievement gaps. Current data indicated less than 40% of participants valued job-embedded professional development for gaining a better understanding of collaborative practices. This finding supported Deal and Peterson's (2009) study of using collaborative practices to reinforce professional learning communities building-wide. Deal and Peterson (2009) found when teachers discuss education reformation, curriculum, and contemporary instructional practices school-wide, it creates a culture that encourages a new perception of learning, raises professionalism, and pursues new approaches to educate all students. Job-embedded professional development created a shared sense of purpose when teachers made decisions collaboratively, examined progression on the school improvement plan, and reinforced trust (Deal & Patterson, 2009). Deal and Peterson (2009) continued that when teachers engaged in professional development practices, collaborative teams focused on enhancing instruction and became more proficient when identifying and clarifying learning deficiencies. However, the results of the current study indicated that few participants viewed job-embedded professional

development as essential for the identification of individuals or groups of students in need of interventions.

In Thacker's (2016) study, teachers transformed school culture through job-embedded professional learning that emphasized collegial collaboration. Data from the current study indicated less than half of the study participants found a connection between JEPD and closing student achievement gaps school-wide and did not coincide with research where teachers' who engage in building-wide learning about common formative assessment practices better understand how to advance student achievement. Black and Wiliam (2009) noted that professional learning must be an extension of common formative assessment practices used for the analysis of student proficiencies. Additionally, collaborative assessment teams are founded in professional learning communities and should be utilized when implementing common formative assessment practices (Bailey & Jakicic, 2012). Findings of the current study listed miscommunication as the cause for a perceived lack of association between JEPD and closing student achievement gaps school-wide. Results of the current study supported previous research connecting professional development and teacher comprehension. Bell, Leusner, & Sondergeld (2010) stated that when teachers received differentiated professional development based on common formative assessment aptitude, the ability to close student academic deficiencies is increased.

Conclusions

In Georgia, all public schools are assessed yearly using the College and Career Readiness Performance Indicator (CCRPI). The CCRPI scores are derived from content-area, End-of-Course, summative assessments, and closing the student achievement gaps. To improve the yearly CCRPI score, High School XYZ implemented building-wide procedures requiring all

teachers to develop and use common formative assessments within Collaborative Assessment Teams (CAT). The results of the current study indicate teachers perceived the development and usage of common formative assessments within Collaborative Assessment Teams (CAT) as an effective tool for identifying student academic proficiencies and strategies for providing corrective instruction to close student achievement gaps. However, teachers seemed to revert to traditional grading practices when assessing student proficiency, were inconsistent in providing corrective instruction, and had not connected job-embedded professional development and Collaborative Assessment Teams (CAT) to closing the student achievement gap school-wide.

Implications for action. The findings from this study have implications for clear job-embedded professional development that focuses on developing well-constructed common formative assessments. The data indicated that teachers perceived common formative assessments developed and used within Collaborative Assessment Teams (CAT) as effective tools to monitor student progress and alter instructional practices. The eight secondary science teachers who participated in this study reported many positive characteristics of collaborative assessment teams that could be explored compared with other content-specific CATs at High School XYZ. The findings of the current study suggest participants believed common formative assessments provide data for CAT to analyze, find emerging trends, and identify interventions. Based on information collected from the eight study participants, teachers should explore ways to combine the preferred tickets-out-the-door and commonly used multiple-choice question format into common formative assessments that provide more distinct opportunities for students to demonstrate proficiency on the content standards tested.

Furthermore, the current study also suggests that teachers need additional job-embedded professional development to assess how to determine student proficiency using the common

formative assessment developed within CAT. The results of the current study supported previous findings from Guskey (2003) regarding inadequate professional development focused on common formative assessment, more specifically, assessment structure and analysis. Guskey (2003) noted that teachers relied on testing material found in textbook manuals or practices similar to those used when they were students themselves. These outdated assessments were designed for summative conventions and not for the assessment of learning (Guskey, 2003). If teachers received adequate training on how to assess student proficiency using common formative assessments aligned to content standards, teachers could simultaneously construct proficiency benchmarks that aid teachers in using a cohesive method for grading.

Findings also revealed a need for more job-embedded professional development at High School XYZ that clearly connects common formative assessment development and use within CATs to close the student achievement gaps school-wide. All teachers at High School XYZ need to fully understand the use of common formative assessments and closing student achievement gaps as they are scored using the College and Career Readiness Performance Indicator. Each CAT must document weekly their understanding of the content standard, pacing guide, target standards, common formative assessment data, and implications for remediation and upload this information to the shared documents folder online. With the detailed work that is discussed weekly, it is inconceivable that not all teachers are able to connect the common formative assessment practices with the vision of closing the student achievement gap school-wide. Additional structures should be put in place to ensure administrators are accurately monitoring CAT actions and asking relevant questions to deepen understanding for all teachers.

Recommendations for future research. Additional research on the development and usage of common formative assessments within Collaborative Assessment Teams (CAT) is

recommended to further inform all educators on the best practices for identifying student deficiencies and using corrective instruction to close the student achievement gap. While the current study focused on secondary science teachers at one high school, it would be advantageous to replicate the study using participants from different content areas or with CAT from the four other high schools in District A. This additional research could unearth findings that highlight structural similarities and differences between Collaborative Assessment Teams across content areas.

A qualitative case study approach could be used to research common formative assessment implementation in real-time. This case study could observe participants from the start of the common formative assessment process, through Collaborative Assessment Teams' engagement, provision of corrective instruction, and conclude with the assessment of corrective instructional practices. The in-depth examination of the common formative assessment cycle in its entirety could enhance educators' knowledge of common formative assessment practices and ensure efficacy. Further research could also help to identify common formative assessments that can be embedded into classroom practices and provide immediate access to data results.

Additionally, studies could be conducted to assess the appropriateness of professional learning to meet educators' needs. Studies of job-embedded professional development could be used to determine effective training for teachers to establish practical expectations and recognize the impact of common formative assessments in content-specific CAT. Future research could also examine whether professional development establishes clarity of the role of CATs in closing the achievement gap through a uniform use of common formative assessment practices building-wide.

Concluding remarks. The current study sought to identify teachers' perceptions of common formative assessment development and usage within Collaborative Assessment Teams (CAT). The results of this study indicated secondary science teachers' ability to connect the use of common formative assessments developed in CAT to the identification of deficiencies in student learning and teacher instruction. Participants provided corrective instruction developed in collaborative teams to students in need of interventions. The major findings of this study surrounded the use of corrective instructional practices, the establishment of proficiency benchmarks, proper implementation of appropriate corrective instruction, and the need for additional job-embedded professional development.

Results from this study identified the need to clarify the purpose of common formative assessment usage and create uniformity of common formative assessment implementation building-wide. An implication for action is teachers at High School XYZ need to receive additional job-embedded professional development that will help clarify the use of common formative assessment practices within CAT toward closing student achievement gaps school-wide. Common formative assessments embedded within instruction can be used to support summative assessments when these common formative assessments are used to enhance student learning.

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Appendix A

Team: Date:

[redacted] High School
PLC Collaborative Record

Team:

Date:

Our purpose is:

- *to collaborate to foster growth in every student and professional,*
- *to share responsibility for best practices, and*
- *to be driven by a pursuit for learning that maintains the standard of excellence.*

Essential Standards:

Data Analysis	Response to Data
Collaboration	**Notes/Follow up**

Celebrations:

Appendix B

COLLABORATIVE ASSESSMENT TEAM
MEETING OBSERVATION GUIDE AND CHECKLIST

Team: _____ Auditor: _____

Date: _____ Team Leader: _____

Opening of the Meeting: *Within the first five minutes is the …*

Purpose or objective clearly stated and acknowledged by the group?
Agenda reviewed (i.e., process steps, time frames)?
Responsibility for meeting roles (i.e., scribe) clarified?

Comments about how our meetings are opened:

Leadership: *The leader of the meeting:*

Seems prepared
Presents ideas clearly
Solicits participation
Enforces ground rules
Keeps discussion focused and on track
Ensures that ideas and actions were captured
Calls for a decision when appropriate
Summarizes frequently
Transitions between agenda items
Clearly restates decisions and action items
Clearly states next steps

Comments about how the meeting was led:

COLLABORATIVE ASSESSMENT TEAM
MEETING OBSERVATION GUIDE AND CHECKLIST

Communication Among Members: *As members interact they…*

Are clear and direct in their communication
Speaks directly to one another
Invite reactions to their ideas
Maintain eye contact
Ask one another questions
Build on one another's ideas
Acknowledge one another's ideas
Express support for others
Restate or paraphrase one another's ideas
Exhibit respect for one another

Comment about the quality of interpersonal communication:
What helped or hindered effective communication?

Developing Common Formative Assessments: *When developing common formative assessment, members…*

Were aware of the learning target
Aligned the formative assessment with the identified learning target
Determined the appropriate assessment to accomplish the identified purpose
Equally participated in the collaborative development process
Put in place guidelines for determine if students met the identified target
Put in place structures to support students who had not met the identified target
Put in place structures to support students who had met the identified target

Comment about the development of common formative assessments:
What helped or hindered the creation of common formative assessments?

Appendix C

Re: Request for permission

YA

Yoli Alovor <alovoryoli@gmail.com>
Thu 3/28/2019 10:27 PM
To: Ayesha O Agboga
Cc: ysfgd@mail.umsl.edu

Yes, I approve Ayesha. Thank you for your ethical guidelines and follow up. Good luck to you in all your pursuits.

Best,

On Thu, Mar 28, 2019 at 11:42 AM Ayesha O Agboga <AyeshaOAgboga@stu.bakeru.edu> wrote:

> Good afternoon,
>
> I am attached the requested document in PDF. If I need to make changes, please let me know and I will do so immediately.
>
> Thanks again for your permission,
>
> Ayesha Agboga

From: Yoli Alovor <alovoryoli@gmail.com>
Sent: Thursday, March 7, 2019 11:17:04 AM

To: Ayesha O Agboga
Cc: ysfgd@mail.umsl.edu
Subject: Re: Request for permission

You are welcome.

On Wed, Mar 6, 2019 at 5:50 PM Ayesha O Agboga <AyeshaOAgboga@stu.bakeru.edu> wrote:

> Good evening,
>
> Thank you for your response. I would very much like to use your survey. I will send out the document very soon.
>
> Thanks again

From: Yoli Alovor <alovoryoli@gmail.com>
Sent: Tuesday, March 5, 2019 11:09:25 AM
To: Ayesha O Agboga
Cc: ysfgd@mail.umsl.edu
Subject: Re: Request for permission

Are you still seeking to use my survey?

Appendix D

Part I: What is Formative Assessment?

1. In your own words can you elaborate on the purpose of using common formative assessment practices within your classroom instruction?

2. In your own words can you elaborate on the role CAT teams play in the development of common formative assessments?

    a. What does common formative assessments look and sound like when CAT teams do it well?
    b. How can CAT teams best use assessment to improve classroom instruction rather than simply measuring student learning?

3. Describe how you implement common formative assessment practices in your classroom?
    a. What do you do to ensure the common formative assessment practices in your classroom are successful?
    b. After administering common formative assessments, describe how you give feedback to your students.

4. Which common formative assessment strategies work best when assessing secondary science standards?

Part II: Instructional Practices

5. In your experience, since utilizing common formative assessments developed in CAT teams, how have you identified students who met the proficiency standard?

6. In your experience, since utilizing common formative assessments developed in CAT teams, how have you identified students who had not met the proficiency standard?

7. In your experience, since utilizing common formative assessments developed in CAT teams, how have you identified appropriate corrective instruction strategies?

Part III: Achievement Gap

8. In your own words can you elaborate on the impact CAT teams play in closing the student achievement gap school-wide?
9. In your own words expand on the impact job-embedded professional development has in closing the student achievement gap school-wide?

Part IV: Other

10. Please explain anything else you would like to say.

Appendix E

Informed Consent to Participate in a Research Study

Baker University

Study Title:
Collaborative Assessment Teams: Influence on Teachers' Perceptions Toward Development and Use of Formative Assessments in the Classroom.

Principal Investigator:
Ayesha Agboga Okaiwele, Doctoral Candidate, Baker University

You are being asked to participate in a project conducted through Baker University. The University requires that you give your signed agreement to participate in this research study. This consent form provides you with information on the research study, and the associated risks and benefits of this research. Participation is voluntary. Please read this form carefully and in its entirety. It is important that you fully understand the research in order to make an informed decision.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You will receive a copy of this document for your records.

Section 1. Nature and Purpose of the Research

The purpose for this research study is to explore teachers' perceptions of formative assessment development and usage. The first purpose was to examine the role collaborative assessment teams play in teachers' development of formative assessments, their understanding of identifying proficiency, and supplemental corrective instruction techniques. The second purpose was to appraise how collaborative assessment teams affect school-wide classroom instructional strategies and the goal of improving student content mastery.

The overarching purpose of the current study, then, is to provide insight into how teachers' perception progress through collaboration to identification of specific professional development needs. Furthermore, making common formative assessments a daily practice in classroom school-wide.

Section 2. Procedures

The study will involve third-party observation of Collaborative Assessment Team (CAT) meetings, a review of archival documentation (2018-2019 CCRPI scores, CAT team Collaborative Record, and Collaborative Assessment Cycle). There will also be follow-up one-on-one, individual interviews conducted by the same third-party observer. A researcher may interview you on one or more occasions.

Section 3. Time Duration of the Procedures and Study

If you agree to take part in this study, your time commitment and involvement will last approximately 45-60 minutes total. You will be observed during your regular CAT team meeting but will participate (voluntarily) in one follow-up interview. Each interview will take approximately 45 minutes.

Section 4. Discomforts and Risks

While participating in this research study you are not at risk for any side effects. There are no foreseeable risks to those participating in this study, though there may be unforeseen risks.

Section 5. Privacy and Confidentiality

Information collected for the purposes of this study will be kept confidential within the limits of the law. Any identifying information will be kept in a secure location and only the researcher or searcher's agent will have access to the data.

Agreement:

I agree to participate in the research study described above.

I understand that my responses will be recorded on audio tape.

I agree _____ I disagree_____ that Ayesha Agboga Okaiwele may quote me in her paper or presentation.

I agree _____ I disagree_____ that Ayesha Agboga Okaiwele may record my responses on audio tape.

Signature: _____ Date: _____
You will receive a copy of this form for your records.

If you have questions about the study, please contact me or Dr. Denis Yoder (if applicable):

Researcher's Name: Ayesha Agboga Okaiwele, ayeshaoagboga@stu.bakeru.edu
Department: School of Education Graduate Studies
Telephone: 913-777-1301
Faculty Advisors Name: Dr. Denis Yoder, Denis.Yoder@stu.edu

Appendix F

[redacted] HIGH SCHOOL

Dr. [redacted], Principal
Mr. [redacted] Assistant Principal
Mrs. [redacted] Assistant Principal for Instruction
Mr. [redacted] Assistant Principal
Dr. [redacted] Assistant Principal

December 3, 2019

Ayesha Okaiwele, a doctoral candidate at Baker University in Baldwin, Kansas, under the supervision of Dr. Denis Yoder, is requesting to conduct research to study teacher perceptions on the development and use of formative assessments on collaborative teams and classroom instruction at [redacted] High School. Team observations, document review, and individual interviews will be utilized. No teacher or school identifiers will be included with draft or final findings.

This study will yield feedback for school leaders in supporting and further developing professional learning communities, formative assessment development and use, and other vehicles for teacher development and collaboration.

Principal acknowledgment and permission is granted per the signature below:

[redacted]

[redacted], Principal
[redacted] High School

12.3.19
Date

[redacted] Rd [redacted] GA [redacted]
Phone: 478-[redacted] Fax: 478-[redacted]

Appendix G

[redacted] COUNTY
BOARD OF EDUCATION
HIGH-ACHIEVING STUDENTS

SUPERINTENDENT OF SCHOOLS
DR. [redacted]

BOARD MEMBERS
[redacted] VICE CHAIRMAN
[redacted] CHAIRMAN
[redacted]

DATE: December 3, 2019

TO: Ayesha Agboga Okaiwele
[redacted] High School

FROM: [redacted]
Director of Professional Learning

SUBJECT: **RESEARCH APPROVAL REQUEST**

Your request to conduct research for your graduate program at Baker University is approved. The purpose of your study, *"Collaborative Assessment Teams: Influence on Teachers' Perceptions Toward Development and Use of Formative Assessments in the Classroom"*, will be to examine teacher perceptions of formative assessments and examine the role collaborative assessment teams play in the development of formative assessments and reinstruction practices. The timeframe for this research study is one year from the date of system approval.

Thank you for submitting your IRB form, consent form, survey questions, and the principal approval letter.

Please keep in mind that you will be responsible for compiling the data for your research. The staff at [redacted] High School and the Departments of Assessment & Accountability and Technology Services is unable to compile data for your research. Board policy also prohibits the use of system email for personal research. Please also remember student and teacher anonymity is of utmost priority for this research project.

I have attached to this approval e-mail the [redacted] County Schools Requirements for Conducting Research.

I wish you the best as you work toward earning your graduate degree. Please let me know if I may be of any assistance to you again in the future.

cc: [redacted]

P.O. Box [redacted], [redacted], Georgia 3[redacted]
[redacted] • Fax [redacted]
www.[redacted].net

Appendix H

BAKER UNIVERSITY

Baker University Institutional Review Board

July 27th, 2020

Dear Ayesha Agboga and Denis Yoder,

The Baker University IRB has reviewed your project application and approved this project under Expedited Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.
6. If this project is not completed within a year, you must renew IRB approval.

If you have any questions, please contact me at npooll@bakeru.edu or 785.594.4582.

Sincerely,

Nathan Pooll, MLS
Chair, Baker University IRB

Baker University IRB Committee
Scott Crenshaw
Sara Crump, PhD
Jamin Perry, PhD
Susan Rogers, PhD