Recommendations to Solve the Problem of Low MAP Growth Reading Scores for Ninth and Tenth Grade Students at Christopher Columbus High School

By

Luis M. Villanueva

An Applied Research Report Presented in Partial Fulfillment of the Requirements for the Degree

Doctor of Education

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Approved by:

Kelly Alves, Ed.D., Mentor

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Abstract

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the Measure of Academic Progress (MAP) Growth test for ninth and tenth graders at Christopher Columbus High School (CCHS) in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year were not at their corresponding grade level in Reading (CCHS, 2022). The rationale for this study was that it is critical to assist the first and second-year students at CCHS in improving their reading competencies – one of two sections, along with math, that is tested. In addition to being an academic foundation for these students, improving in these subject areas will increase students' scores and enable proper learning habits and preparation for more advanced courses. Therefore, the central research question was, "How can the problem of low Reading scores on the MAP Growth test for ninth and tenth graders at Christopher Columbus High School be solved?" Three forms of data for this applied research were collected, including interviews, surveys, and documents. Qualitative data were analyzed by identifying codes and themes, while quantitative data was examined using graphical representations of the quantitative test results.

Keywords: Assessment, Computerized Adaptive Testing, Reading Comprehension

Role of the Researcher

Luis M. Villanueva currently serves as a Student Support Liaison for the online campus of Galen College of Nursing and as a Tutor for the student-athletes at Florida International University. In addition, he has taught as a Temporary Instructor for the Miami-Dade Public School system for three years. His formal education includes a BA in International Relations from Florida International University, an MBA in Management and an MA in Interdisciplinary Studies from Nova Southeastern University, and an Ed.S in Higher Education Administration from Liberty University. Currently, he is pursuing a Doctor of Education degree from Liberty University, focusing on Curriculum and Instruction.

Previously, Luis was a tutor, academic coach, and mentor for military veteran students at Miami-Dade College and worked in the Registrar and Student Services departments of the Miami campus of West Coast University. His experiences in different areas of education allowed him to make suggestions to 6-12 grade teachers and administrators, instructors in higher education, and student support staff regarding instruction, assessment, and data analysis.

As an educator, Luis is motivated to help improve ninth and tenth-grade student performance on the MAP Growth test. However, he recognizes that biases and assumptions could have been present in his research. One form of bias Luis was aware of was a preference for technologies and when they are used, which could affect test scores. Another bias is that he believes low student motivation may influence test scores. As an academic staff member, a possible bias may be the assumption that teachers could benefit from additional training or by modifying their teaching styles to improve instruction. Finally, as a researcher, it is crucial to the study's integrity that biases be reduced as much as possible to allow the literature review, data collection, and analysis report to determine the recommendations for this research.

Permission to Conduct Research

Permission to conduct this research was secured through the Academic Dean of CCHS. The permission granted access to participants and data regarding the school's performance by ninth and tenth-grade students on the MAP Growth test to make recommendations to solve the problem (see Appendix A). As requested by the school, the letterhead and email signature were omitted as they contained identifiable information.

Ethical Considerations

Doctoral students are expected to consistently maintain a high level of professionalism, self-motivation, engagement, scholarly curiosity, and ethical standards to conduct themselves accordingly (UCSD, 2017). Ethical values, such as proper collaboration, mutual aid, and harmonious relations, are required to safeguard the relationship between the researcher and the participants (Cindrak et al., 2022). The researcher ensured that the participants experienced as little risk as possible. There were no deception or discrimination practices throughout this study's research process.

Participants were selected via personal communication and included teachers who taught English and math courses to the ninth, tenth, and eleventh-grade students at CCHS. Pseudonyms were used to protect the participants' identities. Interviews were conducted on-campus or virtually, though individually. Also, identifiable information was not collected during the survey process. The documents were collected from the school's records, and all materials were stored safely. The data contained in this study is not meant to be generally applicable, nor will it be shared or distributed outside of CCHS. For these reasons, Institutional Review Board approval was not required.

Chapter One: Introduction

Overview

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year were not at their corresponding grade level in Reading (CCHS, 2022). This chapter of the report presents the Organizational Profile, an Introduction to the Problem, the Significance of the Research, the Purpose Statement, the Central Research Question, and the Definitions for this Research.

Organizational Profile

The educational site for this study was Christopher Columbus High School (CCHS), a suburban private high school in southeastern Florida. The mission of CCHS includes:

> To prepare students for higher education and their continuous challenge of harmonizing faith, culture, and life. To foster a family spirit among all who are committed to the success of the school and promote opportunities to work together as a community of learners. (Christopher Columbus High School, 2022)

CCHS served roughly 1,700 students, with an ethnic makeup of 93% Hispanic/Latino and a racial makeup of 97% Caucasian, 2.5% African-American, and 0.5% Asian, Native Hawaiian, or Pacific Islander (Christopher Columbus High School, 2021-2022). In addition, 169 faculty and staff served the school, with a 16:1 student-to-teacher ratio. School administrators included a president, principal, chief financial officer, academic dean, dean of curriculum & professional development, dean of faculty, and three deans of students.

For this study, the school's English department was the primary focus, with some consideration also given to the mathematics department because math is also tested; these two

departments had 20 and 16 teachers, respectively. Within each department, a department chair served as leader. Instructional decisions, including which courses are taught and the standards associated with these courses, were generally determined by the teachers, academic deans, and department chairs, with oversight by the principal.

Introduction to the Problem

The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year were not at their corresponding grade level in Reading (CCHS, 2022). According to Nisar et al. (2017), low academic achievement is the inability of a student to grasp required information within a certain amount of time. The MAP Growth test determines a student's competency based on an equal-interval scale called a "Rasch unIT" (RIT). Because Reading and Mathematics are critical foundational courses for high school students, having a low score in these areas as determined by one's RIT score can create educational inequities, lower student motivation, an inability to pursue other or more advanced courses that require this knowledge, and ultimately unfavorable image/s, rankings, and standings for the school.

Unfortunately, as the 2021-2022 school year is the school's second academic year employing this test, it does not have long-term data to see how well the ninth and tenth-grade students are doing in Math and Reading. Presently, the efforts to improve these students in these subject areas are not ideally where they should be, so having an early and impactful intervention to help these students can have profound and effective outcomes school-wide.

Significance of the Research

The benefits of improving student scores on the MAP Growth test included extrinsic aspects, such as qualifying for a higher course level for students, and intrinsic aspects, such as greater student confidence. For the stakeholders of CCHS, the implications of improving the test

scores can include the assurance of sound and talented leadership, effective teachers, greater student motivation and satisfaction, a lower risk of students failing and withdrawing from the school, and a higher reputation and ranking (Brooks, 2018). In addition, the school's leadership may benefit from increased RIT scores by allowing them to shift their focus to other initiatives within the school, thus leading to better efficiency and parental support. Typically, schools with strong academic outcomes can develop and sustain their communities by raising property values, attracting businesses and investments, increasing employment and community engagement, and offering an ideal location for graduates to not only live but apply their knowledge and skills, thus exacerbating a better standard of living (Bouchamma et al., 2018).

Purpose Statement

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. This applied research study included both qualitative and quantitative data collection approaches. The first approach involved semi-structured interviews with six participants from CCHS: the principal, academic dean, dean of curriculum & professional development, dean of faculty, and the department chairs of English and Mathematics. These participants were selected based on their knowledge, teaching, testing, and academic support for the topics covered in MAP Growth and IXL.

The second approach was a survey of 40 freshmen from the 2021-2022 school year (tenth grade currently) and 55 sophomores and 47 juniors from the current 2022-2023 school year (ninth and tenth-grade last year, with no current sophomores surveyed more than once). The survey was administered using Microsoft Forms, an online survey creator, part of Office 365 by Microsoft. The third approach was a thorough review of the documents from the student performance records of CCHS from the 2021-2022 school year on the MAP Growth test.

Central Research Question

How can the problem of low Reading scores on the MAP Growth test for ninth and tenth graders at Christopher Columbus High School be solved?

Definitions

1. Assessment – "a measure and evaluation of new information about a current situation" (Huber & Helm, 2020, p. 238).
2. Competency-Based Education – "an approach to education where students progress through content based on how well they have mastered core competencies, rather than the time they have spent in class" (Sudderth, 2022, para. 4).
3. Reading Comprehension – "a complex human behavior where word decoding and linguistic comprehension occur" (Elleman & Oslund, 2019, p. 4).
4. Computerized Adaptive Testing (CAT) – "testing that administers items and/or item sets to be better matched to different respondents' abilities based on the individual's responses at the outset and through the test" (Martin & Lazendic, 2018, p. 27).
5. Equal-Interval Scale – "a scale that sets the value ranges in each category equal in size. The entire range of data values (max-min) is divided equally into however many categories have been chosen" (University of California, Santa Barbara, n.d., para 5).
6. Norm Group Average – "the average score of students who were in the same grade and tested in the same term" (NWEA & MAP, 2022, para. 10).
7. Percentile Rank – "the percentage of students in the norm group for the grade that the student's score equaled or exceeded" (NWEA & MAP, 2022, para 12).

   Para 13).

Summary

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presented the Organizational Profile, an Introduction to the Problem, the Significance of the Research, the Purpose Statement, the Central Research Question, and the Definitions for this Research.

Chapter Two: Literature Review

Overview

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presents a Narrative Review, Theoretical Framework, and Summary.

Narrative Review

The narrative review of the literature presents the information obtained from a scholarly literature review. This narrative review includes information on computerized adaptive testing, strategies to improve test scores, opportunities for professional development for staff, and the educational environment's impact on personalized testing.

The Rise of Computerized Learning

The technological advancements of the last few decades have transformed virtually every industry and sector for the better, including Education. For example, VHS tapes allowed video to be used as an important visual aid, and the surge in the accessibility of personal computers and email has made access to information and communication unlike anything previously seen. Also, enhancements to search engines, social media, gaming, and video-sharing platforms have made entertainment and learning a critical component of many classroom curricula. Presently, technologies such as Virtual Reality, Augmented Reality, Artificial Intelligence, Deep Learning, Machine Learning, and Neural Networks, among others, are increasingly utilized in learning institutions (Meng-Leong, 2019). Therefore, schools need to consider a future-ready strategy when deploying these resources.

In addition to computers bringing education to the user with greater speeds, more concise content, and the ability for personalization, testing and assessing learning have been heavily impacted by technologies. Thus, computer-based testing provides more flexibility in test design, better access to a large repository of items, a reduction in academic dishonesty, and a faster turnaround for score receipt (Backes & Cowan, 2019). As a result, many national and international testing organizations are in the process of moving online or have already done so, with test results normally appearing in accountability systems; this approach has been used for many years to hold schools and districts accountable for student learning and in compliance with their accreditors.

As many academic institutions had initially adopted testing as a "one-size-fits-all" approach, personalized learning is quickly becoming a pedagogical priority. The rapid growth and development of computer-based educational assessments in the last decades have made testing easier to create, tailor, grade, and assess than ever before. One of these assessments is Computerized (or Computer) Adaptive Testing (CAT), a type of testing characterized by adapting to the testers' abilities and progress as they occur to identify their strengths and weaknesses in knowledge and, ultimately, their grade level (Interbeke et al., 2021).

Computerized Adaptive Testing

The introduction of computer software and applications that can determine student progress in real-time has been groundbreaking in the advancement of learning. According to Martin and Lazendic (2018), CAT assessments promote more positive experiences for students through greater test motivation and engagement, especially for adolescent students who are at an age when they are typically less motivated and engaged; these assessments also measure achievement quicker and more accurately than non-adaptive tests.

This method of addressing individual student needs is imperative to ensure all learners receive the academic challenges suitable for them (Iterbeke et al., 2021). However, despite their benefits, adaptive instruction and elaborated feedback are imperfect, as human error can result in inaccurate results. Nevertheless, CAT assessments can have profound implications for students, teachers, and the school community. Therefore, they must be planned carefully, created thoroughly, and issued properly to be effective.

It is also important to point out that the application and extent of classroom technologies are based almost entirely on financial costs (Iterbeke et al., 2021). As a private school funded by tuition and donations, CCHS can afford to adopt the resources they wish for its students with autonomy in deciding how and when to implement them. Institutions of learning that are forward-thinking, well-funded, and well-resourced appeal greatly to parents looking for the right school for their children (Lanzi et al., 2017).

Measure of Academic Progress (MAP)

Among the many CAT assessments, one of the most utilized is the MAP Growth test (He & Meyer, 2021). MAP was created by the NWEA, a non-profit organization. Aligned to the Common Core standards and backed by years of research, MAP is offered as a suite of assessments and tools designed to support educators in pinpointing exactly what students need by helping them remove barriers to learning and reaching their full potential. Currently, the MAP Suite comprises three assessments: MAP Reading Fluency for Pre-K to 5th Grade students, MAP Accelerator for 3rd to 8th Grade students, and MAP Growth for K-12th Grade students.

MAP assessments would assist teachers by guiding individual and group instruction in their classrooms. As a whole, CCHS can utilize the results to identify where benchmarks should be established, what teaching methods are working, and what improvements need to be made.

However, NWEA understands that its scoring and interval scales can change as course content, order of lectures, and curriculum and budget changes, among other reasons, can vary widely between schools, thus possibly redefining a student's strengths, weaknesses, and grade level from one time period to another (He, 2022).

MAP Growth

MAP Growth is NWEA's signature assessment. Not only does it help target instruction for students regardless of how far above or below they are from their grade level, but it also provides data about student achievement during a given academic term and variations in student achievement (i.e., growth) over multiple terms; it incorporates grade-level standards and cross-grade adaptability to meet students wherever they are in their academic journey and accurately measures their attainment and growth (Meyer & Dahlin, 2022).

The MAP Growth test measures the level of academic attainment and growth in the subjects of Mathematics, Reading, Language Usage, and Science, among others, with schools choosing which subjects to test. The scores are reported on the RIT vertical scale with a mean of 200 and a standard deviation of 10. Scores typically range between 100 and 350; the RIT scale allows for measuring within and between-year growth in a student's progress, with scores for each subject area scaled apart from the others (He & Meyer, 2021). This assessment is administered three times during the school year: beginning, middle, and end.

An important characteristic of the MAP growth test is that it allows those testing to see material from any grade level, regardless of the tester's actual grade level; it does not restrict the assessment to questions assigned for the tester's actual grade. This level of flexibility has the benefit of adapting to the examinee's ability, which can avoid examinee frustration and emotional stress (Li & Meyer, 2019).

Strategies to Improve MAP Growth Test Scores

Although not an exclusively negative factor, academic stress could be a catalyst to boost persistence; students with strong motivation were less affected by stressful and demanding environments (You, 2018). Though some tips and techniques can help with studying, not everyone can take this advice equally, as each student has a distinctive learning style. CAT benefits from adapting to difficulty as students are testing, giving them a general idea of how they are doing based on question challenge – if students see that questions are getting easier, they will know that they are not performing well. Inversely, if they see that questions are becoming more difficult, they will know they are performing well (Martin & Lazendic, 2018).

As a supplement and reinforcement to help students perform better on the MAP Growth test, CCHS implements IXL. IXL is a skills-based, personalized online-learning platform designed to supplement a traditional standards-aligned curriculum used by over 12 million students worldwide (Bashkov, 2021). IXL is built on well-established learning progression theories and education principles; it is currently offered in the following subject areas: English Language Arts (ELA), Mathematics, Science, Social Studies, and Spanish (Bashkov, 2021).

Educators can amend their teaching styles to different learning outcomes; they can better help those struggling to catch up while maintaining motivation for those who perform well. Fortunately, IXL and MAP assessments give school faculty and staff the proper data to help them adapt much more easily. For example, in addition to listing the topics that are performed well and those that students struggle with, MAP identifies students who may, unfortunately, become academically “at-risk” and their probability of becoming so (He, 2022).

MAP Growth identifies struggling students with a multitiered support system of three levels: Tier One, Tier Two, and Tier Three. The latter is considered the most intense level of

intervention and requires immediate action. Therefore, the RIT score is critical for identifying students who may be “at risk” and need intervention through universal screening while tracking learning progress for those who are “at-risk” through progress monitoring. Ideally, universal screening should occur after each of the three yearly assessments, with progress monitoring for those in Tiers One and Two at least once a month. At the same time, those in Tier Three should be monitored weekly (He & Meyer, 2021).

For students, a negative outcome on academic performance should not be determined by one test but rather through several factors that include, but are not limited to, having a learning impairment or other mental health issue/s, low motivation, poor student-teacher relationships, schools setting lower standards so that more students could pass, lack of parental support, experienced child abuse, and socioeconomic status (Cascio, 2019). However, when schools begin supporting a more positive school climate, it promotes better education, health, and civic outcomes for students (Lenzi et al., 2017).

More specifically, schools should encourage teachers to create a culture of achievement, produce lessons and activities that are interactive and relevant, and develop an atmosphere of encouragement and support for students. Doing so can help reduce the likelihood of lower school achievement, increased risk behaviors, and lower physical and mental well-being (Lanzi et al., 2017). In addition, implementing proactive practices can significantly boost student achievement based on standards-aligned lessons and assessments, such as IXL and MAP Growth.

Creating a Culture of Achievement

One way to help boost academic outcomes is by creating a culture of achievement through the engagement of organizational and systemic practices around personalizing the learning experience for students. Though schools may implement this uniquely, administrators,

teachers, and guidance counselors, along with standard operating procedures, can foster adult-student interaction and focus on increasing students' sense of belonging in schools (Rutledge & Cannata, 2016). Thus, having personalized learning is a key success component of high-performing schools.

Achievement through personalization is also supported by Social Cognitive Theory (SCT). This theory explains that human behavior is learned and developed through interactions with others and the world around an individual (Brinkmann et al., 2021). Under SCT in schools, the adults serve as role models, and students learn behaviors by observing the model/s and then determining if they wish to replicate the behavior. By teachers and staff establishing an environment that is positive and productive, students are much more likely to imitate and maintain that culture.

Lessons and Activities

Teachers should have lesson plans that are thorough, interactive, and aligned with the student's interests. One of the best ways to apply this approach is through technology. Teachers must determine how this technology should be used best despite the greater availability and variety of technological tools available for classroom use. Hence, it matters not only that teachers integrate technology into their instruction but also *how* they integrate it (McCulloch et al., 2018). In addition, teachers must know where to find the required resources and support, knowing that technologies change rapidly.

Technologies can work well for class activities, such as gamification and flipped classroom approaches, effectively fostering motivation and learning (Sailer & Sailer, 2020). A flipped classroom that utilizes technologies provides more active and diverse lessons for learners while boosting accessibility to advanced technologies for the learning process (Låg & Saele,

2019); these measures allow students to have more autonomy when learning while also enhancing their research skills and competitive spirit with others.

Support and Encouragement

As the student population at CCHS is predominantly Hispanic, it must understand the values and needs of this demographic group of students. This population has remarkably high aspirations to attend a college/university. According to Azizova and Mendez (2019), 77% of Hispanic parents believe their children should pursue higher education, despite only 48% expecting to pursue it – the lowest rate compared to all other racial/ethnic groups.

Overall, CCHS has a strong student support system that addresses unique student needs, including study hall and peer tutoring; these resources can be beneficial in conjunction with IXL skills assessment and preparing for MAP Growth. A dedicated support system encourages marginal students to have an effective means to improve and should have a noticeable impact on future educational outcomes (Alcott, 2017). Many teachers who take this initiative to encourage student progress risk going beyond the stages in which this approach works without realizing the impact. Nevertheless, educators should encourage their students as widely as possible.

Modern Curriculum

Schools must develop curricula that provide students with receptive, connected, cooperative, and deep learning. Because CCHS is a college preparatory school, it offers opportunities for its students to earn college credits so they can be ahead of their peers in their studies once they graduate. However, high-achieving outcomes are only possible with an organized curriculum that tackles complex topics and concepts, fulfills common goals, adapts to the latest information, and emphasizes real-world skills (Williams, 2019), despite implementing practical and effective approaches.

It is also critical for school curricula to incorporate global citizenship in today's interconnected environment. The concepts learned in IXL and assessed in MAP Growth should help them gain a better sense of self and become efficient in their career paths. Also, teachers should base their instructional methods on the assumption that curricula change regularly, and concepts should incorporate the latest in-demand skills and a more consistent learning path (Williams, 2019).

Parental Involvement

Parental influence on their children's academic success is immense. When parents show that they care about and are actively involved in helping their children with their studies, it will help develop good learning and study habits that can continue into higher education. Also, obtaining a degree can achieve numerous economic, social, and health-related lifetime benefits. According to Degol et al. (2017), those with college degrees are more likely to secure gainful employment, greater economic prosperity, and better overall health.

It is also important to identify the causes that can positively affect a child's s cognitive, emotional, and behavioral development and outcomes so that parents and teachers can develop best practices (Degol et al., 2017). However, these developments change as children grow, so it is critical to address them for the student's advantage. Overall, parents can greatly contribute to the academic success of their children, which can lead to higher performance in more difficult subjects compared to students who have less parental support (Rutledge & Cannata, 2016).

School Safety

School safety is essential for students to be mindful of and preserve to experience positive developmental growth. Nevertheless, school leadership actions can vary widely in their pursuit of diminishing classroom hostility while promoting school safety, which may or may not

be the best approach. Still, educators must work together to enhance the school climate and engage in any necessary prevention efforts (Lenzi et al., 2017).

According to Mori et al. (2021), lacking a sense of safety at school "was related to being victimized and mental health difficulties, including depressive symptoms and suicidal behavior" (p. 232). Conversely, when students feel safe in school and online, they feel that they are part of an inclusive institution and that their concerns and efforts are recognized and accepted (Porter et al., 2021). Therefore, school administration should always be alert to identify any threats or barriers to safety to foster an environment that encourages positive feelings for all students, faculty, and staff.

Extracurricular Activities

Transitioning into adulthood requires the planning, pursuit, and regulation of goals. According to Guilmette et al. (2019), when students become involved in extracurricular activities, they begin developing a self-regulatory mechanism that could contribute to more positive academic, psychological, and social outcomes. Furthermore, students with higher participation rates tend to have stronger persistence. As a result, these students have a much more positive outlook and motivation to accomplish goals, which impacts academic success.

Schools should offer various athletic programs, societies, clubs, groups, and other organizations to meet a wide range of personal and professional interests, with the ability to create one if one is not available. According to Haghighat and Knifsend (2018), when students become involved, they can learn abilities that could stay with them for life by acquiring hands-on and social skills, improved time management, and stronger discipline that can lead to better grades; these factors can be used in college/university and job applications to show varied interests, dedication, and that they went above and beyond to develop critical competencies.

Student Motivation

Learning, studying, and keeping up with assignments can feel forced and burdensome for many students; ultimately, some only do the minimum to pass. Often, these students can be quite intelligent, creative, and talented, but lack the necessary support and resources to help spark their interest and desire to learn. A solid student-instructor relationship can dramatically improve motivation and engagement (Gares et al., 2020). Therefore, lessons and activities must apply to the real world and be interesting and enjoyable to learn and complete.

For the ninth and tenth-grade students at CCHS, the MAP Growth test is critical to help faculty and staff determine grade level and provide the support to lead them to their appropriate level. However, the topics in MAP Growth that CCHS tests on, Reading and Mathematics, are probably not what students are excited about and teaching what is covered in the test may not always go smoothly (Gares et al., 2020). Hence, changing students' attitudes into enjoying learning and understanding the gravity of the assessment can lead to study and learning habits that can be applied in other courses and in preparation for higher education.

By applying SCT to motivation, students would be much more motivated if their teachers and parents were also motivated. According to Lauermann and Berger (2021), teachers' motivational beliefs can greatly influence their professional decision-making and approaches to teaching. The qualities of motivation, including excitement, curiosity, positivity, and goal-orienting, are "infectious" energies that can boost enthusiasm for students, leading to higher morale, greater admiration for faculty and staff, and greater appreciation for the subject matter that they are learning.

Impact of the Educational Environment on Computer-Adaptive Testing

Many factors within the educational environment could impact CAT. These factors may

include the effectiveness of teachers and the instructional resources available for them to utilize for their students.

Teacher Effectiveness

Teachers serve a noble and critical role in society; their instructional techniques can easily determine the success or failure of their student's academic attainment, which in turn, is a reflection of themselves and the school they work for. However, regardless of how effective and impactful they may be, all educators can always benefit from becoming familiar with different approaches to teaching and meeting their course objectives; having varying teaching abilities can help apply different methods depending on student needs (Bruno et al., 2020).

According to Bardach and Klassen (2020), the ultimate goal of educators is always to find ways to improve instruction and to identify the personal qualities that contribute to effectiveness in the classroom. Hence, schools must develop the highest possible standards when searching for and hiring teachers and setting class sizes. In addition, teachers must have a strong working relationship with their school's leadership; in turn, the leadership must guide teachers' self-efficacy and proficiency, make them feel valued, provide mentorship, and offer professional development opportunities (Cansoy & Parlar, 2018). These skills should also apply to substitute teachers.

Ultimately, students' high-level achievement comes about when teachers are very experienced and passionate. According to Podolski et al. (2019), as teachers acquire more of these qualities,

> "their students are more likely to do better on measures of success beyond test scores and make greater gains in their effectiveness when they teach in a supportive, collegial environment, or accumulate experience in the same grade, subject or district". (p. 294)

With the appropriate support and resources, the benefits of having highly experienced teachers are numerous and substantial; “the compounded positive effect of having a series of accomplished, experienced teachers for several years in a row may offer the opportunity to reduce the achievement gap” (Podolski et al., 2019, p. 304).

New Teacher Qualifications. New teachers begin their careers with fresh perspectives and optimism. At the same time, new teachers are more susceptible to stress, burnout, and attrition than more experienced teachers (Goddard et al., 2006, as cited in Fitchett et al., 2017). Most often, teachers gain a much better sense of their strengths and weaknesses, learn how their school, fellow teachers, and students operate and better understand the education field as they progress. New teachers may face instances they might not have experience handling, such as large class sizes and classroom management, which could affect their mental health – becoming an occupational health risk if not addressed promptly (Fitchett et al., 2017).

To acquire the best new teachers, schools must be transparent with job demands and expectations, what resources would be provided (and when), and what flexibilities may be permitted. In addition, with professional preparation and support from school leadership, new teachers can greatly diminish their risks of stress and stress-related illnesses (Fitchett et al., 2017). Nevertheless, all teachers should have the following qualifications before starting their careers: Experience working in a classroom, an advanced degree, and subject matter expertise (Lee & Lee, 2020).

Mathematics Teachers. Teaching experience is extraordinarily important for high student outcomes, especially in STEM courses. For example, student-teacher data in North Carolina high schools found that students taught by teachers with more than 30 years of experience tended to show higher math test scores compared to those taught by teachers with only five years of

experience (Wisall, 2013, as cited in Lee & Lee, 2020). Also, the greater the work experience for teachers is, the more positive and significant their impacts on student test scores, conduct, and graduation rates (Lee & Lee, 2020).

ELA Teachers. Strong reading, writing, and oral communication skills are crucial in any academic subject, and teachers should have at least a master's degree. For example, a San Diego, CA schools study found a positive relationship between attaining a master's degree and students' reading achievements (Betts et al., 2003, as cited in Lee & Lee, 2020). English teachers should also make reading and writing fun rather than burdensome chores. Doing so can shift students' attitudes to enjoying the subject matter and ultimately perform at their grade level, if not higher.

Class Sizes. School leadership and administrators have long debated class sizes to determine the right number of students per teacher for the best outcomes; less considered is how class sizes can affect teachers' ability to perform. According to Blatchford and Russell (2019), class size does not directly impact learning but rather teachers' ability to manage their classes and teach students in groups. As a result, teachers should develop collaborative learning and teaching groups.

Unfortunately, class size "may be difficult to define and compare because pupils often attend different classes, depending on the subject area, with sometimes varying class sizes. Moreover, over the school year, the number of children may change" (Blatchford & Webster, 2018, p. 683). The key influence on the quality and suitability of education for students relies not only on class size but also on the grouping arrangements within and among classes, and how well students interact with their teachers and among themselves (Blatchford & Webster, 2018).

Enhancing Teacher Proficiency. Teachers must develop subject achievement and viable competencies for their students' learning; this can be a complex task requiring setting priorities,

time management, diligence, and a focus on the curriculum objectives (Deneen et al., 2019). Collaborating with the school's leadership team is vital for proficient and perceptive educators. In addition, there needs to be compromise when formulating instructional planning so the school can continue to be proactive instead of having its plans stalled.

According to Deneen et al. (2019), teachers' perceptions of what matters most in assessment, opportunities, and readiness play critical roles in determining how these concerns establish a sound curricular practice. As a result, it would be sensible to focus strongly on supporting teachers, especially in areas where they feel less proficient. At the same time, those who plan and devise the curriculum should carefully consider proficiency and value while allowing teachers to have influence and autonomy in creating and implementing their course objectives, at least to some degree.

Valuing Teachers. Teachers can sometimes view their job as thankless, demanding too much time for too little pay. However, whether educators realize it or not, their teachings can often make lasting impressions on their students and peers. Students notice and value their teachers through the didactic strategies implemented in the classroom (Castañeda-Peña et al., 2019). Didactic strategies can be the answer to addressing instructional challenges when teaching narrative content if planned accordingly. When strategies are developed that clarify lectures and make the course more interesting, students can begin to see their teacher's passion for the subject matter; when teachers see their approaches as valuable, they begin to feel that they are making a positive impact and feel like a valued educator.

At the same time, receiving recognition from school leadership can increase a sense of appreciation for teachers because their actions and output matter. According to Schleicher (2018), teachers can feel valued by empowering them to play a role in their school's decision-

making process, helping to expand their capacity to handle certain tasks that they are not proficient in, supporting their development of interpersonal relationships with the school's stakeholders, creating an effective system of teaching appraisal and feedback, and encouraging collaboration between teachers to help strengthen one another's skills and abilities. Overall, when teachers feel valued and respected, their work reflects that sentiment and students, in turn, begin to view the course in a more meaningful way.

Mentorship. When done correctly, mentoring teachers can be complex and intricate, yet critical and powerful. Many new teachers find themselves trying to meet expectations and following conflicting directions, which can lead to unnecessary tension (Bullough & Draper, 2004; Wang, 2010; Orland-Barak & Wang, 2021); these teachers can greatly benefit from the guidance and advice of their more-experienced peers so that they can function in a manner that meets their objectives, satisfy institutional policies and procedures, and is in line with their school's mission and vision.

When new teachers begin in a school, regardless of their experience in other schools, they should be mentored to understand their new workplace's culture, values, and how it operates. According to Orland-Barak and Wang (2021), mentors should have enough experience in integrated mentoring practices and professional knowledge of their subject matter and institutional workings to guide their proteges as effectively as possible. Doing so can put a vast impression on new teachers that they are looked out for and supported as they become familiar with their new work environment.

Professional Development. Opportunity for high-quality professional development (PD) is a hallmark of people-centric and forward-thinking organizations. School faculty and staff can reap profound benefits from these opportunities by helping them improve and reinforce their

abilities. According to Lofthouse (2018), along with mentoring, PD can help teachers address challenges, pursue professional interests, and handle obstacles commonly experienced in schools. However, to provide these resources properly, they must derive from reputable and reliable organizations and/or individuals, be afforded by the designated budget/s, and be given reasonable time to complete the required training while offering the ability to complete optional ones.

Teachers must instruct in a way for their students to think logically and apply their knowledge accordingly. In addition, teachers should learn how to teach in areas outside of their specialization or "out-of-field" (Kenny et al., 2019), a challenge many teachers encounter at some point in their careers. PD training in this area "can be formal (such as conferences and courses) or informal (such as working with other teachers, mentoring, and collaborative planning) activities" (Education and Training Council, 2009, as cited in Kenny et al., 2019, p. 500). In turn, by teaching "out-of-field", the quality of instruction can be transformative – leading students to have a greater chance of gaining the necessary skills to place them at their respective grade levels as reflected by their assessments.

Substitute Teacher Qualifications. Substitute teachers play a significant role in the classroom by assisting in following lesson plans and creating a cohesive and consistent learning experience for students when the regular teacher is absent. However, to perform their jobs effectively, substitute teachers require classroom management skills, the ability to clarify or review a lesson, and being challenged and supported by an inclusive community (Paetz, 2021). In addition, these teachers need to recognize their strengths, weaknesses, and the resources available to them to have a productive and satisfying career if they decide to move up in the education field.

Many substitute teachers begin their careers with a strong interest in teaching but do not want an initial full-time commitment. Their experiences and expectations during this time can make or break their decision to become full-time educators. Therefore, substitute teachers must have the appropriate support readily available. According to Beswick and Fraser (2019), the 21st-century learning environment is evolving; teachers require competence in creativity, teamwork, communication, and critical thinking to remain relevant, especially in STEM courses. Hence, substitute teachers should be trained for and skilled in classroom technologies while becoming familiar with integrating related academic disciplines so students can understand and learn from their interconnectedness.

Also, new substitute teachers are especially at risk of feeling intimidated and at a sense of loss in that they feel they have to resolve issues mostly on their own; these factors can negatively affect their efficacy, development, and retention (Bruno et al., 2020). Consequentially, this can have serious implications for the school over time, which adversely affect the school's operations, budgets, and allocated resources while adding unnecessary pressure to the remaining faculty and staff (Bruno et al., 2020). Moreover, by not acquiring subject matter knowledge, interaction skills, and lacking guidance from the administration, substitute teachers could become dissuaded; these teachers might otherwise be bright, passionate, and caring individuals with the potential to become leaders and advocates for change and growth in education (Paetz, 2021).

Instructional Resources

Today's classrooms are heavily reliant on technologies to enhance instruction by teachers and retention by students. As a result, educators consistently look for resources to implement within their virtual space. Since the COVID-19 pandemic began, students' online engagement

has grown sharply. According to Torphy et al. (2020), many schools have implemented and expanded learning management systems and other online tools. With a plethora of websites, software, and mobile apps available for teachers to curate lessons, many on-campus courses follow a hybrid format – in-person with an online component, which is a popular format in today's educational environment.

Technologies can enable students to have an appropriate learning model that promotes settings that invite self and shared reflection on essential aspects of their education; this educational approach allows students to be active constructors of their learning, while teachers act as mediators between knowledge and their students (Martinez-Borreguero et al., 2022). In addition, learning with technologies can be highly motivating for students; using suitable digital content, such as simulations and animations, can enable a better understanding of complex subject matter (Albert et al., 2021). Overall, instructional materials that are high quality, accompanied by professional learning supports, can improve student achievement and is an important first step in establishing the conditions for the use of high-quality instructional tools (Doan et al., 2022).

Furthermore, adopting a curriculum design and implementation that integrates interdisciplinary teaching with continuous training in pedagogies and subject expertise, professional development and practices, and discussions/collaborations with peers would enable educators to greatly improve their teaching practices and the educational quality of students (Crismond & Adams, 2012, as cited in Martinez-Borreguero et al., 2022). Depending on the course, the right educational resource/s can be a determining factor in improving student motivation. Therefore, students would have a much more positive attitude about what they are learning and who is teaching it (Albert et al., 2021).

Theoretical Framework

The main purpose of this theoretical framework is to have a structure that uses research knowledge done to date in the education field to make sense of the data in the researcher's study (Kivunja, 2018). Also, a robust theoretical framework can help develop an informed and specialized lens to examine data, conduct data analysis, interpret and report the findings, and make recommendations. The theory used to explain this research was the Connectivism Learning Theory (CLT) by George Siemens and Stephen Downes (2005).

CLT by Siemens and Downes (2005) provides a framework for 21st-century learning and testing. The theory suggests that learning is a process of nurturing and maintaining ties between specialized information sources required to facilitate continuous learning. For example, CLT may occur through apps, audio/video platforms, social media, and blogs to help learners connect fields, data, ideas, and concepts from current and accurate knowledge (Walker, 2018). As modern learning implements technologies and other tools outside of traditional classrooms, and students find information and take practice tests and lessons online, this theory is suitable for this study, aiming to improve assessment scores.

According to Smith et al. (2021), student academic performance since the COVID-19 pandemic has been a major factor that has overwhelmed students, teachers, and the functioning and outcomes of educational institutions. As a result, schools have attempted to establish norms for monitoring student progress through online assessments such as MAP Growth. At the same time, there are strategies for opportunities and preparedness that schools can implement to resolve into curricular practice (Deneen et al., 2019). This research aimed to identify themes related to the problem of low scores on the MAP Growth test; thus, Siemens and Downes's (2005) CLT is a logical choice for this research.

Summary

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presented the Narrative Review and the Theoretical Framework for this research.

Chapter Three: Procedures

Overview

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presents the Interview Procedures, Survey Procedures, and Documents Procedures.

Interview Procedures

The first approach used to collect the data in this study was semi-structured interviews. This approach allowed the researcher to draft interview questions based on scholarly literature and on specific topics that needed investigation, while allowing the questions to draw information about participants' experiences. These interviews helped the researcher determine how CCHS in FL can better assist the ninth and tenth-grade students in raising their MAP Growth test scores.

Convenience sampling was used to easily locate the needed subjects in one location (Etikan et al., 2016). The six faculty/staff members comprised the principal, academic dean, dean of curriculum & professional development, dean of faculty, and the department chairs of English and Math. These participants were selected due to their curriculum knowledge, teaching, testing, and academic support for the topics covered in MAP Growth and IXL.

The interviews took place at the campus of CCHS or through virtual meetings in a one-to-one format at the participant's convenience. The interviews lasted roughly 30-45 minutes; answers were written and later analyzed. During the interviews, the researcher was mindful of the words used for articulation, tone, and non-verbal indications to help detect the participants'

thoughts and attitudes. In addition, each participant was made aware of and agreed to this study's participation requirements and expectations before their interview took place.

After the interviews were transcribed and examined, the results were coded by the theme category presented to each participant. The coding and categorization processes were appropriate as they allowed the researcher to compare the interview responses to the information found in the current literature related to this study. The coding process assigned labels to words or phrases representing important and recurring themes in each response (Medelyan, n.d.). To help answer the central research question: "How can the problem of low Reading scores on the MAP Growth test for ninth and tenth graders at Christopher Columbus High School be solved?", the information was derived and collected through ten semi-structured interview questions. After the participants understood and consented to the study participation, the following ten questions were asked to each interviewee (see Appendix B).

Interview Questions

1. What resources are available for students to help them study outside regular class hours?

   This question aimed to see which academic support services CCHS offers to its students and how they differ from classroom instruction; this helped the researcher determine if any gaps in academic outcomes were present and if there were any differences in approaches to helping students (McCarthy, 2019). In addition, this question helped compare and contrast learning and tutoring approaches by the school to help narrow down what is effective and focus on removing what does not work.

2. How would you compare the performance of students involved in extracurricular activities to those not involved?

   This question helped determine if participation in extracurricular activities made a

difference in academic outcomes. This question aimed to see how these groups function, contribute to socio-emotional and academic benefits, and foster critical thinking and cognitive development for academic success (Morris, D. S., 2015, as cited in Haghighat & Knifsend, 2018). Special focus was given to clubs and groups that emphasized mathematical or scientific thinking to determine what strategies they implemented.

3. How effective are the websites and apps that CCHS is currently using?

This question was designed to answer the effects that educational websites and apps have on the outcomes of CCHS students. It also helped answer if they are being utilized accordingly, if students were interested in using them, and if they were being recommended. Unfortunately, despite the tens of thousands of educational apps available in the Apple App Store alone, there is a lack of clarity and meaningful information for consumers and how Apple chooses its "top" apps. Thus, developers should develop educational quality benchmarks in their app descriptions (Dube et al., 2020).

4. If the student newspaper, The Log, featured math and science puzzles to help students practice their skills, how much would they impact student outcomes?

This question aimed to see if the school newspaper could positively impact student grades. The newspaper could better serve students by helping them learn and informing them of the happenings in school. However, adding problems or puzzles could take away needed space on the paper/website, taking the newspaper longer to complete and release the issue. A concise, well-crafted newspaper can transmit information that is not only informative but educational, timely, and reliable (Hendricks & Thomas, 2017).

5. How even are the academic outcomes among the different student demographics?

This question identified if there are any learning disparities between the different

demographic student groups. According to Kuchirko & Nayfield (2021), semiotic processes occur “at multiple layers of cultural, ideological, and social contexts” (p. 1174); these processes can affect a student’s relationship with their parents, teachers, and peers, which in turn can affect their academic attainment. Therefore, partnerships should be sought to support students who may fall behind as a result: counseling, tutoring, and student services, among others, must work in unison to support any student and any unique challenges that they may have.

6. How impactful are the current classroom technologies on student outcomes?

This question identified the extent to which classroom technologies contribute to student outcomes (Montrieux et al., 2017). It also helped see if students learn better with technologies on their own instead of by the teacher alone or by both. It also determined the effectiveness level: with a lone user, in group settings, in a hybrid setting, or at the classroom level. Implementing the right technologies ensures that teaching operates as effectively as possible. CCHS, in alignment with the FL Department of Education, must wisely decide the best way to utilize said technologies.

7. How do students’ cultural backgrounds affect their grades?

This question identified the effects of ethnic backgrounds on student outcomes. According to Goren and Yemini (2017), students’ backgrounds can shape teachers’ perceptions of a more global education. Diversity among students should be embraced and celebrated in all forms, given the nature of society becoming more global; without so, students would find it more difficult to navigate, compete, and cope with their lives and careers post-graduation.

8. If the admission standards by CCHS were more selective, how much of a difference do you believe it would make?

This question helped identify if a more selective admissions process can bring in more

academically driven students, leading to better grades and test scores. Though CCHS does well in admitting top-performing students, there may be opportunities to improve its admissions process. It is also important to point out that students should strive to enjoy learning as the main goal, as good grades would follow. In addition to excellent grades, high test scores can help school administration make more concise predictions about expectations and outcomes and if amending curricula may be necessary (Koretz & Langi, 2017).

9. What are the most frequent barriers to learning that the students express regarding tutoring being handled?

This question aimed to detect weaknesses in tutoring that could unjustly hold any student back and what is being done about them. Issues with tutoring should be identified to see if the tutor/s, their training, or the type of setting where assistance is provided is the root cause of the problem/s. In addition, students' emotional and motivational barriers, such as fear of failure, criticism/judgment, rejection, and humiliation, can impede students from performing at their highest potential (Gurlen et al., 2019). Hence, it is crucial to identify any barriers and resolve them swiftly.

10. How well are the courses taught at CCHS enabling critical thinking?

This question helped to see how much the topics and logic skills taught can be used in other courses or outside academics. As a college preparatory school, CCHS must teach and prepare students beyond course concepts and testing, as it is only one indicator of college success (Giersch, 2018). Making STEM and English courses more interconnected and relevant to the workplace can improve student outcomes and place them at their grade level, or at least closer to it, as the MAP Growth test intends to measure.

Survey Procedures

The second approach to collecting data for this study was through surveys. This approach helped delve into how to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. To collect the data, a Likert Scale survey was administered using Microsoft Forms, an online form and survey creator, part of Office 365 by Microsoft. As a quantitative survey, it sought to find the frequency of the participants' views, impressions, held thoughts, and attitudes.

Participants included 40 freshmen from the 2021-2022 school year (tenth grade currently) and 55 sophomores, and 47 juniors from the current 2022-2023 school year (ninth and tenth-grade last year, with no current sophomores surveyed more than once). This sample was purposeful as a limited number of people served as the primary data source due to the research design and objectives (Etikan et al., 2016). The participants received directions on completing the survey and a QR code that led to Microsoft Forms; the participants then completed the surveys at the time of issue.

The frequency of each answer evaluated the survey results using a Likert Scale on a question-to-question basis, along with an average score reported for each question. In addition, the survey included five demographic questions and ten statements developed from a review of the literature, to which the participants responded on a five-point Likert Scale rating (see Appendix C).

Demographic Questions

1. What is your racial/ethnic background? (Check all that apply)
    A. Caucasian
    B. African American

C. Latino or Hispanic

D. Asian

E. Native American

F. Native Hawaiian or Pacific Islander

G. Other/Multiracial

2. Besides English, what other languages can you speak comfortably? (Check all that apply)

A. Arabic

B. English

C. French

D. Hindi

E. Japanese

F. Mandarin

G. Portuguese

H. Russian

I. Spanish

J. Other

K. None

3. What academic courses pique your interest? (Check all that apply)

A. Art/Music

B. English/Language Arts

C. Mathematics

D. Natural Sciences (i.e., biology, chemistry, environmental science, physics, etc.)

E. Social Sciences (i.e., economics, geography, history, psychology, etc.).

F. Other

4. Which of the following learning styles do you feel you learn better with? (Check all that apply)

   A. Visual (Spatial)

   B. Aural (Auditory)

   C. By doing (Kinesthetic)

   D. Verbal (Linguistic)

   E. Social (Interpersonal)

   F. Logical (Mathematical)

   G. Naturalistic (From your surroundings)

5. Which learning approach/es do you prefer? (Check all that apply)

   A. Mostly on your own (teacher as facilitator)

   B. In groups

   C. Traditional classroom instruction

   D. Hybrid instruction (part on-campus, part online)

   E. Academic Fairs, Guest Lectures, Field Trips

   F. Other

Survey Questions

Instructions: Choose the best response for each statement below.

6. The teachers at CCHS have the necessary skills to handle the needs of students.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

   The question attempted to answer if teachers and staff have the knowledge and ability to

assist students as thoroughly as possible. Therefore, it is critical to identify the attributes that contribute to high teacher effectiveness. According to Bardach and Klassen (2020), not enough attention has been given to the differences in teachers' cognitive abilities; these abilities can play a key role in successful teaching. Furthermore, subject matter expertise alone does not necessarily translate to effective job performance in education, so assessing individual abilities should be undertaken to identify teaching gaps.

7. CCHS provides the necessary accommodations to students when needed.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

This question aimed to understand what accommodations are available for students that support their holistic growth and how they are offered. Teachers in a college preparatory school must be highly skilled in helping their students improve their university access through academic attainment, pedagogies, and discipline (Alcott, 2017). A narrowing of any educational inequities can be expected, along with a more influential and relational role among the students, teachers, and staff.

8. CCHS offers the resources that students need for success.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

This question helped identify the types of available resources and to what extent they are offered. The school's curation of educational resources across certain factors can also help identify the driving forces behind individual choices and school purview (Torphy et al., 2020). As a result of the types and offerings of resources available in a school, its stakeholders can better understand the circumstances and motives for additional resource curation. With this data,

schools can improve their offerings and remove anything that may be seen as ineffective for student success.

9. CCHS cares about its students.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

This question served to understand how students feel about CCHS regarding their education and support. Students nowadays can easily convey and receive what is meaningful to them on social media, blogs, review websites and apps, and other forms of communication. According to Sanderson (2018), the internet is a predominant tool with its share of benefits and risks for students. Therefore, school stakeholders must have mutual respect and an understanding of the impacts that poor feedback can have on teachers and the school. In today's socio-economic climate, feedback and reviews can occur instantaneously, so it is important to tread cautiously.

10. The tutors' abilities are adequate for the students' needs.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

This question answered how well-trained tutors are to address student needs. These individuals could be anyone, such as teachers, staff, or students. However, they need experience with one-to-one and small groups, preservice learning and growth, and mediating and resolving conflict if necessary (Hoffman et al., 2019). In addition, tutors and mentors must know their specialty topics and always conduct themselves professionally with whom they interact to benefit the school community.

11. CCHS encourages its students to get involved in extracurricular activities.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

This question identified if CCHS persuades its students to participate in campus groups, athletics, and/or any outside extracurricular activities. According to Guilmette (2019), student participation in extracurricular activities can improve adjustment outcomes through "persistence in goal striving and a more positive reappraisal of loss" (p. 9). Also, clubs and organizations can teach skills and personal discipline to benefit their studies and future careers, as long as participation is done in a responsible and balanced way. However, focusing too much on these activities can take time away from studying, negatively affecting academic outcomes.

12. CCHS resolves issues within a reasonable amount of time.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

This question helped answer how quickly any issue/s faced by students are acknowledged and resolved. Stress, academic expectations, personal matters, and mental health challenges can negatively affect student motivation and outcomes; these challenges are inevitable in college life and handled differently based on expectancy and values (You, 2018). As a college preparatory school, the faculty and staff of CCHS must be able to identify, address, accommodate, and resolve student issues so that they do not become a burden to student progress and post-graduation success.

13. CCHS provides flexible help to students.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

This question identifies if student resources can be adapted based on a student's specific needs, such as tutoring being available online, if counselors are available after school hours, or if any tools and resources are available for access on weekends. Education should not be limited to only school hours, and schools must employ teachers dedicated to administering a quality education to each student (Walters, 2019). Doing so can help students feel that they will not be left behind.

14. The academic requirements that students need to follow are reasonable.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

This question answered if the academic requirements for students are reasonable. If not, it helped identify which parts, if any, should change. Students who do not receive adequate assistance to improve could experience negative consequences on the individual and society (Hart, 2017). Therefore, adequate policies must be enacted to offer some form of grade and attendance recovery. In addition, giving teachers the flexibility to craft a strategy with the student and their parents with a path to move forward that works best for everyone should be considered and offered if possible.

15. CCHS is properly staffed.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

This question helped identify if there are enough teachers and staff at CCHS to educate and support all students as best as possible while also being able to perform the variety of tasks needed to operate the school effectively to meet its goals. A lack of staff can negatively affect teachers' and students' overall health and well-being (Zimmer, 2018). However, too many staff

members can diminish individual productivity, become harder to supervise, and turn costly on the school's payroll.

Documents Procedures

The third procedure approach used for collecting data for this study was through document analysis. Under this approach, documents inform the researcher of any inconsistency in MAP Growth scores among the ninth and tenth-grade students at CCHS. In addition, according to Nordquist (2019), documents provide data and ideas on topics in various written and electronic formats.

For this research, data was retrieved directly from the CCHS office in person; this was the best access to the documents needed to determine grade-level outcomes among the ninth and tenth-grade students; the results from this data offered a quantitative synopsis of academic performance to determine the areas that require focus. The overview of documents was critical since it provided the necessary evidence of academic performance and teaching/tutoring effectiveness. This information from the documents was unavailable to the public, but access was granted due to the confidentiality agreement between CCHS and the researcher (See Appendix D). The information therein was subsequently presented in trend, pie charts, and Venn diagram formats.

Summary

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presented the Interview Procedures, Survey Procedures, and Documents Procedures.

Chapter Four: Findings

Overview

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presents the Interview Findings, Survey Findings, and Documents Findings.

Interview Findings

The first approach used for this study was faculty and staff interviews. The semi-structured interviews consisted of 10 questions and were conducted with each of the six participants on a one-to-one basis. The interviews aimed to understand if and how school leadership impacts MAP Growth test scores at CCHS. Of the six interviews, four were conducted in person and on campus, and two were conducted via Zoom.

The criteria for the participants required experience with curriculum, teaching, classroom and faculty management, and familiarity with CAT assessments. Before each interview, the participants were given a short explanation of the research study and an invitation to participate. Each interview lasted roughly 30-45 minutes; answers were hand-written and later transcribed for data analysis.

Interview Description of Participants

Participant One has been a mathematics teacher at CCHS since 1979. She has served as Summer School Principal every summer from 2002 to 2018. Since 2018, she has served as Chair of the mathematics department. Almost her entire career as an educator has been at CCHS. Due to her teaching experience at the school and her knowledge and leadership skills in her

department, Participant One was an ideal contributor who brought interesting information to this study.

Participant Two has been at CCHS since 1998, where he began as a counselor, teacher, coach, and administrator. Since 2014, he has served as the principal of CCHS. Previously, he served as assistant principal for six years and as the guidance department chairperson before that. His high experience in multiple areas of CCHS since his time at the school makes him a very strong participant in this study. He brought valuable insight to help maintain high student outcomes through quality education and mentorship.

Participant Three has been at CCHS since 1990. She started her career at the school as a teacher in the science and mathematics departments. In 2016, she was inducted into CCHS's Hall of Fame for her contributions to the school and students; soon after, she was appointed to her current position as Dean of Faculty at the school. Her experience as an educator in two departments for over 30 years and her ability to guide and mentor teachers make her an excellent participant for this study.

Participant Four has been at CCHS since 2003, where he began as a Religion, History, Psychology, and Chemistry teacher. He has also served as a counselor and administrator at the school. Currently, he serves as Dean of Students, a position he has held since 2013. His experiences in many facets of academics and administration at CCHS make him a highly valuable participant for this research study.

Participant Five has been an educator in the World Languages department at CCHS since 1991. In 2008, he became the Dean of Curriculum & Professional Development while still teaching Spanish courses. This participant had demonstrated a strong passion for education and is devoted to supporting students and teachers of CCHS in every way possible. As a result, his

wealth of knowledge and experience with the school makes him an outstanding participant for this study.

Participant Six has been a ninth-grade English teacher at CCHS since 1993. He has been teaching tenth and 11th-grade English courses since 2000. In 2004, he became the Chair of the English Department. His strong passion for the subject, his ability to manage the functions of his department, and the high regard his students place him in, make him a perfect participant for this study.

Interview Results

The interviews were conducted with four administrators and two teachers at CCHS to identify themes related to MAP Growth test scores. First, words and phrases that stood out were noted, and certain quotes were then coded. After each transcript was coded, the codes were grouped into similar themes. This type of method helped reduce the coding procedure to be analyzed for themes. Distinct qualitative data themes were identified, reported, and presented in Table 1.

Table 1

Codes and Themes from Interview Data

Themes	Codes	Participants' Quotes
Data Analysis	Data	"Investments in learning systems should be thoroughly researched before implementation, regardless of how effective it is claimed they may be."
	Item analysis	"As MAP Growth measures our students' abilities in math and reading, it would be ideal to see the approaches used for teaching and if one department is more effective than the other in learning outcomes. If so, it could lead to large score differences between these two subject areas."

	Interpretation	"Perhaps the Math and English departments could collaborate to see what approaches work and what does not work, to better identify and interpret data outcomes."
Collaboration	Working together	"Teachers are provided technological tools for their courses. However, not everyone is equally knowledgeable when it comes to using them. It would be great to have additional training and support for teachers to feel confident in utilizing tech resources for the students' maximum benefit."
	Community	"A caring learning environment outside of regular school hours, through the implementation of YTeach, writing lab, and study hall, can help students feel supported."
	Teamwork	"There is a mandatory study hall for students on probation. At the same time, some honor societies and athletic teams also have academic support available for their members. All students have many options to seek information and assistance for their studies. In other words, no one is left behind."
	Sharing with others	"Many teachers are available before and after school to assist students in understanding and completing their assignments successfully."
Professional Development	Teacher learning	"The ongoing effort is to have teachers, along with parental support, to encourage teaching and learning that can be applied outside the classroom, such as for college and career preparation, and MAP Growth."
	In-service	"With the use of MAP Growth, now in its third school year, teachers may need in-service training so that students can be at their appropriate grade level."
	Teacher training	"Teachers have a major component in enabling critical thinking at all levels. They need ongoing support to continue this effort."

Certification	"Certification to administer MAP Growth is not necessary, but training in using the website and tracking scores could be beneficial for faculty who are not as tech-savvy as others."

Themes were identified and a word search was conducted. The search results are found in the Frequency Codes from Interview Data as presented in Table 2.

Table 2

Themes and Frequency Codes from Interview Data

Themes	Codes	Occurrences Across Data
Data Analysis	Analysis	9
	Assessments	8
	Data interpretation	11
Collaboration	Working together	8
	Community	13
	Teamwork	9
	Sharing with others	9
Professional Development	Teacher learning	5
	In-service	7
	Teacher training	10
	Certification	7

Survey Findings

The second form of data collected for this research was via a survey. The survey included five demographic questions and 10 Likert scale questions. The scale had five answers to choose

from; the answers ranged from ‘Strongly Agree’ to ‘Strongly Disagree’ or ‘Always’ to ‘Never’. This survey was administered in person using Microsoft Forms. The 142 participants included 95 tenth-graders and 47 11th-graders from the current school year (2022-2023) at CCHS. The participants were given verbal instructions on completing the survey, and consent was given to participate. They then received a QR code through a projector to scan and access the survey; the participants completed the survey within minutes of receiving it. The results were automatically recorded and saved in the cloud, which was available for immediate access via the Microsoft Forms app.

Survey Description of Participants

The 142 participants in this survey included 95 sophomores and 47 juniors. Of them, 85% identified as Latin or Hispanic, 24% as White, and 4% as Black. All others, including Asian, Native American, Native Hawaiian/Pacific Islander, and Other, collectively made up about 5%. Some students picked more than one answer as they identified with more than one race and/or ethnicity.

Besides English, 71% of those surveyed spoke Spanish comfortably, compared to 14% who spoke another language. Some students marked more than one answer as they reported speaking more than two languages, regardless of proficiency level. Approximately 27% spoke only English.

Regarding courses of interest, 44% chose Math as their favorite subject. Almost 37% chose the natural sciences, 34% chose the social sciences, 23% chose Art/Music, and 11% chose English/Language Arts. 30% chose ‘Other’. Some students chose more than one subject area that piqued their interest.

With learning styles, 81% reported learning better visually, 56% perform better through kinesthetic learning (by doing), and 44% reported learning better via engagement with others. Those who learn better through logical, verbal, and auditory approaches reported about 36%. Roughly a quarter of the participants reported learning best from their surroundings and making necessary connections. Some students chose more than one learning style that they felt comfortable with.

With learning approaches, 60% reported preferring learning in group settings, 44% prefer traditional classroom instruction, 40% prefer to learn on their own, 37% prefer to learn through guest lectures, field trips, and academic fairs, 18% prefer a hybrid style of learning (part in the classroom, part online), and 7% prefer a different learning approach. Some students, again, chose more than one preferred learning approach.

Survey Results

The surveys were conducted with 142 participants (ninth and tenth-grade students from the 2021-2022 school year) from CCHS to solve the problem of low scores on the MAP Growth test for ninth and tenth graders. First, the surveys were accessed via Microsoft Forms for the purpose of data analysis. Afterward, a Frequency and Mean table was created to exhibit the data of the Likert scale responses.

Table 3

Frequency and Average of Survey Responses

	Questions	Frequency					Mean
		5	*4*	*3*	*2*	*1*	
1.	The teachers at CCHS have the necessary skills to handle the needs of students.	79	51	9	1	2	4.3

2.	CCHS provides the necessary accommodations to students when needed.	91	39	11	0	1	4.5
3.	CCHS offers the resources that students need for their success.	110	28	2	1	1	4.8
4.	CCHS cares about its students.	105	28	7	1	1	4.7
5.	The tutors' abilities are adequate for the students' needs.	46	50	44	0	2	4.0
6.	CCHS encourages its students to get involved in extracurricular activities.	111	22	8	0	1	4.7
7.	CCHS resolves issues within a reasonable amount of time.	59	62	17	3	1	4.2
8	CCHS provides flexible help to students.	74	47	18	2	1	4.3
9	The academic requirements that students need to follow are reasonable.	64	62	10	4	2	4.1
10.	CCHS is properly staffed.	102	35	4	0	1	4.7

Note. The mean for each question was calculated by multiplying each frequency value by the corresponding Likert scale value and summing the five results. The total sum was then divided by the total number of participants that answered the question, with the lowest score being "1" and the highest score being "5".

Documents Findings

The third approach to data collection was a review of documents. Data was handed in person by CCHS administration with results for the Reading section of MAP Growth for the 2021-2022 school year. Unfortunately, the Math results were inconclusive; therefore, no data for that section was attained. In addition to in-person, data was received by email. The information contained in the documents is listed by grade level only. This type of reporting was done to

protect student privacy and show results by overall grade level and not by any specific demographic group.

Documents Results

Data from the Reading section of MAP Growth at CCHS was thoroughly examined to help reduce any guesswork, make an informed decision to the best possible solutions, and provide a strategy for resolution implementation. A review of the students' performance on MAP Growth - Reading 6+ from the 2021-2022 school year (by the number of students) is shown in Table 4.

Table 4

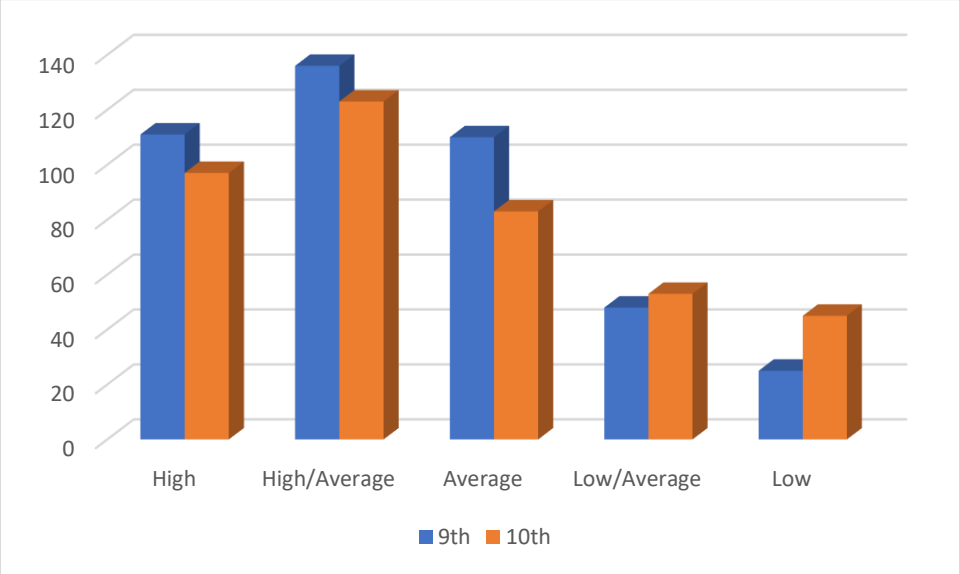
Overall Performance of ninth and tenth-Grade Students on MAP Growth – Reading 6+

Grade	High	High/Average	Average	Low/Average	Low
Ninth	111	136	110	48	25
Tenth	97	123	83	53	45
Overall	25.0%	31.2%	23.2%	12.2%	8.4%

Figure 1 shows a visual representation of the data that displays the number of students from grades 9 and 10 from the 2021-2022 school year across all results of projected MAP Growth – Reading 6+ at CCHS in the form of a bar chart.

Figure 1

Number of Students Across All Results of Projected MAP Growth



Discussion of the Findings

From the interviews, three central themes were developed. The first was Data Analysis, followed by Collaboration, and Professional Development. This section will compare and contrast the collection of data and analysis results from this research. Also, the findings in comparison to the scholarly literature will be assessed.

Interview Themes

The first theme that was shown by the interview procedure was Data Analysis. Despite this theme being prominent in the collected data, it was determined that this was not the dominant theme after reviewing the available literature. Nevertheless, data analysis was viewed as an important theme for the participants of CCHS. One participant stated:

> As MAP Growth measures our students' abilities in math and reading, it would be ideal to see the approaches used for teaching and if one department is more effective than the other in learning outcomes. If so, it could lead to large score differences between these

two subject areas.

Most participants indicated that this form of data analysis is a delicate and time-consuming undertaking, but that it may be necessary to perform. Interpretation of the data was mentioned 11 times in the interviews (see Table 2) as a critical task that can better assist in assessing and applying data to improve teaching and learning.

According to Xu and Zammit (2020), having a thorough step-by-step thematic analysis allows teachers and researchers with an adaptable way to evaluate data collected in classroom settings. Through faculty and staff collaboration, the breakdown of data analysis can lead to opportunities that can dramatically boost teaching quality and learning retention, which can subsequently improve MAP Growth scores. The theme of data analysis was emphasized not only in the interview participants of CCHS, but also in the scholarly literature.

The second theme derived from the interviews was Collaboration. This theme was dominant and establishing a sense of community was very important. One participant stated, "A caring learning environment outside of regular school hours, through the implementation of YTeach, writing lab, and study hall, can help students feel supported." Furthermore, faculty and staff expressed teamwork and sharing with others as vital to the school's goals, with each mentioned eight times during the interviews. One participant stated:

> There is a mandatory study hall for students on probation. Yet, some honor societies and athletic teams have academic support available for their members. All students have options to seek information and assistance. In other words, no one is left behind.

It was evident that the participants desired to do whatever is feasible to work together to help students increase their scores on MAP Growth. Shen et al. (2019) state that teachers can accomplish the goals of a school "not only by continuing teaching students, but also through

influencing others within their schools and elsewhere" (p. 1).

Also, there is a strong correlation between educational leadership and student achievement when improvements in curriculum and instruction are facilitated (Shen et al., 2019). The faculty and staff at CCHS expressed a need to be more collaborative, though it was unclear what the best way to do so was, where the emphasis should be, who would/would not be involved, who would spearhead the effort, and how success would be measured.

The third theme from the interviews was Professional Development (PD). In the interviews, this theme was mentioned by the participants 29 times in total (see Table 2). One of the participants stated, "With the use of MAP Growth, now in its third school year, teachers may need in-service training so that students can be at their appropriate grade level." One participant stated, "Teachers have a major component in enabling critical thinking at all levels. They need ongoing support to continue this effort." Thus, investing in PD training can yield highly valuable outcomes for CCHS's stakeholders.

In addition to training, in-service and certifications were critical for improving teaching and learning. One participant stated, "Certification to administer MAP Growth is not necessary, but training faculty in using the required websites and tracking scores could be beneficial for faculty who are not as tech-savvy as others." This is an important insight that teachers who are not comfortable with technologies, and other resources, need added support to perform their duties optimally. According to Kalinowski et al. (2019), "effective PD requires comprehensive preparation, as well as structures and resources that allow for the integration of multifaceted and complex professional learning processes into teachers' working lives" (p. 11). As a prominent theme, PD efforts were evident throughout CCHS and in the scholarly literature.

Survey Themes

The dominant theme that developed from the surveys was Collaboration. Based on the survey data, questions one, five, seven, eight, and nine received lower marks. The remaining questions received higher marks. Questions three, four, and six addressed the theme of Collaboration and received the highest marks. Because all mean scores were at 4.0 or higher, the answers showed a high level of esteem by the students toward the school, which can influence students for the better. It also shows that CCHS functions collaboratively and that any needed changes can and should be addressed swiftly.

Questions five and nine addressed tutoring abilities and academic requirements, respectively. These two questions received the lowest marks, which is evident that the students want to see better tutoring and a more effective way to handle individual challenges they may face. At the same time, questions addressing community and teamwork received marks of 4.7 or above; the responses from these questions indicate that CCHS does quite well in providing the needed support, and the students strongly agree that they feel cared for and encouraged in that regard.

According to the scholarly literature, collaboration and inclusivity are contested concepts in the field of education, without a definition that is universally agreed upon, despite their benefits; their implementation in classrooms throughout the world can vary significantly and continues to be met with challenges (Bhroin & King, 2020). For this reason, schools must determine their best course of action for creating a collaborative environment for its students, faculty, and staff.

Overall, it appears that instilling motivation and positivity by the faculty to the students could dramatically improve the students' attitudes toward their studies and better understand "the

bigger picture" as they relate to providing needed resources and accommodations and offering a swift and fair resolution to any issue. Therefore, it is extremely important to understand the roles and responsibilities of each member involved in the planning and execution of collaborative teaching, how they are understood, and how interdependence affects student outcomes (Bhroin & King, 2020).

Document Themes

The data overview from the documents reveals that 54% of the ninth and 51% of the tenth-grade students did not meet the projected growth on the Reading 6+ section of MAP Growth for the 2021-2022 school year. Given that only 11% of the students surveyed stated that ELA is their preferred course, the lowest of all subject areas, it makes sense that scores in this subject area were low. Conversely, mathematics is the most popular subject among the survey participants. As a result, it is highly likely that students performed much better in the math section than in the Reading section, despite the inconclusive results of the Math section of MAP Growth.

The documents also state that PD, such as differentiated learning, data analysis skills, and data-driven instruction, have likely enabled the faculty to become better educators; unfortunately, this information was not quantified, so it would be difficult to measure how much they have improved. In addition, due to the mostly homogenous student population, breaking down the results by specific demographics would require additional tasks that would likely not yield any striking results, nor would the effort to do so be worthwhile. After thoroughly reviewing the documents, the most probable reason for low grades on Reading 6+ appears to be personal factors, such as lack of interest and motivation, and not necessarily that the students dislike reading.

Summary

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presented the Interview Findings, Survey Findings, and Documents Findings.

Chapter Five: Recommendations

Overview

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presents the Recommendations, the Roles and Responsibilities of Stakeholders, Resources Needed, Timeline, and Summary.

Recommendations

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The central research question was, "How can the problem of low Reading scores on the MAP Growth test for ninth and tenth graders at Christopher Columbus High School be solved?". After a review of the scholarly research and data collection results, three possible solutions are recommended to answer the central research question. The three recommendations are:

1. Improve tutoring for Reading on YTeach.
2. Offer flexible reading options for students.
3. Restructure professional development for teachers to better assist students in reading.

Recommendation to Improve Tutoring

The first component to solve the problem is assessing the effectiveness of peer-tutoring through the YTeach application. YTeach allows K-12 schools and districts to develop, produce, and monitor peer tutoring programs to help drive student success and to empower faculty and administrators (YTeach, 2022).

The idea behind resources, such as YTeach, is to have an extension of the classroom. YTeach works by having top-performing students tutor their struggling peers at no cost. In exchange for tutoring, community service hours are awarded. This method helps faculty take some of the load off their work by having students teach one another; in turn, teachers can focus on other needed classroom plans, activities, and lessons.

During the interviews, the faculty and staff expressed the importance of having a supportive learning environment and providing options and assistance for student academic efforts. Thus, their message led to the consideration and analysis of YTeach, one of the most important learning resources that students at CCHS have. One interviewee stated that students can feel very supported by fostering a caring learning environment outside of regular school hours, which is possible by using YTeach and other resources, such as the writing lab and study hall.

In addition to these resources, clubs and societies can play a major role in shaping current and future tutors available on the YTeach platform. For example, participation in the National English Honor Society, Pre-Law Club, Quill and Scroll International Honorary Society, and The Log can enhance the knowledge and skills needed to be an effective ELA tutor through strong skills in reading and writing needed to join and participate. These students may know certain tips and tricks to assist with reading comprehension and retention that their non-tutor peers may not know. Consequentially, those receiving tutoring would likely learn better and faster. At the same time, those needing help with math, the other section tested in MAP Growth, could benefit from the same approach.

Another way to help struggling students with reading is to align the assignment and use examples they can relate to. The benefit of being tutored in reading by someone of similar age

and similar likes (peer-tutoring) is that tutors and tutees speak a more similar language, are closer in status, and feel more comfortable expressing themselves with one another (Kalkowski, n.d.). This is not to say that being tutored by someone older (cross-age tutoring) is less effective, but in this case, experiences and expectations between tutor and tutee could become misunderstood or unfamiliar, and outcomes could be unwantedly different compared to peer tutoring. Thus, as provided by YTeach, peer tutoring is a safe approach that can work very well as long as the tutors are well-vetted for the task.

For the faculty and staff, peer tutoring can be particularly helpful. YTeach provides learning trends, usage rates, and student satisfaction so that teachers can become aware of how impactful tutoring and learning are for a given pair of students or the course in general (YTeach, 2022). More importantly, because not all students learn at the same pace, it would be challenging, time-consuming, and futile to return the entire class to basics in order to get everyone on par. Peer tutoring helps fill the gaps in learning without having to hold back lessons; stopping a lesson to assist those falling behind can be unfair and boring to those who have grasped the topic.

For the stakeholders of CCHS, peer tutoring through YTeach can be very effective and should be enjoyable to use; it will allow students to catch up with their coursework, ask pertinent questions with greater comfort, and build ties (Tomkinson, 2021). Therefore, CCHS must implement the YTeach platform in a way that meets course objectives, sets fair rules, and allows for a flexible and fun learning opportunity. In addition, faculty should experiment with different peer pairings to find the best possible match.

Recommendation for Flexible Reading Options

Motivating students to read is a major challenge for educators. One of the best ways to

improve motivation in reading courses is by allowing students to choose what they would like to read. Giving reading options to students can raise interest and engagement. This would increase effort, learning, and performance (Waterford, 2018). When students elect their reading materials and participate in independent reading assignments, they will read more, write better, attain higher scores on standardized tests, and increase their reading comprehension and academic achievement levels.

In addition to selecting reading materials, students could personalize their reading assignments, fostering a sense of engagement and ownership in their learning. However, doing so would require access to various electronic hardware, software, and websites/apps to make the most of personalized learning (Kumar & Mehra, 2022); this method of personalized learning and flexible homework options would work better as a supplement to traditional classroom instruction rather than as a substitute. According to Kumar and Mehra (2022), “this approach is more sustainable because it does not require the schools to change their existing class instructions, and students do not need to devote extra time beyond the regular school time” (p. 4).

Formats in reading can also yield different levels of reading comprehension results. In the ever-more interconnected world, people of all ages are expected to at least be familiar with technological resources that could affect how work and study are performed. In education, it is not surprising that reading from a screen may be a preferred reading method for some. According to Clinton (2019), reading from a screen had a negative effect on reading performance compared to paper, though no major differences were found in reading time. Therefore, students should be aware that reading on paper is more efficient, and comprehension can be improved relative to reading from an electronic device.

Lastly, it is important to note that reading and homework choices should be implemented with parameters for students to work within, such as meeting certain requirements set by the teacher and course objectives. Nevertheless, the options offered should be broad enough to allow flexibility, but not too narrow where students feel they do not have autonomy. As the habit of reading begins to grow with time, students' vocabulary will expand, and they will be introduced to new material they may be interested in.

Recommendation for Restructuring Professional Development for Teachers

Since all subject areas require reading to different extents, improved skills in reading can translate to better performance throughout the program curriculum. As a college preparatory school, better student performance can increase students' chances of acceptance to the college or university of their choice. Thus, faculty must be well-equipped to successfully teach and reinforce reading comprehension for their students; the school's administration must offer ample professional development opportunities to address any difficulties and limitations that ELA students may experience.

According to Chamba and Ramirez-Avila (2021), one approach that ELA teachers can take to help students raise reading comprehension is by helping them grasp the main idea of a text by stopping reading until the information is found to answer a specific question; this method is known as "skimming and scanning" (p. 22). Skimming and scanning extend "students' word recognition through classifying new vocabulary into parts of speech and applying reading skills" (p. 25). Using this method to boost reading comprehension, student performance can improve by an average of 28.2%, and students' perspectives on this strategy turn positive (Chamba & Ramirez-Avila, 2021).

In addition, faculty should be familiar with educational apps, websites, and other

resources with a proven effectiveness record. For example, Epic Books, Storyline Online, Freckle, Newsela, Commonlit, ReadTheory, and the Smithsonian Tween Tribune, provide a plethora of engaging, differentiated activities for students in reading, many of which are free for educators (Marquez, 2022). In order to enhance vocabulary and expression, there is Freerice, which is a vocabulary game created by the United Nations World Food Programme. The Academic Phrasebank, a writing resource by the University of Manchester, can assist with orderly writing and creative ways to write phrases, and the website, Vocabulary.com, which offers a vast library of materials and resources that align to content and curriculum that are ready-made (Teaching Resources, 2022).

Because technologies have profound uses in education, faculty can help boost the reading skills of their students by setting, monitoring, and achieving goals (Burik, 2021). Teachers, along with help from available technologies and student input, can help attain morale-boosting events, such as reading events and celebrations. For example, classrooms can exhibit the material that students have read, and when certain goals and milestones are met, students could have a mini celebration to commemorate their achievements. In addition, feedback from students can help in planning events to showcase their work. By having students be hands-on in the course while allowing some autonomy in managing their learning, a strong incentive for them to succeed can be created.

Also, faculty must understand the power behind guest speakers and lectures. Inviting guest speakers can be a great way for students to learn from others' experiences. Students tend to perk up when an unorthodox teaching method is exposed to them since they expect the bulk of information to come directly from the professor or the textbook/s. By providing an outside person to instruct students, it can help distract from the routine, reinforce what may have been

taught, could offer new information that can supplement the course objectives, influence a student's career choice, and may provide a distinct point-of-view to the material being taught (Varvel, 2022). In today's digital age, guest speakers and lectures can be in different formats, in-person or virtual, through phone or video.

The options that educators have to bolster instruction are limitless. Therefore, it is crucial for administration and teachers to thoroughly review the best resources available that can be afforded and offered to its students. It is critical to have regular PD trainings to keep the stakeholders updated with usage and feedback. It is also important to ensure stakeholders have the skills to navigate the tech resources they need. Lacking this foundation can render future efforts difficult to implement if assumptions are made about skills and experience that may not be true for all.

Roles and Responsibilities of Stakeholders

The roles and responsibilities of stakeholders must be disclosed to solve the problem of this research study. It is essential to offer a plan for how the recommendations would be put into effect and who would be in charge of each given task. The roles and responsibilities for improving tutoring, offering flexible reading options, and revamping professional development for teachers are explained in this section.

Tutoring

In order to solve the problem of low Reading scores on the MAP Growth, it is recommended that improving tutoring be implemented at CCHS. Identifying the roles and responsibilities of those involved in planning tutoring is important for success.

Administration

The administrators' role is to determine efficacy and goals based on faculty and student

input. The administration will oversee the process of implementing tutoring and how it progresses to support student growth through student tutor and faculty feedback. The implementation of a successful tutoring process is needed based on student survey feedback. In order to see improvements in tutoring, a thorough analysis of the people and resources involved, time, and patience are required.

According to Alam (2012), the following should be considered:

1. Evaluate and employ the right balance of in-person, adaptive learning, and other intelligent tutoring systems to offer optimal flexibility for students.
2. Allow faculty to collaborate with administrators to find and adopt the best tutoring approach for their students.
3. Reform tutoring practices in a way that seizes what works well while reducing anything that is deemed unproductive.
4. Make full use of technological resources to complement the YTeach tutoring platform that are enjoyable and financially feasible to obtain.

The approach that should be taken to allow students the best tutoring experience possible should be collaborative rather than "top-down". When faculty provides tutoring ideas and concerns, with administrators serving as facilitators, CCHS can expect a more streamlined planning process and a more valuable learning process for students.

Faculty

In a time when technological advancements to access information have greatly impacted how the education sector operates, students have come to embrace the conveniences they bring, and teachers must welcome the opportunity for instructional adaptation. However, it is understandable that teachers may have questions, concerns, and reluctance to employ certain

tutoring resources that they may be unaware of or do not have experience using. Nevertheless, faculty should familiarize themselves with the available options and choose the appropriate method.

According to Guido (2017), among the plethora of tutoring strategies, teachers can assist in creating a successful peer tutoring methodology by including role-playing, creating a gamified and reward system for tutors, helping students who may lack tutoring skills and providing proper feedback, have all students take turns teaching, partner with another teacher and class to learn off one another's skills, and focus on active learning. It is important to begin with the most viable and easiest method and to work the way up as a way of having a learning environment that is continuously improving.

Due to various factors, there is no correct way to prepare tutors or teach a particular class. Applying at least some of the strategies mentioned could help teachers see how tutors and tutees are performing. The results can determine the practices' effectiveness and where the focus should lie. Faculty would "trial and error" before arriving at an approach that works best for their course/s.

Students

Peer tutoring can be a unique experience for all students. Those who do best in the classroom may be pressured to become tutors, those who need tutoring may feel that they are behind and could lose motivation, and teachers must determine whom to nominate and pair up with; either one could become stressors. This disadvantage for students can include a lack of experience, hesitation, not knowing how to apply themselves, lack of confidence, and concerns from parents about how or if peer tutoring would be successful (Guido, 2017). However, these are normal reactions to changes and new teaching strategies.

When executed correctly, peer tutoring can lead to higher literacy scores, improved reasoning, critical thinking, interpersonal skills, greater confidence, and more versatility when tutoring different subjects (Guido, 2017); current research supports these benefits regardless of the frequency with which they occur. With practice, student tutors will become much more comfortable and effective in helping their peers while enhancing personal skills. In turn, the course's objectives are more likely to be thoroughly met.

Reading Options

To solve the problem of low Reading scores on the MAP Growth, it is advised that flexible reading options be implemented at CCHS. Identifying the roles and responsibilities of those involved in providing reading options is critical for success.

Administration

Administrators must have an effective resource management system for their schools. Concerning reading options, they must support teachers with flexibility while meeting curricula and state requirements. According to American University (2022), school administrators can begin improving learning by asking questions and collaborating with ELA teachers to decide what the goals, priorities, and critical areas of need are. Also, administrators must analyze available resources and justify their costs; those resources must be managed and allocated properly.

By leveraging relationships within the school, effective communication, working as a team, making decisions that address faculty needs and student outcomes, proper budget management, and creating and sustaining a strong support system, administrators can fulfill their essential role as education leaders, thus leading to a boost in learning outcomes and morale for its faculty and students.

Faculty

Teachers have first-hand experience with their students' personalities and learning styles. By knowing how their students learn and interact, faculty members can make more informed decisions about their teaching styles. In ELA courses, it is critical to make reading and writing an enjoyable experience for students, especially since it may not be the course/s that students like best. According to Slavin and Cheung (2022), an effective reading program utilizes computer-assisted instruction and instructional processes, such as cooperative learning and strategy instruction.

By applying these strategies of individualized, flexible, and adaptive instruction. ELA students can become much more engaged in their assigned and chosen reading while improving skills in reading, writing, and vocabulary (Slavin & Cheung, 2022). Therefore, giving students reading options that suit their interests could be a successful approach that could significantly improve reading, writing, and spelling skills, leading to greater MAP Growth – Reading scores.

Professional Development

To solve the problem of low Reading scores on the MAP Growth, it is recommended that a restructuring of professional development be implemented at CCHS. Identifying the roles, responsibilities, and contributions of those involved in professional development is crucial for success.

Administration

School administrators must see that their employees are well-equipped to perform their job requirements thoroughly and successfully. In addition to onboarding for new employees, current employees must be kept abreast of information critical to the school's mission. Doing so requires the attendance of professional development sessions and workshops. However, with

many options, school administrators must concisely overview which programs may work best for its faculty while being financially allowable.

Training in the essential areas of education, such as diversity, verbal communication, and empathy, among others, is critical for academic success, but it is seemingly not enough as virtually all fields are implementing information and communication technologies more and more. According to Fernandez-Batanero et al. (2019), more than ever, teachers need to reinforce their digital competencies and can do so through professional development opportunities. School administrators must realize that said technological resources are playing substantial roles in improving work and educational processes; some teachers may find competencies in this area to be challenging. Therefore, this area of education should be an integral part of a strong commitment to professional development programs.

Faculty

Many faculty members may feel they are performing their duties well, often without realizing that a new or better way of doing things may be available for them. Thus, it is important to become fully aware and familiar with the necessary knowledge to directly impact students. Faculty must also be vocal about their experiences in the classroom so that the administrators can assist in making current practices better; input from faculty and staff should be treated with very high regard.

When deciding on PD, faculty should consider the collaborative environments that may work best for them, including online sessions or in-person seminars and workshops. Also, they should consider how impactful any training may be, as planning for professional development is vital, especially for new teachers. According to the United States Department of Education (2015), up to 17% of new teachers may leave before their fifth year. By embracing new

opportunities for professional growth and engaging with fellow mentors, they could lessen learning curves for faculty, increase accomplishments, and boost the chances of teachers staying longer.

Resources Needed

The resources required to help solve the problem for this research study must be considered. It is extremely important to offer a plan for how the needed resources would be secured, which is explained in this section.

Tutoring

Educators have highly diverse experiences and attitudes about the courses they teach. Besides teaching course materials, they must serve as role models and provide advice and support to students whenever possible; this is especially important in tutoring and assisting the student tutors. For student tutors, the incentive of acquiring community service hours is especially appealing, and faculty must have resources that allow for student-centered pedagogies. According to IXL (2022), ELA students should have skills in grammar, analyzing passages, using contexts, editing and revising, vocabulary, writing strategies, roots and affixes, and phonics, among others. IXL is a powerful resource that CCHS students currently have at their disposal but could be better introduced and explained so that it is viewed as a fun and engaging way to learn rather than being burdensome.

Also, an abundance of free resources may work to different degrees. Therefore, stakeholders need to be consistently informed of what is available and how to make reading a much more enjoyable experience. Student feedback is also critical to determine what works best for them. These resources are the most cost-effective that can be implemented, where the school has nothing to lose by experimenting with them and everything to gain. Resources that are

available for a fee may have more features but may be more difficult to do away with, especially if they are contractual. For these reasons, the costs involved with tutoring can vary widely, so it is best to start with free options and work up if needed.

Reading Options

With the help of the internet, online reading resources have become a convenient way to find, subscribe, reserve, buy, download and rate books, magazines, blogs, and articles, among many other sources of reading material. It also prevents accumulating a collection of physical reading materials and wasting time going from one location to another to find what is needed. However, due to copywritten content, access may come at a cost that cannot be afforded or desired.

Therefore, when requiring or recommending particular reading materials, it is essential to carefully review potential downsides, such as lost time, limited attention and interest, opportunity costs in neglecting another area of focus, and financial costs, among others (Ceniza-Levine, n.d.). Nevertheless, the potential for improving reading comprehension through student choice can be high, but it requires a thorough overview and delicate choice/s when a decision is finally made.

Also, books and other reading sources are easy to obtain. The challenging part is finding a selection that is written at the appropriate grade level, interesting to read, and meets the objectives of the course/s. Therefore, it is important for the faculty to arrange reading materials by genre, author, grade level, and to recommend reading options that have worked well in the past, which could be completed during planning days. Doing so would allow students to make reading selection much easier and faster. In turn, it could save time by having them read right away and allowing teachers to plan, prepare, and add supplemental resources to reinforce

learning throughout the course and curriculum.

Professional Development

A quality PD program is crucial to developing good teachers and improving student learning. These programs should be available for faculty and any staff member who directly interacts with students. To begin, the school must fully understand the current standards, curriculum, teaching strategies, textbooks, and available assessment and feedback data. In addition, everyone who works with students must be able to interact and engage skillfully to share ideas and concerns and work with the administration to set a long-term plan for student achievement.

According to Learning First Alliance (n.d.), PD resources should allow for changes to occur in stages, activities should be tailored rather than standardized, allow self-evaluation, and have sufficient time to define the outcomes of the program/s. Many companies currently offer the necessary PD training materials for individuals and teams, while others offer overviews, ideas, topics, and activities, which can vary considerably in cost and program time lengths. Organizations such as Growth Tactics, MITx, Coursera, Future Educators, PBS, Indeed, and the National Education Association, among many others, offer free training courses, certificates, and micro-credentials (Deng, 2022), which could be of great interest and benefit to the faculty and staff of CCHS.

Timeline

A plan for when the recommendations are to be achieved is necessary to help solve the problem for this research in an orderly manner. The timeline for revising tutoring, providing adequate reading options, and restructuring any professional development opportunities are described in this section.

Tutoring

Enhancing peer tutoring will take approximately four months to achieve. See Table 5 for the timeline of tutoring implementation.

Table 5

Timeline for Implementing Tutoring

Date	Action Items
April 3, 2023	The administration will present any tutoring feedback and all challenges to current tutoring practices.
April 25, 2023	Faculty should have a list of what is working with current tutoring practices and what concerns are present.
May 16, 2023	Faculty and administration should have a list of options to implement and the cost for each.
June 6, 2023	Options that are chosen and items of training will be discussed.
July 7, 2023	Teachers would take this time to review effective tutoring practices.
August 8, 2023	The faculty and administrators will make a final confirmation on tutoring strategies and how student tutors will be trained for the upcoming school year.

Reading Options

Implementing reading options will take approximately three months to achieve. See Table 6 for the timeline for the implementation of reading options.

Table 6

Timeline for Implementing Reading Options

Date	Action Items
May 1, 2023	ELA faculty will present the administration with current achievements.
May 24, 2023	Faculty and administrators will discuss the pro and cons of offering reading options.
June 16, 2023	Summer reading options will be offered as a test run.
July 10, 2023	Possible reading options and associated costs will be reviewed.
August 2, 2023	Faculty and administrators will make a final decision on reading plans and objectives.

Professional Development

Professional development restructuring would take approximately five months to achieve. See Table 7 for the timeline of professional development implementation.

Table 7

Timeline for Implementing Professional Development

Date	Action Items
March 13, 2023	Administrators will review possible PD options.
April 7, 2023	Administrators will ask for feedback about areas of need.
May 1, 2023	The administration and faculty will brainstorm ideas and possible PD offerings.
May 26, 2023	First PD training is scheduled for faculty and staff.
June 20, 2023	Post-training review and feedback from faculty are collected.

July 14, 2023	Second PD training is scheduled for faculty and staff.
August 7, 2023	Second PD training prior to the start of the school year.

Summary

The purpose of this study was to provide recommendations to solve the problem of low Reading scores on the MAP Growth test at CCHS in Florida. The problem was that 52.7% of the students at CCHS that took the MAP Growth test during the 2021-2022 school year did not meet or exceed their projected growth in Reading (CCHS, 2022). This chapter of the report presented the Recommendations, the Roles and Responsibilities of Stakeholders, Resources Needed, Timeline, and Summary. Three recommendations were made: improving tutoring, offering flexible reading options, and revamping professional development for teachers.

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Appendices

Appendix A

February 18, 2022

Subject: Permission to Conduct Research

To Mr. Luis M. Villanueva:

With great delight, we are granting your request to conduct your doctoral capstone research project on our campus.

We would be happy to work with you and grow our abilities to help students grow academically and spiritually. Please find the attached copy of our agreement. I have retained one for our files as well.

I look forward to discussing how to move forward with your project. For further inquiries, you can reach me via my information below. Thank you again for your collaboration.

Sincerely,

[redacted]

Appendix B

Interview Questions

1. What resources are available for students to help them study outside regular class hours?
2. How would you compare the performance of students involved in extracurricular activities to those not involved?
3. How effective are the websites and apps that CCHS is currently using?
4. If the student newspaper, The Log, featured math and science puzzles to help students practice their skills, how much would they impact student outcomes?
5. How even are the academic outcomes among the different student demographics?
6. How impactful are the current classroom technologies on student outcomes?
7. How do students' cultural backgrounds play a role in their grades?
8. If the admission standards by CCHS were more selective, how much of a difference do you believe it would make?
9. What are the most frequent barriers to learning that the students express regarding tutoring being handled?
10. How well are the courses taught at CCHS enabling critical thinking?

Appendix C

Survey

Instructions: Choose the best response for each question below.

1. What is your racial/ethnic background? (Check all that apply)
    A. White
    B. Black
    C. Latin or Hispanic
    D. Asian
    E. Native American
    F. Native Hawaiian or Pacific Islander
    G. Other/Multiracial
2. Besides English, which languages can you speak comfortably? (Check all that apply)
    A. Arabic
    B. French
    C. Hindi
    D. Japanese
    E. Mandarin
    F. Portuguese
    G. Russian
    H. Spanish
    I. Other
    J. None

3. What academic courses pique your interest? (Check all that apply)
    A. Art/Music
    B. English/Language Arts
    C. Mathematics
    D. Natural Sciences (i.e., biology, chemistry, environmental science, physics, etc.)
    E. Social Sciences (i.e., economics, geography, history, psychology, etc.).
    F. Other
4. Which of the following learning styles do you feel you learn better with? (Check all that apply)
    A. Visual (Spatial)
    B. Aural (Auditory)
    C. By doing (Kinesthetic)
    D. Verbal (Linguistic)
    E. Social (Interpersonal)
    F. Logical (Mathematical)
    G. Naturalistic (From your surroundings)
5. Which learning approach/es do you prefer? (Check all that apply)
    A. Mostly on your own (teacher as facilitator)
    B. In groups
    C. Traditional classroom instruction
    D. Hybrid instruction (part on-campus, part online)
    E. Academic Fairs, Guest Lectures, Field Trips
    F. Other

Survey Prompts

Instructions: Choose the best response for each statement below.

6. The teachers at CCHS have the necessary skills to handle the needs of students.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

7. CCHS provides the necessary accommodations to students when needed.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

8. CCHS offers the resources that students need for their success.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9. CCHS cares about its students.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

10. The tutors' abilities are adequate for the students' needs.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

11. CCHS encourages its students to get involved in extracurricular activities.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

12. CCHS resolves issues within a reasonable amount of time.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

13. CCHS provides flexible help to students.

5	4	3	2	1
Always	Usually	Sometimes	Rarely	Never

14. The academic requirements that students need to follow are reasonable.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

15. CCHS is properly staffed.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Appendix D

Confidentiality Agreement

Confidentiality Agreement

This agreement is between:

Luis Villanueva, Liberty University
and
Christopher Columbus High School (CCHS)
for
Doctor of Education Capstone Project

Summary of job description/service provision:

To help solve the problem of low MAP Growth Test scores for 9th and 10th-grade students.

I, Luis M. Villanueva, agree to:

1. Keep all the research information shared with me confidential. I will not discuss or share the research information with anyone other than CCHS leadership and my course professors.
2. Keep all research information secure while it is in my possession.
3. Return all research information to CCHS when I have completed the research tasks or upon request, whichever is earlier.
4. Destroy all research information regarding this research project that is not returnable to the CCHS after consultation.
5. Comply with the instructions of CCHS about requirements to physically and/or electronically secure records (including password protection, file/folder encryption, and/or use of secure electronic transfer of records through file sharing, use of virtual private networks, etc.).
6. Not allow any personally identifiable information to which I have access to be accessible (unless specifically instructed otherwise in writing by CCHS).

Researcher:

Luis Villanueva — Print Name

[redacted] — Signature

2-18-22 — Date

CCHS staff agrees to:

1. Provide detailed direction and instruction on expectations for maintaining the confidentiality of research information so that Luis M. Villanueva can comply with the above terms.
2. Provide oversight and support to Luis M. Villanueva in ensuring confidentiality is maintained consistently and in accordance with

Research Staff:

[redacted] — Print Name

[redacted] — Signature

2-18-22 — Date