6-2020

Is Critical Thinking Really Critical? A Research Study Of The Intentional Planning For The Teaching Of Critical Thinking In The Middle Grades

Michelle Smith

IS CRITICAL THINKING REALLY CRITICAL?

A Research Study of the Intentional Planning for the Teaching of Critical Thinking
in the Middle Grades

Michelle Smith

Educational Leadership Doctoral Program

Submitted in partial fulfillment

of the requirements of

Doctor of Education

in the Foster G. McGaw Graduate School

National College of Education

National Louis University

April, 2020

IS CRITICAL THINKING REALLY CRITICAL?
A Research Study of the Intentional Planning for the Teaching of Critical Thinking in the Middle
Grades

Dissertation Hearing

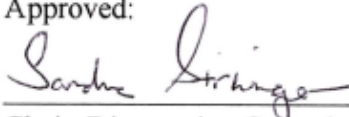Submitted in partial fulfillment
of the requirements of
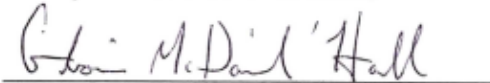Doctor of Education
in the National College of Education

Michelle Smith

Educational Leadership Doctoral Program
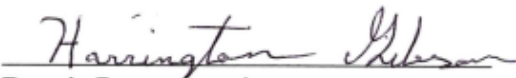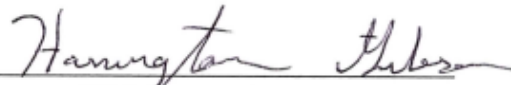

Approved:

_____
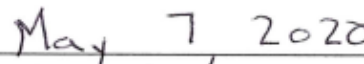Chair, Dissertation Committee

_____
Member, Dissertation Committee

_____
Dean's Representative

_____
Director, EDL Doctoral Program

_____
Dean, National College of Education

May 7, 2020
_____
Date Approved

ABSTRACT

Critical thinking is an integral part of human life. However, it is not intentionally planned for and implemented in most public educational institutions. Due to this lack of planning, not everyone thinks critically. Critical thinking is a skill that must be fostered and developed over a period for it to be applied consistently. Individuals who exhibit critical thinking are increasingly likely to be successful in life.

This study focused on the teaching of critical thinking and was conducted at Wildcat Middle School, located in a suburb of Chicago, IL. The research examined the extent to which teachers intentionally planned for teaching critical thinking and the instructional materials they used to enhance student critical thinking skills. The participants at Wildcat Middle School indicated that critical thinking is of tremendous value to the students. However, there is still a notable gap in Wildcat Middle School when it comes to the full implementation of critical thinking in the learning process.

The adoption of policy measures is necessary to ensure the integration of critical thinking into daily instruction. One of the proposed policies recommends internship programs for students in middle schools. Another suggests the amendment of two current Board policies. Each policy would be updated to reflect the inclusion of the teaching of critical thinking. Implementation of such educational policies will go a long way in ensuring that critical thinking is fully incorporated into the classrooms at Wildcat Middle School and beyond.

PREFACE

I am currently the Superintendent of Smithville School District, located about 10 miles west of Chicago, Illinois. Prior to becoming superintendent, I was the principal of Wildcat Middle School located in Smithville. As the principal of Wildcat Middle School, I regularly observed classroom instruction. After a few years of observing instruction and reviewing historical data, I noticed that large percentages of students were not engaged in classroom instruction and showed minimal growth on standardized assessments. I was faced with the important challenge of fixing a system that was not serving students well.

The first step in addressing this challenge was to determine the cause of the disengagement and low test scores. My observations of teachers and my research leading to this study, point to one key area; critical thinking. As I observed instruction, I continued to notice a disturbing trend across all grades and content areas. Students were not asked questions that required thinking. Most of the questions asked during instruction were low-level inference questions. Answers to other questions were explicitly stated in the text. All questions followed a single path of inquiry which led to the one correct answer. It is also important to note that while teams of teachers were usually teaching the same content, they did not use the same materials. This often led to a difference in the quality of the questions asked.

The purpose of my research was to determine the extent to which teachers intentionally plan activities that promote critical thinking. As a part of planning, it was also important to determine what materials teachers used that required students to think beyond the literal level, how comfortable they were with teaching critical thinking, and their view on the importance of being able to think critically.

ACKNOWLEDGMENTS

The process of completing my dissertation felt like more of a passion than a requirement. However, I would have not been able to explore my passion without the support, guidance, and efforts of some very important people. My deepest gratitude is extended to Dr. Sandra Stringer, my dissertation committee chairperson, and Dr. Gloria McDaniel-Hall, a member of my dissertation committee, for their continued support and positivity. I am honored to have had both of you as members of my dissertation committee.

I would also like to extend my sincere gratitude to the exceptional National Louis University faculty who guided me through this program. Your knowledge and wisdom not only were instrumental in helping me complete my dissertation, I am a better administrator because of being a student in your classes.

It was ultimately my work with the Wildcat Middle School staff and students that lead me to pursue my doctorate. Thank you for believing enough in my topic to agree to participate in my research study. I want nothing more than to see you and the students we serve experience continual success.

Miles, the last three years have been a balancing act as we both got new positions. But somehow, it all worked out. The late nights and long weekends when I was working on my dissertation did not simply happen; this was a huge sacrifice and I am blessed and without words to express how thankful I am. It was not always easy, but you never made it hard.

Finally, I want to acknowledge my daughter, Meisha. Thank you for sacrificing time with me to allow me to finish this project. The completion of this dissertation is my reminder to you that all things are possible if you believe. As with everything I do in education, I wrote my

dissertation with you in mind. Because I think you deserve nothing but the best, I insist on the

best for all the students that I serve. I love you!!

DEDICATION

To my mom, Stella. This project represents all that you have instilled in me. It is my job to advocate for the rights of every student to have access to the best education possible. Thank you for being dedicated to your job and serving others for over 40 years. You consistently modeled work ethic, commitment, and service to others. Your hard work inspired me in ways that you will never know.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

Purpose

Everyone assumes that thought is driven by human nature. However, much of our thinking is left to itself. It can be biased, distorted, partial, uninformed, or downright prejudiced (Paul & Elder, 2002). Paul and Elder (2002) go on to state, "The quality of our lives and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated" (p. 4). Demirel and Can Aran (2017) believe that thinking is one of the most significant features of humankind, as well as an inherent part of our daily lives. We encounter complex problems throughout our lives, and they require high order thinking skills (Demirel & Can Aran, 2017). One such skill is known as critical thinking. Critical thinking is vital for success in our complex world.

This history of critical thinking dates back 2,500 years ago. Socrates, a Greek philosopher, discovered that people were unable to rationally justify the claims and stereotypes they proclaimed to be true. According to Paul, Elder, and Bartell (1997), Socrates established the importance of asking deep questions that probe profound thinking before we accept ideas as worthy of belief. Socrates laid the foundation for reflectively questioning common beliefs and explanations, as well as carefully distinguishing views that are reasonable and logical from those which lack concrete evidence or rational foundation. He also established the importance of seeking evidence, closely examining reasoning and assumptions, analyzing basic concepts, and tracing out implications of not only what is said but what is done, as well (Paul et al., 1997). Socrates' method of inquiry is known as "Socratic Questioning." Socrates's practice was

followed by Plato and Aristotle, both of whom emphasized that things are often very different from what they appear to be.

While no universal definition of critical thinking has been identified, "Critical Thinking Skills" (n.d.) can be understood as the ability to think clearly and rationally and understand the logical connection between ideas. Alwehaibi (2012) summarized critical thinking as the ability to not only acquire knowledge but also make sense of new information. Ennis (1987) defines critical thinking as reasonable and reflective thinking that is focused on deciding what to believe or do. Critical thinking focuses on problem identification and problem-solving. It is a rational response to questions that cannot be answered definitively and seeks to explore situations to arrive at optimal and justifiable hypothesis or conclusion (Reinstein & Bayou, 1997). Critical thinking is the art of analyzing and evaluating thinking with a goal to improve it (Elder et al., 2002). Elder (2002) goes on to state that it is self-directed, self-disciplined, self-monitored, and self-corrective thinking.

The emphasis on critical thinking skills in students of all ages has grown within the past ten years. It was nearly 30 years ago that researchers, psychologists, and educators began to emphasize the significance of this skill. Improving students' critical thinking skills is widely referenced as one of the most important outcome predictors within the educational setting (Bok, 2006). Business leaders and educational institutions have acknowledged the need for students to think and reason critically. The 21st century, with its global, social, economic, environmental, educational, and technological challenges, does not demand the teaching of obsolete facts. Rather, it fosters critical thinking skills at all levels of education (Facione & Facione, 1994). The changing nature of jobs due to technological advancements require employees capable of

thinking critically and possessing transferable (Sternberg, 2013). Therefore, the abilities to learn effectively and think critically are essential for students at every level.

Given the significance of critical thinking, we need to ensure that students at all grade levels are exposed to it daily via school assignments and activities. The purpose of my research is to highlight the extent to which middle school students are intentionally exposed to activities and resources that require them to think critically.

My research will be conducted in the Smithville School District at Wildcat Middle School. Smithville is situated approximately 10 miles outside of Chicago and is comprised of three elementary schools and one middle school. In 2018, there were 200 teachers in the district and 2,888 students in grades K-8. Eighty-eight percent of the students enrolled in the district received free or reduced lunch. Nineteen percent of the students in the district were labeled as needing special education services, and 32% were English Learners. The district had a mobility rate of 10%. Racial/ethnic percentages are: White 5%; Black 12%; Hispanic 81%; Asian 1%; and Other 1%.

Wildcat Middle School was the largest school in the district, with 72 full-time teachers and 969 students in grades 6-8 during the 2018–2019 school year. Eighty-nine percent of students were considered low income. Seventeen percent of students had an Individualized Education Program (IEP) and 19% of students were English learners (EL). The racial makeup of the student population at Wildcat mirrored that of the entire district.

As a principal in Smithville, I have observed the plethora of instructional changes that have taken place in the district to improve academic performance. The district has implemented guided reading, instructional rounds, Achieve 3000, MTSS, co-teaching, and too many other initiatives to list. To date, none of those efforts have produced system-wide changes that have led

to consistent improvement. A discussion of critical thinking and how it impacts academic development is also missing from the conversation. My research aims to bring awareness of the need for critical thinking and to provide ideas on how it can be easily incorporated when planning lessons.

Rationale

The development of critical thinking is often listed as the most important reason for formal education (Marin & Halpern, 2011). Although most educators agree that critical thinking skills are vital for future success, many students are leaving the K–12 education system lacking critical thinking skills. These skills are necessary to succeed in higher education and the workplace (Smith & Szymanski, 2013). In their 2015 report, the American Association of Colleges and Universities (AACU, 2015) found only 26% of employers believe students to be prepared for the workforce in the area of critical thinking and analysis. Stitt (2015) states, "A survey posted on CampusTech.com showed what many people have been saying for years: high school students are not being prepared for college or jobs" (para. 1). The survey shows explicitly the following:

1. Many students have adequate verbal skills and work well in a team environment. However, students don't think critically, can't comprehend complex materials, have poor work and study habits, and cannot write at the requisite level.
2. Eighty-two percent of instructors found less than half or none of their students had basic critical thinking skills and were not slightly prepared for college.
3. Quoting from the survey, "Neither university faculty nor employers believe that American public high schools are preparing students for the expectations they'll face in college and career."

4. Only 14% of college instructors found the latest group of high school graduates to be prepared for college. Only 29% of employers felt that students had the skills needed to enter the workforce.

5. For students attending a 2-year college, the news is even more disappointing. Four percent of instructors find students "most generally able to do what is expected."

6. Fifty-four percent of students surveyed said classes only "somewhat challenged" them, and one-fifth said they could "slide by." Yet, 53% of students believed they were "extremely or very well" prepared.

Business leaders have repeatedly insisted that schools do a better job of teaching students to think critically. In addition, organizations and initiatives involved in education reform have pointed out the need for students to think and reason critically. The College Board recently revamped the SAT to assess students' critical thinking better. Additionally, the ACT, Inc., offers a test of critical thinking for college students (Willingham, 2008). The importance of critical thinking is further confirmed in a recent research study conducted by the Educational Testing Service (ETS, 2013). In this research, provosts or vice presidents of academic affairs from more than 200 institutions were interviewed regarding the most commonly measured general education skills. Critical thinking was evidenced to be one of the most frequently mentioned competencies considered essential for both academic and career success.

The ability to think critically is essential for success in our world. Indeed, the rate at which new knowledge is created is accelerating by the minute. Critical thinking enhances academic growth; the more it is integrated into content instruction, the more students will analyze the concepts they are learning (Swartz & Parks, 1994). Given the vast amount of information that is available to today's learners, care must be taken to think critically about what

one hears and reads. There is a plethora of websites with information on millions of topics. It is important to note that not all available information is of equal value or even equal validity. Future success depends on the student's ability to think critically about information.

Smithville has implemented several district-wide strategies to increase academic achievement. One such strategy is the development and implementation of a horizontally and vertically aligned curriculum. The horizontal alignment is designed to ensure that teachers in the same grade level across the district are teaching the same content. While the vertical alignment ensures that from grade-to-grade teachers are teaching according to grade-appropriate standards. Ideally, this should produce increases in achievement across all grade levels in the district.

I examined data from the Partnership for Assessment of Readiness for College and Careers (PARCC) and Illinois Assessment of Readiness (IAR) (formerly PARCC, now IAR) assessment, which is administered to students in Illinois in grades 3–8. This assessment was chosen because it is a measure of the extent to which students think critically. PARCC is considered a modern assessment of competency in higher-level critical thinking and problem-solving skills (Fulciniti, 2018). Fulciniti (2018) further states, "The exams don't just test content, they test the development of skills that help students succeed (para. 10)." In addition, the PARCC/IAR assessment is used to determine college and career readiness skills. College ready skills include writing well-structured essays, following through with mathematical formulas, being able to use the scientific method, and the like. There are additional skills that are not necessarily taught directly but help in both college and career readiness (and life). These skills include critical thinking, problem-solving, time management, decision-making, communication, and networking (Wignall, 2019). PARCC tests were developed for a collective of states and pledged to reward critical thinking and problem-solving with more sophisticated questions

(Engdahl & Gorski, 2015). The academic standards are meant to put students on track for going to college or work (Engdahl & Gorski, 2015).

The PARCC/IAR data results indicate that when the horizontal and vertical alignments were originally developed, math scores increased across all schools. Following the 2015–2016 school year, the math data has been inconsistent. English Language Arts scores showed significant increases in only two of the four schools in the early years of administration. This trend has continued.

Illinois Assessment of Readiness (IAR)
English Language Arts (ELA) Meets/Exceeds 2015-2019

	District	A	B	C	D
2015	30%	20%	27%	28%	34%
2016	36%	38%	28%	30%	40%
2017	42%	42%	29%	29%	51%
2018	41%	41%	29%	29%	52%
2019	45%	48%	27%	31%	53%
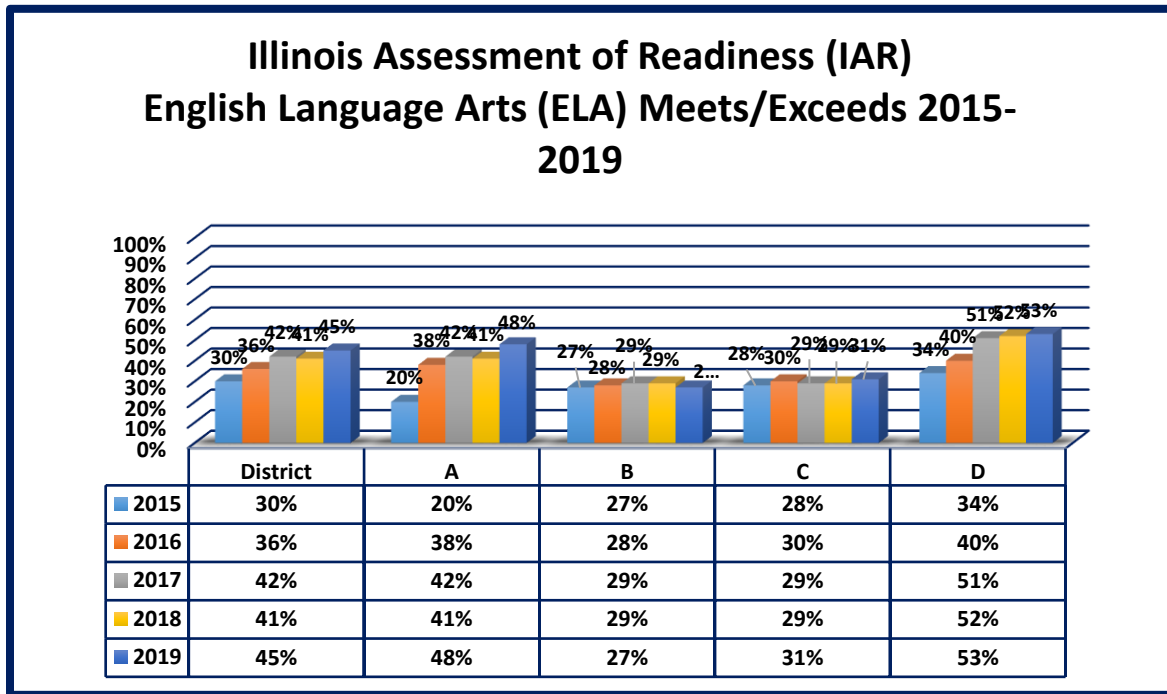
Figure 1 Percent of students who met/exceeded on the PARCC/IAR reading assessment from 2015-2019

**Illinois Assessment of Readiness
Math Meets/Exceeds 2015-2019**

	District	A	B	C	District
2015	16%	11%	11%	14%	20%
2016	22%	23%	19%	19%	24%
2017	23%	28%	17%	21%	24%
2018	26%	31%	16%	22%	28%
2019	26%	32%	20%	20%	27%
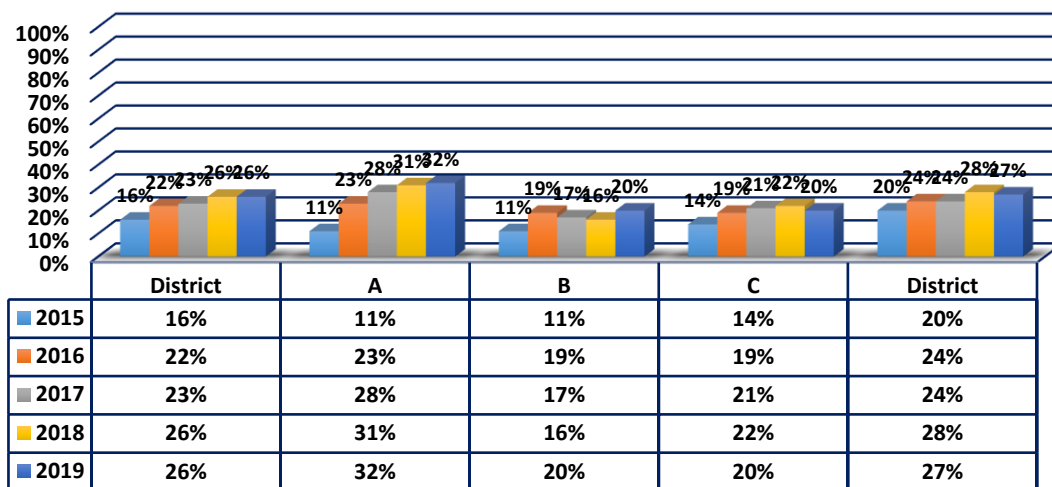
Figure 2 Percent of students who met/exceeded on the PARCC/IAR math assessment from 2015-2019

The Partnership for Assessment of Readiness for College and Careers (PARCC), now known as the Illinois Assessment of Readiness (IAR), provides each school district with an Evidence Statement Analysis Report. Evidence statements describe what students might say or do to demonstrate mastery of the standards. The analysis report places evidence statements in order on a graph from the most to the least difficult (Pearson, 2018). This difficulty order is determined by the performance level of items based on the state level (Pearson, 2018). Evidence statements where the state average points achieved versus the maximum points possible was lower are considered the more difficult categories (Pearson, 2018). The more difficult questions on the IAR are the ones that require students to think critically. Critical thinking questions tend to be difficult and different from what students are accustomed to (Paris, 2016).

Table 1 from 2018–2019 IAR shows the average percentage of students in each grade level and content area who correctly answered the difficult questions relative to the more straightforward questions. Difficult questions are at the lower end of the scale, beginning with number 1. Easier questions are at the higher end of the numerical scale.

Table 1 Percent of students who answer more difficult questions correctly versus those who answer easier questions correctly

6th Grade		7th Grade		8th Grade	
ELA		ELA		ELA	
Questions 1- 10	30%	Questions 1 - 7	40%	Questions 1 - 12	30%
Questions 11-20	40%	Questions 8 - 14	45%	Questions 13 - 24	45%
Questions 21 - 35	40%	Questions 15 - 19	50%	Questions 25 - 35	50%
Math		Math		Math	
Questions 1 - 16	20%	Questions 1 - 22	21%	Questions 1 - 22	26%
Questions 17 - 34	26%	Questions 23 - 45	45%	Questions 23 - 45	50%
Questions 35 - 50	50%				

The data shows that most students in grades 6–8 are not correctly answering the most difficult questions. In reading, grades 6 and 8 have about 30% of students answering the first 10–12 questions correctly. In 7th grade, the percent looks slightly better, with approximately 40% of students answering the critical thinking questions correctly. Math is considerably lower. Across all three grades, less than 30% of students are answering the first half of the questions correctly. Based on test results, a horizontally and vertically aligned curriculum has been minimally effective. It has not consistently increased academic achievement district-wide.

In addition to developing a horizontally and vertically aligned curriculum, the district has utilized instructional rounds. Instructional rounds are a disciplined way for educators to work

together to improve instruction (City, Elmore, Fiarman, & Teitel, 2009). Rounds are an inquiry process, and the observers are the learners. Rounds aren't designed to focus on an individual teacher. Rather, they focus on understanding what's happening in classrooms, what have we done to produce what we're observing, and how we create conditions to produce the learning we want to see. The goals of instructional rounds are to:

1. Take improvement to the next level;

2. Build a common understanding of effective learning and teaching;

3. Reduce variability in levels of instruction;

4. Focus on a single problem (usually one per year);

5. Put educators in charge of their own learning;

6. Provide data and inform professional development. (City, 2011, p. 41)

As a principal in Smithville School District, I participated in instructional rounds eight times per year for three consecutive years. Each of the four schools in the district were scheduled for instructional rounds twice per year. It was during instructional rounds that I became aware of a lack of incorporation of critical thinking skills in the schools' instruction. When we first began rounds, we were concerned by the lack of student-to-student discourse. There were not enough opportunities for students to talk to one another. By year two, we began to see district-wide increases in the amount of time students were expected to be engaged in academic conversations. After listening to the discourse, we began to question the quality of the conversation, which led us back to the quality of the assignment or question. However, there was still no discussion of critical thinking and there was no plan created for how to address the quality of the questioning.

Although rounds were designed as an improvement strategy, the data shows that they have a minimal impact on increasing academic achievement consistently. It is time for critical thinking to be a part of the improvement strategies employed by Smithville.

Goals

The goal of my work is to inspire the implementation of critical thinking nationwide at all levels of schooling. The beginning step in this large goal is my work within the Smithville School District. When Smithville is successful, I aim to change schooling, as we know it, and have all students exit schools and enter the workforce ready and able to complete the highest level of thinking and work required by the best companies. I hope that this research is the beginning of major instructional changes in our current educational system.

Within this broad goal are several small goals focused on the Smithville School District and Wildcat Middle School. One of which is to gain an understanding of the extent to which teachers believe they provide opportunities for students to think critically and to identify what materials they use to do so. Another goal is to make recommendations on how to incorporate critical thinking into daily lessons and activities. Lastly, I want to ensure that critical thinking is a part of a larger district strategy to facilitate improvement across all schools and create urgency around its implementation.

Research Questions

My research will examine how teachers intentionally plan to implement activities and ask questions that require students to think critically. I will highlight how teachers choose instructional materials and/or questions that require students to think at higher levels. I seek to answer the following research questions:

1. To what extent do teachers believe that they currently provide activities/materials that foster critical thinking?

2. To what extent do teachers know how to identify and align questions/activities that require students to think critically?

3. What are the teachers' perceived impact that their activities/materials, including those that cultivate critical thinking, have on student learning?

4. How often do teachers of the same grade level and content area discuss the implementation of activities/materials that foster critical thinking?

Conclusion

Since the implementation of the Common Core State Standards, a greater emphasis has been placed on critical thinking. In a March 25, 2014, commentary, writer and former teacher David Ruenzel asserts that the Common Core State Standards' stress on a "thinking curriculum" will require teachers, as well as students, to engage in critical thinking (Ruenzel, 2014). This emphasis has led to increased studies that show a lack of critical thinking among high school and college graduates. Paul and Elder (2002) state, "The quality of our lives and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated (para. 9)." This systematic cultivation must occur in schools every day. It is possible, with planning and training, to consistently create great thinkers. My research seeks to highlight ways in which to do so.

CHAPTER TWO: A REVIEW OF THE LITERATURE

This study focuses on the extent to which critical thinking is consistently and intentionally integrated into daily lessons at Smithville Middle School. This chapter summarizes the literature on critical thinking and is divided into the following sections: (a) the history of critical thinking; (b) the definition of critical thinking; (c) the importance of critical thinking skills; (d) the teaching/essential development of thinking skills; and (e) ways to assess critical thinking.

History of Critical Thinking

Critical thinking can be traced back over 2500 years ago to the teachings and visions of Socrates. Socrates formed the basis of critical thinking when he discovered that people could not rationally justify their claims of knowledge (Clark, 2009). Beneath all their empty rhetoric, was confused meanings, inadequate evidence, or contradictory beliefs. From these observations, Socrates concluded that it is illogical to depend on authority figures to have sound knowledge and insight. He determined that it was possible for a person to be in a position of power and, still, be irrational and deeply confused (Crenshaw, 2014). As such, he established the need for deep questioning and profound probing before blindly accepting ideas as worthy of belief.

Socrates used the idea of deep questioning to establish the need of seeking evidence, the close examination of logic and assumptions, analyzing basic concepts, and analyzing the connotation of what is said and what is done. Socrates, therefore, came up with one of the most commonly used critical thinking strategies. It is a line of questioning, commonly known as Socratic Questioning (Crenshaw, 2014). The basics of this strategy are the need for clarity and logical consistency in thinking.

Plato, Aristotle, and other Greek philosophers continued investigating critical thinking. They emphasized that for thinking to be systematic, well-reasoned, and comprehensive, one must go deep below the surface. Things are not what they appear to be, and one must look deeper to determine what is right (Behar-Horenstein & Niu, 2011). This ancient Greek tradition gave rise to a desire for those who aspired to have a better understanding of the deeper realities to think systematically. They had to trace implications broadly and deeply; the only way to go deeper is through comprehensive, well-reasoned, and responsive thinking (Behar et al., 2011).

About 50 years later, Descartes from France, wrote the second text on critical thinking, "*Rules for the Direction of the Mind*." In his book, he discussed why the thinking of the mind needs to be guided. He developed a method of critical thought based on the principle of systematic doubt (Crenshaw, 2014). Every part of thinking, he argued, should be questioned, doubted, and tested.

Other significant contributors to the understanding of critical thinking were Bayle, Montesquieu, Voltaire, and Diderot, all part of the French Enlightenment. They argued that a disciplined mind is better able to determine the nature of the social and political world. These thinkers asserted that thinking must be reflective (Crenshaw, 2014). That is, people should analyze their thinking to determine weaknesses and strengths in thought. Similar to Socrates, they also believed that all authority must be questioned.

In the 19th Century, critical thought was extended into the domain of social life, as well as applied to the problems of capitalism, the history of human culture, and the basis of biological life (it led to Darwin's Descent of Man), the unconscious mind (the work of Sigmund Freud). Additionally, it contributed to the development of the language that led to the field of linguistics

and research of the functions of symbols and language in human life (Behar-Horenstein & Niu, 2011).

In the 20th Century, our understanding of the power of critical thinking emerged to a greater extent. In 1906, William Graham Sumner published a study of the foundations of sociology and anthropology, Folkways, in which he stated the following: "Schools make persons all on one pattern, orthodoxy. School education, unless the best knowledge and good sense regulate it, will produce men and women who are all of one design, as if turned in a lathe. Orthodoxy is produced regarding all the great doctrines of life. It consists of the most worn and commonplace opinions which are common in the masses. The favorite ideas always contain broad fallacies, half-truths, and glib generalizations" (Paul, R., Elder, L., & Bartell, T., 1997, p. 4). Sumner recognized the deep need for critical thinking in life and education.

With contributions from the sciences, we have learned the power of information and the importance of gathering such with great care and precision, as well as with sensitivity to its potential inaccuracy, distortion, or misuse (Behar-Horenstein & Niu, 2011). From the contribution of psychology, we have learned how quickly the human mind is self-deceived, how easily it unconsciously creates illusions and delusions, and how quickly it rationalizes, stereotypes, projects, and scapegoats.

The many contributions to critical thought have vastly increased the tools and resources that are now available. Indeed, every discipline has contributed to the development of the critical thinking paradigm. However, over 2500 years later, the question remains, "Is Critical Thinking Critical?"

Definition of Critical Thinking

Critical thinking has been defined by numerous authors, philosophers, researchers, and educators. Although the idea of critical thinking was developed over 2500 years ago, researchers continue to disagree on a standard definition. According to Dewey (1910), critical thinking occurs when learners investigate the issues and look for new evidence to support or counter a given claim (Elder, 2016). The emphasis on how learners develop reflected skills and the cognitive processing of further information led to the development of Bloom's Taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Originally, Bloom and colleagues organized learning into six hierarchical categories: knowledge, comprehension, application, analysis, evaluation, and synthesis (Bloom et al., 1956). This was later revisited and revised by Krathwohl. Krathwohl (2002) reviewed the taxonomy based on the typology of required knowledge: factual, conceptual, procedural, and metacognitive. He relabeled the last objective as "creating" and included the skills of higher-order thinking in the previous three categories of the taxonomy: analyze, evaluate, and create (Lai, 2011).

The fields of cognitive psychology, philosophy, and education have differing definitions of critical thinking. Each field agrees that critical thinking involves the use of higher-order thinking (Willingham, 2007). The AACU defined critical thinking as "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion" (AACU, 2010). The AACU developed five phases of critical thinking, with indicators for achieving the milestones outlined in the rubric. They further developed a rubric and an assessment of learning to accompany the definition. Below is a summary of the five phases (AACU, 2010):

1. Explanation of issues: Learners describe in detail the items to be considered critically by delivering all relevant information for a complete understanding.

2. Evidence: Learners systematically analyze assumptions and carefully consider the relevance of the context.

3. Influence of context and assumptions: Learners evaluate and use information from a variety of sources to analyze or synthesize the viewpoint of the experts.

4. Student's position: Learners take into consideration the complexities of the issue when acknowledging their limitations, explaining their perspective, and they include the view of others in their hypothesis.

5. To show their ability to prioritize evidence: Learners state consequences and logical conclusions.

Cognitive psychology focuses on recognizing the intricacies behind a given issue, looking for evidence, basing one's opinions on facts and evidence, and being receptive to differing ideas (Willingham, 2007). Most cognitive-based theorists preferred to use thinking skills or higher-order thinking skills rather than critical thinking (Lewis & Smith, 1993; Sternberg, 1987). Those in the field of philosophy use the same definition while adding reflective thinking and reasoning (Ennis, 1996).

Some scholars use "critical thinking" and "higher-order thinking" interchangeably (Halpern, 1993). Still, others delineate the two (Facione, 1990). Other areas of disagreement and concern include (a) the extent to which critical thinking is subject-specific, (b) differences between expert and novice thinking in a discipline and the extent to which novices can learn to think like experts, (c) difficulties in separating higher-order and lower-order skills for instructional purposes, and (d) whether critical thinking should be considered a process rather than a set of skills (Beyer, 1985; Facione, 1984).

Richard Paul is a philosopher whose work has been cited by scholars using both philosophical and intellectual theories. He asserted that critical thinking could be defined in a variety of ways. One of Paul's definitions is "thinking about your thinking while you are thinking to make your thinking better" (Paul, 1993, p. 91). Another is defined as a unique kind of purposeful thinking in which the thinker systematically and habitually imposes criteria and intellectual standards upon a given thought, taking charge of the construction of that thought, guiding the construction of the thinking according to rules, and, finally, assessing the effectiveness of the thinking according to the purpose, the criteria, and the standards (Paul, 1993, p. 21). Paul's definitions focus on thinking as a metacognitive process and teaching others to assess their thinking.

The topic of critical thinking can be approached in a purposeful, systematic, and developmental manner (Finocchiaro, 1996). This approach proposes that critical thinking should be taught in three domains: the functional domain, the methodological domain, and the theoretical domain.

In most cases, critical thinking is expressed as a long-term, implicit goal of teachers. However, most teachers do not spend enough time trying to transfer critical thinking skills. This is unfortunate given that these skills are meant to make students wise consumers, more careful judges of character, or more cautious interpreters of behavior (Harvey, 2018). Despite the undeniable importance of this kind of thinking, it is often overlooked. Teachers must work toward improving their purposeful implementation of critical thinking questions and activities.

Practical domain

The best way to encourage the practice of psychology is by presenting students with ambiguous samples of behavior. Following this, the students should be asked to distinguish what they observe. At this point, the teacher should observe their behavior and make inferences from

their behavior. They will come to understand that interpretations are not only personal; they are also subject to bias due to the influence of values and preferences. The experience of such strong individual differences helps students to adjust to the appropriate level of confidence in their conclusions. It also helps them to be more tolerant of ambiguity, which increases the likelihood of them proposing alternative explanations (Harvey, 2018). As they gain a better understanding of scientific procedures, they become less likely to be swayed by stereotypes of off-base claims about behavior that confront us all.

Theoretical domain

The theoretical domain of critical thinking focuses on assisting students in developing an appreciation for scientific explanations of behavior. In this case, the study of psychology expands from simply understanding the content. Indeed, it adopts a more organized structure of concepts, principles, laws, and theories (Hiner, 2013). The development of theoretical skills begins in the introductory section of the course, where the primary objective of critical thinking is to apply and understand concepts correctly. For instance, when introducing students to the principles of reinforcement, you can either ask them to make up stories to illustrate the laws or you can request they find examples of the laws in the news.

When it comes to mid-level courses in the major of psychology, the concept of theoretical, critical thinking becomes more sophisticated. At this level, the study moves from the application of concepts and principles to the learning and use of theories. In this case, for instance, the teacher can provide the student with a rich case study in abnormal psychology and ask them to make sense of the situation from a different perspective. They should also emphasize the theoretical flexibility or the accurate use of existing and accepted frameworks in psychology to explain the patterns of behavior. Critical thinking in advanced courses, on the other hand, should evaluate theories and select the most useful or reject the least helpful. For instance,

students can contrast different models to explain drug addiction in abnormal psychology (Hiner, 2013). In doing so, they can select which theories serve best as they learn to justify their criticism by evidence and reason.

In higher levels of education, such as capstone, honors, and graduate courses, the application of theoretical, critical thinking goes beyond theory valuation. It focuses on encouraging students to develop a theory of their own (Leicester & Taylor, 2010). For example, students may select a complicated question about behavior and make their interpretations of the behavior based on some specific theories. In this case, the students are required to synthesize and integrate the existing theory and, at the same time, devise new insights into the behavior.

Methodological domain

Some departments allow students to develop their methodological, critical thinking abilities through the application of diverse research methods in psychology. This process starts by teaching beginning students the components of scientific methods. This is followed by the implementation of the understanding of the scientific method by identifying design elements in existing research (Leicester & Taylor, 2010). A detailed description of an experimental design, for instance, can help students distinguish between independent and dependent variables. It also provides insight as to how researchers control for alternative explanations. This step of critical methodological thinking is followed by the evaluation of the quality of existing research design and challenging the conclusions of research findings. At this point, the provision of technical support for the students is essential. It helps them feel empowered to overcome the reverence for anything in print they occasionally demonstrate.

Nevertheless, asking the student to conduct a critical analysis of a reasonably sophisticated design may be quite a challenge. They are likely to perform better if they are

provided with examples of such designs from which they can build their critical abilities and confidence. Consequently, they will be able to handle sophisticated designs (Behar-Horenstein & Niu, 2011). Allowing students to develop research designs in their independent searches prompts them to integrate their critical thinking skills.

Importance of Critical Thinking Skills

Critical thinking is one of the most vital aspects of knowledge. Its applicability spans from the classroom to nearly every other aspect of human life. From solving problems in class to facing real-world situations, critical thinking is a crucial skill that every student should endeavor to master (Miller, 2005). Essential skills of thinking teach a myriad of skills that are applicable in any case in life that requires one to reflect, analyze, and plan. It is a domain-general thinking skill that implores people to think clearly and rationally in everything they are doing. Whether it is in the field of education, research, management, or legal, critical thinking establishes itself an essential skill. Critical thinking is not limited to a certain class of people or to a specific profession; it is an asset for any career. According to Butler, Pentoney, and Bong (2017), critical thinking skills are a far better indicator for making positive life decisions than raw intelligence.

Many educational organizations include critical thinking on their list of the skills students need. The AACU, the New Zealand Ministry of Education, the International Baccalaureate, the Common Core Standards, and ACARA (Australian Curriculum, Assessment, and Reporting Authority) are just some who list this as a necessary life skill (Wabisabi Learning, 2020).

Critical thinking is also essential for reasons that appeal entirely to self-interest and for more philosophical and abstract purposes. The major importance of critical thinking skills includes logical self-defense, personal empowerment, liberal democracy, and civic duty, as well as philosophy and the search for wisdom (Browne & Freeman, 2000).

Logical self-defense

The need to develop critical thinking skills can be compared to the reason why people are compelled to learn martial arts. While some people do it for the exercise, others do it for the sporty aspects, and, most obviously, people take martial arts lesson because they need to be able to defend themselves against aggression (Browne & Freeman, 2000).

Individuals are compelled to learn critical thinking skills because, no matter how rational we are, we may be confronted by irrational people at any point in our lives. In such cases, we may need to protect ourselves and avoid getting hurt (Ruggiero, 1988). Although people do not think of it in this way, the same is for critical thinking. However, in critical thinking, we are not talking about people wanting to hurt us physically. Rather, people want to influence our beliefs, values, and actions. Self-defense in critical thinking is for protecting us against people with invested interests in getting us to believe what they want us to understand, to do what they want us to do, and to value what they want us to appreciate.

Everybody is interested in exerting their influence in the world. Parents, for instance, want to influence their children, peers wish to influence their peers, and so on. As long as we are part of a community, there is no escaping it. However, in thinking about protecting ourselves, the main focus in critical thinking focuses on powerful social institutions, such as political parties and advertising companies (Sanders, 2011). The work of these institutions is to get people to think and do what another person, group, or institution would like you to think and do. These institutions have enormous resources and expertise at their disposal to be effective in their job. The interests of these institutions are aligned to the goals of their objectives and not to the well-being of their targets. They only care about the welfare of their targets to the extent that it aligns with their goals and interests.

In politics and advertising, for example, they are masters at influence. This enables them to acquire enough support for a position or product. The point is, these institutions do not and cannot care about their subjects. They cannot know or care about what matters to the masses, what is meaningful to you, what fulfills your interests, or what your values are (Sanders, 2011). Therefore, these institutions are simply powerful influencers that follow their logic and dynamics. They get people to believe and value what they want them to believe and value. Ultimately, people will behave in ways that conform to and reinforce institutional goals (de Bie, Wilhelm & van der Meij, 2015). These institutions are in fierce competition with other institutions, which possess similar incentives and resources. As such, citizens find themselves bombarded continuously by influencing messages. They are being pulled in different directions, forcing them to take sides on ideological issues.

Although the art of influence has existed for over a century, there has been a rise in institutions attempting to gain control and weight over people's minds and actions within the last decade (Seldomridge & Walsh, 2006). The science of influence includes cognitive, behavioral, and social psychology, behavioral economics, as well as scientific specializations that focus on understanding, predicting, and influencing human behavior. A lot of resources have been dedicated to hiring experts in these fields who craft influence strategies. Although these strategies may be beneficial in making one believe or do something, your beliefs may still be utterly unjustified from a rational standpoint. One's actions may have nothing to do with their true rational self-interest (Forshaw, 2012). For instance, the techniques used by effective salespeople, the rhetoric of charismatic leaders. The crude appeals to emotion and the manufacture of discontent, which are critical to advertising, are all useful and most likely aligned to your genuine needs and interests.

Although we live in a heavily influential environment, most people recognize this due to socialization. Acknowledging that mental influence is present in society is the first step toward becoming an independent thinker (Sternberg, Roediger, & Halpern, 2007). This creates the basis for why it is important to learn critical thinking. It is self-defense against the sophisticated manipulation, bad arguments, and non-arguments that are the weapons of choice in the battle of influence.

Understanding the principles of critical thinking better can help sensitize people to the presence of these weapons as well as immunize them, to some extent, from their effects. This can occur by learning to distinguish between good and bad reasons for belief and action (Sternberg, Roediger, & Halpern, 2007). This is the first step toward becoming an independent critical thinker. The goal of learning to think critically should not just be to detect manipulative rhetoric and fallacious reasoning. The ultimate goal is to be able to construct good reasons for the positive beliefs we hold. In return, we can justify and claim ownership of the view that guides our understanding of the world and interactions with other people, as well as informs our choices (Gelerstein, Río, Nussbaum, Chiuminatto, & López, 2016).

Personal empowerment

Personal empowerment is critical when one is trying to persuade individuals to follow an absolute path. When one is well-versed in the elements of critical thinking, they are likely to be an effective persuader. As such, they will be inspired by their ability to organize their thoughts logically and craft an argument that convinces their audience to accept their conclusion. Good critical thinkers are empowered by their understanding of the human psyche and the consciousness of influence and persuasion (Sternberg, Roediger, & Halpern, 2007). This means that they are in a position of being heard, acknowledged, and responded to.

Some people find it impossible to associate critical thinking with positive qualities. For instance, people often associate critical thinking with self-defense, while others believe critical thinking is and should be about logic and argumentation. This argument makes sense and underscores the importance of distinguishing between good argumentation and persuasive rhetoric. However, it is a mistake to assume that the theory and techniques of compelling rhetoric do not have a place in critical thinking (van Zyl, Bays, & Gilchrist, 2013). Just like any other tool, they can be used in positive or negative ways. It is up to the individual to decide the how it should be used.

The psychological dimension, however, is unavoidable, and every argument provided in the real world is defined in part by the social and psychological context within which the evidence is given. In this context, the persuasive power of the case is determined by several factors. These are the psychological and social factors that enable one to persuade an audience and make them accept their point of view. A good argument is not just about logic; it is also about good philosophy (Gelerstein, Río, Nussbaum, Chiuminatto, & López, 2016).

Liberal democracy and civic duty

The value of critical thinking extends beyond the self-interests of individuals. People exist in communities that are liberal democratic societies. In such setups, critical thinking plays an essential role (van Zyl, Bays, & Gilchrist, 2013). A liberal democratic society, in this case, refers to forms of government in which political power is vested in the people.

Critical thinking plays a significant role in maintaining liberal democracies because it helps one to participate fully in democratic processes (Ikuenobe, 2001). However, it goes deeper than that. Critical thinking helps to separate conflicts between democratic rule and classic liberalism. Citizens have the responsibility to cultivate their critical thinking skills. Although this

is not a legal obligation, it is essential to make the system work correctly. Despite the significant role that critical thinking plays in liberal democracy and civic duty, it is not taught in most schools.

Philosophy and the search for wisdom

Critical thinking is instrumental for philosophical thought and the pursuit of philosophical knowledge. An essential element in attaining philosophical wisdom is rational argumentation, which is a social activity. As such, if you are interested in reading and understanding the works of philosophers, you need to acquire some foundational critical thinking skills (Imaniar, Lestari, & Munir, 2018).

Unsuccessful Critical Thinking Strategies

Hopeful people have tried many activities to enhance critical thinking. Examples include exposure to classical music, the so-called Mozart effect, learning to play a musical instrument, and learning to play chess. None of which have succeeded as hoped. According to Willingham (2019), "It is no surprise that programs in school meant to teach general critical thinking skills have had limited success. Such programs are usually curricular add-ons during which students engage in critical thinking activities for perhaps five hours each week over the course of a year or two. Unfortunately, the evaluations of these programs seldom offer a rigorous test of transfer (p. 6)."

A review of the research on how to teach critical thinking concludes that teaching general critical thinking skills, such as logical reasoning, is a waste of time. Critical thinking exercises and games haven't produced long-lasting improvements for students (Barshay, 2019). Furthermore, research indicates that it's challenging for students to transfer critical thinking skills learned in one content area to another. When investigators have tested for transfer in such

curricular programs, positive results have been absent or modest and quick to fade (Barshay, 2019).

Teaching/Development of Critical Thinking Skills

Critical thinking skills should be taught to students, given that it plays a crucial role in life. Learning to think critically will help people take control of their lives and play an active role in decision-making processes (Critical Thinking and Its Benefits in Life, 2019). In the recent past, there has been a shift toward getting students to be more cognitive in learning as opposed to merely memorizing information. Employers and colleges emphasize the importance of critical thinking skills. Therefore, teachers are now required to elevate the thinking of their students beyond the traditional strategies that have been used in the past. In order to do so, teachers need a way of sharing ideas. According to Wagner (Technological advances have also enhanced the need for students to develop critical thinking skills. Acquiring these skills will help students to understand and analyze the information being learned (van Zyl, Bays, & Gilchrist, 2013). The application of specific teaching strategies can help students to learn to think critically, starting as early as kindergarten.

Teaching strategies that help students to think for themselves

"We educators are giving, helpful people. That's what drew many of us to teaching in the first place: a genuine desire to help children. And yet it's our helpfulness, I've found, that often hurts kids more than it helps them" (Ginsburg, 2011, para. 1)." Teachers are often quick to offer assistance to students who are struggling to acquire knowledge. Although this may seem like a kind gesture, it may result in undesirable outcomes. Ginsburg (2011) states, one of the best ways you can help a student develop critical thinking skills is resisting the desire to jump in and support every time a request for help is made. While this may appear to be the most natural solution for the student, it may hinder their ability to think critically. Let the students do the

thinking and ensure that they have the time to do it (Saaris, 2019). Although assisting is one of the fundamental roles of teachers, allowing students to attempt to solve these problems first is the best way to help them develop critical thinking skills (van Zyl, Bays, & Gilchrist, 2013). This can be followed by assisting them in figuring out the best possible solution. Here are a few strategies teachers can use to help students think for themselves (Heick, 2020):

1. Allow them to practice, practice, practice in the company of some kind of feedback loop

2. Teach them to make mistakes without blame

3. Allow them to receive learning feedback from someone just beyond their own 'level'

4. Make sure they frequently think about complex ideas or situations

5. Make sure they hear things in multiple times, in multiple ways, and from multiple perspectives and voices

6. Make sure they are given the support to self-direct their learning

7. Encourage them to make things

8. Help them to see the value of their performance

9. Help guide them to think about their thinking

10. Help them honor uncertainty

11. Make sure they can establish their relevancy for content

12. Encourage them to ask their own questions and then ask *better* questions

13. Encourage them to revisit their past mistakes, thinking patterns, and moments of genius

14. Encourage them to trust themselves to fail

15. Allow them to see their progress

16. Guide them in studying patterns

17. Make sure they can explain the significance of an idea, skill, or another academic topic

18. Help them start with what they don't know−this will guarantee that they think for

themselves, as it provides each student with their launching pad.

Accessing prior knowledge/Developing background knowledge

Background knowledge is a collection of abstracted information, which is an accumulation of life experiences (James, Hughes, & Cappa, 2010). As such, everyone has some level of background knowledge, either consciously or subconsciously. This background knowledge is used to connect new information to old information and is a critical component in learning. It helps one to make sense of new ideas and experiences. According to James, Hughes, and Cappa, (2010), background knowledge is one of the most reliable indicators of how well a student will learn further information relative to the content.

Students are likely to find themselves confused about certain concepts if they do not have prior knowledge about the content. Nevertheless, teachers often assume that students adequately possess the skills and information to understand what is taught. This assumption is erroneous. To a large extent, the ability of students to learn is influenced by both prior knowledge and the new instruction they receive (van Zyl, Bays, & Gilchrist, 2013). It is, therefore, imperative to pay attention to this fundamental aspect of the learning process.

Many students are equipped with beliefs and academic experiences of what and how they should learn. In most cases, this prior knowledge is critical in facilitating learning by creating mental hooks that anchor instructional concepts. However, if new information conflicts with

preexisting misinformation, it thwarts the acquisition of new content. Therefore, background knowledge can lead to either failure or success in the classroom. Teachers and students should take some time to understand what is known and what is unknown about a topic before commencing with instruction (James et al., 2010).

Jean Piaget believed that children gradually develop cognitive structures that help them to make sense of the world (Nilson, Fetherston, & McMurray, 2014). By the time they enter school, they have developed abstract ideas of how the world around them works. When they get to class, the teaching of these concepts does not start at the beginning. Rather, it revolves around refining, restructuring, and building upon preexisting ideas.

When preparing for instructions, teachers typically focus on the new content they plan to teach and neglect the need for an assessment of preexisting knowledge. This often has adverse impacts on knowledge acquisition (Nilson et al., 2014). When preconceptions are not addressed, children may fail to grasp the critical concepts necessary to understand the content. An example to illustrate this is the notion that some people are naturally good at math while others are not. If such beliefs are not addressed, they can significantly hamper learning. Indeed, when preexisting knowledge conflicts with new content, the new material presented is at risk of not being learned.

The research literature concludes that scientists are united in their belief that content knowledge is crucial to effective critical thinking.

Help students to make connections

It's absolutely impossible for our students to learn without making connections to the concepts we teach. We can achieve this by providing both context and relevance (Watanabe-Crockett, 2018). Without connection, there is no interest, and interest always precedes meaningful and authentic learning (Watanabe-Crockett, 2018). It is imperative that we are

helping students make secure learning connections in order to develop the critical thinking habits they need for success.

According to Watanabe-Crockett (2018), "Without connection, learning can't occur because it's difficult to learn something that doesn't connect to our interests and needs. Connection paves the way for critical thinking, and having a stake in learning concepts that carry both context and relevance" (para. 7). Think back to your most recent "aha" moment. That moment most likely came from making a connection. Making connections comes from interaction with open-ended materials that encourage creativity. In a rapidly changing technological world, it is even more essential for us to provide opportunities and experiences for children to make connections. This should be done repeatedly to enhance the development of critical thinking.

Most human activities are interconnected (Onodipe & Ayadi, 2012). If one can identify a pattern in a problem, then they can find a solution to the problem. Since critical thinking involves finding solutions for problems, a teacher can help students to develop these skills by encouraging them to make connections and look for patterns. The best way to carry out this exercise is to ask students to identify trends in a specific situation to determine an identified pattern. By encouraging students to relate whatever you are teaching or doing to real-life situations, you are helping them develop critical thinking skills.

When learners have a low level of connection to the content, they are essentially practicing passive compliance. It's like being engaged merely enough to pass the course and nothing more. This kind of learning presents little or no value to the learner. A low-level connection generates remembering, understanding, and possibly applying (Watanabe-Crockett,

2018), which are at the lowest level of Bloom's Taxonomy. However, the brain will likely discard and forget this information soon after the content is learned.

When we achieve a high level of connection through tasks that promote critical thinking, relevant skills with applicable value are nurtured. In doing so, we cultivate a sense of student ownership. Therefore, by focusing on making strong learning connections first, we've provided learning of great value to our students.

Small-group discussion

The use of small-group discussion is a collaborative and constructivist teaching method that is widely recognized as a high-yield, best-practice instructional strategy (Zemelman, Daniels, and Hyde, 2005; Marzano, Pickering, and Pollock, 2001). Working in groups is an ideal way of encouraging the sharing of ideas and information. The more you encourage group work in class, the more the students become exposed to the thoughts and opinions of other students. Group settings encourage students to think. When students are working together with their peers, they are exposed to the thought processes of their peers (Onodipe et al., 2012). When students are engaged in meaningful small-group discussions, they are more involved in learning and thinking. Small-group discussions promote inquiry, higher-order thinking, cooperation, and student responsibility. All of which have been shown to increase student achievement (Hattie, 2009). Small-group discussions engage students in critical thinking, working collaboratively, and communicating effectively. All of which are hallmarks of more in-depth learning (Vander Ark & Schneider, 2014). As students learn and understand how other people think and why they think that way, they can realize that their way of thinking is not the only way. *The use of questions*

A discussion about questioning would not be complete without referring to the Greek philosopher Socrates. Socrates spent most of his life asking intentional and organized questions

about people's beliefs and values. Through the use of questioning, Socrates helped his students to examine beliefs and to build stronger views. The Socratic approach involves posing a series of organized and prearranged questions designed to help students improve their thinking. The ultimate goal is to attain a better understanding of one's thoughts and beliefs.

A teacher using the Socratic approach is not looking for answers from students. Instead, they're promoting reflective thinking and complex questions. According to Paul and Elder (2009), questions are what stimulates the thinking process. Unless the answers generate more questions, the thought process will be brought to a halt. When teachers create quality, scaffolded questions for instruction, students are more motivated to engage in the learning process. Questions that effectively promote inquiry, student self-assessment, and creativity stimulate critical thinking (Gose, 2009). According to Walsh and Sattes (2010), when a culture of inquiry is developed through quality questioning and student engagement, academic achievement will be stimulated. Unfortunately, as important as strategic questioning is, it is often a characteristic of quality teaching that is not developed in teacher training programs (Caram & Davis, 2005).

Classroom teachers often ask questions that require a basic recall. Questions that are limited to asking students to recall information fail to develop critical thinking that is necessary for students to be college and career ready. Questions are one of the most powerful teaching tools. When teachers increase their questioning strategies, the quality of their instruction will greatly improve.

Most teachers do not have confidence in the ability of their students to learn critically on their own, given that they may be unwilling or unable to articulate their thoughts. On the other hand, some teachers intentionally do not incorporate critical thinking into their lessons. They feel that students are unable to enjoy classes when discussions require critical thinking.

State of Critical Thinking Today

Studies carried out to determine the current state of critical thinking today indicate that there is a worrying trend replicated in most learning institutions globally. Some of the concerning facts gathered in research indicate that most learning institutions lack a substantive concept of critical thinking. Furthermore, they do not realize they lack such a critical element of an education system (Arslan, Gulveren, & Aydin, 2014). A study conducted by Choy & Cheah (2009) concluded that teachers did not seem to understand the requirements needed to cultivate critical thinking among students. Although teachers believe that they are encouraging critical thinking in the classroom, they are merely focusing on the comprehension of the subject matter. This problem exists prior to becoming a teacher. In a study of pre-service teachers, participants were evidenced to have a limited understanding of critical thinking. They also lacked training and support in their college programs regarding how to implement critical thinking oriented teaching practices (Yuan & Stapleton, 2019). Pre-service elementary teachers believe themselves to be critical thinkers at least some of the time. However, few critical thinking skills were required in the lesson plans designed by participants (Dallman, 2015). Unfortunately, teachers believe they understand the fundamentals of critical thinking and that they are teaching their students these concepts.

In the current educational landscape, students are not provided with activities and questions that cultivate connections or provide depth across and within subjects. Instead, they learn superficial fragments that they forget almost immediately. The missing link in the education system is the connection, coherence, and the depth of understanding that accompanies systematic critical thinking.

Conclusion

Contrary to what schools believe, research indicates that critical thinking is not fostered in the typical classroom. Although most institutions desire to foster critical thinking, in practice, they promote thinking at the lowest cognitive levels. Institutions still focus more on content knowledge gained through teacher talk, despite this being an ineffective means of developing critical thinkers. This method of teaching fails to address the misconceptions that students possess and is ineffective in helping students learn complex abstract concepts (Yesilpinar & Doganay, 2014).

The school owes its students to teach them *how* to think, not *what* to think; to question whatever they read, and never to accept any claim blindly; to suspend judgment until they've heard all sides of a question, and interrogate whatever claims to be true, since the truth can withstand any scrutiny (Breslin, 2016).

CHAPTER THREE: METHODOLOGY

Research Design Overview

Fostering critical thinking in children during their formative years has perpetually been acknowledged as the responsibility of teachers (Wellberg, 2019). Studies, however, show that many of the students leaving the K-12 education system lack the critical skills necessary for succeeding in the workplace and higher education (Smith & Szymanski, 2013). Smithville School District has, in the recent past, implemented several strategies to increase academic achievement. However, the efforts made by teachers in the district to foster critical thinking in children is unknown. This research will be focused on evaluating the intentional fostering of critical thinking in middle school students by teachers using learning activities, materials, and tests in the Smithville School District.

Methodology

Program evaluation in institutions ensures that goals are accomplished in a quality manner. The methodological approach used in conducting program evaluation is guided by the nature of an evaluation question and the type of information required (Patton, 2014). This research uses a mixed-methods approach in which both qualitative and quantitative methods were used in the program evaluation. A quantitative research methodology involves collecting measurable numerical data that are analyzed using statistical or mathematical approaches to reveal patterns or relationships (Creswell, 2014). In a qualitative research methodology, the researcher explores people's beliefs, values, ideas, or experiences to seek explanations or understanding of a particular phenomenon (Creswell, 2014).

This inquiry's purpose is to understand how and to what extent teachers foster critical thinking in Smithville School District with middle school students. Therefore, the mixed-methods approach will be the most suitable technique. Using a mixed-method approach will

ensure that both measurable and intangible data are collected. The analysis will provide a comprehensive understanding of the methods that middle school teachers in Smithville use to foster critical thinking in their students.

Participants

The participants of the research were 6th-, 7th-, and 8th-grade teachers from Wildcat Middle School in Smithville School District. Participants were chosen using a convenience sampling technique. A convenience sample is a non-probability sample in which the researcher uses the participants that are nearest and available to partake in the research study (Crossman, 2019). Advantages to using the convenience sampling method are the ease of recruiting the research participants, and data can be collected quickly for a low cost (Crossman, 2019). A disadvantage of the convenience sampling is the researcher's inability to control the representativeness of the sample because it is random. This lack of control may cause a biased sample and research results, and thus limits the wider applicability of the study. Teachers were selected from the middle school based on their availability and willingness to participate in the research project. The teachers willing to participate were given a questionnaire to complete (Appendix A). A subgroup of the participants took part in a focus group discussion on the questionnaire results (Appendix B). According to Patton (2014), qualitative data collection is comprehensive and requires a smaller sample size compared to the quantitative approach. Six teachers were randomly selected from the original sample of 69 to participate in the focus group discussion. The only inclusion criteria for participating in the research was being a 6th-, 7th-, and 8th-grade teacher in the school. There were no exclusion criteria unless it originated from the participant.

The focus on middle school teachers was because of the recent curricula changes in the school district, which have been associated with minor improvements in student performance. As

a school leader based in the district, I gained a comprehensive understanding of the extent to which critical thinking is fostered in schools and will make recommendations about future prospects. Middle school teachers in the district are, therefore, the best target for achieving these goals.

<div align="center">**Data Gathering Techniques**</div>

Quantitative data collection

Data were collected in two stages. The first stage of data collection involved gathering quantitative data. Quantitative data is measurable and numerical. It is collected using questionnaires, records, and observation instruments, and the like (Patton, 2014). For this research, quantitative data was collected using a semi-structured questionnaire issued to the participants. The questionnaire (Appendix A) was developed and assessed how well the use of learning activities, materials, and tests among teachers fosters critical thinking in their students. According to Patton (2014), quantitative data is collected in standardized categories with attached numerical values. A 5-point Likert scale was assigned to the questionnaire responses, providing numerical values regarding the extent to which teachers rated their activities to foster critical thinking. The responses ranged from never as the lowest score (1) to always as the highest score (5).

The questionnaire was semi-structured, indicating that the questions were both open-ended and close-ended. Each item in the questionnaire required a numerical value response and an additional comment if the participant wanted to add additional information. The comment section allowed participants to include any additional information they had about the question if their response did not align with the provided scale. The data collected from the comments were considered qualitative.

Qualitative data collection

The collection of qualitative data was conducted through focus groups hosted by me, the researcher. Qualitative data collection enabled participants to express their opinions in their words without the limiting categories imposed in quantitative data collection (Patton, 2014). In the proposed research, hosting a focus group allowed participating teachers to express their opinion regarding some of the responses provided in the questionnaire (Appendix B). The discussion also allowed teachers to express what they do to foster critical thinking without the restrictions of a questionnaire. The focus groups were recorded, with permission from the participants, using an audiotape. It was later transcribed into a word document for analysis. I hosted and guided the discussions held during the focus group meetings by asking a set of questions. The participants contributed their insights to each question asked, and I allowed them to discuss the specifics of each activity among themselves.

<div align="center">Ethical Considerations</div>

The guidelines provided by ethical standards and principles for research were adhered to when conducting the program evaluation. According to Patton (2014), a program evaluation should involve appropriate stakeholders (such as a Board chair) and ensure that the privacy, anonymity, and confidentiality of the participants are protected. The superintendent was informed about the research before the implementation began. A formal letter was written to request permission to conduct research in the school.

Consent was provided by participants to partake in the research during recruitment. The participants were informed of the objective of the research, the requirements of participating, and the potential benefits and risks before asking them to provide written consent. Providing potential participants with the appropriate information ensured that their decision-making regarding their participation was not coerced. Participants were also informed that failure to

participate would not have any negative effects on their career and that they could choose not to respond to any question they did not want to answer.

The participants remained anonymous during all stages of the research. During data collection, no personal identifiers were gathered. Only data relevant to the research was collected. Additionally, the participants were reminded to avoid writing anything that might be used to identify them. Participants were assured of the confidentiality of the information provided. I transferred the collected data into a password-protected personal computer. Hard copies of the questionnaires are stored in a locked cabinet and will be destroyed once the data entry process is completed. During the transcription process of the focus group discussion, any names mentioned were left out. The audiotape will also be destroyed after transcription and accuracy checks.

Data Analysis Techniques

Quantitative data analysis

The data collected were analyzed in two stages. Quantitative data were analyzed using the statistical package for social sciences (SPSS) version 25. A descriptive analysis was used to map the grades taught by the teachers who participated in the research. Descriptive statistics were used in the analysis of each of the nine main items in the questionnaire. Percentages, medians, and means for participant responses were calculated to address the research questions.

Qualitative data analysis

The qualitative analysis method was used for the data collected using the focus group discussions. I organized the transcripts' data into codes and categories and derived themes. The themes were developed to address the research questions by providing a comprehensive understanding of the teachers' perception of fostering critical thinking in their students.

Conclusion

The readiness of students for the workplace and their ability to apply critical thinking skills has been questioned over the years. In recent studies, students leaving the K-9 system have been found to be unprepared for their college life due to a lack of critical thinking skills. This research aims to assess the awareness and methods of teachers in fostering critical thinking skills in middle school children. A mixed-method approach was used to evaluate teachers' intentional activities that foster critical thinking in middle school students. Using both qualitative and quantitative approaches was necessary to ensure that comprehensive, measurable, and intangible data was obtained. A nine-item questionnaire with a 5-point Likert scale was used to collect quantitative data, while focus group discussions enabled the gathering of qualitative data. Data analyses were conducted using SPSS for the quantitative data and a coding method for the qualitative data. The next section includes a presentation of the results from the analyses and an interpretation of results.

CHAPTER FOUR: RESULTS

As-Is Analysis

An important framework to consider when analyzing information and drawing conclusions from this study is Wagner's (2006) 4 C's: competencies, conditions, culture, and context (pp. 99–105). This analytic framework allows us to see the interrelated parts of the change process in schools and districts. Systems thinking is the basis of this framework. Wagner (2006) defines system thinking as attempting to keep the whole in mind while working on the various parts. For the purposes of this research study, Wildcat Middle School is the system, and the parts are the 4C's. Leaders are encouraged to intentionally design systems according to these four factors as they are the basis of change. For this study, all areas of the 4C's (Appendix C) were examined closely to determine the next steps.

In order to apply Wagner's framework (2006), it is important to understand the 4 C's: **Competencies** can be defined as the "repertoire of skills and knowledge that influence student learning" (p. 99). That is, competencies are the knowledge, skills, abilities, and behaviors held by adults and students that contribute to teaching and learning. There are two kinds of skills: hard and soft. Hard skills are teachable abilities or skill sets that are easy to quantify (Doyle, 2020). Proficiency in a foreign language and computer programming are considered hard skills. Soft skills, on the other hand, are subjective skills that are much more challenging to quantify (Doyle, 2020). Examples of soft skills include communication, leadership, critical thinking, problem-solving, teamwork, and work ethic. Schools emphasize hard skills more often than soft skills, given that hard skills are a part of state assessments. Most teachers at Wildcat Middle School have strong content knowledge. They have some expertise in their respective teaching areas:

English, math, Science, and/or Social Studies. However, this knowledge is not used as a foundation to develop students' ability to think critically about the content.

Conditions are defined by Wagner et al. (2006) as "the external architecture surrounding student learning, and tangible arrangements of time, space, and resources" (p. 101). Conditions might include daily schedule, class size, test scores, policies, or laws. Research indicates that school conditions contribute more to SES differences in learning rates than family characteristics (Aikens & Barbarin, 2008). Schools near Chicago are increasingly subjected to conditions that require students to depend more on schools for food, afterschool programs, and instruction. Poor households have less access to learning materials and experiences, including books, computers, stimulating toys, skill-building lessons, or tutors to create a positive literacy environment (Bradley, Corwyn, McAdoo, & García Coll, 2001; Orr, 2003). These conditions must be considered when analyzing the results of this research. However, on a positive note, there are conditions in place to support the inclusion of critical thinking in the curriculum. Teachers at Wildcat Middle School have common planning time daily and access to full-time instructional specialists in reading, math, science, and social studies. However, due to a lack of consistent increases in academic data, there are too many new initiatives. While these initiatives are designed to provide support, they have largely served to overwhelm teachers. According to Michael Fullan (2017), "One cause of initiative fatigue is that schools and districts try to implement too many changes at once. The change ideas might have promise, but there are way too many of them. Another feature of the problem is that the initiatives aren't connected. They're fragmented" (para. 2). Given the current conditions, it is challenging to engage teachers in a conversation about critical thinking.

Culture is defined by Wagner et al. (2006) as "shared values, beliefs, assumptions, expectations, and behaviors related to students and learning," along with "quality of relationships within and beyond the school" (p. 102). Essentially, culture is the shared vision and passions of an organization. It dictates what people believe and, ultimately, how they behave. This is such an important aspect in schools and dictates a great deal of what takes place. Looking closely at Wildcat Middle School, there is a culture of teamwork. However, there is also a culture of "nice." A culture of nice is when teachers tend only to say nice things about each other's work, including when the goal of a discussion is to improve practice (MacDonald, 2011). This occurs often at Wildcat during content area meetings. Teachers are unwilling to disagree with their colleagues. There is a culture of "being nice" so as not to be viewed as offensive or demeaning. Therefore, for many Wildcat teachers, it is safer to agree and/or remain silent. This culture serves as a barrier to meaningful sharing and may have an undesirable impact on discussions about critical thinking. We must intentionally work to change the culture to one of open and honest communication.

Context is defined by Wagner et al. (2006) as the "skill demands that all students must meet to succeed as providers, learners, and citizens, as well as the aspirations, needs, and concerns of the families and communities a school serves" (p. 104). Overall, context means examining the realities and then creating a description of what students should know. Ninety-five percent of Wildcat Middle School's population are students of color, and the school serves free or reduced lunch to more than 80% of its students. Research data shows that white teachers expect 58% of white high school students to obtain at least a four-year college degree, but anticipate the same for only 37% of black students (Gershenson and Papageorge, 2018). Expectations, conscious, and unconscious have an impact on what is taught and, consequently, what is learned.

Area 1: Participant Demographics

A total of 67 teachers participated in the survey. Participants' grades are represented in Figure 3. Two-thirds of the surveyed teachers taught single grades, with only 32% teaching all the grades in middle school. Participants were also surveyed on their roles. The majority of the participants taught regular education, and almost a quarter were special education teachers (Figure 4).
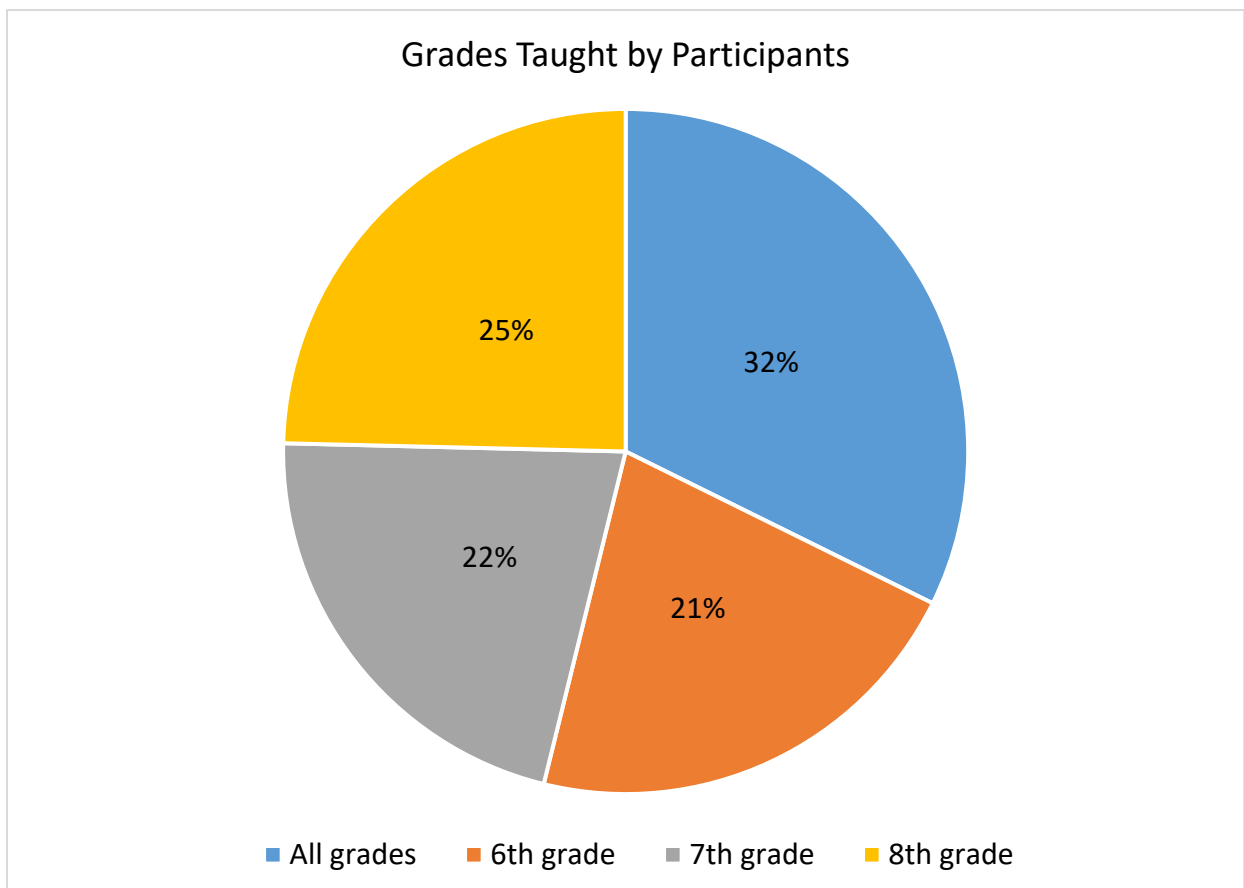
Figure 3 Grades taught by participants

Role of Teachers

3%

6%

20%

71%

■ Regular teacher ■ SPED teacher ■ EL teachers ■ Instructional specialist
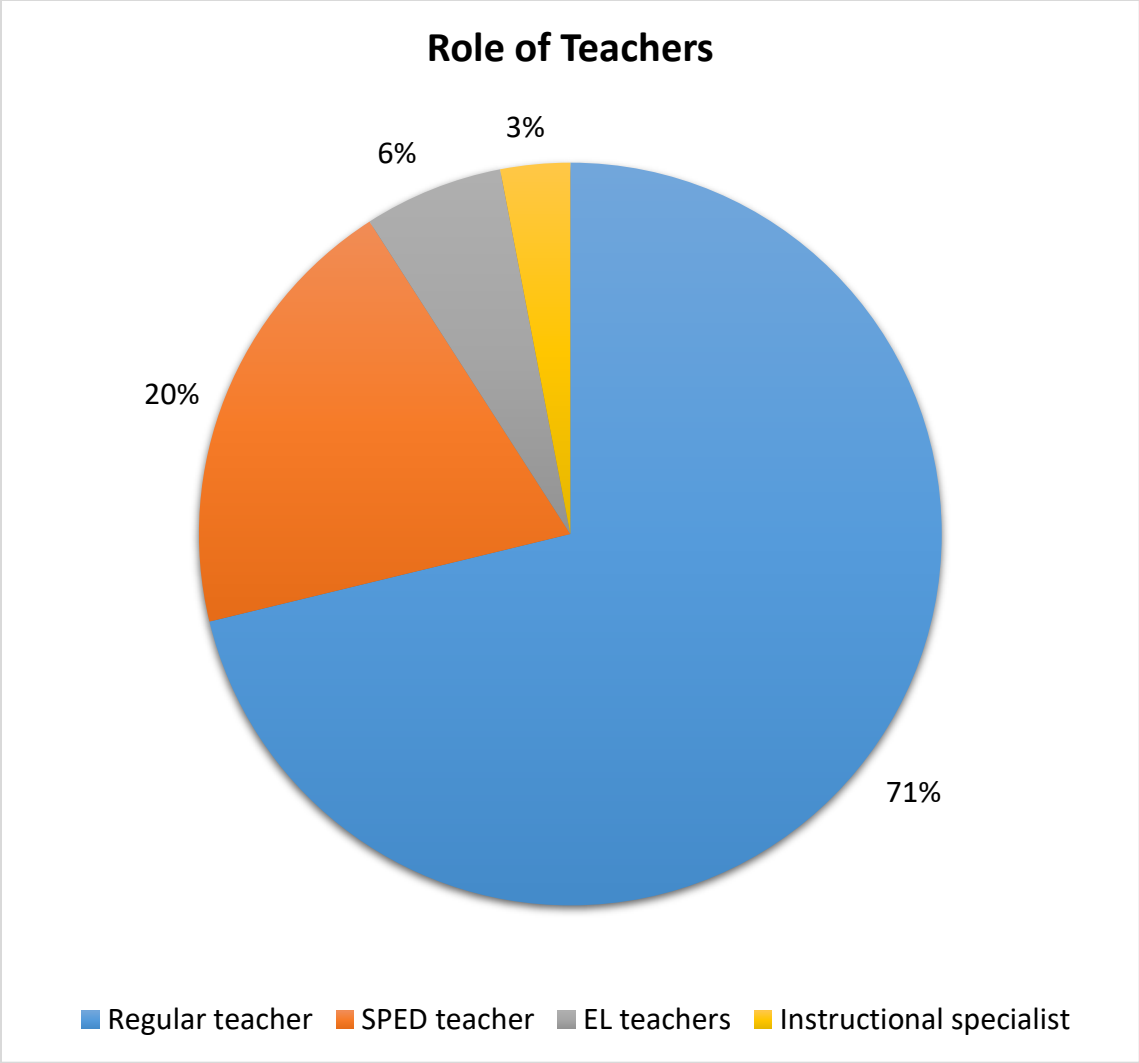
Figure 4 Role of teachers

Area 2: Perceived Activities/ Materials that Foster Critical Thinking

When the participants were asked to rate the importance of critical thinking skills, 75%

rated it as extremely important, and the other 25% stated it was important. The participants were

also asked to rate how comfortable they were with their ability to teach critical thinking. The

results are shown in Figure 5. The majority were comfortable, with a quarter of the population

being extremely comfortable.

How comfortable do you feel in your ability to teach students to think critically?

- Extremely comfortable 24%
- Comfortable 62%
- Not very comfortable 14%
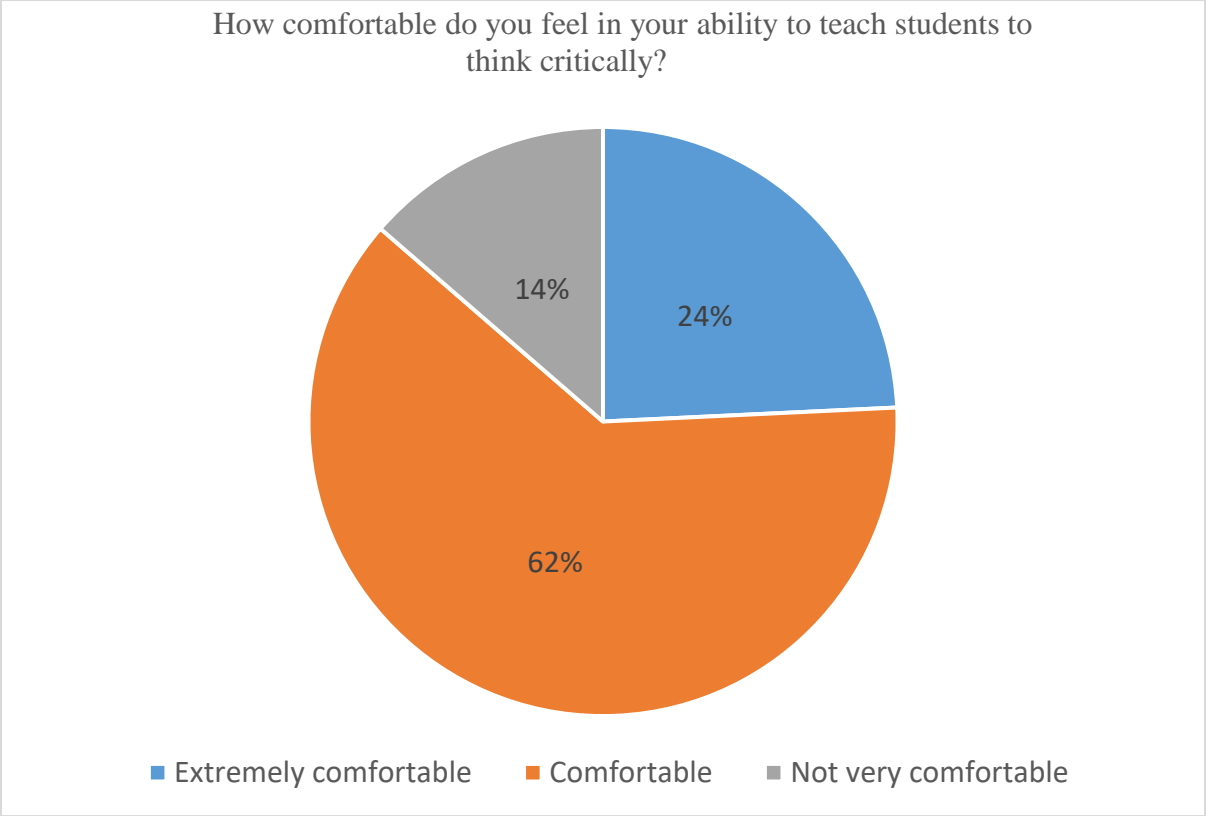
Figure 5 Teachers' level of comfort teaching critical thinking

Figure 6 displays the various approaches teachers use to develop students' critical thinking skills. Intentional practices (such as the use of activities and materials/textbooks) that foster critical thinking were assessed. The participants' responses were rated from never to always. The most common practice was the purposeful planning of activities and questions that required students to use critical thinking, where 60% did so often, and 20% always or sometimes. The next widely used practice was teacher developed materials that foster critical thinking, where 61% of the participants did it often, 27% sometimes, 11% always, and 2% rarely. Using textbooks to foster critical thinking was the least common. Only 33% of the participants did it often, 21% sometimes, 20% always, 17% rarely, and 9% never used the district purchased teaching materials.
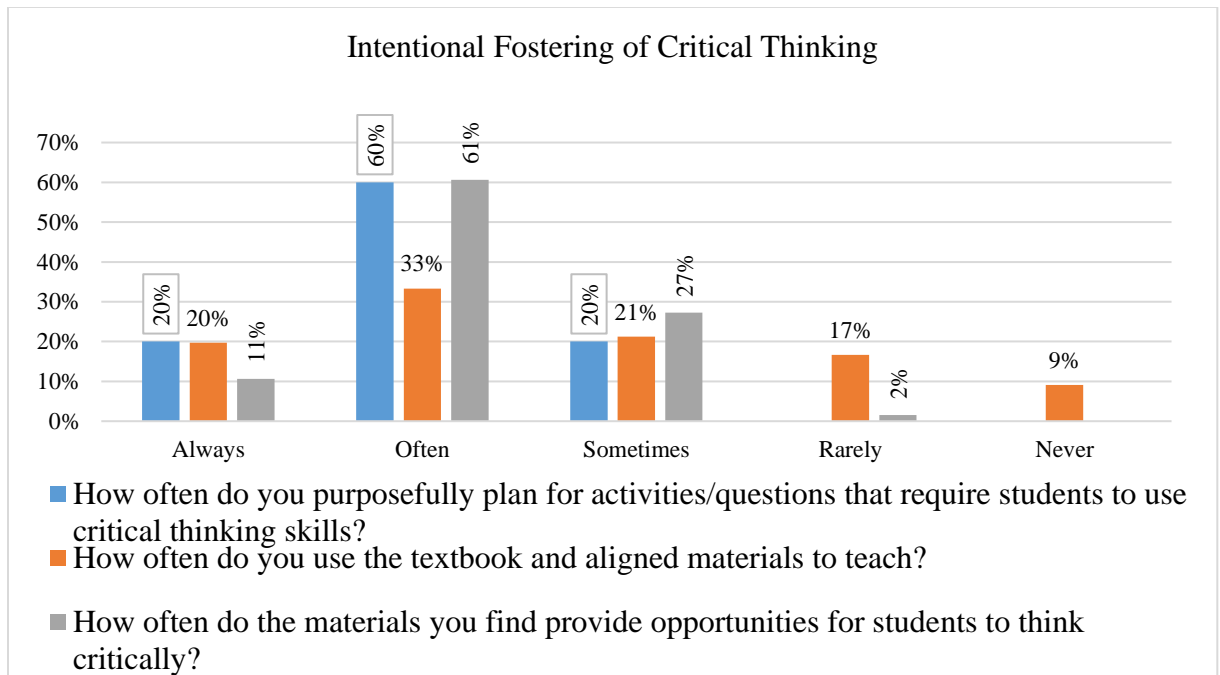
Figure 6 Purposeful planning and materials used to teach critical thinking

Two themes related to the intentional fostering of critical thinking emerged from the focus group discussions: The availability of aligned instructional materials and the response of students. Regarding the availability of materials, it emerged that there are some affiliated books that promote critical thinking while others do not. The aligned materials teachers preferred included reading authentic texts. A teacher said during the focus group discussion, "And when we're doing some standards, when we sneak them in, and we don't let them know and that's when some critical thinking happens. So, I do like the seventh-grade texts." Teachers mentioned that some of the books that are important for teaching did not foster critical thinking at all.

Like, go math books. I feel like they don't promote critical thinking because all the examples are solved for them. Literally, here's an example, here's how you solve it. And

then there's guided practice but they don't have, they're not given the chance to like

discover on their own.

The lack of books and aligned materials that foster critical thinking was more prominent

than their availability. Teachers also reported during the focus group discussion that some

students couldn't handle critical thinking lessons while others are not responsible with the

freedom to make their own choices. Some of the teachers mentioned they did not trust their

students with the activities that required them to use critical thinking skills and reiterated the

need to start imparting the skills in children early, not just in middle school.

> … there's critical thinking in those situations where we control so much of, okay, every
>
> aspect from the time they come in, when they can use the restroom, when they can drink
>
> water or when they can eat. I don't know. That's what it sounds like. But giving up that
>
> control is scary. It's like when I trust my students, but when I give them an edge, they
>
> literally take a mile and they do something, and it's gone.

Area 3: Teachers' Ability to Identify and Create Activities/ Materials that Foster Critical Thinking

Teachers were assessed for their ability to create activities and identify materials that

promote critical thinking skills in children. The findings are presented in Figure 7. The most

common practice was established as finding their materials in stories, questions, or problems that

promote critical thinking (52% did it often, 32% always, and 17% sometimes). The second

common practice was the development of activities or questions that require children to use

critical thinking skills, with 62% of the teachers doing it often, 26% sometimes, and 13% always.

Continuing from Area 2 finding, the problems, questions, and text that promote critical thinking

from class textbooks was the least common practice (32% did it sometimes, 27% often, 17%

rarely, 13% always, and 11% of the teachers never used the district provided resources).

Ability to Identify and Create Critical Thinking Materials/ Activities
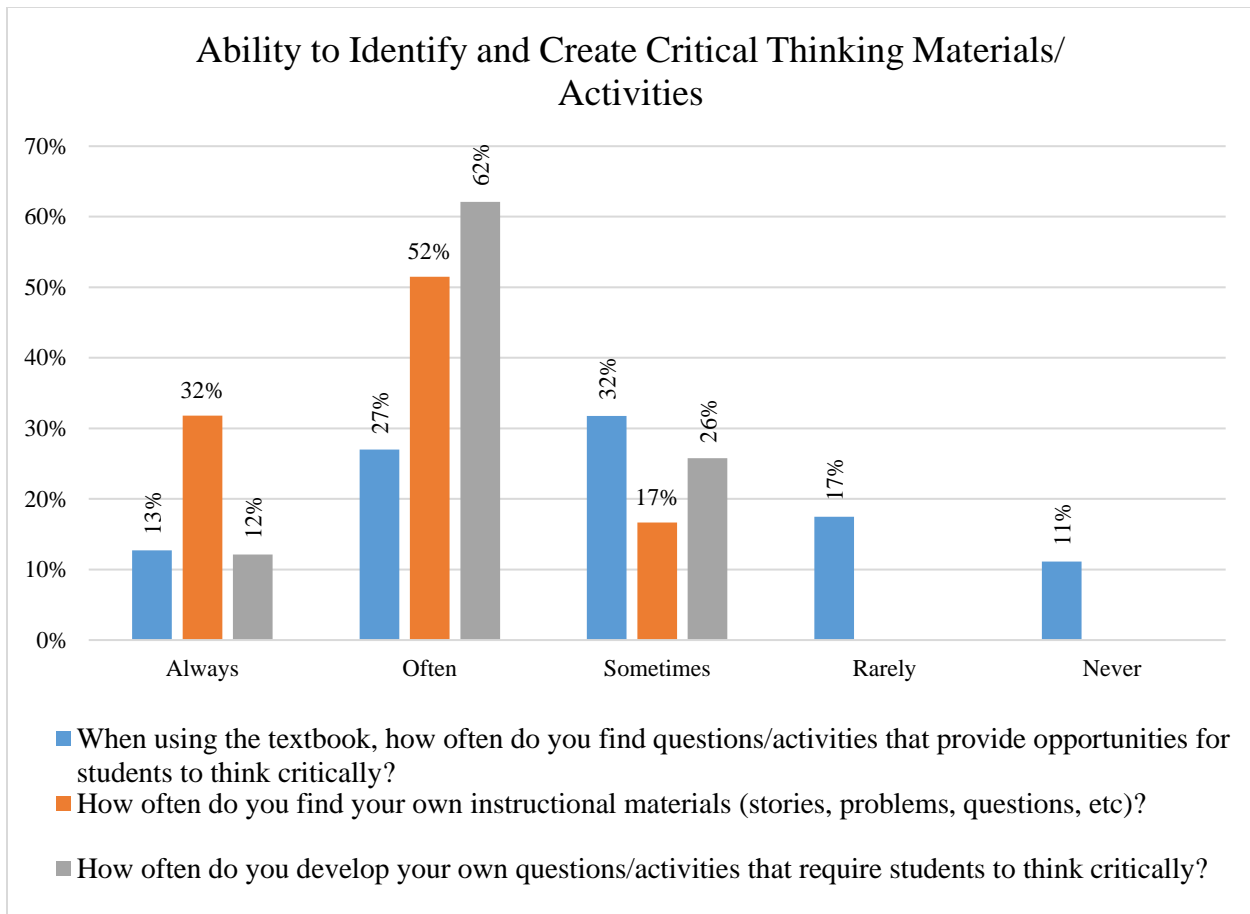
Figure 7 Teacher's ability to identify and develop materials that foster critical thinking

Two themes related to the ability to identify materials related to critical thinking emerged from the focus group discussion: lack of available materials and lack of knowledge. As discussed in Area 2, teachers felt that most of the textbooks did not have materials that promoted critical thinking, "We kind of developed our own, since it's a new curriculum planning process. We have to kind of develop our own with the help of supportive other systems like common lit (textbook)."

> … what we use, the text we use. Some of them we like, some of them are outdated and they're challenging for them to understand and they're not engaging at all, but we're working on it. So, some of them are fine, but as of now, it's not where it should be, but we're all aware of this. We all agree as a team.

Teachers also agreed that they were not taught to think critically, how to apply critical thinking skills, or how to teach it. They elaborated on this during the focus group discussion:

> I mean just from my own experience; I'm thinking like I took all these method classes just to be able to teach different content areas and that's what I learned. I didn't learn how to apply critical thinking or teach critical thinking. I was taught how to, how to teach math, how to teach reading, writing…

Area 4: Discussions with Other Teachers

Teachers were asked how often they discuss with their peers the ideas and approaches to foster critical thinking. Figure 8 presents the findings. Many of the teachers said they often did, 24% sometimes, 14% always, 12% rarely, and 6% never discuss ideas to promote critical thinking in their student. The focus group discussion revealed that teachers rarely discuss teaching critical thinking. Instead, they focus their conversations on the content. When teachers were asked whether they discuss critical thinking with their peers, none of the participants in the focus group agreed, "Um, say no, it doesn't happen. I speak for my team that when I was in eighth-grade math, we were just drowning in what to teach and had very little time to get to how to teach it."

How often do you and your team share ideas and/or ways of teaching critical thinking?

- Always
- Often
- Sometimes
- Rarely
- Never
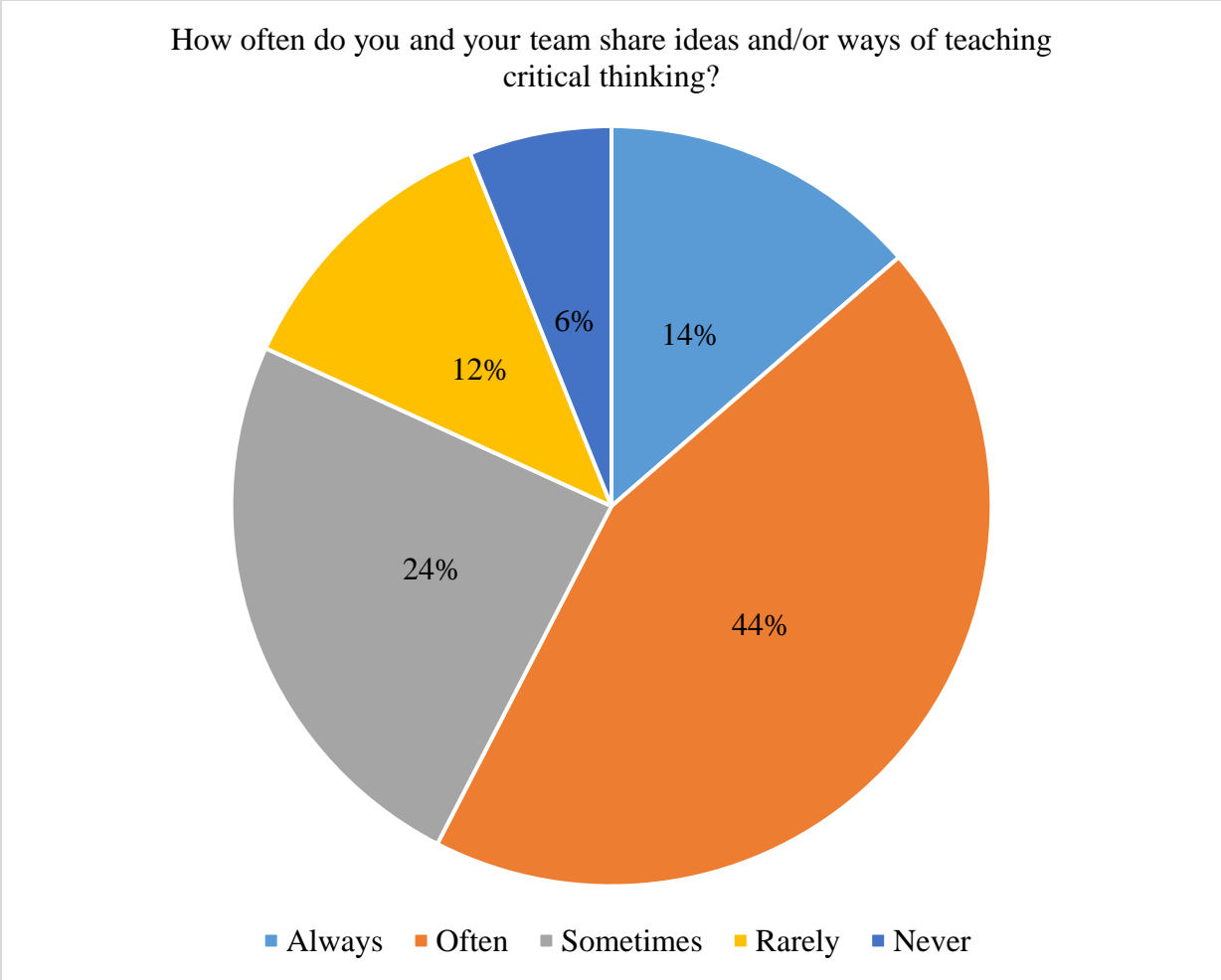
Figure 8 Frequency with which teachers share ideas about ways to teach critical thinking

The Four Cs

Competencies refer to people skills and knowledge that facilitates change. In this case, evidence reveals that teachers were not taught how to teach or apply critical skills. Still, the majority were very confident in their skills. A discussion may erupt that teachers think they are fostering critical thinking when they are not.

Conditions are the factors internal to the organization that support change. In this case, the identified conditions were the freedom to plan, identify, and develop teaching materials as needed. The majority of the teachers often or always develop materials for fostering critical

thinking. Teachers are also able to identify and give problems to the students in a manner that promotes critical thinking.

  Culture refers to the factors within the organization that are the norm. The identified cultural factors include the lack of trust in the behavior of students and late introduction to critical thinking. Teachers felt that students who had a late introduction to critical thinking were less equipped to handle the responsibilities it allows them. Therefore, teachers do not trust students with many activities that foster critical thinking. The research indicated that teacher teamwork is present. Nonetheless, teachers do not always discuss ideas for fostering critical thinking in their students.

  Contexts are the elements external to the organization that are beyond control but still impactful. From the findings, identified significant contexts were textbooks that lack materials or activities for fostering critical thinking, and a failure of colleges and universities to impart teachers with knowledge on how to teach and apply critical thinking.

Interpretation

  From the quantitative findings, more than three-quarters of the surveyed teachers were comfortable or extremely comfortable with their ability to foster critical thinking. From the focus group discussions, it emerged that teachers do not have a specific lesson for critical thinking. It is an ongoing process where students are imparted with critical thinking during normal lessons or school activities. Additionally, teachers do not necessarily identify it or tell their students they are teaching them critical thinking; they merely impart the skills. Conclusions can, therefore, be drawn that critical thinking is fostered in standard school activities.

The findings also indicate that teachers often develop activities and questions that allow students to use critical thinking skills. Similarly, teachers identify materials separately from the aligned textbooks to foster critical thinking. Teachers do not prefer class textbooks as materials that promote critical thinking. This is because some of the books help students to solve problems without room for trial, consequently, blocking the opportunity for critical thinking. The teachers also cited some of the books, especially reading materials that promote the use of critical thinking skills among students.

The findings contradict previous studies that indicate that students leaving the K-12 education system do not have adequate critical thinking skills. During the focus group discussion, it emerged that some of the responses were exaggerated. That is, teachers may not plan and implement critical thinking as they say they do. Teachers agreed with the statement, "maybe teachers aren't really teaching critical thinking, but they think they are." This questions whether teachers are knowledgeable about critical thinking and if they can apply and teach it.

Judgments

Returning to this study's primary research questions, participant responses and data gleaned from it provide important insight as well as answers to some questions. These primary research questions are:

1. To what extent do teachers believe that they currently provide activities/materials that foster critical thinking?

2. To what extent do teachers know how to identify and align questions/activities that require students to think critically?

3. What are the teachers' perceived impact that including critical thinking activities/materials have on student learning?

4. How often do teachers of the same grade level and content area discuss the implementation of activities/materials that foster critical thinking?

Figure 5 indicates that the majority of teachers feel comfortable with their ability to teach critical thinking. However, 14% of teachers are not comfortable.

Figure 6 represents the findings on teachers' perceived provision of materials and activities that foster critical thinking in students. The results show that the majority of the teachers perceived that they frequently provide materials and activities that foster critical thinking, with a minority rating the practice as always and sometimes.

Figure 7 represents teachers' ability to identify and develop materials and activities that foster critical thinking in students. The teachers rated the frequency at which they identify and develop materials and activities that promote critical thinking in their students as often. A minority of them rated the frequency as always and sometimes. It is worth noting that teachers prefer developing and finding materials as opposed to using class textbooks.

The third research question assessed teachers' perceived impact on critical thinking materials and activities on their students' learning. It was noted that teachers were hesitant to include extensive critical thinking activities. The teachers cited that giving much responsibility to students may have consequences. The teachers also pointed out that some of the students could handle critical thinking materials and activities, while others could not. They agreed that they needed help in managing the two groups in one activity.

Figure 8 presents the frequency with which teachers discuss with their peers ideas for promoting critical thinking in their students. The quantitative findings indicate that teachers often

discuss ideas for teaching critical thinking. The focus group discussion, however, did not reveal that teachers discuss critical thinking with their colleagues. From these findings, school leaders must begin discussions with their staff regarding teaching critical thinking. Doing so may improve their confidence, and, at the same time, share ideas for its incorporation in daily instruction.

Recommendations

A positive finding in the research relates to conditions. According to teacher responses, they have the autonomy to find materials, as well as make their own. Furthermore, throughout the focus group, teachers regularly referred to their "team." This identifies that conditions exist that support teacher collaboration. In Wildcat Middle School, the conditions exist for teachers to engage students in critical thinking.

In the focus group, teachers did acknowledge that they may not be competent in the area of critical thinking. Therefore, I recommend that a rubric be implemented to vet teacher made and chosen activities and questions. The use of a rubric (Appendix D) would serve two purposes. First, it provides teachers clear ideas on what kinds of activities promote critical thinking. If they can't apply the rubric to a given activity, the activity likely does not require students to think critically. Secondly, it gives teachers a way to assess if students are engaging in the critical thinking process. In following the research, I also recommend that teachers spend time assessing students' prior content knowledge, as well as building background knowledge on the topic at hand. It is impossible to think critically about a topic that you have little to no knowledge of. Also, building background knowledge is equivalent to building student subject matter competency. My next recommendation, related to building teacher competency to implement critical thinking, would be to provide them with a list of questions (Appendix E). The questions can be included in daily instruction and will require students to think critically. As mentioned

above, the questions will dictate the quality of the lesson. If they can't apply the questions, it means the lesson is absent of critical thinking. Please note that not all recommendations would be introduced simultaneously. Teachers need time to become proficient at one topic prior to the introduction of another.

While teachers talked about team planning, and it is referenced under conditions, I would argue that this planning is also a part of the culture in Wildcat Middle School. Teachers work in planning teams daily for 40 mins. I recommend that we create the same culture among students. The culture needs to reflect teamwork and collaboration. Using small-group discussions can assist in the development of this culture. Therefore, small-group discussions need to be implemented to begin to address critical thinking. Another part of the culture that exists in Wildcat Middle School is a teacher distrust of students' ability as it relates to critical thinking. Specifically, teachers referenced the responsibility needed by students to engage in these kinds of activities. They felt that students aren't ready given that they haven't engaged in critical thinking in prior years. My first recommendation would be to start now. If lessons haven't been intentionally provided to students that require them to think critically previously, then this should be a priority. If we continue to wait, regardless of the reason, we will continue to produce students that are not college and career ready. My next recommendation would be that we use an instructional specialist to model critical thinking activities in classrooms with teachers. Teachers may need to see their students engaged in the process successfully before they can overcome their distrust of students. In addition, through grade-level meetings, teachers should routinely discuss ideas for improving student responsibility.

In reviewing the context, research has identified the access to sufficient resources is a concern for the implementation of critical thinking. The district purchased textbooks are not used

consistently by teachers, as well as appear to lack activities and questions that require students to think critically. Therefore, teachers routinely develop materials and search the Internet for others. My previous recommendations regarding the implementation of a critical thinking rubric and a list of questions that require critical thinking should assist teachers as a resource. In addition, I am suggesting that teachers use the list of characteristics of critical thinkers when choosing or developing lessons:

- open-mindedness regarding divergent world views

- flexibility in considering alternatives and opinions

- alertness to likely future events to anticipate their consequences

- understanding of the opinions of other people

- fair-mindedness in appraising reasoning

- honesty in facing one's own biases, prejudices, stereotypes, or egocentric tendencies

- prudence in suspending, making, or altering judgments

- willingness to reconsider and revise views where honest reflection suggests that change is warranted. (Facione, 1998)

Conclusion

This research study was designed to examine the extent to which teachers intentionally plan and implement critical thinking activities and lessons into their daily instruction. An analysis of the data indicates a contradiction. The survey results reveal that teachers are intentionally planning for critical thinking and that they feel very comfortable in their ability to do so. Contrarily, the focus group data revealed that teachers, as students, were not provided opportunities to engage in critical thinking. In addition, they were concerned about providing critical thinking activities to some students who they don't feel are prepared for such. The focus group eventually decided that teachers think they are teaching critical thinking when, in

actuality, they are not. Using the AS-IS framework, I analyzed the context, culture, competency, and conditions at Wildcat Middle School in relation to providing critical thinking activities. My analysis showed that the conditions are in place for Wildcat Middle School to engage students in critical thinking. These conditions are the foundation for how to address culture, competency, and context. Given that consistent collaboration time exists, and functioning teams are in place, we can begin to engage teachers in critical thinking attributes, questions, and rubrics to increase their competency. This process should be started immediately. Teachers admitted that fear and perceived student inability had stopped them from addressing critical thinking. Given the expectations that all students must be college and career ready, we have no time to waste.

CHAPTER FIVE: TO-BE FRAMEWORK

Envisioning the Success: To-Be

By understanding conditions, competencies, context, and the culture that currently exists at Wildcat Middle School, we can begin creating a vision of what is "To-Be" as it relates to critical thinking. Using key data points and input from staff, our vision – our "To-Be" (Appendix F) – is a district in which all students are college and career ready as evidenced by their ability to think critically. With deliberate, purposeful, and well-planned lessons, critical thinking is possible and the change that it brings will positively impact student achievement. As students learn to think critically and teachers learn ways to teach critical thinking, they will feel more successful in multiple contexts, including the "4 C's."

Competencies

First, student and teacher competency would increase significantly. With professional development that focuses on the characteristics of critical thinkers, questions to ask that access student thinking, and the use of a rubric to assess assignments for critical thinking, teacher competency will soar. Teachers will begin to access their own critical thinking skills and use them in various other aspects of their life. Teachers will then work to build content-specific background knowledge with students. Student collaboration along with content-specific critical thinking questions will provide students with more engaging lessons. Initially, students will find these questions more difficult but eventually, they will be aware of when they are thinking critically and begin to ask questions that require others to think critically. Larger numbers of students will be able to respond correctly to the most difficult questions on IAR moving Wildcat Middle School to the status of Exemplary School. Our students will be sought after by the best high schools in the area because college success is inevitable.

Culture

The very nature of the use and teaching of critical thinking will truly impact school culture. When individuals engage in critical thinking, they become flexible in their opinions and begin to seek to understand the opinions of others. They consciously and consistently face their personal biases, prejudices, and stereotypes. Reflection and revision of thinking becomes a natural part of the thinking process. Implementing critical thinking is a culture changer because it has an immense impact on how individuals think. Distrust of students and their ability to think critically will dissipate and the expectations for student performance will increase. There will be an increase in student teamwork and collaboration. Students will want to share their revised thinking with their peers and teachers will ensure that there consistent opportunities to do so.

Context

When reviewing the context for teaching critical thinking, the main concern identified by teachers was resources. A lack of resources to teach critical thinking was a barrier to consistently planning for it. Some of my previous recommendations include the use of a rubric to assess current activities and providing a list of subject-specific critical thinking questions. These resources will have a positive impact on student and teacher competency and context. I also suggested that teachers be provided a list of the characteristics of critical thinkers. The list of characteristics can serve as a long-range planning guide for teachers. It provides a picture of what a critical thinker knows and can do. Therefore, teachers can plan activities and questions, with the specific characteristics as a guide.

Conditions

With improvements in teacher and student competency, school culture, and context, it is highly probable that Wildcat Middle School will experience some improvements in conditions.

While the conditions that currently exist support the implementation of critical thinking, there is always room for improvement. Planning time will now be used to discuss ideas for the implementation of critical thinking. Grade level and content area teams will plan lessons that incorporate critical thinking by applying the critical thinking rubric and the content-specific critical thinking questions. The current conditions at Wildcat Middle School will go from good to great.

Conclusion

According to Wagner et al. (2006), "your system – any system – is perfectly designed to produce the results you are getting" (p. 106). This means that based on inputs and processes, the system is yielding exactly the output it is supposed to produce. Wildcat Middle School must examine the system as it currently exists by understanding its competencies, conditions, culture, and contexts. Once they have analyzed the 4C's, they can begin to create a plan to make meaningful improvements that are derived from purposeful and deliberate information gathering and action planning. This leads to what Wagner refers to as the "To-Be," or the transformation. Synthesizing this information enables Wildcat Middle School to look at strategies, actions, and processes that will bring about necessary changes in daily instruction.

CHAPTER SIX: STRATEGIES AND ACTIONS

All schools are expected to show growth and improvement in student academic performance. Schools that allocate time to understanding the 4C's have a framework for examining their work and are better able to plan for improvements. This is the basis of the work of Wagner et al. (2006) on the 4 C's: competencies, conditions, culture, and context (pp. 99-105). Essentially, Wagner et al. (2006) assert that to create sustained and long-lasting change, an organization must first understand their standing in relation to the 4 C's, create an image of the ideal organization, and, finally, create a plan to bridge the organization from As-Is (current state) to the To-Be (ideal state).

Teachers from Wildcat Middle School often gather in small groups of like-minded people to discuss student grades, the lack of involvement by families, new educational websites, and why their school is falling short of their expectations. They continuously see great ideas and top practices that other schools are initiating. Wildcat teachers try these ideas only to get minimal results. In the end, there is a lack of understanding of the underlying cause of the school's academic progress. The underlying cause is the "illusion of a broken system," which is rooted in school culture.

Heifetz, Grashow, and Linsky (2009) state that there is no such thing as a dysfunctional organization. The broken system is an illusion; people in the organization have the power to cultivate change (Heifetz, et al., 2009). The system is only broken because the culture of the school continues to support the "As-Is." In the case of Wildcat Middle School, it means that enough people like the situation as it is, regardless of what they say about it. This same idea can be extended to the Smithville School District as a whole.

I contend that one of the best ways to move from the "As-Is" to the "To-Be" is to adopt a process that will have a lasting impact on culture, climate, and academic progress. Thinking, particularly critical thinking, is one process that can assist with most of Wildcat's current academic concerns. This is one approach that has not been tried by Wildcat Middle School or Smithville School District. In fact, my research reveals that many schools or school districts have not undertaken this approach as a long-term strategy. Furthermore, when it is used, it is haphazardly implemented in a few classrooms. However, in settings that have infused it into daily practice, research shows that students perform better academically.

When imagining the possibilities for Wildcat Middle School, it is essential to look beyond the present state. What could the school's future look like? How much stronger could the school become? What makes the school unique? This "To-Be" should drive the vision and focus of the school and school district. Progressing toward this ideal state, Wildcat should focus first on growing competencies within the district. This can be indicated by increased academic performance and professional development of staff members. In the realm of conditions, Wildcat continues to foster a strong staff culture of teamwork and a family-like environment. This same culture should exist within the student body. Culturally, teachers should trust that students can and will think critically. The implementation of critical thinking will change thinking, and, therefore, change the existing culture. Both students and staff members will benefit from this strategy. Lastly, the context of teaching at Wildcat Middle School should be identified as a strength. No longer will teachers complain about the lack of resources to teach critical thinking. Due to the increase in knowledge and understanding of critical thinking, teachers should easily and consistently develop materials and revise existing materials to meet student needs.

To fully understand how the change will occur at Wildcat Middle School, I will first examine the idea of educational change. What is education change? It is change that aims at school improvement. School improvement is closely linked to the professional development of principals and teachers (Postholm, 2012; Timperley, 2008; Timperley, Wilson, Barrar, & Fung, 2007). The ultimate goal for school improvement is to enhance student learning, learning conditions, and learning processes (Hargreaves, Lieberman, Fullan & Hopkins, 1998).

Fullan (2007) operates with three dimensions of educational change. The first one, which is also the most visible one, is when new or revised materials are introduced, such as curriculum materials or technologies. The second one, which is more challenging to implement, is new teaching approaches (i.e., teaching strategies or activities; Fullan, 2007). Finally, the third dimension, which is the most difficult one to employ, is changing people's beliefs (e.g., assumptions and theories underlying particular policies or programs (Fullan, 2007)). All three dimensions are necessary to achieve what Fullan calls "real change." There will be minimal change if new materials are implemented without being accompanied by new teaching approaches. The same is true if changes are related to beliefs and values with no understanding of their implications for practice (Burner, 2015).

All three dimensions of educational change impact the implementation of critical thinking. The most visible dimension is one of the expected outcomes for Wildcat Middle School teachers. Teachers will develop their materials or revise materials as they learn more about how to incorporate critical thinking into daily lessons. The implementation of a new teaching strategy or activity is the second dimension. Critical thinking is often perceived as a teaching strategy because it is paired with academic content. After determining the content to be taught, teachers will develop questions and activities to push students to think critically. Content is the "what" in

a lesson, and critical thinking is the "how." The third dimension is the changing of values and beliefs. The very nature of critical thinking requires us to question our values and beliefs constantly. The third dimension can cause considerable discomfort. Learning the characteristics of a critical thinker requires one to examine their level of critical thinking. If done well, this discomfort will motivate teachers to want to not only incorporate critical thinking into their curriculum but to also infuse critical thinking into all that they do.

Strategies and Actions (Appendix G)

The first step in the strategy to achieve the "To-Be" is to develop a sense of urgency by using current and historical data. The data will be compiled by an external consultant who will use statistical models and methods not available to the district. Using an external consultant to analyze, organize, and present the data will remove any biases held by the district or school.

The next step in the process is to compose a team of teachers, administrators, parents, and community members who commit to developing a vision. They should develop a plan to increase student achievement district-wide. Once the members of the team are identified, they will read and engage in conversations about critical thinking and participate in critical thinking activities. Learning more about critical thinking will prepare this team to be spokespeople and to lead the process of implementation.

Creating an implementation plan is the next step in the process. The plan will include annual academic goals, long-term professional development for staff, and ways to monitor implementation. A revised teacher orientation will include academic expectations and professional development. This will ensure that new staff have the knowledge and skills to implement critical thinking,

The final phase is to communicate the plan. Communication will occur via the district website and social media platforms, as well as during staff meetings, parent meetings, and Board

meetings. Several members of the team will attend community meetings to discuss the plan. The team will seize all opportunities to communicate the plan to stakeholders.

Staying the course is one of the most important parts of the strategy, although it is not a step. Staying the course means that we will continue to implement all of the steps in the above strategy. It demonstrates that we are truly committed to continuing to work on critical thinking until Wildcat Middle School and Smithville School District obtain the "To Be."

Conclusion

The data shows that the teachers at Wildcat Middle School are apprehensive but prepared to plan for and implement critical thinking. When asked, most of them reported that they currently teach critical thinking. However, data suggests that critical thinking is not being taught effectively. Similar to most schools, Wildcat can make meaningful improvements in the planning and teaching of critical thinking by being intentional. Smithville School District can help facilitate the process by implementing the strategies and actions outlined in the plan.

CHAPTER SEVEN: POLICY ADVOCACY AND RECOMMENDATION

Introduction

Critical thinking is a vital facet in human life. However, findings indicate that the concept of critical thinking has yet to be fully implemented in learning institutions. While 75% of the participants in the research believe that critical thinking is crucial, various factors attributed to the failure of the teaching of critical thinking concepts. Firstly, there was a lack of instructional materials to support promoting critical thinking. Secondly, some teachers believe that learners are unable to engage in critical thinking activities. They, therefore, do not provide them with opportunities to do so. Consequently, learners are assigned low-level academic tasks.

Despite teachers at Wildcat Middle School valuing the essence of critical thinking, according to the research findings, they rarely deliberated on how the concepts could be applied in classroom activities. Moreover, it was found that the teachers were using outmoded teaching strategies, even though the standards have changed and required more critical thinking. This is a clear indication that Wildcat Middle School has yet to adopt the changes that support the incorporation of critical thinking in the classroom. Applying critical thinking concepts in academic activities would greatly benefit the students' learning process.

As previously stated, the idea of critical thinking is embraced at Wildcat Middle School. However, it has not been fully incorporated in the learning process. That is, the students are not given opportunities to exercise their critical thinking skills. With a lack of teaching materials, teachers have trouble incorporating critical thinking into their lessons. Where critical thinking has been implemented to some extent in a few classrooms, many challenges are still prevalent. The implementation of new policies would prove to be paramount in the application of critical thinking at Wildcat Middle School.

As mentioned previously, my program evaluation involves an appraisal of how teachers implement critical thinking concepts in middle school through the use of learning activities and instructional materials. Given that teachers have identified a lack of materials available to help in teaching critical thinking, this demonstrates that it is not entirely possible to evaluate critical thinking using current instructional resources. A limitation in learning materials is an indication that teachers will not likely be able to implement critical thinking fully. As previously noted, existing textbooks do not invite learners to think critically. Although Smithville School District has undergone a curriculum audit and alignment process, the curriculum in existence has yet to align with state standards and promote the critical thinking needs of learners. Therefore, teachers are not fully aware as to what critical thinking entails. Therefore, it is challenging for educators to teach what they do not know.

According to research, some teachers feel that students are unable to handle thinking critically. This is unexpected given that teachers acknowledge that they may not know how to teach critical thinking. This seems to be contradictory. Indeed, teachers don't know if students are able to think critically if they aren't regularly providing activities that require them to do this. Unless there is a policy developed that ensures that all students have consistent access to lessons and activities that require them to think critically, we won't actually understand the extent to which students can do this.

The end goal of my research is to ensure that students are equipped with the necessary skills that enable them to become productive members of society. With critical thinking, learners will be better able to solve the challenges that arise in the course of their life endeavors. New policies are needed to ensure that critical thinking becomes a natural part of the learning process and life.

Policy Statement

As a way of addressing the circumstances that limit the advocacy of critical thinking at Wildcat Middle School, it is essential to develop new policies. Currently, Board Policy 6:10, The Philosophy of Our Schools (Appendix H), addresses critical thinking. Item number six in the policy states, "The task of Smithville Schools includes developing students' critical thinking skills and the need to strive for intellectual and social self-discipline." I would suggest that we leave this policy as is and refer to it when necessary. It is my recommendation that the Board Policy 6:40 Curriculum Development (Appendix I) and Board Policy 6:60 (Appendix J) be revised to include critical thinking.

In Board Policy 6:40, I recommend that under the section entitled "Development," a sentence be added that states, "The curriculum at every grade level, beginning with Pre-K, will include consistent critical thinking instructions." I further recommend that a beginning sentence be added to Policy 6:60. It should state, "All curricula adopted and implemented by Smithville School District will include the teaching of critical thinking at all grade levels." Having all policies that relate to curricula and instruction include a statement about critical thinking, emphasizes the importance of this skill.

The inclusion of these sentences in each policy will ensure that critical thinking is taught at all grades beginning with Pre-K. The Smithville School District will be organized in a way that incorporates critical thinking as an integral part of learning. Rather than being seen as an incidental aspect of teaching, critical thinking will be viewed as the primary goal and expectation of all middle school students. There is a dire need to shift from low-level activities and questions to new methods of teaching that produce valued, respected prospective employees who can solve complex problems and develop new ideas and technology. This means that the system of

education that haphazardly teaches critical thinking should be updated to include the teaching of effective critical thinking at all grade levels.

My recommendation to change how students are taught stems from several considerations. First, as society becomes increasingly dominated by technology, we must change how we teach. Secondly, what you learn is not the most important thing in education. Rather, how you think about the information learned matters significantly. Classes need to be conducted in a manner that encourages critical thinking among learners (Paul et al., n.d). These policy recommendations will enable learners to become critical thinkers at an early stage in their life.

I believe that having a policy that encourages the teaching of critical thinking from a young age will go a long way in ensuring that students become productive citizens. Indeed, they will think beyond the obvious and add value to the workplace and the world. This will be reflected in their handling of challenging work and daily life scenarios. Implementing critical thinking at the youngest of ages ensures that by the time students enter middle school, they will have years of critical thinking experience and be prepared to tackle more rigorous tasks. We are putting them on the path to being productive citizens in society.

School stakeholders will be compelled to change the school curriculum to align with state standards that require more advanced thinking. The change in curriculum will be oriented more toward equipping learners with critical thinking skills rather than imparting mere knowledge. The policies will also require that teachers have access to appropriate teaching materials that encourage students to think critically in the learning process.

I propose another policy measure be taken that involves giving students a chance to undertake internship programs in business organizations. Given that modern businesses complain that their employees do not think critically, the education system must partner with companies to

develop critical thinking in future employees. Students in grades 6-8 should be required to undertake an internship program lasting 2-3 months each year before they are transition to the next grade. Ideally, students would be partnered with a person in an organization who the employer feels models the thinking needed to do the job successfully. This policy ensures that learning is extended beyond the walls of the school. Students will tangibly get to experience the kind of thinking that is necessary to be successful in the workplace. For employers, there are a few benefits of this policy. It provides them with an opportunity to help develop the next generation of employees. Companies will also have the chance to identify students who would be great assets as future employees.

Currently, no policy exists in the Smithville School District that requires students to participate in internships. I suggest that a new policy be developed. The policy would require all students in middle school to participate in an internship. The number of days and hours would be co-developed with the middle school staff and local businesses. The completion of the internship would be required for promotion. Wildcat Middle School would be responsible for developing and fostering relationships with companies. The students' choices should be taken into consideration when determining placements to obtain maximum benefits from the internship.

The benefits of the proposed policies suggest that it is possible to have a generation of students who are deemed as well-prepared, competent prospective employees who are adequately prepared to overcome adversity.

Analysis of Needs

To effectively implement critical thinking at Wildcat Middle School, an education policy that embraces critical thinking for learners of all ages is urgently required. Students at Wildcat

Middle School deserve the opportunity to participate in a system that values all learners as capable critical thinkers.

I will evaluate the impact the proposed policies will have on the following six areas: education, economics, social, political, legal, and moral/ethical.

Educational analysis

The goal of any education system is to develop students into contributing members of society. For students to achieve this, they must develop their critical thinking skills. The existing system of education, as it has been shown from the analysis at Wildcat Middle School, falls short of this requirement. It does not comprehensively address the critical thinking needs of students. An education system should develop students who become an asset to society. With the proposed policies, students benefit in two ways: (1) They are immersed in critical thinking throughout their time in the Smithville School District, and (2) once they enter middle school, they work with professionals in business while exhibiting critical thinking. These skills will later be a tool in the workforce. The system of education will extend beyond the ordinary class learning. Teachers will not be the sole providers of knowledge. Students will apply the skills of critical thinking to come up with new ideas. Similarly, students will be better prepared to critique and offer suggestions regarding what they are taught in school.

Economic analysis

The proposed policy measures to amend Policy 6:40 and Policy 6:60 may bear some economic impact. Once the policies are amended, a considerable amount of professional development will be required from staff. Additionally, new instructional materials may be purchased. However, the long-term economic impact outweighs that of the short-term. Certainly, the Smithville School District may initially spend additional money to ensure the teaching of

critical thinking. Nonetheless, in the long run, employees who think critically benefit the economy. Therefore, the critical thinking skills that are gained in the classroom will be reflected in the economy (McEachern, 2011). The economy is driven by information and technology. Employees are required to deal with changes quickly and effectively. The economy places increasing demands on flexible intellectual skills, the ability to analyze information, and the ability to integrate different sources of knowledge in solving complex problems. The policy changes I proposed promote good thinking skills and will positively impact the fast-changing workplace.

Social analysis

The changes in the policies will influence students' social skills. If students are critical thinkers in the early stages of their education, they will be more likely to have positive interactions with their peers (Hellsten, 2010). Indeed, learners who are equipped with critical thinking skills have improved logical reasoning, which improves their interactions with others. Additionally, they can determine the degree to which their assumptions limit their ability to make good decisions. From this, it becomes possible to have different perspectives and this prompts informed actions (Hajhosseinin et al., 2016). Students who have these attributes fostered through critical thinking will be able to evaluate their decisions based on information, and then change their decisions when necessary.

Political analysis

Politics are present in all that we do. Education is no different. Every change in or amendment to a policy has political ramifications. Changes in school policies can be daunting due to the desire to maintain the status quo. As mentioned previously, every system is perfectly designed to get the results they receive (Wagner, 2012). Regardless of the teachers at Wildcat

Middle School believing that critical thinking is important, the skills are not promoted in the instruction in most classrooms. This confirms that many people are comfortable with the way things are. People use politics and political connections to maintain the status quo. In this case, politics will involve calls to Board members to block the amendment of the policy. It might also involve the teacher's union complaining to the superintendent about the changes. While the specifics of the politics are unknown at this time, there will be political moves to prevent changes to the policies.

Legal analysis

From a purely legal perspective, there are limited concerns and issues with these policy recommendations. Overall, there are greater implications economically than there are legally. However, understanding the legal landscape when proposing policy changes to stakeholders is essential. The challenge with any policy change or requirement is to gain buy-in from the stakeholders. Convincing these individuals to support this policy would be the greatest challenge. Carrasquillo, Rodriguez, and Kaplan (2014) discuss this hurdle in great detail, outlining that, for any mandate to be effective, policymakers and advocates must first "create a movement of individuals who are strong supporters of the requirement, who will meet regularly to move the policy forward" (p. 89). This could include local leaders, district leaders, parents, and community members. Without such a movement and convincing supporters, any mandate would struggle to be successful.

Legally, the policy recommendations will require the schools in the district to implement critical thinking. However, there is flexibility in how this looks among schools. There is a myriad of ways to teach critical thinking. Therefore, schools can design critical thinking lessons to best

suit the needs of students. While the policy recommendations require the teaching of critical thinking, the aim is for schools to utilize the flexibility they have to plan for their students.

Moral and ethical analysis

From a moral and ethical perspective, there are no issues related to implementing the proposed policies. However, moral and ethical issues arise if the policies aren't implemented. Article X, Section 1 of the Illinois Constitution decrees, "The State shall provide for an efficient system of high-quality public educational institutions and services." Businesses globally are concerned about the quality of employees in the workplace. Their major complaint relates to employees' inability to think critically and solve complex problems. A high-quality public educational institution, as established in the Illinois Constitution, should not produce citizens who are unprepared for the current challenges of the workplace. Educators have a moral and ethical responsibility to all students and citizens to ensure that we provide education that aligns with the Illinois Constitution. Failure to do so shows that we are stripping our younger generations of their constitutional rights. The proposed policy changes will increase the quality of the educational system at Wildcat Middle School. It will develop professionals who are prepared for the thinking required for jobs that do not currently exist. Most importantly, schools exist to meet the needs of students. It is our moral and ethical obligation to do so.

Implications for Staff and Community Relationships

When implementing any new policy, practice, or procedure, there are implications for staff and community relations. This holds true for the policy recommendations requiring students in Pre-K to 8th grade be taught to think critically, as well as the development of a new policy requiring middle school students to participate in internships. Most stakeholders would view these policies as positive. Both policies are clearly focused on preparing students to thrive in our ever-changing world.

As mentioned previously, businesses will have the opportunity to partner with educators in creating a generation of critical thinkers. This will create new relationships between Wildcat Middle School and local businesses. More importantly, business professionals will have the opportunity to build long-lasting relationships with students.

Evidence reveals that the Wildcat Middle School staff indicated that critical thinking is important, and it should be taught. However, once it is required, immediate staff buy-in may be lacking. Nonetheless, with sustained professional development, most resistance is likely to dissipate.

With the promotion of critical thinking, the relationship between students and staff is likely to improve. As students become more astute at thinking critically, teachers' perceptions of them will increase. Teachers will embrace and celebrate the newly acquired thinking exhibited by their students. This will lead to improved relationships and a desire to continually provide activities that promote critical thinking.

Conclusion

Findings suggest that critical thinking at Wildcat Middle School is viewed as essential, but has not been embraced. The reasons cited include a lack of appropriate instructional materials and a lack of understanding of critical thinking. A policy is needed that advocates for changes to the current instructional model. I recommend Board Policy 6:40 and Board Policy 6:60 be revised to require all students from Pre-K to 8th grade to be taught to think critically. Furthermore, a new policy should require students in grades 6 to 8 to participate in internships.

The proposed policy measures were analyzed to determine their educational, social, legal, ethical/moral, and political impacts. The new policies will address each of the identified areas and ensure that the maximum benefits are realized. The recommended policy changes will have

an impact not only on the learners but also on teachers. Teachers must be prepared to think critically and push students to do the same. Parents and guardians must support their students who will struggle in the beginning. However, the community as a whole should stand to reap huge benefits as we produce a workforce of better thinkers.

CHAPTER EIGHT: CONCLUSION

Introduction

No matter your walk of life, your pursued career interests, or the extent of your work experience, critical thinking skills are vital for achieving success. In fact, lacking such skills can have detrimental impacts on one's career. Erstad (2018) states, "The ability to think critically is more important now than it has ever been. Everything is at risk if we don't all learn to think more critically. If people cannot think critically, he explains, they lessen their prospects of climbing the ladder in their respective industries" (para. 2).

Wildcat Middle School, located 10 miles west of Chicago, has struggled with a lack of continuous academic improvement. Classroom observations indicate that daily lessons are predominantly composed of low-level activities and questions. To better understand how critical thinking is taught, as well as what materials are used to teach it, the Wildcat Middle School staff had an opportunity to explain their experience with teaching critical thinking through a survey and focus group. The ultimate purpose of which was to answer four key questions:

1. To what extent do teachers believe that they currently provide activities/materials that foster critical thinking?

2. To what extent do teachers know how to identify and align questions/activities that require students to think critically?

3. What is the teacher's perceived impact that including critical thinking activities/materials have on student learning?

4. How often do teachers of the same grade level and content area discuss the implementation of activities/materials that foster critical thinking?

Discussion

The purpose of this study was to determine the extent to which educators at Wildcat Middle School teach critical thinking. An analysis of the data revealed a contradiction. The survey results reveal that teachers are intentionally planning for critical thinking and that they feel very comfortable in their ability to do so. However, further analysis revealed that teachers might have exaggerated the extent to which they actually plan and implement lessons and activities that require students to think critically. The teachers acknowledged that they were concerned about providing critical thinking activities to some students who may not be prepared to think critically. The focus group eventually concluded that teachers think they are teaching critical thinking. However, in actuality, they are not.

Once staff perceptions of critical thinking were evaluated, it became imperative to begin looking at an organizational plan to tackle the findings. In addition to analyzing research, Wildcat Middle School was examined closely to assess their current state or "As-Is." Key findings of this process were organized according to Wagner's (2012) "4 C's" – context, conditions, competencies, and culture. Data shows that the school has a strong staff collaborative culture, instructional specialists support content instruction, and the school has sufficient planning time to address critical thinking. However, the focus group indicated that teachers might not know how to teach critical thinking. Additionally, there is a lack of instructional materials to support the teaching of critical thinking, and teachers don't trust that all kids are capable of thinking critically. These areas must be addressed before critical thinking can be implemented at Wildcat Middle School.

In looking carefully and critically at the school's current state, it is important to develop what Wildcat Middle School could become. Using the "4 C's" context, a "To-Be" analysis was completed. This analysis identified the possibilities for the school as to whether an organizational

plan be implemented. The analysis determined that teachers need professional development that focuses on the characteristics of critical thinkers and models of ways to incorporate critical thinking into their daily lessons. Furthermore, critical thinking questions and a rubric are a few tools that teachers need to begin immediate implementation.

Knowing this, a series of strategies and actions addressing the need to implement critical thinking have been proposed. The plan has four parts: (1) to establish a sense of urgency, (2) to build a team, (3) to provide professional development, and (4) to develop and communicate the plan. To ensure these strategies are effective, they must be evaluated regularly, and leadership must maintain a clear focus on them.

The final phase of this study presents an argument for advocacy of a policy that requires all teachers in grades Pre-K to teach critical thinking. In order to accomplish this, I proposed amendments to Board Policy 6:40 and Board Policy 6:60. Each of these policies would include a sentence that incorporates critical thinking into curriculum and curriculum planning. I also proposed that a new policy be created that requires students at Wildcat Middle School to complete a two- to three-month internship annually. This would allow students to see the thinking that is needed to be successful in the workplace. Furthermore, businesses would see that middle school students are capable of solving complex problems. The implementation of the policy recommendations would lead to better thinkers.

Leadership Lessons

Reflecting upon this research study has allowed me to take a closer look at my leadership style, as well as at approaches and practices I implement take to better Wildcat Middle School and myself. Taking into account Wildcat's strengths, challenges, and opportunities, I will focus on a few leadership lessons:

81

- Professional Development is a vital component of implementing any change

- The extent to which each person will exhibit critical thinking will vary

- School and district leaders must think critically for others to follow

This research highlighted the need for continuous professional development. With well-designed, long-term professional development in critical thinking, staff can begin to build these skills in themselves and their students. Cwikla (2002) supports this claim, discussing that research indicates the need for purposeful professional development and learning goals for teachers. Teachers must feel that they are supported when participating in new educational opportunities. Ideally, the more teachers learn, the more students learn, and the greater the return for the entire school community. A significant way to truly increase academic performance is to provide professional development and support to teachers.

While conducting research, I continued to wonder why critical thinking is not widely taught. Most research indicates the difficulty involved in teaching critical thinking. I quickly began to understand that it is not a realistic expectation for people to exhibit the characteristics of critical thinkers consistently. The extent to which each person thinks critically will vary. The nature of being human indicates that there will be times when our thinking is distorted, biased, and illogical. The goal of critical thinking is to make individuals aware of when this occurs and to change the thinking based on information. Nonetheless, being human implies that we are imperfect. As individuals who make mistakes, we will not be flawless critical thinkers. Therefore, the culture associated with critical thinking must be one that values and supports making mistakes.

As a leader, I believe it is essential to push people to think critically. Nonetheless, I understand that consideration needs to be given regarding the amount of time it takes to develop

critical thinking skills. I anticipate that this frustration will be felt by the staff. It might explain why most people do not endeavor to teach critical thinking. The process takes time, practice, and patience. It is my goal to ensure that each of these is provided.

Exemplary leaders know that to gain commitment and achieve the highest standards, they must be models of the behavior they expect from others (Posner, 2017). To expect staff to think critically and to teach critical thinking, all building level and district administrators must endeavor to be critical thinkers. The statement, "Do as I say, not as I do" has lost much of its relevance in education. Simply, we are role models. Furthermore, administrators are role models for staff and students. People look to us for guidance and support. It is impossible to guide and support others in an area in which we are not proficient. Further, once staff understand critical thinking and become critical thinkers, they will evaluate the extent to which administrators think critically. Therefore, critical thinking is expected from administrators also.

Conclusion

Is critical thinking really critical? Research indicates that critical thinking has been deemed essential since the time of Socrates. "Every school in America should teach the arts of critical thinking and critical reading, so that a critical spirit becomes a permanent possession of every student and pervades the teaching of every course in America" (Breslin, 2016, para. 3). It is our responsibility as educators to teach students h*ow* to think rather than *what* to think. Students should question everything they read and never accept a claim blindly. "Critical thinking is life's indispensable survival skill, compared to which everything else is an educational frill" (Breslin, 2016, para. 8). To date, critical thinking is still discussed and hailed as critical. However, there is minimal evidence that suggests that educational institutions are any closer to developing their students as critical thinkers.

References

Aikens, N. L., & Barbarin, O. (2008). Socioeconomic differences in reading trajectories: The contribution of family, neighborhood, and school contexts. *Journal of Educational Psychology, 100,* 235-251. http://dx.doi.org/10.1037/0022-0663.100.2.235

Alwehaibi, H. U. (2012). Novel program to promote critical thinking among higher education students: Empirical study from Saudi Arabia. *Asian Social Science*, *8*(11), 193.

Arslan, R., Gulveren, H., & Aydin, E. (2014). A research on critical thinking tendencies and factors that affect critical thinking of Higher Education students. *International Journal of Business and Management*, *9*(5). doi: 10.5539/ijbm.v9n5p43

Barshay, J. (2019, Sept. 18). Why content knowledge is crucial to effective Critical Thinking. *Mindshift*. https://www.kqed.org/mindshift/54470/why-content-knowledge-is-crucial-to-effective-critical-thinking

Behar-Horenstein, L., & Niu, L. (2011). Teaching critical thinking skills in Higher Education: A review of the literature. *Journal of College Teaching & Learning (TLC)*, *8*(2). doi: 10.19030/tlc.v8i2.3554

Bernardi, R. A., Massey, D. W., Thorne, L., & Downey, A. (2002). *Critical thinking and moral reasoning of intermediate accounting students*. Available at SSRN 1095379.

Board Policy 6:10 The Philosophy of Our Schools

Board Policy 6:40 Curriculum Development

Board Policy 6:60 Curriculum Content

Bok, D. (2009). *Our underachieving colleges: A candid look at how much students learn and why they should be learning more*. Princeton University Press.

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & García Coll, C. (2001). The home environments of children in the United States Part I: Variations by age, ethnicity, and poverty status. *Child Development*, *72,* 1844-1867. doi:10.1111/1467-8624.t01-1-00382

Breslin, F. (2016). Why public schools don't teach Critical Thinking. *HuffPost.* Retrieved from: https://www.huffpost.com/entry/why-public-schools-dont-t_b_7956518

Browne, M., & Freeman, K. (2000). Distinguishing features of critical thinking classrooms. *Teaching In Higher Education*, *5*(3), 301-309. doi: 10.1080/713699143

Burner, T. (2015). Formative assessment of writing in English as a foreign language. *Scandinavian Journal of Educational Research,* 1-23. doi:10.1080/00313831.2015.1066430

Butler, H. A., Pentoney, C., & Bong, M. P. (2017). Predicting real-world outcomes: Critical thinking ability is a better predictor of life decisions than intelligence. *Thinking Skills and Creativity*, *25*, 38-46.

Carrasquillo, A., Rodríguez, D., & Kaplan, L. (2014). New York State Education Department policies, mandates and initiatives on the education of English language learners. *Journal of Multilingual Education Research*, *5*, 67-91.

Choy, S. C., & Cheah, P. K. (2009). Teacher perceptions of critical thinking among students and its influence on higher education. *International Journal of Teaching and Learning in Higher Education*, *20*(2), 198-206.

City, E. A. (2011). Learning from instructional rounds. *Educational Leadership*, *69*(2), 36-41.

Clark, M. (2009). Beyond critical thinking. *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, And Culture*, *9*(2), 325-330. doi: 10.1215/15314200-2008-035

Crenshaw, P. (2014). Review of Critical Thinking: An introduction. *Inquiry: Critical Thinking Across the Disciplines*, *29*(1), 63-72. doi: 10.5840/inquiryct20142916

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publishers. Retrieved from https://books.google.com/books?id=4uB76IC_pOQC&printsec=frontcover&dq

Critical Thinking, (n.d.). Retrieved from https://www.skillsyouneed.com/learn/critical-thinking.html

Crossman, A. (2019, July 18). *Convenience samples for research*. Thought Co. Retrieved from: https://www.thoughtco.com/convenience-sampling-3026726

Cwikla, J. (2002). *The Importance of Setting Teacher Learning Goals To Investigate the Effectiveness of Teacher Professional Development*.

Dallman, D. A. (2015). *Critical thinking in the 21st century: pre-service elementary teachers' perceptions and application of critical thinking in a social studies methods course* (Doctoral dissertation, Montana State University-Bozeman, College of Education, Health & Human Development).

de Bie, H., Wilhelm, P., & van der Meij, H. (2015). The Halpern Critical Thinking Assessment: Toward a Dutch appraisal of critical thinking. *Thinking Skills and Creativity*, *17*, 33-44. doi: 10.1016/j.tsc.2015.04.001

Demirel, M., Derman, I., & CAN ARAN, O. (2017). Examining graduate dissertations in the field of Critical Thinking: A case from Turkey. *Eurasian Journal of Educational Research (EJER)*, (67).

Doyle, A. (2020, Jan. 20). Hard skills vs. soft skills: What's the difference? *The Balance Careers*. Retrieved from: www.theblanacecareers.com

Elder, L. (2016). Richard Paul's contributions to the field of Critical Thinking and to the establishment of first principles in Critical Thinking. *Inquiry: Critical Thinking Across the Disciplines*, *31*(1), 8-33. doi: 10.5840/inquiryct20163113

Erstad, W., (2018). *6 critical thinking skills you need to master now*. Rasmussen College https://www.rasmussen.edu/student-experience/college-life/critical-thinking-skills-to-master-now/

Forshaw, M. (2012). *Critical thinking for Psychology*. Hoboken: Wiley-Blackwell.

Fullan, M. (2017, July 17). *Michael Fullan on Initiative Fatigue: Grasping at no handles*. ASCD. Retrieved from: https://inservice.ascd.org/michael-fullan-on-initiative-fatigue-grasping-at-no-handles/

Finocchiaro, M. (1996). Critical Thinking, Critical Reasoning, and Methodological Reflection. *Inquiry: Critical Thinking Across the Disciplines*, *15*(4), 66-79. doi: 10.5840/inquiryctnews19961546Gelerstein, D., Río, R., Nussbaum, M., Chiuminatto, P., & López, X. (2016). Designing and implementing a test for measuring critical thinking in primary school. *Thinking Skills and Creativity*, *20*, 40-49. doi: 10.1016/j.tsc.2016.02.002

Gershenson, S., & Papageorge, N. (2018). The power of teacher expectations: How racial bias hinders student attainment. *Education Next*, *18*(1), 64-71.

Ginsburg, D. (2011). *When helping students hurts students. Education Week blog*. Retrieved from:
http://blogs.edweek.org/teachers/coach_gs_teaching_tips/2011/03/when_helping_students_hurts_students.html

Gose, M. (2009). When Socratic dialogue is flagging: Questions and strategies for engaging students. *College Teaching, 57*(1), 45–49.

Hajhosseini, M., Zandi, S., Hosseini Shabanan, S., & Madani, Y. (2016). Critical thinking and social interaction in active learning: A conceptual analysis of class discussion from Iranian students' perspective. *Cogent Education, 3*(1), 1175051. Illinois Constitution, art. X, pt. I.

Hargreaves, A., Lieberman, A., Fullan, M., & Hopkins, D. (Eds.). (1998). *International handbook of educational change.* Netherlands: Springer Netherlands.

Harvey, F. (2018). Critical GIS: Distinguishing critical theory from critical thinking. *The Canadian Geographer / Le Géographe Canadien*, *62*(1), 35-39. doi: 10.1111/cag.12440

Hattie, J., Fisher, D., Frey, N., Gojak, L. M., Moore, S. D., & Mellman, W. (2016). *Visible learning for Mathematics, grades K-12: What works best to optimize student learning*. Corwin Press.

Heick, T. (2020, Jan. 26). 60 ways to help students think for themselves. *Teachthought.* https://www.teachthought.com/critical-thinking/how-students-learn/

Heifetz, R. A., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Harvard Business Press.

Hiner, A. (2013). Critical thinking in the Literature classroom, Part I: Making critical thinking visible. *Inquiry: Critical Thinking Across the Disciplines*, *28*(1), 26-35. doi: 10.5840/inquiryct20132813

Imaniar, F., Lestari, L., & Munir, A. (2018). The teaching and learning of academic writing involving critical thinking in Higher Education. *Journal of English Language and Literature*, *10*(1), 975. doi: 10.17722/jell.v10i1.387

Ikuenobe, P. (2001). Teaching and assessing critical thinking abilities as outcomes in an informal logic course. *Teaching In Higher Education*, *6*(1), 19-32. doi: 10.1080/13562510020029572

James, N., Hughes, C., & Cappa, C. (2010). Conceptualising, developing and assessing critical thinking in law. *Teaching In Higher Education*, *15*(3), 285-297. doi: 10.1080/13562511003740858

Kokkidou, M. (2013). Critical thinking and school music education: Literature review, research findings, and perspectives. *Journal for Learning through the Arts*, *9*(1), n1.

Leicester, M., & Taylor, D. (2010). *Critical thinking across the curriculum*. Maidenhead: Open University Press.

Liu, O. L., Frankel, L., & Roohr, K. C. (2014). Assessing critical thinking in higher education: Current state and directions for next-generation assessment. *ETS Research Report Series*, *2014*(1), 1-23.

Facione, N. C., & Facione, P. A. (1994). *The" California Critical Thinking Skills Test" and the National League for Nursing Accreditation Requirement in Critical Thinking*.

Fulcinita, F. (2018, Nov 4). *What is the PARCC Test?* PrepScholar. Retrieved from: https://blog.prepscholar.com/what-is-the-parcc-test

MacDonald, E. (2011). When nice won't suffice. *Journal of Staff Development*, *32*(3), 45-47.

Marzano, R. J., Pickering, D., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. ASCD.

Mathis, J. (2002). Multicultural text sets: Organizing for critical thinking. *New Review of Children's Literature And Librarianship*, *8*(1), 55-69. doi: 10.1080/136145402095106

Mayfield, M. (2014). *Thinking for yourself*. Boston, MA: Wadswort

McEachern, W. A. (2011). *Economics: A contemporary introduction*. Cengage Learning.

Miller, S. (2005). The dialogue of creative and critical thinking. *Inquiry: Critical Thinking Across The Disciplines*, *24*(4), 37-43. doi: 10.5840/inquiryctnews20052447

Nilson, C., Fetherston, C., & McMurray, A. (2014). Developing children's critical thinking through Creative Arts Eeposure: An application of Ennis's Super-streamlined Critical Thinking Framework. *The International Journal of Arts Education*, *8*(3), 31-45. doi: 10.18848/2326-9944/cgp/v08i03/31-45

Onodipe, G., & Ayadi, M. (2012). Promoting critical thinking in online discussion threads: Lessons learned teaching Economics. *SSRN Electronic Journal*. doi: 10.2139/ssrn.2103352

Paris, B. (2016, Nov. 29). *Failing to improve Critical Thinking*. Inside Higher Ed. https://www.insidehighered.com/views/2016/11/29/roadblocks-better-critical-thinking-skills-are-embedded-college-experience-essay

Patton, M. Q. (2014). *Essentials of utilization-focused evaluation.* Thousand Oaks, CA: Sage Publications. Retrieved from http://www.cehd.umn.edu/OLPD/MESI/spring/2017/Patton-Utilization.pdf

Paul, R. (2004). *The state of critical thinking today*. Retrieved from http://www.criticalthinking.org/pages/the-state-of-critical-thinking-today/523

Paul, R. & Elder, L. (2009). *The art of asking essential questions. The foundation for critical thinking*. Retrieved from: https://www.criticalthinking.org/files/SAM-Questions2005.pdf

Paul, R., Elder, L., & Bartell, T. (n.d.). *Research findings and policy recommendations - The critical thinking community*. Critical Thinking. https://www.criticalthinking.org/resources/articles/research-findings-policy-recom.shtml

Paul, R. W., Elder, L., & Bartell, T. (1997). *California teacher preparation for instruction in Critical Thinking: Research findings and policy recommendations California Commission on Teacher Credentialing, Foundation for Critical C Sacramento California.* Retrieved from: http://www.criticalthinking.org/aboutCT/briefHistoryCT.cfm

Pearson. (2018, Spring). *Partnership for assessment of readiness for College and Careers*. Retrieved from: https://www.isbe.net/Documents/Spring-2018-PLS-ES-CSR-Inter-Guide.pdf, 5.

Plattner, H., Meinel, C., & Leifer, L. (2012). *Design thinking research*. Berlin: Springer.

Postholm, M. B. (2012). Teachers' professional development: A theoretical review. *Educational Research, 54*(4), 405-429. doi:10.1080/00131881.2012.734725

Posner, B. (2017). *5 practices of exemplary leadership. Success*. Retrieved from: https://www.success.com/5-practices-of-exemplary-leadership/

Radulović, L., & Stančić, M. (2017). What is needed to develop critical thinking in schools? *Center for Educational Policy Studies Journal*. https://www.cepsj.si/index.php/cepsj/article/view/283

Reinstein, A., & Bayou, M. E. (1997). Critical thinking in accounting education: Processes, skills and applications. *Managerial Auditing Journal*, *12*(7), 336-342.

Ruenzel, D. (2014, March 25). *Embracing teachers as Critical Thinkers*. Education Week. Retrieved from: https://www.edweek.org/ew/articles/2014/03/26/26ruenzel.h33.html

Ruggiero, V. (1988). *Teaching thinking across the curriculum*. New York: Harper & Row.

Saaris, N. (2019, March 19). Expert strategies to drive greater depth of knowledge in your classroom. *Actively Learn*. https://www.activelylearn.com/post/expert-strategies-to-drive-depth-of-knowledge

Sanders, M. (2011). Embracing critical thinking as a model for professional development. *Inquiry: Critical Thinking Across the Disciplines*, *26*(1), 29-37. doi: 10.5840/inquiryctnews20112615

Seldomridge, L., & Walsh, C. (2006). Measuring critical thinking in graduate education. *Nurse Educator*, *31*(3), 132-137. doi: 10.1097/00006223-200605000-00011

Smith, V. G., & Szymanski, A. (2013). Critical thinking: More than test scores. *International Journal of Educational Leadership Preparation*, *8*(2), 16-25. Retrieved from http://files.eric.ed.gov/fulltext/EJ1016160.pdf

Sternberg, R. J. (2013). Giving employers what they don't really want. *The Chronicle of Higher Education*, *17*.

Sternberg, R., Roediger, H., & Halpern, D. (2007). *Critical thinking in psychology*. Cambridge: Cambridge University Press.

Schwarze, S., & Lape, H. (1997). *Thinking Socratically*. Upper Saddle River, NJ: Prentice Hall.

Stitt, R. (2015, Aug. 4). Lack of Critical Thinking hurts high school students. *Voice & Viewpoint.* Retrieved from: https://sdvoice.info/lack-of-critical-thinking-hurts-high-school-students/

Swartz, R. J., & Parks, S. (1994). *Infusing the teaching of Critical and Creative Thinking into content instruction: A lesson design handbook for the Elementary Grades*. Critical Thinking Press and Software, PO Box 448, Pacific Grove, CA 93950-0448.

Timperley, H. (2008). *Teacher professional learning and development*. In Educational Practices Series. Belley, France: Imprimerie Nouvelle Gonnet.

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration.* Wellington: Ministry of Education.

Tsai, P. Y., Chen, S., Chang, H. P., & Chang, W. H. (2013). Effects of prompting critical reading of science news on seventh graders' cognitive achievement. *International Journal of Environmental and Science Education*, *8*(1), 85-107.

VanTassel-Baska, J., Bracken, B., Feng, A., & Brown, E. (2009). A longitudinal study of enhancing critical thinking and reading comprehension in Title I classrooms. *Journal for the Education of the Gifted*, *33*(1), 7-37.

van Zyl, M., Bays, C., & Gilchrist, C. (2013). Assessing teaching critical thinking with validated critical thinking inventories: The Learning Critical Thinking Inventory (LCTI) and the Teaching Critical Thinking Inventory (TCTI). *Inquiry: Critical Thinking Across the Disciplines*, *28*(3), 40-50. doi: 10.5840/inquiryct201328318

Wagner, T., Kegan, R., Lahey, L. L., Lemons, R. W., Garnier, J., Helsing, D., & Rasmussen, H. T. (2006). *Change leadership: A practical guide to transforming our schools*. John Wiley & Sons.

Walsh, J. A., & Sattes, B. D. (2010). *Leading through quality questioning: Creating capacity, commitment, and community*. Thousand Oaks, CA: Corwin Press.

Watanabe-Crockett, L. (2019, Feb. 13). *This is why making strong learning connections matters most*. Global Digital Citizenship Foundation. https://globaldigitalcitizen.org/making-strong-learning-connections-matters

Wellberg, J. Fostering critical thinking in Pre-K. *The Reading Teacher*, *0*, 1. https://doi.org/10.1002/trtr.1829

Wight, J. B. (2012). *Ethics and Critical Thinking*. UR Scholarship Repository | University of Richmond.

Research. https://scholarship.richmond.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1024&context=economics-faculty-publications

Wignall, A. (2019, Oct. 31*). What exactly is College Readiness?* Retrieved from: https://www.collegeraptor.com/getting-in/articles/questions-answers/exactly-college-readiness/

Willingham, D. (2019). *How to teach critical thinking*. Education Future Frontiers.

Yang, Y., & Chou, H. (2008). Beyond critical thinking skills: Investigating the relationship between critical thinking skills and dispositions through different online instructional strategies. *British Journal of Educational Technology*, *39*(4), 666-684. doi: 10.1111/j.1467-8535.2007.00767.x

Yesilpinar, M., & Doganay, A. (2014). Self-efficacy perceptions of classroom teacher and prospective teacher about the instruction of Critical Thinking. *Cukurova University Faculty of Education Journal*, *43*(2). doi: 10.14812/cufej.2014.013

Yuan, R., & Stapleton, P. (2019). Student teachers' perceptions of critical thinking and its teaching. *ELT Journal*.

Zemelman, S., Daniels, H., & Hyde, A. (2005). Best practice: Today's standards for teaching and learning in America's schools. *Education Review//Reseñas Educativas*.

Critical Thinking in the Middle Grades

1. Please select your completed years of teaching experience.
Mark only one oval.

◯ 0 - 3

◯ 4 - 8

◯ 9 - 13

◯ 14 - 18

◯ 19 - 29

◯ More than 30

2. What content do you teach?
Mark only one oval.

◯ ELA

◯ MATH

◯ SCIENCE

◯ SOCIAL STUDIES

◯ ART

◯ MUSIC

◯ THEATRE

◯ PE

◯ TECHNOLOGY

3. What grade do you teach?
Mark only one oval.

◯ 6th grade

◯ 7th grade

◯ 8th grade

◯ All grades

4. What is your job title?
Mark only one oval.

◯ Regular Education Teacher

◯ EL Teacher

◯ SPED Teacher

◯ Instructional Specialist

5. **On a scale of 1-5 with 5 being the highest and 1 being the lowest, rate the importance of critical thinking skills.**

Mark only one oval.

( ) Extremely Important

( ) Important

( ) Not Important

6. **Comments/Reactions**

_____

_____

_____

_____

_____

7. **How often do you purposefully plan for activities/questions that require students to use critical thinking skills?**

Mark only one oval.

( ) Always

( ) Often

( ) Sometimes

( ) Rarely

( ) Never

8. **Comments/Reactions**

_____

_____

_____

_____

_____

9. **How often do you and your team share ideas and/or ways of teaching critical thinking?**

Mark only one oval.

( ) Always

( ) Often

( ) Sometimes

( ) Rarely

( ) Never

10. Comments/Reactions

_____

_____

_____

_____

_____

11. How comfortable do you feel in your ability to teach students to think critically?
Mark only one oval.

◯ Extremely Comfort

◯ Comfort

◯ Not very comfortable

◯ Not at all comfortable

12. Comments/Reactions

_____

_____

_____

_____

_____

13. How often do you use the textbook and aligned materials to teach?
Mark only one oval.

◯ Always

◯ Often

◯ Sometimes

◯ Rarely

Never

14. Comments/Reactions

_____

_____

_____

_____

_____

15. **When using the textbook, how often do you find questions/activities that provide opportunities for students to think critically?**
Mark only one oval.

⬭ Always

⬭ Often

⬭ Sometimes

⬭ Rarely

⬭ Never

16. **Comment/Reaction**

_____

_____

_____

_____

_____

17. **How often do you find your own instructional materials (stories, problems, questions, etc)?**
Mark only one oval.

⬭ Always

⬭ Often

⬭ Sometimes

⬭ Rarely

⬭ Never

18. **Comments/Reactions**

_____

_____

_____

_____

_____

19. **How often do the materials you find provide opportunities for students to think critically?**
Mark only one oval.

⬭ Always

⬭ Often

⬭ Sometimes

⬭ Rarely

⬭ Never

21. **How often do you develop your own questions/activities that require students to think critically?**

Mark only one oval.

◯ Always

◯ Often

◯ Sometimes

◯ Rarely

◯ Never

22. **Comment/Reaction**

_____

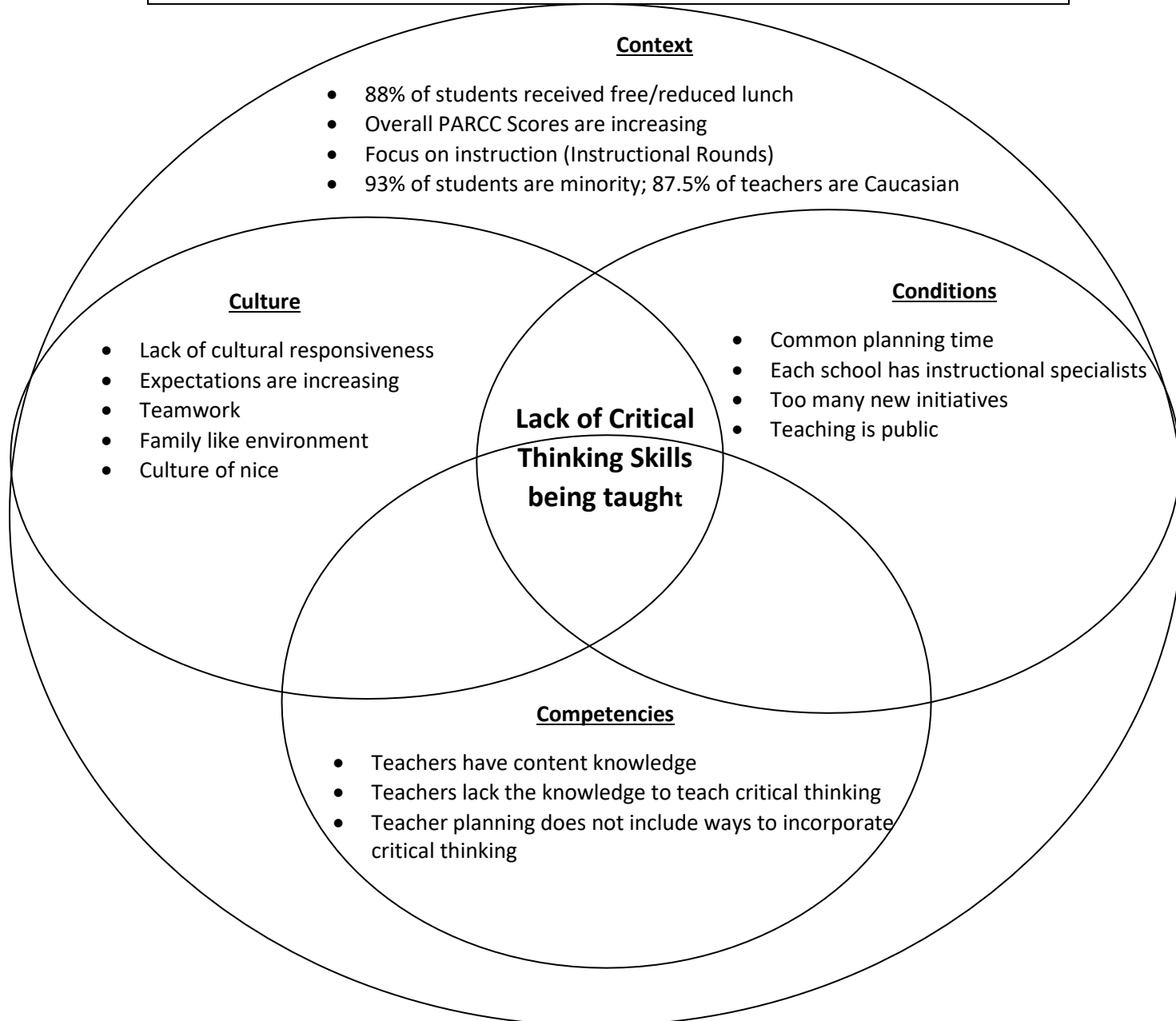_____

_____

_____

_____

Powered by

Google Forms

Appendix B – Focus Group Questions

1. Please read the definition of critical thinking I provided and give me your thoughts.

2. Based on the definition, do you think that you do this at Wildcat Middle School?

3. Based on the definition, how many of you think most adults do this?

4. Why do you think the number one complaint from businesses is that their employees don't think critically?

5. Do you think critical thinking can be taught?

6. Do you think your students think critically?

7. Of the 68 teachers who responded to the survey, 17 said critical thinking is important. Everyone else said it was extremely important. Why do you think some teachers value it more than others?

8. Of the 17 teachers who said critical thinking is important, seven of them are SPED (special education) teachers. What are your thoughts about this data?

9. Do you think that making decisions for students helps them to think critically?

10. Do you think that we provide students with opportunities to think critically?

11. Fifty-six teachers report that they plan for critical thinking always or often. Only 13 teachers report planning for it sometimes. No one reported planning for critical thinking never or sometimes. What are your thoughts on this data?

12. How early, or at what grade, do you think students should be provided critical thinking activities/questions?

13. When asked about planning for critical thinking with their content area peers, teachers report the following: eight rarely do so – three never do it – 16 do it sometimes – 30 do it often – and nine always do it. What are your thoughts on this data?

14. Fifty-eight teachers report feeling very comfortable and comfortable teaching critical thinking. Only nine teachers report feeling not very comfortable. What are your thoughts on this data?

15. Is there anything that needs to happen at the university level with critical thinking?

16. How many of you think that most teachers are aware that they should be incorporating critical thinking in their daily classroom instruction?

17. When planning, do you use questions from resources provided by the district or do you develop your own questions?

Appendix C – "As Is" Analysis

"As Is" 4 C's Analysis for Critical Thinking

Context

- 88% of students received free/reduced lunch
- Overall PARCC Scores are increasing
- Focus on instruction (Instructional Rounds)
- 93% of students are minority; 87.5% of teachers are Caucasian

Culture

- Lack of cultural responsiveness
- Expectations are increasing
- Teamwork
- Family like environment
- Culture of nice

Conditions

- Common planning time
- Each school has instructional specialists
- Too many new initiatives
- Teaching is public

Lack of Critical Thinking Skills being taught

Competencies

- Teachers have content knowledge
- Teachers lack the knowledge to teach critical thinking
- Teacher planning does not include ways to incorporate critical thinking

Appendix D – Critical Thinking Rubric

CRITICAL THINKING & PROBLEM SOLVING RUBRIC

Dimension Assessed	Accomplished 4	Proficient 3	Developing 2	Beginning 1
(Inquire) **Identify and define key issue/s and/or problem/s**	Clearly, accurately, and appropriately identifies key issue/s and/or problem/s.	Identifies most or all key issue/s and/or problem/s. Some minor inaccuracies or omissions may be present, but do not interfere with meaning.	Identifies some key issue/s and/or problem/s. May have some inaccuracies, omissions or errors present that interfere with meaning.	Most or all of key issues/ and/or problem/s are not identified or defined, or are identified or defined inaccurately. Meaning is unclear.
(Analyze) **Present and Analyze Data/ Information**	Presents appropriate, sufficient and credible data/information. Clearly analyzes information for accuracy, relevance, and validity. Information clearly relates to meaning.	Presents sufficient and appropriate data/information. Generally analyzes data/information for accuracy, relevance and validity. Minor inaccuracies or omissions do not interfere with analysis or meaning.	Presents some appropriate data/information. May miss or ignore relevant data/information. Analysis is limited or somewhat inappropriate. May contain inaccuracies or omissions that interfere with analysis and/or meaning.	Does not present relevant and appropriate data/information. Fails to analyze, or uses inaccurate or inappropriate analysis of data/information. Copies information without analysis.
(Evaluate) **Apply a Multi-Dimensional approach/ Consider context**	Clearly applies a multi-dimensional approach. Synthesizes various perspectives. Acknowledges limits of position or context.	Acknowledges multiple approaches. Some synthesis of perspectives. May not fully acknowledge limits of position or context, but is aware of limits or context.	Somewhat simplified position with some sense of multiple approaches. Minor or vague synthesis of perspectives. Some acknowledgement position may have limits. May not acknowledge context.	Student's position is grounded in a singular, often personal perspective. Position may be simplistic and obvious. Little or no awareness that position may have limits or context.
(Solve) **Demonstrate Sound Reasoning and Conclusions**	Reasoning is logical and creative, consistent, complete and often unique. Conclusion is complex and/or detailed, well supported, creative, complete, and relevant ·	Reasoning is mostly logical, complete, and consistent. Demonstrates some unique or creative insight. Conclusion is generally complete, supported, and mostly consistent and relevant	Reasoning contains elements of logic and/or creative insight, but not fully resolved. May have minor inconsistencies or omissions. Conclusion is relevant but abbreviated or simplified, not fully supported, and/or contains minor inconsistencies	Reasoning is illogical, simplistic, inconsistent or absent. Conclusion is simplistic and stated as an absolute, or inconsistent with evidence or reasoning. Lack of coherent or clear conclusion.

Appendix E – Critical Thinking Questions/Cheatsheet

WABISABI ⊙ LEARNING

The Ultimate Cheatsheet for
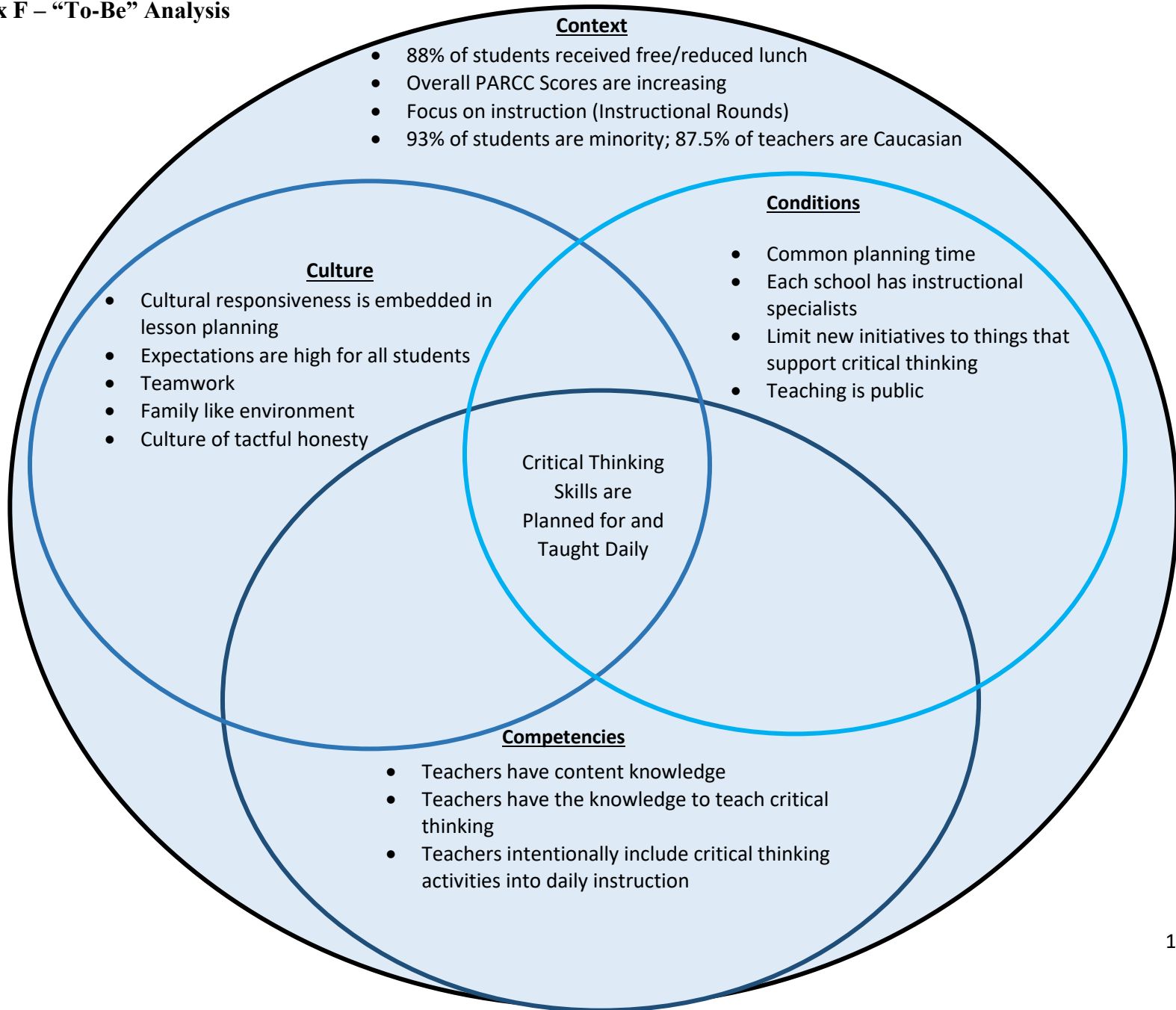# Critical Thinking

Want to exercise critical thinking skills? Ask these questions whenever you discover or discuss new information. These are broad and versatile questions that have limitless applications!

Who
- … benefits from this?
- … is this harmful to?
- … makes decisions about this?
- … is most directly affected?
- … have you also heard discuss this?
- … would be the best person to consult?
- … will be the key people in this?
- … deserves recognition for this?

What
- … are the strengths/weaknesses?
- … is another perspective?
- … is another alternative?
- … would be a counter-argument?
- … is the best/worst case scenario?
- … is most/least important?
- … can we do to make a positive change?
- … is getting in the way of our action?

Where
- … would we see this in the real world?
- … are there similar concepts/situations?
- … is there the most need for this?
- … in the world would this be a problem?
- … can we get more information?
- … do we go for help with this?
- … will this idea take us?
- … are the areas for improvement?

When
- … is this acceptable/unacceptable?
- … would this benefit our society?
- … would this cause a problem?
- … is the best time to take action?
- … will we know we've succeeded?
- … has this played a part in our history?
- … can we expect this to change?
- … should we ask for help with this?

Why
- … is this a problem/challenge?
- … is it relevant to me/others?
- … is this the best/worst scenario?
- … are people influenced by this?
- … should people know about this?
- … has it been this way for so long?
- … have we allowed this to happen?
- … is there a need for this today?

How
- … is this similar to _____?
- … does this disrupt things?
- … do we know the truth about this?
- … will we approach this safely?
- … does this benefit us/others?
- … does this harm us/others?
- … do we see this in the future?
- … can we change this for our good?

www.wabisabilearning.com

101

Appendix F – "To-Be" Analysis

Context
- 88% of students received free/reduced lunch
- Overall PARCC Scores are increasing
- Focus on instruction (Instructional Rounds)
- 93% of students are minority; 87.5% of teachers are Caucasian

Conditions
- Common planning time
- Each school has instructional specialists
- Limit new initiatives to things that support critical thinking
- Teaching is public

Culture
- Cultural responsiveness is embedded in lesson planning
- Expectations are high for all students
- Teamwork
- Family like environment
- Culture of tactful honesty

Critical Thinking Skills are Planned for and Taught Daily

Competencies
- Teachers have content knowledge
- Teachers have the knowledge to teach critical thinking
- Teachers intentionally include critical thinking activities into daily instruction

Appendix G – Strategies and Actions

The chart below describes the leadership actions that I would recommend to accomplish

the "To-Be:"

Strategy	Actions:
Establishing a Sense of Urgency	I will seek an outside data consultant to compile current and historical data that presents an unbiased view of Smithville School District's and Wildcat Middle School's academic progress. This data will include: • The number of students in grades K-8 who are currently on grade level in reading and math. We will also look at this data historically to determine the past number of students who were on grade level; • The percentage of students who earn a "meet" or "exceeds" on the PARCC assessment; • The percentage of students who graduate from Wildcat Middle School and are accepted into four-year colleges/universities; • The percentage of high school freshmen who have more than two core class failures at the end of their freshman year. This data will be presented to all stakeholders. **Measuring Effectiveness:** If this step is effective, it will create a sense of shock and outrage in the school community. There will be a demand for a long-term plan to address the data.
Build a Team	• Set up follow-up meetings to hear concerns about the data as well as opportunities the data may present. • Input on addressing the data will be solicited. • Individuals (parents, teachers, admin, and, community members) will be asked to be a member of a committee. • The first few meetings of this committee will be focused on the change process. Committee members will read about and engage in small-group conversations about the stages of the change process.

	• They will review all previous academic initiatives with the team to determine which ones can be attributed to increasing student achievement. • Engage the team in a visioning process **<u>Measuring Effectiveness:</u>** This step is effective if the invitation results in a committee of committed individuals and a vision.
Provide Professional Development	• Provide the team with research as it relates to critical thinking. • Lessons that integrate critical thinking will be modeled using the team as students. • Send team members to workshops related to critical thinking and continue to provide articles to increase understanding. • The team will be tasked with doing independent research. We will ask each member of the team to come to each meeting with new information about critical thinking. This can be derived from an article, a book, or information from a webinar, conference, or speaker. **<u>Measuring Effectiveness:</u>** This step is effective if the majority of the team agrees that critical thinking is a necessary part of instruction, and the team begins to own it as the strategy to use to address the data. In addition, the team exhibits more knowledge about critical thinking.
Develop a Plan	As a team, we will do the following: • Determine what professional development is needed for the staff. • Determine when, where, and how the professional development will be provided as well as who will provide it. This will be a long-range plan, spanning at least two school years. • Draft academic goals to be met annually. • Determine how to include critical thinking in the expectations for new staff. • Determine ways to monitor the implementation.

	• Develop a common message that we will share with others about how critical thinking will be used to increase academic achievement. • Revise the plan as needed. **Measuring Effectiveness:** This step is effective if we have a collaboratively developed plan that will be used to start the process of implementing critical thinking.
Communicate the Plan	As a team, we will do the following: • Meet with stakeholder groups repeatedly to discuss critical thinking and the plan for its implementation. • We will also collaboratively develop an elevator speech that sums up our vision. An elevator speech is a short, concise speech that can be delivered in the time it takes to get to your destination via elevator. **Measuring Effectiveness:** We will use a survey to determine the effectiveness of this step. The survey will ask stakeholders about their awareness of our district vision and plan as it relates to critical thinking.
Stay the Course	As a team, we should expect: • Resistance from some staff. We should stay the course. • Complaints and concerns. We have to address concerns as they arrive. • Some staff to love the process. This will help us stay the course. • Students complaining that it is difficult. Modeling our thinking will help, and we will still stay the course. • Parents complaining that students are not doing well. We should explain that this type of thinking is different and that all kids can do it. We will: • Develop a systematic way of praising teachers who implement critical thinking; • Continue to model ways to implement critical thinking and provide professional development annually; • Monitor the data for improvement.

	<u>Measuring Effectiveness:</u> Effectiveness means that the majority of teachers are making a serious attempt at planning for and implementing critical thinking. Lessons are more engaging, and the level of academic rigor and questioning require higher levels of thinking. We will measure the effectiveness by monitoring classroom instruction and by providing a survey to teachers.

Instruction

6:10 The Philosophy of Our Schools

School District 98 believes that the primary purpose of schooling is the transmission of knowledge and culture through which children learn in areas necessary to their continuing development. These areas include: mathematics, language arts, physical and biological sciences, social science, the fine arts, physical development and health.

Of primary value is the intellectual, cultural, emotional, social and physical development of children leading to self-realization, character development and constructive participation in society.

Specifically, the tasks of our schools include:

1. To introduce the basic tools of learning (e.g., reading, writing, speaking, mathematics, listening, using resource materials and educational technology) and to develop these skills with which to use them well.
2. To offer equally to all children both the opportunity and the encouragement to make full use of their individual talents, interests and energies.
3. To foster a child's awareness and appreciation of the rights, privileges, and responsibilities of participation in a democratic society and to foster respect for peoples and cultures different from his/her own.
4. To provide an atmosphere that fosters sound mental health entailing a sense of personal worth, integrity, and responsibility, a love and respect for learning, and freedom from undue anxiety.
5. To encourage participation in challenging physical activities and to foster sportsmanship and good habits of personal hygiene.
6. To develop the students' critical thinking skill ability and the need to strive for intellectual and social self-discipline.
7. To continually scrutinize District 98 goals and achievements and to seek improvement in all areas.
8. The provision of aesthetic experiences which contribute o the enrichment of life.

Adopted: July 19, 2018

Appendix I – Board Policy 6:40

INSTRUCTION

6:40 Curriculum Development

<u>Adoption</u>

The superintendent shall recommend a comprehensive curriculum that is aligned with:

1. The District's educational philosophy and goals.
2. Student needs as identified by research, demographics, and student achievement and other data.
3. The knowledge, skills, and abilities required for students to become life-long learners.
4. The minimum requirements of State and federal law and regulations for curriculum and graduation requirements.
5. The curriculum of non-District schools that feed from a District school, provided that the necessary cooperation and information is available.
6. The Illinois State Learning Standards and any District learning standards.
7. Any required State or federal student testing.

The Board of Education will adopt, upon recommendation of the superintendent, a curriculum that meets the above criteria.

<u>Single-Gender Classes and Activities</u>

The superintendent may recommend a program of non-vocational single-gender classes and/or activities to provide diverse educational opportunities and/or meet students' identified educational needs. Participation in the classes or activities must be voluntary, both genders must be treated with substantial equality, and the program must otherwise comply with State and federal law and with Board Policy 7:10, *Equal Educational Opportunities*. The superintendent must periodically evaluate any single-gender class or activity to ensure that (1) it does not rely on overly broad generalizations about the different talents, capabilities, or preferences of either gender, and (2) it continues to comply with State and federal law and with Board Policy 7:10, *Equal Educational Opportunities.*

<u>Development</u>

The superintendent shall develop a curriculum review program to monitor the current

curriculum and promptly suggest changes to make the curriculum more effective, to take advantage of improved teaching methods and materials, and to be responsive to social change, technological developments, student needs, and community expectations.

The curriculum review program shall:

1. Ensure regular evaluations of the curriculum and instructional program.
2. Ensure the curriculum continues to meet the stated adoption criteria.
3. Include input from a cross-section of teachers, administrators, parents, and students, representing all schools, grade levels, disciplines, and specialized and alternative programs.
4. Coordinate with the process for evaluating the instructional program and materials.

Experimental Educational Programs and Pilot Projects

The superintendent m a y recommend experimental educational programs and/or pilot projects for Board consideration. Proposals must include goals, material needs, anticipate d expenses, and an evaluation process. The superintendent shall submit to the Board periodic progress reports for programs that exceed one year in duration and a final evaluation with recommendation upon the program's completion.

Curriculum Guides and Course Outlines

The superintendent shall develop and provide subject area curriculum guides to appropriate staff members.

LEGAL REF.:

20 U.S.C. §1681, Title IX of th e Edu cat i on Amendments of 1 972, implemented by

34 C F.R. P art 106 . 1 05 ILCS 5/10-20 8 and   -

CROSS REF.: 6:60 (Curriculum Content). 6:65 (Student Social and Emotional Development). 6:70 (Teaching About Religions), 6:80 (Teaching About Controversial Issues), 6:100 (Using Ani mals in the educational program), 6:110 (Programs for Students At Risk of Academic Failure and/or Dropping Out of School and Graduation Incentives Program), 6:120 (Education of Children with Disabilities), 6:130 (Program for the Gifted), 6:135 (Accelerated Placement Program), 6:140 (Education of Homeless Children). 6:145 (Migrant Students), 6:150 (Home and Hospital Instruction), 6:160 (English Learners), 6:170 (Title I Programs),

Appendix J – Board Policy 6:60

INSTRUCTION

6:60 Curriculum Content

The curriculum shall contain instruction on subjects required by State statute or regulation as follows:

1. In each grade, subjects include: (a) language arts, (b) reading, (c) other communication skills, (d) science, (e) mathematics, (f) social studies, (g) art, (h) music, and (i) drug and substance abuse prevention. A reading opportunity of 60 minutes per day will be promoted for all students in kindergarten through grade 3 whose reading levels are one grade level or more lower than their current grade level. Before the completion of grade 5, students will be offered at least one unit of cursive instruction. Beginning with the 2020-2021 school year, in grades 6, 7, or 8, students must receive at least one semester of civics education in accordance with Illinois Learning Standards for social science.

2. In grades 7 and 8, as well as in interscholastic athletic programs, steroid abuse prevention must be taught.

3. In kindergarten through grade 8, provided it can be funded by private grants or the federal government, violence prevention and conflict resolution must be stressed, including: (a) causes of conflict, (b) consequences of violent behavior, (c) non- violent resolution, and (d) relationships between drugs, alcohol, and violence.

4. In grades kindergarten through 8, age-appropriate Internet safety must be taught, the scope of which shall be determined by the superintendent or designee. The curriculum must incorporate policy 6:235, *Access to Electronic NetWorks* and, at a minimum, include: (a) education about appropriate online behavior, (b) interacting with other individuals on social networking websites and in chat rooms, and (c) cyberbullying awareness and response.

5. In all grades, character education must be taught including respect, responsibility, fairness, caring, trustworthiness, and citizenship in order to raise students' honesty, kindness, justice, discipline, respect for others, and moral courage. Instruction in all grades will include educating students about behaviors that violate policy 7:180, *Prevention of and Response to Bullying, Intimidation and Harassment.*

6. In all schools, citizenship values must be taught, including: (a) patriotism, (b) democratic principles of freedom, justice, and equality, (c) proper use and display of the American flag, (d) the Pledge of Allegiance, and (e) the voting process.

7. In all grades, physical education must be taught including a developmentally planned and sequential curriculum that fosters the development of movement skills, enhances health-related fitness, increases students' knowledge, offers direct opportunities to learn how to work cooperatively in a group setting, and encourages healthy habits and attitudes for a healthy lifestyle. Unless otherwise exempted, all students are required to engage in a physical education course with such frequency as determined by the Board after recommendation from the superintendent, but at a minimum of three days per five-day

week. For exemptions and substitutions, see policy 7:260, *Exemption from Physical Education.*

8. In all schools, health education must be stressed, including: (a) proper nutrition, (b) physical fitness, (c) components necessary to develop a sound mind in a healthy body, and (d) dangers and avoidance of abduction. The superintendent shall implement a comprehensive health education program in accordance with State law.

9. In all schools, health education must be stressed, including: (a) proper nutrition, (b) physical fitness, (c) components necessary to develop a sound mind in a healthy body, (d) dangers and avoidance of abduction, and (e) age-appropriate sexual abuse and assault awareness and prevention education in all grades. The superintendent shall implement a comprehensive health education program in accordance with State law.

10. In all schools, conservation of natural resources must be taught, including: (a) home ecology, (b) endangered species, (c) threats to the environment and, (d) the importance of the environment to life as we know it.

11. In all schools, United States (U.S.) history must be taught, including:(a) the principles of representative government, (b) the Constitutions of the U.S. and Illinois, (c) the role of the U.S. in world affairs, (d) the role of labor unions, (e) the role and contributions of ethnic groups, including but not limited to, the African Americans, Albanians, Asian Americans, Bohemians, Czechs, French, Germans, Hispanics (including the events related to the forceful removal and illegal deportation of Mexican-American U.S. citizens during the Great Depression), Hungarians, Irish, Italians , Lithuanians, Polish, Russians, Scots, and Slovakians in the history of this country and State, (f) a study of the roles and contributions of lesbian, gay, bisexual, and transgender people in the history of the U.S. and Illinois, and (g) Illinois history.

> In addition, all schools shall hold an educational program on the United States Constitution on Constitution Day, each September 17, commemorating the September 17, 1787 signing of the Constitution. However, when September 17 falls on a Saturday, Sunday, or holiday, Constitution Day shall be held during the preceding or following week.

12. In grade 7 and all high school courses concerning U.S. history or a combination of U.S. history and American government, students must view a Congressional Medal of Honor film made by the Congressional Medal of Honor Foundation, provided there is no cost for the film.

13. In all schools, the curriculum includes instruction as determined by the superintendent or designee on the Holocaust and crimes of genocide, including Nazi atrocities of 1933-1945, Armenian Genocide, the Famine -Genocide in Ukraine, and more recent atrocities in Cambodia, Bosnia, Rwanda, and Sudan.

14. In all schools, the curriculum includes instruction as determined by the superintendent or designee on the history, struggles, and contributions of women.

15. In all schools, the curriculum includes instruction as determined by the superintendent or designee on Black History, including the history of the African slave trade, slavery in

America, and the vestiges of slavery in this country, as well as the struggles and contributions of African-Americans.

16. In all schools, instruction during courses as determined by the Superintendent or designee on disability history, awareness, and the disability rights movement.

17. In kindergarten through grade 8, education must be available to students concerning effective methods of preventing and avoiding traffic injuries related to walking and bicycling.

LEGAL REF.:

Pub. L. No. 108-447. Section 111 of Division J, Consolidated Appropriations Act of 2005.

Pub. L. No. 110-385. Title II, 122 stat. 4096 (2008), Protecting Children in the 21st Century Act.

47 C.F.R. §54.520

5 ILCS 465/3 and -

20 ILCS 2605/2605-480.

105 ILCS 5/2-3.80(e) and (f), 5/27-3, 5/27-3.5, 5/27-5, 5/27-6, 5/27-6.5. 5/27-7, 5/27-12. 5/27-12.1. 5/27-13.1, 5/27-13.2. 5/27-20.3, 5/27-20.4. 5/27-20.5. 5/27-20.7, 5/27-21, 5/27-22, 5/27-23.3, 5/27-23.4. 5/27-23.7, 5/27-23.8, 5/27-23.10, 5/27-23.11, 5/27-24.2, 435/, and 110/3.