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Grade 9 Teachers' Perceptions of Habits of Mind and Academic Success

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This is to certify that the doctoral study by

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Grade 9 students' academic failure has been documented to lead to future academic failure at the secondary level. Research has shown that lack of persistence and problem solving behaviors when dealing with adversity have multiple consequences, including low self-esteem and dropout. The purpose of this qualitative exploratory case study was to examine Grade 9 teachers' perceptions related to the use of Habits of Mind, a program designed to address the dispositions of thinkers when faced with problems such as resilience or persistence. Guided by Bandura's social cognitive learning theory, which holds that environment relates directly to behaviors and feelings of self-efficacy, the study was designed to examine teachers' perceptions regarding Habits of Mind and academic success. The research questions addressed teachers' perceptions about utilizing specific habits of mind to support students' academic success as well as how teachers' instructional designs incorporate Habits of Mind. Interviews with 10 9th grade teachers and surveys were used to gather data. Data analysis was conducted in a process of pre-coding, ongoing coding, and development of themes from the data. Results showed that teachers perceived habits of mind as necessary for success, handling adversity, and adapting to life beyond high school. They also indicated that the desire for purposeful collegial interactions most effectively embeds habits of mind instruction within and beyond classrooms. Implications for social change include maximizing students' problem solving strategies and knowledge related to dealing with adversity, including failure, in order to help prepare students for successful post-secondary academic experiences, employment, and productive, responsible citizenship.

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Dedication

I dedicate this doctoral study to my husband, Erich, and four sons- Noah, Nicholas, Evan, and Reid. Thank you for your love, support, and encouragement throughout this process. I also dedicate my study to my late grandmother, Loretta, and my wonderful family, who has sustained me and seen me through this journey. Sometimes, we inherit grit; other times, we learn it by example. I am grateful to have had both bases covered.

Acknowledgments

I would like to thank several people who have helped me reach this achievement. Dr. David Weintraub- thank you for your constant support, wisdom, encouragement, and ability to always help me gain perspective. I am grateful to have been on this journey with you as my mentor. I also wish to express my gratitude and appreciation to Dr. Charles Bindig and Dr. Kathleen Montgomery. I am proud of this academic achievement and I recognize the outstanding team of mentors who have helped me along the way.

Table of Contents

List of Tables

Section 1: The Problem

Introduction

In this exploratory case study, I aimed to examine Grade 9 teachers' perceptions related to the use of Habits of Mind, a program designed to address the dispositions of thinkers when faced with problems. This section includes discussions of the problem, purpose, rationale, evidence of problem from professional literature, and significance. I also provide definitions of key terms, present the research questions, review the academic literature, and discuss this study's implications.

Definition of the Problem

The problem at the local research site, a rural high school in northern Maine, was the failure rate in Grade 9 English. School data showed that Grade 9 students failing one grading quarter may also fail other grading quarters in Grade 9 English, a course in which a passing grade is a mandatory 4-year academic requirement for graduation (Power School, 2015). Additionally, English faculty members who teach Grade 9 English students at the study site reported that freshman students consistently exhibited difficulty in persisting through academic adversity and reflecting on learning strengths and weaknesses. Persistence in light of failure is a critical characteristic for academic success (Sideridis & Kaplan, 2011). English faculty at the site expressed a desire to learn more about strategies to support students in persisting through academic difficulty to reduce failure rates. During the Grade 9 transitional year from middle school to high school, grades and engagement drop sharply, and course failure becomes more common (Roderick, Kelley-Kemple, Johnson, Beechum, & University of Chicago Consortium on

Chicago School, 2014). If students can maintain academic success in the critical Grade 9 year, they are more likely to graduate from high school on time (Roderick et al., 2014). Additionally, grade retention may lead to low self-esteem and maladaptive or dysfunctional behaviors (Lynch, 2014).

In light of freshman failures, the principal at the study site implemented a number of supportive strategies to support freshman students' success in their academic transition from middle school to high school. Examples included smaller class sizes, extra classes in literacy instruction and study skills support for Grade 9 students considered academically "at risk," and a "step up" process designed to introduce freshman to the physical layout, student body, and expectations of high school education.

Miller (2013) argued that learning can be especially hard work for students being asked to complete new cognitive tasks that may make them feel uncomfortable due to lack of knowledge or experience. Feelings of discomfort while learning new knowledge should be embraced in the classroom as a natural part of learning (Miller, 2013). Nonetheless, failure is inherently a part of the learning process; successful learners are resilient and persistent in light of setbacks (Olson, 2012). Grade 9 students face multiple new cognitive tasks and experiences as they transition from middle to high school. Thus, opportunities to discuss, examine, and implement habits of mind, including persistence, may shape approaches to learning tasks and processes.

Habits of Mind is a program designed to address the dispositions of thinkers when faced with problems, such as lack of either resilience or persistence. The habits of mind that the program takes its name from are a composite of attitudes, skills, and strategies

(Costa & Kallick, 2008). The habit of mind of *persistence* is particularly important because students who exhibit grit may have higher levels of academic achievement and do better in college (Huang, 2015). A habits of mind initiative was introduced to the local setting in 2012 as part of professional development supporting effective instructional practice surrounding Maine's implementation of L.D. 1422, a proficiency-based education law.

In addition to working to meet new guidelines under the law, district leaders also recognized the potential benefits of equipping students with specific strategies for problem solving in school, career, and life in general. During the 2013-2014 and 2014-2015 school year, increased training in habits of mind was ongoing through teacher workshops, classes offered for teacher recertification, and faculty meeting conversations. During the 2014-2015 school year, the principal asked staff at the local site to discuss and report out in small groups concerning which of the 16 habits of mind identified by Costa and Kallick would be most appropriate for focus at the high school level.

While staff understanding and implementation of habits of mind varied by department, the English department chair communicated a desire of English faculty to increase habits of mind instruction. This focus was part of an approach that supported content learning with complex reasoning and problem-solving skills. Teachers and administrators used observation and test scores to evaluate the effect on students' approaches to academic difficulty and problem-solving and improve quarter-end failures. The school district engaged faculty in ongoing professional development focusing on a "three-circle approach" to effective teaching and learning, including content knowledge,

complex reasoning skills, and lifelong habits of mind. Gordon (2011) contended that as educators prepare students for problem-solving in real world contexts, equipping students with the techniques of problem-solving, not just practical wisdom, is key.

As a former teacher in the English department at the research site, I have been able to engage in dialogue with colleagues who teach Grade 9 English regarding the problem of freshman failure and difficulty handling academic adversity. However, I did not teach freshman English students directly. Although several high schools in Maine are beginning to use habits of mind as part of instruction aimed at academic success, a teacher at the study site noted that the local setting in northern, rural Maine is singular in its developing use, mindful implementation, and professional development surrounding habits of mind.

Conversation about lack of cognitive strategies of 9th graders, such as their perseverance and flexible thinking, led members of the English department to examine the use of habits of mind. One of the teachers noted that they wanted to examine the ability of freshman students to meet adversity with more success and to decrease Grade 9 English course failure. Both Grade 9 English teachers and the English department chair indicated a desire to evaluate whether using five particular components of the Habits of Mind program, as part of a school-wide habits of mind initiative, had an effect on students' quarter-based failures. Additionally, Grade 9 English teachers and the department chair also expressed interest in exploring habits of mind to increase students' overall ability to approach academic failures and adversity with specific strategies for improvement and resiliency. The five components were being persistent, thinking

flexibly, managing impulsivity, applying past knowledge to new situations, and remaining open to continuous learning.

Rationale

Evidence of the Problem at the Local Level

Despite implementation of habits of mind strategies, the principal reported that Grade 9 English failures continued to persist as an issue of concern at the local site. Table 1 notes quarterly failures.

Table 1

Grade 9 English Quarterly Failures 2013-2016

School year	Total number of Grade 9 students	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Failed more than 1 quarter of English
2015-2016	108	8	8	10	7	8
2014-2015	106	13	11	16	21	16
2013-2014	101	23	19	16	17	17

Data indicated that in the 2013-2014 school year, 17 freshmen failed more than one quarter of English, decreasing the chance of obtaining credit for Grade 9 English (Power School, 2015). In 2014-2015, 16 freshmen, or 15% of the class failed more than one quarter of English. In 2015-2016, 10 of the 108 freshmen, or 9.23% failed more than one quarter of English. While these numbers indicated a decrease in the percentage of total freshmen failing more than one quarter, freshman English teachers communicated an ongoing concern with students' willingness to accept a "0" as a grade instead of completing work. Furthermore, Grade 9 English teachers reported overall lack of

persistence, resilience, and reflection among Grade 9 students and felt that freshman, in particular, seemed to struggle to overcome academic adversity. The principal expressed interest in exploring ways to equip students with skills and strategies to overcome challenges to achieve academic success, especially for Grade 9 students.

According to Emmett and McGee (2012), one-fifth of freshman do not earn enough credits for promotion to the next grade level and are subsequently unable to graduate high school in 4 years. Nearly one-third of U.S. high school students fail to graduate in 4 years (Werblow, Urick, & Duesbery, 2013). Furthermore, Emmett and McGee (2012) pointed out that students at risk of dropping out of high school, such as those living in poverty, struggle to ameliorate academic deficiencies by themselves.

At the local research site, the dropout rate was 3.9%, in the 2013-2014 school year, compared with the 2.7% state average (Maine Department of Education Data Warehouse, 2015a). In the 2014-2015 school year, the local setting had a free and reduced lunch rate of 41.4%, a key indicator of a high poverty level (Maine Department of Education Data Warehouse, 2015b). High academic failure and dropout rates remain key concerns in U.S. education and are linked to lack of persistence and lower expectations for achieving academic goals (Fan & Wolters, 2014).

Although English course year-end failure was a problem for Grades 9-12, Grade 9 students continued to fail English at a disproportionately higher rate than other grade levels. Course failure is a significant predictor of dropout rates, less persistence, and negative behaviors requiring discipline (Casillas et al., 2012). Furthermore, Grade 9 students struggled academically across content areas.

Table 2

Number of Students who Failed More Than one Course 2012-2016

School year	9th graders	Failures
2012-2013	109	19
2013-2014	101	34
2014-2015	106	31
2015-2016	108	20

Responding to feedback from teachers in the building, the principal implemented new initiatives to find ways to increase student persistence. Cottle (2012) referred to *resiliency* as the ability of students to bounce back from adversity and work through challenges such as academic failure. Such initiatives coincided with a district-wide movement to more purposefully approach classroom teaching and learning as a "3-circle approach," which included content knowledge, explicit teaching of complex reasoning skills, and habits of mind. Additionally, Grade 9 English teachers communicated in department level meetings that students seemed reluctant to examine errors in thinking or completing academic tasks; rather, many students seemed inclined to not revise work, accept failing grades, and take a "0" for an assignment too willingly.

Grade 9 English teachers reported concern about students' inability to show evidence of persistence, flexible thinking, and reflection in academic work, classroom discussions, and their overall approach to learning. The English department chair also reported increased discussions within the department and across departments about students' lack of persistence. With academic standards such as Common Core increasing rigor and academic expectations and students needing to show evidence of specific proficiencies under Maine law, teachers and administrators underscored a need for

persistence, flexibility and metacognition among students.

Evidence of the Problem from the Professional Literature

Quality pedagogical practices are exhibited by evidence of student achievement in relation to expected learning outcomes (Hollins, 2011). With identified successful cognitive processes such as persisting, managing impulsivity, and metacognition, the potential for Habits of Mind to increase student success and decrease freshman academic failures is likely (Costa & Kallick, 2008). A study by Geoghegan, O'Neill, and Petersen (2013) showed that metacognition improved students' academic achievement and articulation of learning. Studying the effect of habits of mind instruction may provide data to improve Grade 9 students' academic outcomes and approaches to academic problems. Problem solving is a critical decision making process in which metacognition plays an important role in systematic strategy development (Gok, 2014). Students generally experience difficulty identifying and implementing specific problem-solving strategies (Gok, 2014).

The development of strategies for overcoming failure and striving for growth are key for positive academic performance (Lam, 2014). In addition to affecting academic performance, low socioeconomic status may also lead to increased dropout rates; education is a critical element in the wellbeing of those living in poverty (Lam, 2014). In 2012, all regions of the United States had a higher percentage of children living in poverty compared to 2000 (Kena et al., 2014). Poverty, as reflected in the local setting, has the potential to impact student social-emotional growth, particularly in rural areas (McCrary, Lechtenberger, & Wang, 2012). Student achievement, such as tests scores,

tend to be lower in families below the poverty line (Lam, 2014).

Student achievement in school involves numerous influences, such as socioeconomic status and student beliefs about achievement when facing failure (Hodis, Meyer, McClure, Weir, & Walkey, 2011). It is critical for teachers to examine strategies for improving the academic performance of students living in poverty (Lam, 2014). Significant academic failure and dropout rates continue to be vital issues in the United States, with over 25% of students not earning a high school diploma (Casillas et al., 2012). Interventions and remediation for academically struggling students are necessary for positive student outcomes (Hodis et al., 2011). Students leaving high school without a diploma lack the critical skills necessary for a high quality of life upon entering society (Hodis et al., 2011).

Definitions

Habits of Mind: A program designed to address the dispositions of thinkers when faced with problems, dilemmas, or uncertainty. Habits of Mind (See Appendix B) is a conceptual composite of attitudes, skills, and strategies (Costa & Kallick, 2008).

Significance

Grade 9 English teachers at my study site expressed concern with the propensity of students to fail more than one quarter of English, increasing the likelihood of course failure and retention. With this study, I made an original contribution to the local setting by exploring the perceptions of teachers who used habits of mind instruction as a way of improving student academic success. With several changes occurring in classroom instruction and assessment practices as part of Maine's shift to a proficiency-based

education law, Grade 9 English teachers expressed a desire to study the influence of equipping students with problem-solving strategies that may affect English scores as well as approaches to academic challenges. This study helped to determine perceptions of teachers related to habits of mind in order to pinpoint areas of strength and need in instruction. Additionally, according to Gok (2014), limited research exists on problem-solving strategies in both conceptual learning and step-by-step quantitative problem solving. Effective problem solving is a foundational skill necessary for all 21st century learners to know in order to be effective contributors in the work environment and in society (Jones, 2014).

Positive school transformation that supports students' academic success involves changes in instructional strategies and development of a common curriculum (McTier & Crowe, 2012). Helping students to not give in to an initial instinct to give up when work is difficult or to give a quick answer in place of a more thoughtful one is necessary for teaching students to be persistent and manage impulsivity (Jones, 2014). When problem solving, students will benefit academically from instruction that focuses on having them apply past knowledge to new situations, with appropriate scaffolding provided (Jones, 2014).

Studying the effect of habits of mind instruction on student scores and problem solving may positively impact classroom instruction, increase student problem solving approaches when facing adversity by providing valuable information concerning tools for increasing student achievement. Students who struggle with problem solving, decision making, and reflection encounter difficulties that extend beyond the high school level.

Colleges also report high remediation rates for students unable to be insightful or experience content while thinking critically about it (Gordon, 2011). In a local setting that is considered high-poverty, it is important to understand that achievement gaps are even more prevalent among the poor (Berliner, 2013). Students who fail to graduate from high school, on average, face higher rates of incarceration, unemployment, lifetime earnings, and life expectancy (Bowers, Sprott, & Taff, 2012).

Guiding Research Questions

I developed the research questions out of a desire to study Grade 9 teachers' perspectives in depth concerning habits of mind instruction and academic failure. The questions were designed to uncover meaning related to habits of mind and academic progress, a key idea of qualitative research design (Lodico, Spaulding, & Voegtle, 2010). The research questions for this study were as follows:

RQ1: What were the teachers' perceptions of the use of five specific components of the Habits of Mind program in assisting their 9th grade students to achieve academic success?

RQ2: How did teachers of 9th grade English utilize these components in their instructional design?

RQ3: What were teachers' perceptions of student academic success in the use of five specific components of the Habits of Mind program?

Review of the Literature

Introduction

Academic success and problem-solving abilities are being discussed at every level

of our nation's education system, from the classroom to the federal policy level. Problem solving skills hold promise for students' futures in a new, complex age of global competitiveness in which students are required to apply learning in both self-directed and collaborative ways (Tucker, 2014). Academic failure and dropout rates are considerable issues of concern (Casillas et al., 2012). Several issues may impact academic performance for Grade 9 students, specifically as they transition from middle to high school. While grading has been traditionally thought to reflect intelligence, this system does not account for the cognitive dispositions and thinking strategies associated with intelligence (Toplak, West, & Stanovich, 2014).

How students handle challenges in school impacts several facets of leading a productive life. Approaches to problem solving in school influence the extent to which students will handle adversity in adult life (Brad, 2011). Li and Lerner (2013) have contended that success in life depends on the individual's ability to effectively use knowledge and skills learned in school. A variety of strategies have been identified and implemented to increase the achievement of freshmen. In particular, classroom instruction focused on habits of mind may be worthy of study for its potential to increase freshmen academic success (Costa & Kallick, 2008).

I gathered materials for this literature by searching academic database including ERIC, Educational Research Complete, Sage Journals online, and Google Scholar. All journal articles were peer reviewed and, other than limited foundational research, all articles were from the last 5 years. Search terms included *habits of mind*, *academic failure*, *problem solving*, 21st *century skills*, *adversity*, *metacognition*, *resilience*, and

persistence. The topics covered in this literature review include factors influencing freshman academic failure, consequences of failure, intervention strategies for academic success, and the potential of using habits of mind instruction as strategies for academic achievement.

Conceptual Framework

Bandura's (1977) social cognitive learning theory provided the framework for this study. This theory identifies intrinsic motivational factors and cognitions as critical factors in learning motivation. Furthermore, Bandura defined *self-efficacy* as people's beliefs of self-capacity to approach difficult tasks and overcome them (1977). Bandura (1977) posited that humans learn from modeled behavior; thus, students may benefit from reflecting on effective cognitive behaviors when problem solving or facing academic adversity. Beliefs about self-efficacy arise when one is confident that his or her actions are capable of producing specific results; thus, motivation will increase (Bandura, 1977). Bandura's (1977) theories of learning have also been tied to the idea that when learners are more motivated, they can better handle problems and adversity. Thus, students' beliefs about ability to overcome adversity, coupled with the identification of specific strategies for overcoming such adversity, may be beneficial for students' academic success. The explicit teaching and modeling of effective cognitive behaviors when students face with uncertainty or difficulty is reasonable for further study through the lens of Bandura's research on motivation and student feelings of self-efficacy. Since I aimed to address the problem of academic failure in Grade 9 students, Bandura's framework was helpful in identifying whether students may more effectively handle adversity when

specific habits of mind strategies are being taught and used.

Factors Influencing Failure

Many factors may contribute to academic and social challenges for high school students. The transition from middle school to high school may be particularly challenging for students who are already at risk for academic failure (Langenkamp, 2010). Students who enter high school with diminished academic performance are furthermore at increased risk for dropping out of high school (Langenkamp, 2010). According to Downey (2014), "Growing numbers of children face adverse environments that place them at risk for school failure, educators face mounting pressure to increase students' academic performance" (p. 48).

Grade 9 students are situated in a complex time of change, with the middle-to-high school transition carrying potential for later academic success or failure in high school (Casillas et al., 2012). Ellerbrock and Kiefer (2014) referred to the middle-to-high school transition as being especially challenging, pointing out that 6% of high school students drop out by the beginning of sophomore year. During the adolescent period leading up to entering high school, students experience significant potential for either healthy development leading to positive outcomes, or feelings of frustration and lack of ability associated with disengagement (Schoeneberger, 2012). Freshmen face a complicated transition from more socially supportive middle school models of instruction to attending multiple classes each day, spread throughout a building; social factors and feelings of lacking preparedness negatively impact student achievement (Emmett & McGee, 2012; Frank, 2011).

Difficulties for freshman that lead to academic failure may be due in part to the dichotomy between students' academic and social needs and the more traditionally structured and regimented high school environment (Ellerbrock & Kiefer, 2014). Freshmen require increased academic supports because they may feel lost in an increasingly more challenging educational landscape (Frank, 2011). Increased academic rigor and academic expectations without proper supports or strategies may also lead to increased failure (Emmett & McGee, 2012; Hazard, 2013). For some freshmen, lack of content relevancy may negatively impact attitude towards school and academic success (Montgomery & Hirth, 2011).

Another factor influencing academic failure is poverty. Poverty levels in rural areas like the setting for this study increase at rates greater than in urban settings and have a negative impact on academic engagement (McCrary et al., 2012). Students living in poverty may lack strategies to overcome adversity due to learned helplessness and a lack of growth mindset when experiencing failure (Jensen, 2013).

Consequences of Academic Failure

Consequences of academic failure are profound and far-reaching. Beliefs and confidence levels surrounding one's ability to manage the learning environment are also directly related to perceptions of academic success (Klassen, 2010). Implicit beliefs about one's ability and intelligence may impact academic performance (Snyder, Malin, Dent, & Linnenbrink-Garcia, 2014). Furthermore, concern exists over the alarming number of high school students who are unprepared to persist in postsecondary education, with 20% of high school students required to enroll in remediation classes at 4-year colleges (An,

2015). Failure early on in high school may affect the likelihood of future academic failures (Montgomery & Hirth, 2011). Academic performance records are key considerations in university admissions decisions (Stewart et al., 2011).

Academic failure has an impact on social-emotional wellbeing and decision-making that carries over into adulthood. Low expectations for future success through failure may influence feelings of hopelessness and behavior issues in adolescents (Chen & Vazsonyi, 2011). In the secondary education setting, considerable emphasis is placed on academic performance and, as a result, feelings of self-worth (Gadbois & Sturgeon, 2011). Academic failure may further lead to social promotion, or advancement to the next grade level without evidence of meeting the requirements of a current grade level, and subsequent lack of academic improvement (Norton, 2011). Failure can bring negative, unwanted attention from a social group that may lead to embarrassment, shame, and isolation (Gausel, 2014). Retention decreases students' confidence and motivation (Lynch, 2014). Due to fear of failure, students may develop self-handicapping behaviors or strategies such as procrastination or claiming false illness in order to avoid suffering ramifications of failure on self-esteem (Schwinger, Wirthwein, Lemmer, & Steinmayr, 2014; Snyder et al., 2014). All students wish to be viewed as competent by peers and academic incompetence can trigger feelings of shame (De Castella, Byrne, & Covington, 2013).

Furthermore, connections exist between poor academic performance in high school and increased dropout rates (Fan & Wolters, 2014). Graduation is essential to prepare students for increased global competition; America's business leaders are

concerned that failure to educate students effectively will impact the U.S. workforce and U.S. democracy (Glennie, Bonneau, VanDellan, & Dodge, 2012; Kolb, 2011). High school dropout rates are as high as 25% in the United States, setting in motion lifelong consequences such as lower than average income, increased risk of health issues, and a higher tendency to become incarcerated (Schoeneberger, 2012; Casillas et al., 2012). Failure to complete a high school degree may foster feelings of embarrassment and rejection along with blame aimed toward the school for such failure (Gausel, 2014). Student dropout due to perceptions of academic performance may also lead to depression (Quiroga, Janosz, Bisset, & Morin, 2013).

Hardré (2012) defines *dropout* as having two distinct aspects—physical dropout that entails students leaving school, and motivational dropout, which is characterized by student disengagement and apathy. While focus on achievement may not affect motivation, focus on motivation does encourage student achievement (Hardré, 2012). Several characteristics set apart students who graduate form those who do not including learning behaviors and attitudes. Students who dropout generate less tax revenue, and cost taxpayers approximately $24 billion in crime and welfare each year in the United States (Saddler, Tyler, Maldonado, Cleveland, & Thompson, 2011).

Students considered to be at risk of academic failure often experience diminished feelings of self-efficacy and perceive that their best efforts will prove futile (Haselden, Sanders, & Sturkie, 2012). Many students experiencing academic problems at school also experience considerable challenges at home and in the larger community (Shepard et al., 2012).

Intervention Strategies

To address the problem of academic failure in high school freshman, schools have implemented various interventions. Freshman academies (which place highly effective teachers with at-risk freshman), purposeful placement of caring and dedicated teachers with at-risk freshman, and vocational programs are all strategies used to increase freshman success (Montgomery & Hirth, 2011). Targeted remediation of deficient skills upon entering high school in order to break the academic failure cycle has also been posited as a way to help struggling freshmen be more successful (Emmett & McGee, 2012). With supportive classroom instruction, failure may be seen as an opportunity for growth and future success (Fouché, 2013). Moreover, instruction focused on the teaching of intelligent behaviors when facing problems may positively impact students' lives at school, work, and in social situations (Burgess, 2012). Through a meta-analysis of the research, 16 intelligent behaviors and strategies to work through adversity and effectively solve problems were identified, and coined Habits of Mind by Costa and Kallick in 2008 (Olson, 2012).

Habits of Mind

The 16 components of Costa and Kallick's Habits of Mind are listed in Appendix B. Equipping students with specific strategies for problem solving may help facilitate academic success. Academic adaptability is also defined as "appropriate cognitive, behavioral, or affective adjustment in light of uncertainty and novelty" (Martin, Nejad, Colmar, Arief, & Liem, 2013, p. 728). According to Getzel (2014), specific skills help support self-determination in students, including problem solving ability, self-awareness,

and internal locus of control. The transferability of problem solving skills from classroom to real-world situations must be stressed in order to equip students with strategies for handling difficulty in the real world and in the workplace (Dixon & Brown, 2012).

Habits of mind as cognitive dispositions are rarely used singularly; rather, they are used in conjunction with one another when students face difficulty or do not know an answer (Costa & Kallick, 2008). Additionally, Costa and Kallick (2008) asserted that their trademarked Habits of Mind are patterns of intellectual behavior, developed as a set of responses to uncertainties or dilemmas. Such intellectual habits are amalgamations of skills, attitudes, cues, and past experiences (Costa & Kallick, 2008). Similarly, Hew and Cheung (2011) articulated habits of mind as mindful decisions about using skills and knowledge in any circumstance. The term *habits of mind* has also been used generally to describe intellectual behaviors, critical thinking, and thinking skills in general (Burgess, 2012). Critical thinking requires the purposeful use of cognitive strategies to meet the complexity of a situation or achieve a desired outcome (Ku & Ho, 2010). To fully understand one's ability to think critically, strategies used to approach cognitive tasks must be made transparent and examined closely (Ku & Ho, 2010). Instruction focused on using problem solving skills to handle adversity, generally called *habits of mind* by many researchers, has shown particular promise in preparing students for postsecondary success (Cunningham & MacGregor, 2014; Hazard, 2013; Lind, 2014; Özyurt, 2015; Park, Holloway, Arendtsz, Bempechat, & Li, 2012).

When facing setbacks, such as academic challenges or failure, students benefit from specific ways of thinking, or cognitive habits that foster resilience and

empowerment in the face of difficulty (Olson, 2012). Adversity has been described as circumstances that produce a sense of disruption, danger, or stress (Kiff et al., 2012). When facing adversity, insightful problem-solving may produce shifts in ways of thinking about problems that support innovation and transformation (Cunningham & MacGregor, 2014; Yuen Lie Lim, 2011). Lind (2014) argued that while it is difficult to predict the skills or learning necessary to prepare students for the next 50 years, empowering students with agile thinking is necessary for producing innovation that will be required to face challenges of any generation.

Equipping students with specific problem-solving strategies, such as Habits of Mind, facilitates increased creativity, academic performance, and overall awareness in students (Gok, 2014). Effective teaching must reflect knowledge of intelligent behaviors and problem solving strategies, in order ensure that today's educational system reflects what is known about how students learn and live in an ever changing and technologically advanced world (Tucker, 2014). High school students in particular should be given ample opportunities to develop critical thinking and problem-solving skills that will allow for postsecondary preparation, and global competition competencies (Carlgren, 2013). The potential of further exploration of for Habits of Mind exists, as specific intellectual and problem-solving behaviors may aid students in the overall approach to academic difficulty.

Habits of Mind: 21st Century Skills for Global Competition

Wagner (2012) argued that education has traditionally been a risk-averse field in which teachers shy away from encouraging academic risk-taking to one that neatly

utilizes tools of accountability to measure academic success. In order to prepare students for meaningful work in the new global knowledge economy, students should benefit from classroom experiences that encourage the *Habits of Mind* dispositions of risk-taking, innovation, collaboration, and problem solving (Wagner, 2012; Carlgren, 2013; Antonenko, Jahanzad, & Greenwood, 2014). Collaboration, an academic skill highlighted under English Language Arts Speaking and Listening Common Core Standards, has been identified as important for both individual and group success and innovation (Kaplan, 2014). When individuals collaborate to solve a problem or innovate, appreciation for the process and its potential benefits for society may be realized (Kaplan, 2014).

Global competition is one of the driving forces in the necessity of students to be critical thinkers and problem solvers; in order to have an advantage over the competitor, one must possess complex thinking strategies able to be implemented in multiple situations (Carlgren, 2013). Furthermore, Carlgren (2013) argued that college may be too late in equipping students in critical thinking and problem-solving skills; explicit instruction should be introduced and modeled for students much earlier and consistently. Secretary of Education Arne Duncan referenced 21st century skills as "skills that increasingly demand creativity, perseverance, and problem solving combined with performing well as part of a team" (Larson & Miller, 2011, p. 27). While such skills may not be new, there is increased emphasis on skills that foster students' responsibility for learning as well as intelligent response to problematic situations (Larson & Miller, 2011).

Habits of Mind and Academic Success

Empowering students with thinking tools maximizes learning outcomes and

academic achievement (Forster, 2012). Students of all age groups face multiple types of adversity in daily life; however, adversity is a unique opportunity for growth and positive change (Nikam & Uplane, 2013). Students' approach to learning and interaction with the learning environment influences academic achievement and outcomes (Ning & Downing, 2012). Achievement goal theory maintains that students' perceptions and beliefs about learning will influence achievement outcomes (Edwards, 2014). Habits of Mind instruction has shown academic promise with students exhibiting challenging behaviors (Burgess, 2012). Schools need to integrate academic and social components, as well as problem-solving skills necessary to be successful and beyond (Carlgren, 2013; Duckor & Perlstein, 2014; Ellerbrock & Kiefer, 2013; Fard, Bahador, Moghadam, Rajabi, & Moradi, 2014; Frischkorn, Greiff, & Wüstenberg, 2014; Miller; 201). Effective teachers use positive attitudes and habits of mind to improve, revise, and re-think instruction over time (Seif, Kallick, & Costa, 2011). Marzano, Pickering and McTighe (1993) state that without positive attitudes and perceptions about learning, students will struggle to be proficient with learning. Conversely, Parker, Bindl, and Strauss (2010) found that when students invest and engage personally in learning, achievement of goals is more likely. Students must be given strategies to extend and refine knowledge, not simply recall it (Marzano et al., 1993). When focusing on equipping students with cognitive skills that go beyond mere memorization into problem solving and critical thinking, educators are highlighting the belief that intelligence is not fixed and that failures are opportunities for growth (Robbins, 2011). Specific habits of mind, including persistence, metacognition, thinking flexibly, and managing impulsivity, and the potential for impact on students'

academic achievement, are explored more in depth in the following sections.

Persistence. Costa and Kallick (2008) describe the *Habit of Mind* of persistence as being able to identify and analyze a problem, followed by choosing a range of strategies to persevere through the problem. Cognitive capacity and thinking skills that help students overcome academic adversity are teachable skills (Jensen, 2013). Explicit Habits of Mind instruction has also become part of purposeful instruction in some public schools in Hawaii as part of an effort to teach students thinking processes that will yield positive results and foster persistence when facing adversity (Matsuoka, 2012). In terms of identifying skills for resilience, Nikam and Uplane (2013) identified 4 essential components, deemed as "adversity quotient": control, ownership, reach, and endurance. Students must be explicitly taught reasoning skills when facing a problem and is is imperative that these skills are modeled and practiced (Carlgren, 2013; Robbins, 2011).

When students lack persistence, motivation may be negatively impacted, leading to failure (Kadioglu & Uzuntiryaki-Kondacki, 2014). Furthermore, empowerment of students to feel confident in learning ability is cultivated through feelings of motivation and competence (Brooks & Young, 2011). Keklik and Erdem-Keklik (2012) contend that motivation and learning strategies are highly relational and that achievement and learning cannot happen with the absence of one of these. Failure-fearing students may be less motivated to take risks and keep trying, choosing instead to exhibit self-handicapping behaviors (De Castella et al., 2013). Positive outcomes, including increased motivation and self-worth, exist for students who show patterns of persisting when experiencing failure (Sideridis & Kaplan, 2011). Students who feel confident about their ability to

learn experience increased levels of self-motivation and make better achievement-associated decisions (Fan & Wolters, 2014).

Similar terms for this habit of mind include *resilience* and *grit* or the ability to remain committed to goals in the face of failure (Perkins-Gough, 2013). Resilience is a process that is developed and strengthened by dealing with adversity, not simply a trait that people do or do not have (Werner, 2012). Downey (2014) defines educational resilience as "the heightened likelihood of educational success despite personal vulnerabilities and adversities brought about by environmental conditions and experiences." In a study focused on resilience and African-American youth, Williams and Portman (2014) identified educational resilience as the ability of an individual to adapt to challenging life situations. Regardless of unique definition, resilience is strengthened through adverse situations and is developed through use of specific problem-solving tools (Shepard et al., 2012). Despite background or specific challenges, students garner strength and the ability to be resilient, even while encountering serious life challenges (Henderson, 2013). Students with higher rates of persistence and effective strategies for dealing with adversity demonstrate higher levels of learning and mastery (Sideridis & Kaplan, 2011). Beyond high school, implications for academic success in the transition from high school to college include the need to persist in pursuit of academic goals necessary to complete a degree successfully (Sparkman, Maulding, & Roberts, 2012). Additionally, Wilde (2012) claimed that students' increased ability to tolerate frustration is associated with higher GPA. Ultimately, students' ability to be resilient in light of multiple situations of challenge is highly influential on success, or lack of success and

involves the implementation of specific strategies (Thieman, Henry, & Kitchel, 2012).

Metacognition. Several pieces of research have targeted the effects of metacognition and reflection as effective problem-solving strategies when facing adversity. Metacognition has been defined in the research as actively thinking about one's thinking (Ku & Ho, 2010). Costa and Kallick (2008) consider metacognition a Habit of Mind because it involves reflection when thinking, which they consider an effective problem-solving strategy (Costa & Kallick, 2008). Adaptive behaviors of students include self-reflection and self-regulation in order to evaluate performance and pinpoint specific steps for improvement (Martin et al., 2013). Adolescence in particular is a phase of development that requires constant adjustment and adaptability in order to maintain a healthy life (Martin et al., 2013). Metacognitive awareness may be developed through the implementation and instruction of specific educational strategies (Snyder & Dringus, 2014). Students benefit academically, cognitively, and behaviorally from metacognition ad reflective practice (Frederick, Courtney, & Caniglia, 2014; Geoghegan et al. , 2013; Gok, 2014; Hong-Nam, 2014; Kirbulut, 2014).

Moreover, self-regulation of learning and motivation are both associated with positive student academic outcomes (Ning & Downing, 2012). Both metacognitive skills, such as self-monitoring, and beliefs, such as self-efficacy, are improved through problem solving (Gok, 2014). Metacognition is a fundamental skill that allows for understanding of information, developing points of view, and engaging in complex reasoning in any context; it is a critical executive function for intellectual success (Ku & Ho, 2010). Research has shown that learners with more use of both cognitive and behavioral self-

regulation achieve more than students with lower levels of self-regulation (Keklik & Erdem-Keklik, 2012).

Thinking flexibly. Divergent thinking includes imaginative thinking, curiosity, intellectual flexibility and risk taking (Gallavan & Kottler, 2012). Opposite of divergent thinking would be convergent thinking, where students arrive at a single conclusion, usually without the benefit of intellectual collaboration with peers (Gallavan & Kottler, 2012). Convergent and divergent thinking are both mental processes reflecting intelligence, defined as thinking and acting purposefully in any circumstance, and creativity (Cho, Nijenhuis, Van Vianen, Kim, & Lee, 2010). Problem solving ability is viewed in conjunction with flexible thinking, along with analytical reasoning and creativity (Huang, Yeh, Li, & Chang, 2010). Reflection and higher order thinking skills inherent in divergent thinking may ask students to develop unique perspective to solve a problem or defend choices from a multitude of possibilities (Gallavan & Kottler, 2012).

Impulsivity and self-management. Managing impulsivity, through careful pre-consideration of words and actions, is a key cognitive disposition identified through Costa and Kallick's meta-analysis (2008). Psychologists and behaviorists tend to view impulsivity as having 4 distinct personality components: 1) urgency, 2) lack of persistence, 3) lack of thoughtfulness in decision making, and 4) sensation seeking (Klonsky & May, 2010). During adolescence, the teenage brain is naturally developing at a rapid rate; risk taking behaviors are viewed as typical of teenagers due in part to an underdeveloped frontal cortex (Romer et al., 2011). A rise in impulsivity in adolescence is connected to decreased executive function with insufficient cognitive reasoning skills

(Romer et al., 2011).

Implications

Academic failure has multiple implications for students' future academic performance, self-worth, and ability to contribute positively to society. Based on the anticipated findings of data collection and analysis, the project focused on professional development model in processes and strategies for implementation of Habits of Mind informed problem solving. Further, professional development may include information on potential benefits and outcomes of inclusion of purposeful opportunities for Habits of Mind instruction in students' school experiences. The implications for the project include the opportunity to influence social change, particularly in supporting educators' understanding and ability to implement instruction that may lead to students' increased academic success and positive problem solving capabilities. Such actions may ultimately facilitate lower drop out occurrences, positively support graduation rates, and overall support students' ability to practice resilience and persistence in an increasingly competitive and complex world.

Summary

Grade 9 students' academic failure and approach to problem solving were areas of concern for teachers in the local research site. A continued, explicit incorporation of problem solving strategies into students' academic experiences was an area of interest for teachers to implement in classrooms as a desire to increase academic success and transferrable skills of resilience and persistence grows. While failure was a challenging situation, it also provided an opportunity for regrouping, reflection, and growth. Explicit

instruction, ongoing exposure through academic vocabulary, and modeling of problem solving strategies appeared ideas worthy of consideration in equipping students with skills necessary to succeed. Specific Habits of Mind were the focus of this study as a potential way to empower students in critical thinking and decision making when facing the inevitable uncertainty and adversity that comes with school, work, and life.

Section 2: The Methodology

Introduction

In this section, I provide the rationale and description of the qualitative case study design I used for this project study. A description of how the research design logically derived from the problem and research questions, as well as justification for the choice of design over others will also be presented. Further, I discuss participants, data collection methods, data analysis methods, and measures to account for accuracy and credibility. I then conclude with a discussion of the study's limitations. The research questions of this study were as follows:

RQ1: What are the teachers' perceptions of the use of five specific components of the Habits of Mind program in assisting their 9th grade students to achieve academic success?

RQ2: How do teachers of 9th grade English utilize these components in their instructional design?

RQ3: What are teachers' perceptions of student academic success in the use of five specific components of the Habits of Mind program?

Research Design and Approach

The research design for this study was qualitative in nature due to my desire to use an inductive approach to account for multiple perspectives and give voice to participants in a social setting (see Lodico et al., 2010). Specifically, I used an exploratory case study design to describe the perceptions of Grade 9 teachers related to use of habits of mind instruction and academic progress. With implementation of habits

of mind instruction at the research setting as a way of positively impacting student learning and academic achievement, this research design choice provided the opportunity to examine complex phenomena within a specific context.

Exploratory Case Study Design

My use of exploratory case study design derived logically from the problem of academic failure for Grade 9 students because the intervention being evaluated (habits of mind instruction) has no clear or previously explored description of outcome (Baxter & Jack, 2008). Case study research, which researchers use to gain insight into an individual, group, or situation, was an appropriate design given my desire to investigate and gain insight about the process of using habits of mind and, moreover, teachers' perceptions of habits of mind and academic progress (Lodico et al., 2010). Using a constructivist lens, case study researchers emphasize the inherent truth in one's subjective perceptions when experiencing a new phenomenon in a particular context (Baxter & Jack, 2008). In-depth exploration of the Habits of Mind program and teachers' perceptions related to academic progress as part of case study design also allowed for data collection procedures over a sustained period of time (see Creswell, 2009).

Case study design allows the researcher to explore a phenomenon in its natural environment without manipulating the behavior of participants in any way (Baxter & Jack, 2008). It also allows for the researcher to gain insight into the complexity of a phenomenon (Baxter & Jack, 2008). The case of this research was bounded by the idea that habits of mind is a new instructional element being discussed in classrooms in the research setting; therefore, teachers' emerging perceptions regarding habits of mind are

critical to understand as the school moves forward.

Justification

Qualitative design in which data analysis leads inductively to revealing general themes was a more appropriate choice than quantitative design, with which researchers seek to examine relationships between variables (Creswell, 2009). Exploratory case study design research design allows for study of *how* and *why* questions while considering contextual conditions that may relate to the phenomenon being examined (Baxter & Jack, 2008). Case study design was appropriate for my study because it focuses on a specific situation or phenomenon, it yields a thick description, and it is "heuristic" in that it "illuminates understanding of the phenomenon under study" (Yazan, 2015, p. 8).

While case study design may be similar to ethnography, the purpose is rooted in studying process and program, not a cultural group (Creswell, 2009). Grounded theory involves a constant comparison of different groups in a sample to find similarities and differences in information; however, I endeavored to study one group of students and collect data on them over a sustained period of time for analysis (see Creswell, 2009). Descriptive case study design was also considered for the project study, but I did not selected it because information is collected without changing the environment and because descriptive case study is often associated with correlations, or relationships (Research Design, n.d.).

Participants

Population

The target population comprised all Grade 9 teachers at the research site as well

as teachers and administrators who regularly communicate with Grade 9 teachers about habits of mind. There were 12 teachers of Grade 9 students at the research site in total. All teachers, Grades 9-12, were introduced to habits of mind at emerging levels at either district-wide or school-based professional development.

Sampling Method

I used purposeful sampling in order to learn about ideas central to the research (Lodico et al., 2010). Specifically, I used purposeful sampling, in the form of expert sampling, to select a sample size of 10. This sample included the only remaining Grade 9 English teacher at the research site, a recently retired Grade 9 teacher at the research site who taught there for 32 years, a Grade 10 English teacher who regularly communicated with Grade 9 English teachers about habits of mind and has implemented related instruction in her classroom, the English department chair, a Grade 9 social studies teacher, a Grade 9 science teacher, a Grade 9 math teacher, a Grade 9 Health/PE teacher, a Grade 9 special education English teacher, and the building principal.

Having relatively few participants is standard procedure in qualitative research, and such a number of participants allowed for a more in-depth understanding of participants' experiences and thick, rich descriptions (see Creswell, 2009). I selected participants based upon their teaching of students at a particular grade level (Grade 9) and experiences communicating about students and their habits of mind. I gained access to participants through permission of the superintendent and building level principal. The purpose of the study, amount of time needed to collect data, time required of participants, benefits and risks, and use of results were all verbally explained to each participant. I

reviewed copies of participant consent forms with the superintendent and principal.

I secured written consent from each participant through an in-person meeting in a quiet, secure, and private room. Communication to schedule the in-person meetings was made through e-mail with e-mail addresses I procured through a publicly-accessible district website. During the in-person meeting, I explained the purpose of the study, the amount of time it would take to collect data, time required of participants, benefits and risks, and how results would be used (see Creswell, 2012). I emphasized that confidentiality would be ensured by removing any distinguishing features, such as names, from reporting of the research. Once the consent procedure was fully explained, I asked clarifying questions of participants to ensure full understanding of the process and to emphasize that participation was voluntary. Participants were asked at the end of the meeting whether they agree to participate; if they agreed to sign, a copy of the consent form was given to each participant.

Data Collection

In this subsection, I describe the setting and sample for the project study. A description of the local setting, population, sampling method, sample size, and participant eligibility are discussed. Finally, I discuss the measures I took to ensure protection of participants' rights.

Local Setting

The research setting was a rural high school in northern Maine. The community has a population of just over 8,000. The total student population of the high school is just under 400 students, with students attending from the community's middle school as well

as from two nearby K-8 schools just outside of the community. The high school has one principal, an assistant principal/athletic director, a full-time guidance counselor, a part-time guidance counselor, and a teaching staff of 24 classroom teachers, one full-time tutoring center coordinator, two part-time tutors, and five paraeducators. There is an attached vocational center located on the campus, with many students taking vocational classes during their sophomore, junior, and senior years. Instruction is given in eight 48-minute periods each day.

Instrumentation

Case studies support the use of multiple modes of data collection in an effort to comprehensively understand the phenomenon being examined (Baxter & Jack, 2008). The first data collection technique I used was interview (see Appendix C for the interview protocol). I interviewed each participant individually to gain a cross-sectional view of participants' understandings of the phenomenon being studied (see Lodico et al., 2010). I secured participants' permission to have their responses audio recorded. Neutral language was used in questions, intended to garner participants' honest feelings and perceptions related to habits of mind. Alignment of research questions with specific interview questions can be found in Appendix D. Using the initial research questions as central questions, I designed the interview questions to explore participants' perceptions in depth (see Creswell, 2009). The interviews, approximately 45 minutes to 1 hour in length, took place in secure, private rooms at the research site or at a local library. Interviews remained semi-structured to allow for natural clarifications of responses based on pre-established interview questions (Lodico et al., 2010). I transcribed audio

recordings of interviews into typed transcripts to help ensure accuracy in data analysis. Participants were identified during data collection and analysis by number.

I used surveys as a second data collection technique to gather data concerning participants' ideas about habits of mind (Appendix B). The surveys took approximately 45 minutes to 1 hour to complete. Jansen (2010) pointed out that in qualitative research, surveys do not aim at establishing numerical frequencies; rather, they serve to give dimension to topics. Furthermore, surveys may work particularly well to support the validity of responses from interviews and serve as an important tool to triangulate the data collected (Jansen, 2010). Explorative surveys allow for clarity or explanation of a subject touched upon in interviews (Jansen, 2010). Alignment of research questions with survey questions may be found in Appendix D. I gave participants the option to opt out of either the interview or survey phase of the study.

Member checks were conducted via e-mail so that participants could confirm or refute themes I uncovered during interviews. During member checking, I gave participants the opportunity to affirm or refute that the findings reflecting their experiences and perceptions. Affirmation of findings helped ensure validity.

My goal in using multiple data collection methods was to provide a thick description of the nature of using habits of mind to impact academic achievement (see Lodico et al., 2010). Depth of inquiry was achieved by using surveys and interviews to support findings with participants in a relatively small sample size. Strategies to enhance data credibility included triangulation of the interview and survey data. Surveys also allowed participants to share artifacts related to research questions, which also supported

triangulation. A data collection log is shown in Table 3.

Data Collection Log

Month	Week	Data collection task
1	1	Interviewed 3 participants
1	2	Interviewed 3 participants
1	3	Interviewed 2 participants
1	4	Member checked interviews
2	1	Surveys deployed and data collected

Data Analysis

I analyzed data through transcription of interviews and organization of the data gathered via surveys (Lodico et al., 2010). As data was collected, I coded and analyzed it in an ongoing basis, rather than all at once at the conclusion of data collection (Saldaña, 2009). Data analysis began once the first stage of data collection, in-depth individual interviews, were complete and continued once each process of data collection was complete. This allowed for follow up questions or clarifying questions to be used with participants if necessary in a timely manner. Coding is a heuristic process for picking out and symbolizing ideas and will be used to further separate data into categories and identify themes (Lodico et al., 2010; Saldaña, 2009). During data analysis, one aim will be to create thick descriptions of the perspectives of the participants (Lodico et al., 2010).

Using inductive processes, themes were identified from the coded data to provide a deeper understanding of ways in which students utilize habits of mind to influence academic progress (Lodico et al., 2010). Specifically, the first stage of data analysis was be pre-coding, including circling, highlighting, and underlining of quotes or information

collected that may be considered provocative or worthy or attention-grabbing (Saldaña, 2009). During this stage, codes were recorded in the left margin of the interview transcript and memos in the right. Small passages or paragraphs will be more manageable for coding than entire passages of text (Saldaña, 2009). Next, preliminary jottings were word processed in columns. It was important for the research to look for patterns in the data. The first column will contain raw data, the second column preliminary codes, and the third column final codes (Saldaña, 2009). Acceptance of the necessity of re-coding and constant comparison in light of the complex nature of coding will be paramount for the researcher to keep in mind (Saldaña, 2009). The process of inductive coding moves then into finding categories for codes, and finally to the identification of themes related to participants' perspectives (Saldaña, 2009). It was important for the researcher to pay attention to information that varies from emerging categories and themes, or discrepant cases (MODULE IV-C: Qualitative Analysis and Reporting, n.d.). In the case of discrepant data that does not fit previous conclusions, it was key for the researcher to be transparent and report such cases and allow the reader to draw individual conclusions (Kaplan & Maxwell, 2005).

Ethical Considerations

In order to assure confidentiality and respect of all participants at all levels of data collection and analysis, all data collection materials were kept in a locked file cabinet in the researcher's home. Labels of identification, such as school names, personnel names, parent/ guardian names and student names were kept strictly confidential and pseudonyms were used in any published record.

Initial contact with the school district was completed through an email and follow up phone call first with the Superintendent, then the building-level principal. After approval at the building level, a meeting was set up between the researcher and participants. The purpose of the study and data collection tools was shared at that time.

Role of the Researcher

I was employed at the high school that will serve at the research setting as a Grades 10 and 11 English teacher from August 2005-June 2016. However, I have since assumed a new professional role at a local university as a Director of the Center for Teaching and Learning. When at the research site, I had no supervisory status over any other teacher. Working with a district leadership team to build awareness and implementation of habits of mind, I worked on a habits of mind task team. We provided district staff with educational materials, examples of instructional practices that incorporate habits of mind, and helped develop a tool for blending habits of mind with our state's law involving a similar initiative, called Maine's Guiding Principles.

Limitations

Participants with negative bias towards habits of mind, or who have limited understanding of habits of mind due to a recent date of hire, may skew results. Additionally, the presence of the researcher in data collection may influence subjects' responses (Anderson, 2010). Results from this particular research design may have limited value in decision making due to a naturally more unstructured research process than quantitative research (Research Methods, 2015). However, findings may be transferable to another setting (Anderson, 2010).

In case studies, threats to internal validity include the complexities of making inferences. While a certain amount of inference is inherent in this design, the researcher must be vigilant in considering all possible explanations and in considering whether the evidence is convergent (Yin, 2009). Reliability is supported through meticulous documentation of the research process, so that a researcher could replicate the study (Yin, 2009).

Case studies tend to focus on a particular process or project within a specific context; therefore, some may argue its limitations as it is bound by time and activity (Creswell, 2009). Additionally, those critical of case study design overall question the rigor of the methodology (Willis, 2014). Nonetheless, case studies provide rich and insightful investigation of a program or intervention in its natural setting (Creswell, 2009).

Conclusion

Qualitative methodology, in the form of exploratory case study design, was used for this project study. This design was particularly well-suited to explore the complexity of teachers' perceptions concerning habits of mind at the research site. Critical steps to ensure protection of participants' rights, validity, and reliability were taken. After data collection and analysis, a project was proposed as a possible way to bridge a gap in practice at the local research site. The researcher also strove to support social change as a cornerstone outcome of the project study.

Data Analysis Results

The purpose of this study was to examine Grade 9 teachers' perceptions related to

the use of Habits of Mind, a program designed to address the dispositions of thinkers when faced with problems, such as lack of resilience or persistence. Data were gathered through interviews and surveys. From the original sample size of 10, 8 interviews were conducted and 8 surveys were completed by participants. Interviews were conducted using Garage Band to record audio, with 5 transcripts being transcribed by the researcher and 3 interviews being transcribed by a professional transcription service. All interviews were conducted in private, secure locations, either conference rooms in a local library or convenient and private school-based locations requested by interviewees. All interview transcripts were sent to interviewees for member checking. In addition, 8 surveys were completed anonymously via Google Forms. All print copies of transcripts were kept locked in a file cabinet at the researcher's home and audio files were stored securely on the researcher's password-protected thumb drive.

To analyze the data, the researcher identified patterns and themes from the data. Pre-coding was used to identify rich or significant quotes from the data, followed by analytic memos of preliminary codes from the data. Finally, thematic codes and categories were deduced (Saldaña, 2013).

Results for RQ1

Research Question 1 asked, "What were the teachers' perceptions of the use of five specific components of the Habits of Mind program in assisting their 9th grade students to achieve academic success?" The following themes were discovered based on the interviews and surveys: soft skills for life; necessity for critical thinking; adaptation for a dynamic world.

Theme #1: Soft skills for life. When asked to define Habits of Mind, all participants included some aspect of identifiable life skills or "soft skills" necessary for effective problem solving and handling of adversity. Habits of Mind were described as knowledge and skills necessary to survive in the world and communicate well with others. Participant 4 stated that Habits of Mind are, "everything you need to know to be successful that isn't taught in a textbook".

In terms of why Habits of Mind are important to incorporate into classroom instruction, participants reported that there are certain skills important beyond content curriculum. Participant 7 said that, "Sometimes students get so steeped in subject matter, they forget how to learn". Respondents felt that students need to be well-rounded and adept at grappling and persisting when it comes to difficulties and must find alternative solutions. Additionally, several respondents communicated that it is important for teachers to include explicit instruction in Habits of Mind because students need to know and practice skills that will take them beyond high school. Multiple participants referred to Habits of Mind as "tools" and identified them as specific strategies necessary for student success; two mentioned them as being necessary for learning and productivity, respectively. In relation to instruction, Participant 8 articulated that "the best achievement is when students' use of Habits of Mind becomes automatic".

The habit of mind of managing impulsivity was described as necessary for cooperative learning and academic success, such as working with others, being a good team member, and showing empathy. Managing impulsivity was frequently described as important for adult life- rejecting snap decisions, listening to others, and, in the words of

Participant 4, “mediating their need for immediate gratification”. Academic success was connected to managing impulsivity in that being able to concentrate effectively and decide on what to focus on- and not- is critical for learning.

Theme #2: Necessity for critical thinking. Participants were also asked their perceptions of how five specific Habits of Mind may impact academic success. Related to thinking flexibly, the data showed that a high level of academic importance was placed on being able to think about a concept in a different way, as very rarely is there only one way to accomplish a goal. Critical thinking skills were frequently mentioned as being related to flexible thinking; specifically, looking for multiple alternatives and multiple causes were noted as skills for science students that would support academic success. Participant 8 shared that “without flexible thinking, students will struggle to think critically and will be confined to prior knowledge”. Participants noted that thinking flexibly helps students be academically successful because they are more open to new discoveries and will ideally “look for unique ways to solve problems that haven’t been thought of yet”. This habit of mind was further seen as a life skill related to transferability (beyond high school), given the flexibility needed in thinking and communication with a trend of numerous changes in employment.

In response to the habit of mind applying past knowledge to new situations and academic success, Participant 3 felt that “this skill is necessary to be able to engage in new learning effectively; our brains like to grab on to what we already know”. This problem- solving strategy was described as foundational for relating previous learning to new learning and making connections between the past and present, especially in the light

of the fact that they, “have to embrace thinking critically, as they cannot Google everything when it comes to making connections” in the words of Participant 2. Similarly, Participant 8 described the way that this habit of mind leads to ongoing learning by saying that “True learning happens with connections. We can only learn through our strengths and students who apply past knowledge to new learning situations will help solidify new information as attainable. These connections are crucial to move short term learning into long term learning.”

Theme #3: Adaptation for a dynamic world. Respondents reported remaining open to continuous learning was important for developing skills to be successful in our ever-changing world. Adaptation and openness to new ideas and opportunities were noted as necessary were viewed as central to learning new technologies and accepting new discoveries in learning. According to Participant 2, “There are always new things left for us to know- history books will continuously be rewritten. We are always growing and learning more. Becoming lifelong learners and achieving academic success beyond high school are both predicated on remaining open to continuous learning.”

Persistence was described as essential for continuous improvement and goal attainment. In addition to critical for completing an academic task, persistence was noted as necessary to deal with struggles inherent in learning new content and skills, especially because it was described as “virtually impossible” to learn a new skill on the first attempt. Participant 2 went as far as to say that “exhibiting the skill of persistence is the difference between being successful in life…and not”. Concerning the fundamental nature of persistence in academic success, one participant said, “learning is challenging,

uncomfortable, and chaotic- students need persistence in order to stay with this struggle". Another noted that persistence is the "antithesis of perfection; we must coach students into the patience that comes with learning something new".

Results for RQ2

Research Question 2 asked, "How did teachers of 9th grade English utilize these components in their instructional design"? The following themes were discovered based on the interviews and surveys: incorporating choice; connecting prior learning to current and future learning; emphasizing collaboration; focus on constant improvement and life preparation. and purposeful collegial interactions.

Theme #1: Incorporating choice. When asked how they incorporate thinking flexibly as part of their instructional design/ planning, teachers articulated that choice is important in the classroom. Additionally, encouragement of divergent thinking and alternative ideas was woven into instructional design. When appropriate, giving students opportunities to demonstrate evidence of proficiency in a standard was used as an example of a planning element that facilitated flexible thinking while also encouraging student agency. Teachers used abstract, higher-order questions during instruction to encourage this habit of mind, including "what is truth"? In the content area of science, one teacher described how the classroom culture has been built to celebrate alternate ideas and new discoveries and was used as an example of flexible thinking in action.

Theme #2: Connecting prior learning to current and future learning. Applying past knowledge to new situations was reported to be an inherent part of asking students to activate background knowledge when learning new material. Making

connections between knowledge and skills already learned and helping students through scaffolding to develop deeper understandings and increased skill were shared as ways in which this habit of mind was embedded into classroom instruction and planning. Lesson sequencing was noted as a way in which teachers help facilitate this skill in the classroom, with graphic organizers, read-alouds and word walls as specific tools for supporting students in the acquisition and practice of this habit of mind.

Theme #3: Emphasizing collaboration. In terms of managing impulsivity, teachers shared that group work and collaborative activities frequently lend themselves to incorporating this habit of mind. Developing group norms and clearly outlining expectations were mentioned as ways in which teachers feel that they show awareness of this habit of mind in their instruction. Another way introduced for teachers to help foster this skill is by minimizing the risk that students will get overwhelmed by academic demand and expectations. Erratic or impulsive behavior was categorized as being a result of poorly communicated classroom procedures or expectations. One example of why this skill matters in the classroom was provided by a science teacher who shared that managing impulsivity is just general good discipline, especially for laboratory rules.

Theme #4: Focus on constant improvement and life preparation. Remaining open to continuous learning was reported as being incorporated in instructional design through conversations related to the ongoing nature of learning and discoveries beyond classroom walls. It was described as a mindset of learners that allows them to think about others' opinions and the need to always strive to know and do more. Teachers mentioned examples of incorporation as including tasks that require students to explore values and

beliefs that may be contrary to their own, and also model this habit by asking for student feedback about whether or not a teaching strategy is working for students.

Persistence was described as a skill inherent in constant improvement and using mistakes to improve. Participants expressed that talking explicitly in the classroom about persistence- both when observed and consequences of not using it- was important. Talking openly about the benefits of struggle and the "crucial" nature of "stick-with-it-ness" related to learning and achievement were both highlighted in the data. According to Participant 8, "While we may think students make these kinds of connections, they often don't. Talking about persistence in the classroom can be a helpful way to assist students in making the connection". Sharing stories of students modeling this habit of mind, or highlighting the process of a final piece of polished student work were two specific ways in which persistence was an instructional focus for some. Practice and persistence to achieve a new skill were seen as accomplished by repeated effort, with Participant 6 stating that "we are constantly re-defining what the term 'done' means".

When asked about how they incorporate the five habits of mind into professional conversations and development, an awareness of the overall importance of habits of mind for career and life preparation were highlighted. Thinking flexibly was described as part of professional adaptability when it came to remaining dynamic with teaching strategies and pedagogical approaches; with new teaching methodologies, resistance to change was viewed as potentially problematic. Sensitivity and response to students' diverse needs and parent concerns were identified as being professionally relevant in terms of flexible thinking. Applying past knowledge to new situations was central especially in the area of

social studies, where professional conversations focus on application of knowledge of the past to the present. One respondent stated that "being able to filter through past knowledge and experiences, both positive and negative, to glean and apply the specifics pertinent to a new situation dramatically improves efficiency and probability of a positive outcome."

Remaining open to continuous learning seemingly resonated with participants, as teachers described the need to constantly learn and adapt their teaching skills, particularly in light of shifts in educational policy or practice that are sometimes regarded as "flavors of the week". Keeping an open mind and seeking input from others in the process was reported as essential to combating cynicism that may be inherent within faculties. One practice described was "continually seeking opportunities to work with different style teachers to learn and adapt…" by Participant 6.

Theme 5: Purposeful collegial interactions. For managing impulsivity, respondents noted that this skill was important to incorporate into collegial dialogues and approaches to work. Taking time to really think before speaking with others and slowing down to not jump to conclusions were described as parts of an effective professional disposition, although it was stated that teachers primarily relate this habit of mind to students. This skill was also incorporated when "applying this every day in making decisions and during interactions with everyone in the school community".

Persistence was articulated as a skill to not only model professionally, but also an idea to remind colleagues to value and practice. Stressing process over perfection, encouraging others to "try and try again" and seeing professional goals to fruition were

identified as specific examples of how persistence was part of professional approaches. Additionally, it was noted that teaching requires persistence in that changes and initiatives often require sustained effort**,** with Participant 5 saying, "as educators and educational leaders, we need to be sure our goals are worthy of persistence".

Results for RQ3

Research Question 3 asked, "What are perceptions of student academic success in the use of five specific components of the Habits of Mind program?" The following themes were discovered based on the interviews and surveys: problem solving for success; teacher intentionality, and consistency in program implementation.

Theme #1: Problem solving for success. When asked how habits of mind may impact student success beyond high school, participants stressed the idea of the need for problem solving skills for college and life preparation. It was stated quite frankly that "life is harder if you don't have these skills". From time management to relationships with co-workers, adaptation to agency over lifelong learning, habits of mind were described as congruent with moving forward successfully and independently. College was highlighted as a period of time in which students may flounder without using habits of mind. Productivity as an adult was mentioned as being aligned with habits of mind, particularly because problem solving and persistence amid struggles are necessary for both work and personal life- "when you're giving someone else a hand up or showing someone else the way, whether it's your own child or not…that's when these skills really come home to roost".

Theme #2: Teacher intentionality. Students may most effectively observe habits

of mind when educators effectively lead by example. Intentionality was stressed as important for teachers to be cognizant of when considering how to help students observe these skills. Students may benefit from teachers sharing problem solving processes, struggles, ways of learning, and "real life" examples of habits of mind in action. According to Participant 2, "Teachers typically want to be the expert in the room, but if we are professionals show how we learn and troubleshoot areas of uncertainty…students will witness examples of habits of mind".

Theme #3: Consistency. In terms of how Habits of Mind instruction might be improved, consistency and intentionality were key considerations. To not make this program too "gimmicky", teachers need to find ways for conversations and examples to be embedded into existing curriculum. However, other respondents seemed to feel that pulling Habits of Mind out as a separate conversation or emphasis may be effective; for example, it was suggested to have a rotating school or department-wide focus on certain habits of mind. There was some clear sentiment related to not grading habits of mind. Rather, keeping habits of mind conversations related daily actions and consequences seemed to be a more popular notion as habits of mind "transfer to every area of our lives, whether we are reading a massive novel or attempting to alpine ski for the first time".

Discrepant Cases

Salient data was compiled through a process of coding interview and survey responses. I first used descriptive codes to summarize participant responses and then coded again for identification of patterns. This process also allowed for nonconforming responses, or discrepant cases, to be identified. For one participant in particular, a

question concerning how to improve Habits of Mind instruction was answered with an expression of frustration versus a description of ways to improve. The participant noted, "I think that it's always been there, but it's a generational aspect of, we did all these things. We never were taught we had to do these. It's just that if you did a good job, you did all this." Additionally, even after clarification, when asked about how remaining open to continuous learning, Participant 6 reported adaptations and changes in technology personally experienced rather than focusing on student success: "I went to the computer building about four times in college. Never used one. I used an electric typewriter, which everyone thought that was real fancy. It had a correcting ribbon. Oh, it was a big deal."

Participant 1 sometimes provided examples for a specific habit of mind that might have been more accurately associated with a different habit of mind. For example, when asked about how managing impulsivity may help students achieve academic success, participant 1 stated, "I think this is a freshman/ sophomore issue more than a --I say that-- more than a junior senior issue. I found it to be because they're they still... they're not... they haven't figured it out to the point that they think of up quickly. They think "this didn't work...OK, I'm done". They haven't learned "stick-to-it-ness". Similar responses pertaining to the notion of "sticking to it" were given by other participants related to persistence, not managing impulsivity.

Another example of a discrepant case was seen in responses to an interview question that asked participants to share how Habits of Mind instruction could be improved at the research setting. For most participants, responses included descriptions of greater consistency and intentionality. However, Participant 2 reported that this

question assumes that current Habits of Mind instruction is not working. Because the participant was new to the school, there was reluctance to identify a need for improvement. Because the discrepant cases were singular in the nature of response, they were not included in the themes identified as related to research questions.

Evidence of Quality

All interviews were audio recorded and member checked. Each interview transcript was sent by e-mail to each corresponding participant, who was asked to review the transcript for accuracy. If the participant felt that changes were needed, he or she was asked to reply to the e-mail indicating the revised response. If participants were satisfied with the accuracy of the interview transcript, he or she was asked to reply indicating this as well. Participants were also given a week-long window to member check; it was told to them in the e-mail that if they did not reply to the e-mail within the week window, this indicated that no revisions with the interview transcript were necessary.

The outcomes of the data addresses teachers' perceptions of Habits of Mind as skills necessary for academic success and success in life. Habits of Mind were described as critical or important problem-solving skills for academic success and for flexibility and adaptability when facing challenges inherent in life beyond high school. These perceptions align with the conceptual framework provided by Bandura (1977) in that habits of mind are largely intrinsic motivators linked to academic success and perceptions of self-efficacy.

Project Deliverable

The findings of the data revealed that teachers' perceptions of Habits of Mind and

academic success include the potential for intentional, consistent, cross-disciplinary Habits of Mind instruction to improve students' problem-solving abilities within and beyond school. The data revealed that teachers hold Habits of Mind as important or critical for academic success and effective problem-solving in life. Additionally, the data revealed that some teachers desire Habits of Mind instruction to be more embedded across disciplines in a "non-gimmicky" manner. The project deliverable will be professional development training, curriculum, and materials. Such a project will support teachers in professional conversations, sharing, and building of a cohesive and purposeful curriculum for incorporating Habits of Mind across the curriculum.

Section 3: The Project

Introduction

This section includes a description of and goals for the project, and also provides a rationale for the project type. A literature review outlines an empirical and theoretical base for the project. I also explore implementation, evaluation, and potential for the project to facilitate social change.

Description and Goals

The project is a 3-day professional development/training with curriculum and materials. The project includes purpose, goals, learning outcomes, target audience, components, timeline, activities, trainer notes, materials, implementation plan (including an hour-by-hour detail of training), and evaluation plan. The project addresses the problem of freshman failure in Grade 9 English by offering professional development to teachers on critical problem solving strategies and tools related to the five habits of mind: persistence, managing impulsivity, remaining open to continuous learning, applying past knowledge to new situations, and thinking flexibly. Through cross disciplinary conversations and collaboration, the project facilitates identification of problem solving strategies that aid students in overcoming challenges. In Section 1, I identified such skills in fostering resiliency as not only necessary for academic success, but also paramount in today's globally competitive and collaborative world. The goals of this project are to cultivate cross-disciplinary, intentional conversations about equipping students with problem solving skills necessary for success beyond high school and to empower teachers to embed specific habits of mind instruction into classroom instruction and school

culture. Evaluation methods for the project include both formative (multiple check-ins with teachers during the professional development) and summative assessment (a Google form survey at the conclusion of the professional development).

Rationale

I developed a professional development and training project because it provides a unique opportunity for teachers to work collaboratively to support students' academic success with habits of mind. Of all the project genres, this one focuses most concisely on purposeful work that includes teachers within and beyond the English department at the local research site. The data revealed that teachers perceived cross-curricular collaboration and learning as highly valuable. Given this finding, professional development was a logical choice given that it has the potential to bring teachers together for common learning.

The data analysis I discussed in Section 2 showed that teachers perceive habits of mind as critical skills for successful life beyond high school. In the spirit of constant improvement and life preparation, teachers described a need for intentionality when it comes to habits of mind as part of students' experiences in classrooms. Purposeful, collaborative, and ongoing collegial conversations and interactions were identified as important action steps as a result of data analysis. Peer group work allows for meaningful exchange of ideas and construction of new knowledge (Cuesta, Azcárate, & Cardeñoso, 2016). Furthermore, teacher collaboration is a fundamental component for student success (Morgan, Parr, & Fuhrman, 2011). Therefore, the project genre I chose is an appropriate fit based on the data. The problem was addressed through the project, which

focuses on habits of mind. Embedded problem solving strategies and skills within the project may ultimately mitigate academic failure. The project provides a solution to the problem by educating and empowering teachers to collaboratively embed problem solving skills, including persistence and flexible thinking. In this approach across the curriculum, the problem of student failure is the focus of purposeful instructional strategies.

Review of the Literature

Genre and Problem

According to Desimone (2009), professional development is moving from a narrow view of workshops and trainings toward a more comprehensive definition of any activity focused on improved teacher instruction, skills, or knowledge. High-quality, evidence-based professional development is paramount for teachers to develop the knowledge, skills, and strategies to positively impact student learning and achievement (Erickson, Noonan, Brussow, & Carter, 2016). New teachers may especially benefit from a process of independent self-analysis that supports a researcher's mindset related to teaching practices (Cuesta, Azcárate & Cardeñoso, 2016). Additionally, professional development is key for teacher growth and advancement (Yurtseven & Altun, 2017).

The introduction of various structures to support teachers' professional learning has a powerful impact on school culture (Hudson, Childs, & Carver, 2016). Knowledge of high-quality instructional practices forms the cornerstone of effective schooling for students (Early et al., 2016). Improvements in teaching are related to purposeful opportunities for teacher growth (Sayler et al., 2013). Teacher practice in the classroom

has a significant impact on student achievement; teacher training and development has become a considerable focus of institutions in the United States and beyond (Sharplin, Stahl, & Kehrwald, 2016).

Criteria, Research, and Project Development

The first identified criterion for the project emerging from the research is purposeful collaboration. Professional development allows for purposeful conversations and collaboration surrounding intentional alignment of desired learning outcomes, instruction and assessment; such alignment is associated with improved student achievement (Early et al., 2016). Collaboration is the heart of enriching professional learning and development, specifically when focused on common outcomes or goals (Devlin-Scherer & Sardone, 2013). Morris (2017) stated that collaboration is associated with the concept of "turnaround schools" or schools in which student achievement is positively transformed in a relatively short timeframe.

Professional learning can build a sense of shared community and common goals when engaging both teachers and administrators (Guskey, 2016). Additionally, in order to change teacher beliefs and practices, professional development should include active learning, collaboration, and coherence (Desimone, 2009). With little time devoted to peer collaboration, it is critical that administrators enact ways for teachers to work together to "leverage diverse perspectives and skills to promote creativity and productivity" (Morel, 2014, p. 36). Furthermore, Morel (2014) noted that collaboration increases teachers' job satisfaction and models the important nature of collegiality in the 21st century.

The second criterion for the project, developed out of research, is active learning.

In a simplified form, active learning equates to a method that encourages deep learning, where participants discuss, interact, and think deeply instead of passively taking in information (Riley & Ward, 2017). Active learning is learner-centered and reflects the beliefs that learners learn in different ways and construct knowledge in unique ways (Burns, Pierson, & Reddy, 2014). The most effective learning involves social exchanges and is "cradled in task" (Mehorter, 2017, p. 52). Active learning facilitates reflection on the learning process as well as collaborative problem solving for more substantial learning (Virtanen, Niemi, & Nevgi, 2017).

According to Streveler and Menekse (2017), active learning strategies enhance learning and are viewed as more positive than passive learning. Moreover, active learning is effective in that it fosters collaborative learning, wherein students collaboratively construct knowledge (Streveler & Meneske, 2017). In action learning, critical thinking is spurred through authentic organizational issues (Cummings, 2018). Furthermore, faculty prefer active learning with problem solving and discussion to passive lecture methodologies (Cummings, 2018).

Reflection is the third criterion for professional development embedded in this project. According to Middlehurst, Cross, and Jeannin (2018), one does not automatically learn through actions; rather, individuals leans only when becoming aware of their perspectives and are able to "suspend beliefs" and learn from others (p. 165). According to Yee (2015), there is value in designing metacognition as part of faculty development. Cuesta et al. (2016) argued that overall teacher quality is dependent upon the development of reflective skills. As Bleach (2014) noted, reflective practice is key for

ongoing development of professional identity and practice. Similarly, Pantiwati and Husamah (2017) contended that metacognitive awareness is a valuable skill for teachers, and one that benefits from constant development.

Reflection may help teachers both seek insight into professional obstacles and also foster resilience in dealing with challenges (Cunningham, 2018). Furthermore, reflection allows teachers to learn from daily experiences in the classroom and turn experiences into knowledge (Šaric & Šteh, 2017). Reflection may influence both teachers' personal and professional practices and allows teachers to "learn, unlearn, and relearn teaching practice" (Núñez & Téllez Téllez, 2016, p. 56).

Collaboration was the fourth design criterion for this project design. Communicative competence and the ability to work in communicative environments are both increasingly necessary in the professional sphere (Tolegen et al., 2016). The ability to work cooperatively with colleagues and problem solve constructively supports overall development of teaching staff (Tolegen et al., 2016). Teachers value scheduled opportunities to collaborate with colleagues and share ideas, to which they have attributed their growth (Martin & González, 2017). Researchers have highlighted teacher collaboration as a key strategy that facilitates school improvement (Spillane & Shirrell, 2018). According to McComb and Eather (2017), including teacher collaboration in professional development allows teachers to challenge and transform deeply held beliefs about their own thinking. Martin and González (2017) posited that collaborative learning experiences for educators promote teacher growth and reflective change through discussions with others that "disrupt entrenched patterns of behavior" (p. 447).

Furthermore, teacher collaboration is a critical component for successful educational reform (McComb & Eather, 2017). Teachers are critical influences on student achievement, though rarely called upon to lead school reform efforts (Lowery-Moore, Latimer, & Villate, 2016).

Theories and Project Content

Bandura's social learning theory (1977) informed the content of the project through a focus on collaboration and learning from others, as well as through incorporation of exemplar models in the project. Bandura's theory (1977) shaped the inclusion of project elements that emphasized the consequences of not using habits of mind, as the theory describes humans as information processors who consider the consequences of behavior. Additionally, the project embeds strategies to build a school culture that focuses on effective habits of mind and problem solving behaviors. In this element, social cognitive theory is reflected in the notion that humans and environments experience reciprocal influence (Bandura, 1977).

A second theory that informed project content was Vygotsky's theory of constructivism (1978). The project included purposefully designed opportunities for teachers to engage in collaboration and to learn with and from one another. Vygotsky's theory supports the idea that social interaction is necessary for learner development and that learning is a collaborative process (1978). Vygotsky (1978) also purported that, while cognitive motivation is intrinsic, learning in groups compels humans to connect individual learning to group learning.

Piaget's theory of cognitive development (1958) also influenced the constructivist

element of the project. Piaget (1958) stressed active learning and problem solving as an important concept in constructing knowledge. Piaget (1958) also stressed the critical nature of schemas as building blocks to organize new learning and connect it with previous learning. With Piaget's (1958) theory in mind, the project included opportunities for teachers to reflect on new learning, changing perceptions through experience, and also incorporated both individual and group learning activities.

Research and Project

Research concerning the critical nature of problem solving skills as essential life skills informed the project. Additionally, content-embedded instruction that is authentic and cohesive was considered. According to Vande Zande, Warnock, Nikoomanesh, and Van Dexter (2014), problem solving skills are critical for survival. Design thinking, which lends itself to habits of mind development, may be especially useful in the classroom to help students both ideate and revise thinking (Vande Zande et al., 2014). Similarly, project-based learning provides a modality for students to hone skills in problem solving, synthesizing, and critical thinking (Meyer & Wurdinger, 2016). Project-based learning supports the development of reflective skills and persistence in learning (Adanali, 2018).

Essential skills for 21st century learning and career involve high levels of critical thinking, collaboration, and problem solving (Kivunja, 2014). The project includes intentional discussion and development of activities surrounding problem-solving skills. According to Bayazit (2013), problem solving is "the most significant cognitive activity in professional and everyday life" (p. 1920). Developing and embedding necessary skills

into the curriculum requires educators to consider instructional strategies that cultivate these skills (Geisinger, 2016). Learners are rarely given the opportunity to use innovative problem-solving skills for real-life problems (Strimel, 2014). It is imperative that learners learn skills of collaboration, critical thinking and problem solving within the instruction of core knowledge (Beriswill, Bracey, Sherman-Morris, Huang & Lee, 2016).

The project includes active engagement and intentional collaboration with colleagues. Learners benefit from active involvement and shared learning in a collaborative manner (Tinto, 1997). Additionally, constructing knowledge with peers allows for cognitive and social development as learners benefit from diverse perspectives (Tinto, 2012).

Implementation

Once completing the project, I will present both the research findings and an outline of the project to the superintendent of the district in which the research was conducted during a face-to-face meeting. During this time, both the overarching principles of the project and rationale for specific content will be explained and any questions answered. The next steps after the project will be completed based on the needs identified by the superintendent. After sharing the project with the Board of Education, final steps for implementation will begin. The project will be implemented after the Superintendent and building level administrator determine the level of need for faculty to engage in professional development and when would be a best time to engage in the development. I will support the administration in facilitating the professional development, should that need by identified.

Potential Resources and Existing Supports

The administration and faculty of this school may serve as supports for implementing a cohesive approach at the high school. Other resources include an assistant superintendent who also serves as the Curriculum Coordinator and Education faculty and administration at a local university who have expressed interest in grit, persistence, and collaborative problem-solving skills in a K-16 continuum.

School district facilities include a performing arts center attached to the high school, which includes plenty of seating, excellent lighting and acoustics. Set up in a slanting auditorium style, this facility also includes a large screen for projecting. Due to the educational focus of the project, use of the facility would be at no cost. Photocopying will include fewer than 200 overall copies and can be completed at the research site at minimal or no cost. The school district provides all teachers with laptops, which will be valuable resources while attending the training.

Potential Barriers

Barriers to project implementation include time and resources. The school calendar year is created months in advance, with limited ability to incorporate new professional development opportunities without advanced planning. However, if the research site or district administration chose to implement the project, it could be implemented during several teacher in-service days or in a combination of mandated days in district and optional professional development opportunities offered at a local university; the latter would also invite preservice teachers to join in professional development alongside in-service teachers. Resources may be limited in terms of funding

to pay for multiple teachers' substitutes to attend an off-site workshop during the school calendar year. A final potential barrier may be teacher initiative fatigue. Although Habits of Mind is not a pre-packaged program or boxed series, teachers are coping with a shifting landscape statewide, including new teacher evaluation systems and fluctuation in proficiency-based education legislation. New instructional and assessment methodologies and teacher certification changes may prove barriers to teachers prioritizing habits of mind professional development.

Proposal for Implementation and Timetable

For most effective implementation of the project, an implementation that includes workshop days within the first 4 months of school is recommended. This implementation schedule will allow for utilization of pre-scheduled teacher workshop days, cohesiveness of content, and consistency of implementation and practice. Such a schedule also allows for teachers and administrators to meet and reflect on professional development to identify needs and action steps.

The first professional development day of the project will take place as one of the two workshop days in the week before the school year begins (slated for mid-August). The second workshop day will take place during scheduled teacher workshop day in September or October and the final professional development day will take place in November just before Thanksgiving break.

Roles and Responsibilities of Student and Others

My role as the researcher/student is to educate the administration at the research site, regarding the research findings, project design, and project elements. I am

responsible for explaining the rationale or "why" of the project as well as the specific components that comprise a cohesive and research-based professional development experience or "what". I am also responsible for providing support and guidance as identified during the implementation of the project.

The role of administration at the research site is to coordinate and schedule the appropriate time and place for the project to be delivered. Additionally, teachers at the research site should be made aware of the rationale behind the professional development, with clear explanation by administrators at the research site as to how the professional development may benefit teachers and students. A responsibility of administration is also to articulate to teachers how the professional development aligns with the vision and mission of the district.

Project Evaluation

The project will be evaluated through formative and summative evaluation measures. All evaluation will be aligned to identified and articulated outcomes of the project. After completing the project, next steps would be informed by the results of the evaluation measures. Adjustments to content and pacing, as well as information about future offerings and necessary action steps to continue professional development and teacher growth related to habits of mind will be identified.

The overall evaluation design of the project is outcomes based. The 4 outcomes of the project are for participants to be able to articulate a definition for each of the 5 chosen habits of mind and how each may influence student success; to develop and provide evidence of understanding how habits of mind benefit students beyond high

school; to engage in collaborative, cross- disciplinary learning activities that highlight the benefit of habits of mind strategy and skill development; and to collect and research habits of mind examples and materials within and beyond content areas. Outcomes are used in the project to align learning activities and to provide frameworks for assessments of learning and project efficacy. Formative and summative evaluation will be used with the project. Formative evaluations include verbal check-ins for understanding, entrance/ exit slips to check in with participants about understanding and to adjust content and/ or pace of the project, and digital polls will be used similarly to check in with participants about their learning. After each day of professional development, a summative evaluation will also be deployed using Google Forms. The third and final workshop day will feature summative evaluation questions that ask about the specific day as well as the overarching nature of the habits of mind professional development. Because the school calendar does not allow for the professional development to occur in 3 consecutive days, summative evaluations will be used at the end of each discrete day as a way of informing the next workshop day. The ultimately evaluation goal is to inform next steps as a district concerning habits of mind professional development.

Implications Including Social Change

Local Community

The project addresses needs of learners in the local community by targeting professional development that will empower and equip teachers to address students' problem solving skills as they move beyond high school into the world of college, career, and citizenship. Through providing strategies and focus on skills such as persistence,

flexible thinking, applying past knowledge to new situations, remaining open to continuous learning and managing impulsivity, the project supports life skills that students and society benefit from mutually. Students, families, instructors, administrators and community partners all benefit from an increase in awareness and skill development when it comes to people of all ages working together to think divergently and focus on options for positive change. Whether civic awareness and responsibility, stable employment, politics, civil communication, or finance, it is hoped that community stakeholders would benefit from pointed development of Habits of Mind skills and strategies in the classroom and beyond.

Eventually, all students leave high school and step into the next realm of development. As contexts expand and more people ultimately come into contact with one another in numerous situations, humans benefit from individual modeling and shared value in problem solving skills that allow for resilience, flexibility, and lifelong learning. The project addresses the need for teachers to purposefully help students to develop and transfer critical skills that they will continue to cultivate as they encounter challenges in personal and professional spheres of life. Kivunja (2014) notes the imperative nature of 21st century problem solving skills when quoting educational researcher and leader Michael Fullan, "the moral purpose of education is to equip students with the skills that will enable them to be productive citizens when they finish school" (p. 81).

Conclusion

This section has provided rationale for the project type, as well as a literature review related to the project. A timeline and plan for implementation, supports and

resources, and barriers have been identified. Finally, implications for social change were explored at both a micro and macro level.

Section 4: Reflections and Conclusions

Introduction

In this section, I synthesize experiences and insights related to the doctoral study process. Specifically, I address strengths of the project and implications for future research. Additionally, I offer a detailed analysis of myself as a scholar and practitioner. Finally, I describe of how the doctoral study may lead to social change.

Project Strengths

The project helped address the problem of grade 9 students' academic failure by addressing teachers' perceptions of an overall lack of focus and cohesiveness concerning habits of mind instruction. Teachers reported feeling that consistent, cross-curricular instructional strategies and tools held the potential for increasing student success within and beyond high school. In particular, I designed the project to increase teacher intention and reflection regarding how habits of mind instruction is defined, how curriculum may naturally embed such instruction, and how students benefit beyond high school from such skills. All of these areas highlight project strengths concerning a focus on educators' reasonable and relevant actions in response to the identified problem of increased student failure.

Teachers also shared the perception that habits of mind instruction often occurs in a vacuum because teachers may not know or communicate how habits of mind are discussed or practiced within content areas. A specific strength of the project was the intentional design of activities for teachers to communicate and brainstorm with one another. Thus, habits of mind instruction is more likely to be a shared responsibility of all

teachers in an effort to reduce student failure and equip them with effective problem-solving skills.

Recommendations for Remediation of Limitations

While the project addresses teachers' perceptions that habits of mind instruction holds promise for developing students' problem-solving skills and benefits them beyond high school graduation, the project did not specifically address teachers' beliefs about the effects of using the Habits of Mind program to improve academic achievement. Although the problem was borne out of data concerning Grade 9 students' end of quarter or end of year failures, I focused on applying results of data analysis to create a project that would educate teachers and allow them time for reflection and collaboration concerning habits of mind instruction. A limitation of the project in addressing the problem would be that the project hones in on teachers' knowledge and skills that may ultimately lead to increased student achievement through purposeful implementation of thoughtful habits of mind instruction. Further, the project's focus is not on prescribed, specific actions or a habits of mind curriculum that can be followed in a lockstep manner. Rather, I designed the project to allow teachers to evaluate current practice and pedagogy and become informed about the nature of habits of mind and their potential to have positive influence on students. For ultimate efficacy of the project, teachers must buy in to the influence and relevance of habits of mind in students' lives.

To remediate the limitations of the project, I recommend stressing mindfulness of the influence educators have on students' approach to academic work and life skills. Although the project is designed for educators, it should be made transparent that the

ultimate goal of the project is to instill in students the awareness and strategies to enact habits of mind in their academic and personal lives. Additionally, to counterbalance teacher reticence to see the relevance of habits of mind instruction, efforts should be made to tailor habits of mind application examples to the audience. For example, it is important to share examples that highlight how thinking flexibly is as important in a health class as in an AP biology class.

The problem could be addressed differently by gathering student perception data concerning habits of mind. Alternatively, another option would be to design a quantitative research study and ensuing project that examines the effects of habits of mind instruction on grades. The project could be designed for a student audience instead of teachers.

Scholarship

Scholarship is an iterative process that requires critical thinking skills, especially analysis and synthesis. Critical thinking is one identified attribute of competence in the academic community (Ipperciel & ElAtia, 2014). In addition to contributing to the literature, scholarship involves research and reflection in order to ultimately lead to action. Similar to Franz's (2016) description of a scholarship model that attempts to bridge theory and practice through iterative problem solving, I developed newfound appreciation for the potential for scholarship to move beyond theory and lead to social change action. I increased my skills as a scholar-researcher with a greater understanding of the potential for scholarship to lead to change. Investigating the problem and related research, along with data collection and analysis, allowed me to look at others' research

while conducting my own. As I created my project, I realized that there was great satisfaction in using research to inform a product and process that could improve student success. While the process of engaging in scholarship and developing research "chops" is complex and demanding, I feel that the most fulfilling aspect of scholarship is when it can inform practice and improve outcomes in people's lives.

While seeking participants for my research, I learned that ensuring fidelity of the research process means accepting that I may not get the number of participants I was seeking. Furthermore, I learned quickly that interviewing participants becomes a smoother process once the first one is completed. Once my data were collected, I discovered that coding was both an iterative and visual process for me; color coding and the creation of a spreadsheet to help identify patterns and themes was especially helpful.

I learned that organization and resilience are key facets of engaging in scholarship. During the EdD process, one of the most challenging components was the literature review in both Section 1 and Section 2. While reviewing the research, I found that there was a complex need for developing an organized system of analyzing literature, while simultaneously synthesizing sources to identify common themes. I also found that annotation of articles was extremely helpful during this process.

Finally, scholarship must be approached as a long-term endeavor that requires attention and fidelity concerning process. At the doctoral level, scholarship means more in both breadth and depth. There are no short-cuts and there is no overlooking protocol; scholarship is a carefully planned and executed process in which each stage demands the scholar to maintain discipline, academic integrity, and account for the safety and

wellbeing of human subjects involved.

Project Development and Evaluation

One of my most prominent discoveries related to project development is that design is critical. Using project outcomes to calibrate the design of the project was foundational in ensuring that activities, sequencing, and resources were aligned with outcomes for participants. Using data analysis results to frame the project allowed for a cohesive series of professional development focused on addressing a gap in practice at the local research site. While developing the project, I sought to organize learning activities in a way that allowed for interaction, problem-solving and collaboration, with intentionality surrounding the incorporation of critical 21st century skills for the workplace (see Yoo & MacDonald, 2014).

I completed evaluation of the project on both an ongoing, formative basis, and also on a summative basis. I learned that asking participants for daily feedback was important in order to make adjustments for the next chunk or day of professional development. Informal assessments, such as observation of audience and exit slips, allow for constant adjustment of pace and content. Project outcomes also allowed for the project evaluation to more fully assess participants' actual learning as compared to intended learning. Without careful consideration of what it is I wanted participants to know and be able to do as a result of the professional development, it would be difficult to accurately evaluate the efficacy of the project. Project evaluation is a necessary component that fosters a cycle of reflection, adjustment, and improvement.

Leadership and Change

Throughout this process, I learned that leadership and change requires steadfast commitment to long-term goals and objectives, persistence, empathetic thinking, and flexibility in thinking. Leadership is both a frame of mind and skill set that must be developed through experience, listening, and constant reflection. Change is able to come about only when leaders take time to reflect on what has been learned in order to make adjustments and improvements for the greater good.

Throughout the doctoral study, I often found myself overwhelmed by a lack of work-school-life balance. It was difficult to reenter the mindset necessary for focus and productivity when other distractions took precedent. With the ultimate goal of finishing my dissertation in the forefront, I found myself remembering both my personal and academic goals of degree and doctoral study completion. Breaking that idea down further, I discovered success when considering the purpose and scope of each individual section of the doctoral study, differentiating each but also striving to understand how each section added to the comprehensiveness of the whole. Persistence was paramount; the ability to respond positively to setbacks and productivity stalls is foundational to success in a doctoral study program. As much as the development of academic research skills is central to an EdD program, so is the skill set of resilience and persistence.

Chunking and short-term goal setting were also both key techniques I learned. A digital calendar provided increased leverage for managing multiple timelines that overlapped my academic, professional, and personal life. I feel that I developed increased leadership skills by sharing with my doctoral colleagues ways in which I feel I have been

successful with my work approach. Talking with others was fulfilling for me; I believe that leadership encompasses helping others who may be working on similar challenges.

I have learned that empathy and flexible thinking are important skills for leaders to develop. Ultimately, a central aim of research is to inform others in order to affect positive change. Leadership requires commitment to long-term goals, but also flexible thinking. As research is conducted, thinking is naturally formed and reformed by what is learned. Leaders must not hold fast to predetermined outcomes or solutions; rather, the ability to remain malleable and engaged in the process of learning is a key underpinning of leadership. Empathetic thinking is also a hallmark of servant leadership (Peterson, DeSimone, Desmond, Zahn & Morote, 2017). I feel that my project reflects a focus on professional learning teams and collaboration in the spirit of servant leadership. Throughout the doctoral study, I found it beneficial to remind myself that the identified problem and purpose that undergirded my research were pinpointed because I wanted to learn more, do better, and help others do the same. Remembering the *why* of this process continually refocused me on the fact that the process I was undertaking and the results of what I was learning could ultimately lead to improved outcomes for economically-disadvantaged students who struggle academically. Thus, I found that empathy is necessary in leadership development; my research and entire doctoral study process was about improving outcomes for students. It helped me to think of my own past students for whom academic success was a struggle. Leadership is about digging in and doing hard work because you know it is good work—good for others and good for cultivating positive change.

Analysis of Self as Scholar

As a scholar, I value the notion that research may lead to action and improvement of others' lives. Braxton and Ream (2017) describe the idea of "conversion of knowledge to practical action" (p. 99). Throughout the research process, I discovered that I am driven by the belief that research can- and should- ultimately improve circumstances, knowledge, and equitable opportunities. In essence, I realized through reflection during the research process that the most fulfilling concept for me as a researcher would be to know that my research positively impacted others. Additionally, through data collection and analysis, I also considered and synthesized multiple perspectives. As a scholar, it is important to embrace divergent thinking and to be able to honor the value that multiple perspectives bring to research and society.

I learned as a scholar that *research* is a meaningless term until one engages in the research process. I now understand that research involves many skills and strategies that must be integrated in order to be effective, including analysis, inductive and deductive reasoning, synthesis, summarizing, time management, and fluency in written communication. Furthermore, I have a better understanding of the fundamental nature of ethics in research; whether learning about protecting human research participants or adhering to the IRB process and protocols, I have grown in my ability to understand that ethical behavior is both a hallmark and legal necessity for academic research.

As a scholar, I feel that I have grown in my ability to apply the research process and my understanding of the critical role of organization and prioritization of time. The EdD process has allowed me to understand the value of consistent planning, critical

thinking, reflecting, and revising. I have learned that "reflective, evaluative critical thinking takes time and that in scholarship, as in life, there are detours and delays" (Berg & Seeber, 2016, p. 68). Although life continues, I have learned that there is a clock ticking in the background of research. Whether the timeframe of publication dates or meeting a critical deadline to keep the entire dissertation process moving forward, I have learned through experience that mitigating unexpected circumstances, delays and detours is an elemental skill for the academic scholar. Finally, I better understand more the complexity and nuances of research and academic publication; specific examples include skills necessary for literature reviews, Institutional Review Board processes, and American Psychological Association (APA) format. New and synthesized ideas ultimately need to be communicated through clear, scholarly writing in the doctoral process; I found my background as an English teacher beneficial to the writing skills necessary at this level.

Analysis of Self as Practitioner

I learned that as a practitioner, I believe in the power and potential of knowledge and application of research to improve lives and problem solve. One of the aspects of my EdD program that I am most proud of is that as a scholar-practitioner, I am challenged to identify and bridge a gap in local practice. I value and appreciate the fact that my project is designed with the ultimate goal of improving a problem that may, through increased teacher awareness and preparation, lead to greater academic and problem-solving success for students. I am hopeful that my project, which incorporates critical thinking, metacognition, and collaboration will ultimately influence how teachers embed these

same skills in the classroom; these skills are necessary for 21st century learning (Boholano, 2017).

Although there have been times in which I have doubted my ability to complete my dissertation, I have learned in the process that I am deeply committed to knowing and doing better as a scholar-practitioner in my field. At times, my persistence and resilience was driven by my desire to contribute to the field and establish credentials that will allow me to continue with research and publication in the future. As an educator with 20 years experience at the middle school, high school, and college levels, I understand and promote the capacity of education to change lives. Utilizing the skills I have learned in the EdD program, I believe that I will continue to remain open to continuous learning and address problems in practice to improve the human condition.

Analysis of Self as Project Developer

Reflecting through the lens of a project developer, applying instructional design principles to my project allowed for a cohesive and aligned project. From using outcomes to plan learning activities to audience awareness and engagement strategies, I feel that I have grown in my ability to create a well-designed project. As a project developer, I also discovered that time management in planning a project is critical, as is thoughtful sequencing and chunking of project content. Awareness of limitations of working memory and how cognitive load theory supports explicit instruction followed by problem solving was a beneficial framework for me to operate within during project design and development (Kalyuga & Singh, 2016). Participants require time to both learn conceptual knowledge and collaborate with one another to reflect and discuss implications for

improving practice (Claesgens et al., 2013). My overall awareness of how to design, implement, analyze, revise, and evaluate a quality project to a specific audience was enhanced through my doctoral work.

The Project's Potential Impact on Social Change

Walden University's focus on social change is well-aligned with my own worldview; I believe that each human has the capacity to positively impact others and improve lives. The doctoral process has taught me that action is powerful when it stems from a place of understanding, problem-solving, and insight. Although I am from a small, rural community, it does not mean that I cannot make a positive impact beyond my community. I am not sure that I would be able to appreciate the potential for my beliefs to enact positive change if I had not engaged in the demanding and rewarding research process of the doctoral program and my project in particular.

The project is embedded in the work of teacher awareness and application of habits of mind within and beyond the classroom. The problem-solving strategies that teachers learned about in the project are fundamental skills for teachers to embrace so that they are embedded into classroom instruction and school culture. With a focus on such skills as persistence, thinking flexibly, applying past knowledge to new situations, remaining open to continuous learning and managing impulsivity, the project has the potential to increase cohesive and meaningful efforts to build a school culture that empowers students to be both learners and mindful problem solvers.

At the local level, teaching students about the benefits of using habits of mind and the consequences of not using them may positively shift students' feelings of self-

efficacy and autonomy related to academic success. The project may ultimately increase students' academic success, including graduation rates. The local research site is an area of high poverty. In 2012, the dropout rate of students from low-income families was higher than students from high-income families, with the statistics being 5.9% for low-income students vs. 1.3% dropout for high-income students (Stark & Noel, 2015). Furthermore, students who value and are self-aware concerning their persistence or "grit" are able to face challenges within and beyond school more effectively (Perkins-Gough, 2013). This project may shape how learners persist, collaborate, and grow in their academic, social and civic efforts beyond high school. Implications for social change include maximizing students' problem-solving strategies and knowledge related to deal with adversity, including failure, in order to help prepare students for successful post-secondary academic experiences, employment, and productive, responsible citizenship.

Implications, Applications, and Directions for Future Research

Implications for future research include the potential for students' perceptions surrounding habits of mind and academic success to be further explored. While the current research and project aims to explore teachers' perceptions, gathering data on how students feel habits of mind shape their academic skills, problem-solving aptitudes, and overall persistence may add context and complexity to the current body of knowledge. Additionally, future quantitative research related to habits of mind and academic success may further verify research findings and provide depth related to the topic.

Another implication of the research is that because teachers value cross-curricular conversations and cohesive professional development efforts, continued exploration of

this topic may prove valuable in the local setting. Potential research related to teachers' perceptions of efficacious modalities and structures of professional development may further inform not only what teachers learn, but also how they learn best. Explicit professional development surrounding teachers' metacognitive awareness and regulation of cognition may further elevate the long-term effectiveness of workshops and trainings (Hughes, 2017). Applications to the field of education include the inclusion of teachers in professional development planning. Additionally, purposeful design of professional development that includes opportunities for teacher reflection and application of new learning to previous learning may be beneficial for addressing teacher needs.

With high teacher value also placed on applying past knowledge to new situations for students, a need for increased focus on activation of background knowledge to support habits of mind instruction is highlighted through the research. The extent to which students activate prior knowledge may impact the quality of their overall learning (Oyinloye & Popoola, 2013). Implications include opportunities for cross-curricular, multi grade level professional development that facilitates increased awareness and use of strategies and tools for teachers to activate students' prior knowledge. Applications to the educational field may include the inclusion of teacher release time, workshop days, and conferences that are aligned with effective strategies for building new, lasting knowledge.

Conclusion

In conclusion, my skills as a scholar-practitioner have been honed through the development and evaluation of the project. I have applied thoughtful design principles with a focus on outcomes, while addressing a local problem. Beyond high school,

teachers perceive habits of mind to be instrumental in overall success in life; response to setbacks and persistence in light of challenges are seen as critical for postsecondary success. Future research related to the project may include exploration of students' perceptions related to habits of mind and academic success Implications for social change related to the project include increased student persistence and application of problem solving skills, with the ultimate goal of equipping students to be more academically successful and achieve graduation.

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Appendix A: Project

Purpose- to provide purposeful, cross-disciplinary professional development surrounding habits of mind and their relation to students' academic success

Goal- to cultivate cross-disciplinary, intentional conversations and action around equipping students with problem solving skills necessary for success beyond high school and to empower teachers to embed specific habits of mind instruction into classroom instruction and school culture.

Learning Outcomes- participants to be able to:

- articulate a definition for each of the 5 chosen habits of mind and how each may influence student success
- develop and provide evidence of understanding how habits of mind benefit students beyond high school
- engage in collaborative, cross- disciplinary learning activities that highlight the benefit of habits of mind strategy and skill development
- collect and research habits of mind examples and materials within and beyond content areas.

Target Audience- High school teachers, administrators, and guidance counselors

Components- Presentation; Small Group Work; Discussion

Timeline	**Activities**	**Materials-**	**Trainer's Notes**

		May be linked electronically or attached below this document.	
Day1: Defining Habits of Mind and Impact on Student Success Within Content Areas			
8:00-9:00	Welcome Introductory Activity What are Habits of Mind and Why Do They Matter		Use Slide Deck- Day 1 This slide deck features multiple examples of Habits of Mind being applied (all 16, with a mindfulness of the 5 of school focus). Provide this handout of the 16 Habits of Mind and have attendees highlight or mark the 5 being focused on as a schoolwide initiative.
9:00-10:00	Identifying Habits of Mind in Application- 5 in Focus 3 circle approach- habits of mind; complex reasoning skills and content. The final "big" question to pose to audience- "Take a look at your notes and consider the examples you have seen. Why do these habits of mind matter? How did using habits of mind lead to success? What is a message we can distill and share with our students about habits of mind?		Slide Deck- Day 1 Participants will view the examples in the slide show, take notes, and share with whole group examples of habits of mind. Provide graphic organizer.
10:00-10:15	Break		
10:15-12:00	Quick check-in (formative assessment) when regrouping after break- turn and talk to an elbow partner and explain in your own		Formative assessments allow for the trainer to "check in" with the audience- to see understandings and

	words what habits of mind are and why you feel they are important. Working in discipline-specific teams of 3-5: • Identify examples of how the 5 school focus habits of mind are naturally embedded in current instruction. • Discuss gaps that exist- are there any of the 5 habits of mind that are not currently embedded within instruction? • Identify opportunities- how can habits of mind instruction be strengthened, highlighted, or made more explicit? Are there natural fits within projects, units, lessons, field trips, etc.? • What supports or resources need to be found or created? All disciplines reconvene in central workshop location and report out a synopsis of the 4 bullet points.		pinpoint areas that need clarification or more work. Assign each discipline-specific team a separate working space. Designate the time to reconvene in the common workshop space. Provide each discipline-specific team with a graphic organizer to take notes. Ask them to appoint a small group reporter who will share on behalf of the group when the audience reconvenes.
12:00-1:00	Lunch		
1:00-2:00	The flipside- what happens when our students fail to use habits of mind? In small groups, share examples (without names) of students (or adults) not		It is important that participants understand not only about when

	using Habits of Mind. What were the outcomes/ consequences? Reconvene after 45 minutes of sharing/ conversation and report out a synthesis to the whole group.		Habits of Mind are used effectively, but also the consequences of not doing so. This will help frame such conversations with students.
2:00-2:45	Skype (projected on large screen) with a recent high school graduate(s) who, through college and/or career, can articulate how using habits of mind (or not) led to success (or failure). Allow time for Q&A		Will need to coordinate with a student (or combination of 2) who can speak to how habits of mind are used in life after high school. This may mean sharing habits of mind and descriptions with students in advance and coordinating technology needs (projector, screen, sound, bandwidth). The Skype may serve as a way for teachers to better understand how habits of mind are applied in life after high school ("in the real world"). This opportunity may also spur ways for habits of mind to fit into curriculum once teachers hear how former students felt they used- or didn't use- habits of mind.
2:45-3:00	Re-cap the day: • Defined habits of mind • Identified 5 being focused on within school • Considered how habits of mind use-		

	or lack thereof- may impact student success • Examined examples of habits of mind applied in • Summative Evaluation- Google Form		Summative Evaluation Google Form
Day 2: Building Habits of Mind Capacity Across Content Areas			
8:00-9:00	Begin by posting the central idea concerning habits of mind, distilled from day 1. Teachers as models Padlet: In what ways can staff at this school model specific habits of mind? Small Group Activity: In cross-disciplinary teams, discuss how habits of mind may be mindfully embedded as part of the school culture (extending beyond content area curriculum). Keep in mind that a goal is for habits of mind to be a natural part of the school culture- but not in a "gimmicky" or programmatic way.		Use Slide Deck for Day 2
9:00-10:00	Zooming out the lens: Habits of Mind Across the Curriculum Show examples of situations in which habits of mind are being used in a real-world applications and in schools that highlight the trans-disciplinary potential of habits of mind.		The examples shown in the slide deck provide

	Prompt audience to discuss with an elbow partner how they saw habits of mind instruction embedded in the cross-disciplinary examples. Share out whole group.		important background knowledge and specific examples of what it might look like to design a school-wide, cross-disciplinary habits of mind project for students. Keep in mind that terms like "problem-based learning" and "project-based learning" are used in some of the videos; this is not to confuse participants, but rather help them understand related topics or processes for embedding habits of mind within and across classrooms.
10:00-12:00	*Habits of Mind in the Curriculum* (handout) Read, Annotate and Discuss Text as a Whole Group, Reporting Out On: 1. What does the text state or imply about the value of incorporating Habits of Mind into instruction? 2. What are some of the implications from the text regarding creating a school-wide Habits of Mind culture? 3. What are classroom-level implications for us as teachers? In small cross-disciplinary groups, participants will		Ask a school administrator to scribe/ project and take notes as groups report out. This activity empowers teachers to contribute ideas about creating a school-wide vision and processes for habits of mind instruction. Break participants into

	engage in active learning to solve a problem. De-brief and share out to other groups: Describe your process and how habits of mind were incorporated.		groups, ideally in areas or corners of the same room (so that the final product does not need to be moved) and provide them with materials. The activity they will engage in is Paper Tower: Objective: To work as a part of a team and to problem solve as a team. To continue an activity even it frustration occurs. Group size: 2 – 10 participants Materials: Stack of 8x11 copy paper Description: Simply give the group a stack of paper and nothing else. Instruct the group that they must build the tallest tower that they possibly can, using only the paper given to them. No tape, gum, paper clips, etc. allowed. Make sure each group has a table or flat surface. Set a timer for 30 minutes and have groups walk around and see other groups' products.
12:00-1:00	Lunch		

1:00-2:45	Begin afternoon whole group; Introduce Carol Dweck's research (video) and the power of focusing on grit, persistence, and process, not just results. Introduce Cross-Disciplinary Project (see below) Form school-wide, cross-disciplinary jigsaw teams that include classroom educators, special educators, guidance personnel, school nurses, and administrators. Use Project Handout/ Planning Guide (below) to begin constructing vision and a framework for a school-wide project that incorporates habits of mind. Teams report out on initial ideas for habits of mind project.		Show video in slide deck It will be important to have buy in from administration (school and district level) concerning the time (one full day for students) needed beyond the professional development to plan and implement the cross-discipline habits of mind project. Provide teams with a planning guide and action plan. It will be important for building leadership to identify cross-curricular teams that will work collaboratively towards the project. Making HOM a central focus of school culture is critical for project success and faculty buy in.
2:45-3:00	Complete Evaluation Google Form.		
Day 3: Building a Habits of Mind Culture			
8:00-8:15	Begin day by meeting whole group. Hand out and explain rubric for self-assessing project. Teams will present to each other with administration and school-representative-personnel present after		No Slide Deck Needed for Day 3

	lunch. Administration and support personnel (ex. Guidance counselors, school social worker, school nurse) are invited to attend to better understand projects and how they can enhance and support implementation with a goal of building a school culture that embraces habits of mind.		
8:15-9:15	Tuning Protocol- To help focus the group on key considerations for building a culture with Habits of Mind, form mixed small groups (not curricular or project groups- perhaps count off). Educators will read two short articles and engage in a protocol for discussion. Habits of Mind for Now and Later (ASCD, 2016) 6 Tips for Leading Schools with Habits of Mind in mind (2018) Protocol Below		
9:15-11:15	Project teams meet and work on project, using rubric to guide their project. Teams take breaks as needed.		
11:15-12:15	Lunch (note earlier than previous 2 days)		
12:15-2:00	Project teams present project plans. Other teams, (and possibly invited		

	community members) present may provide feedback, share ideas, resources, and support. Optional: invite community members as part of post-lunch audience so that projects can gather even more feedback and benefit from the potential of community connections (library; fire department; police department; hospital; recreation center; recycling center, etc.)		
2:00-2:15	Summative Evaluation Form- Complete		
2:15-2:30	Exit Slip- Teachers each complete a final exit slip in which they identify: • 1 new piece of knowledge about Habits of Mind • 1 commitment concerning how they will model Habits of Mind • 1 action step for embedding Habits of Mind within- or across- curriculum Ask for verbal sharing and collect exit tickets in a basket as teachers leave.		

Graphic Organizer- Day 1 Identifying Habits of Mind		
Habit of Mind: What habit(s) of mind do you see being applied- or not- in the example?	How is the habit of mind being applied, or not?	What is the result (+) or consequence (-) of applying the Habit(s) of Mind, or not?

How do you feel that Habits of Mind lead to success? Alternatively, how can the absence of using Habits of Mind hinder success?		

Graphic Organizer- Day 1 **Curricular "Fits" for Habits of Mind** **Small Group Work**	
• Identify examples of how the 5 school focus Habits of Mind are naturally embedded in current instruction: Persistence Thinking Flexibly Managing Impulsivity Remaining Open to Continuous Learning Applying Past Knowledge to New Situations	
• Identify opportunities- how can Habits of Mind instruction be enhanced, highlighted, or made more explicit? Are there natural fits within projects, units, lessons, field trips, etc.?	
• What resources/ supports are needed?	

Planning Guide: School-Wide, Cross Disciplinary HOM Project and Action Plan **Your school has set aside a full day to engage students in multiple cross-disciplinary Habits of Mind projects. Each project will last 1.5 hours.**

The goals of this group project are to: • Increase conversations and cross-curricular intentionality related to Habits of Mind • Generate creative, student-centered learning projects to engage students in learning and Habits of Mind	
Step 1- As a team, identify your content areas and share ideas already generated about how Habits of Mind can be naturally embedded within your content areas (2-3 min. individual share out)	Notes:
Step 2- As a cross-disciplinary team, begin brainstorming a project (1.5 hr block of time) that would allow students to experience a learning situation that incorporates each of your disciplines AND engages them in the 5 Habits of Mind being focused on in the school.	
Step 3- Identify the learning objectives of your project. Identify resources you will need. Identify how you will organize and chunk your time.	
Step 4- Create your action plan/ timeline. List actions, identify the lead person(s) responsible for completing the actions, and by when.	
Step 5- Meeting Schedule- Create a common meeting schedule for your team. Although you will have ____ months to prepare the project, the time will go by quickly!	

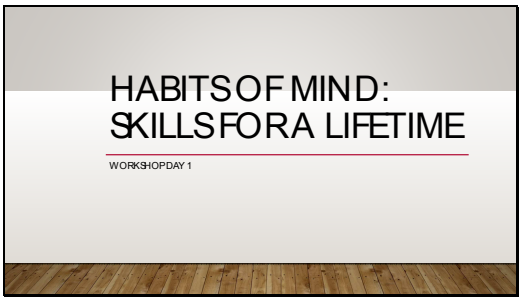
Tuning Protocol: Building a School Culture with Habits of Mind	
15 min.- Read and annotate the 2 articles. Look for key takeaways and strategies that will inform you as you build a school culture with HOM.	
10 min.- Each member of the group will share a critical takeaway from the *Habits of Mind for Now and Later* article, focusing of what we need to be aware of concerning our students and Habits of Mind.	
5 min.- Members of the group can respond to another member, add to their ideas, or suggest an how to apply a concept in	

practice.	
10 min.- Each member of the group will share a critical takeaway from the *6 Tips* article, focusing of what we need to be aware of concerning our actions as school leaders and Habits of Mind.	
5 min.- Members of the group can respond to another member, add to their ideas, or suggest an how to apply a concept in practice.	
10 min.- As a group, brainstorm what either of these articles might look like in action in your school. Encourage brainstorming possibilities!	
5 min.- A group spokesperson reports out to all groups 3 takeaways and/ or strategies that your group discussed.	

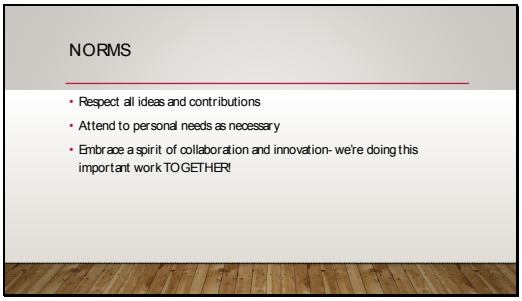
Exit Slip: Conclusion of Professional Development	
• 1 new piece of knowledge about Habits of Mind	
• 1 commitment concerning how you will model Habits of Mind •	
• 1 action step for embedding Habits of Mind within- or across-curriculum	

POWERPOINT PRESENTATION FOR DAY 1

Slide 1



Slide 2



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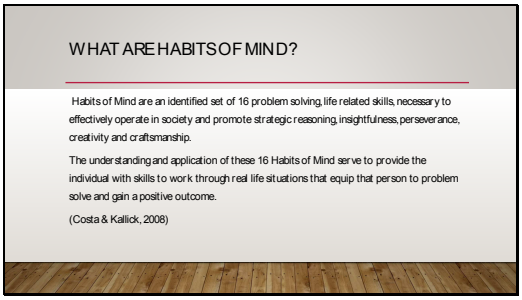

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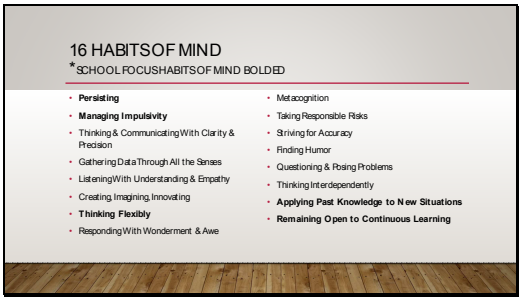

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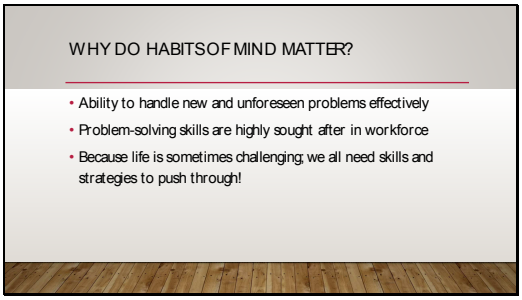

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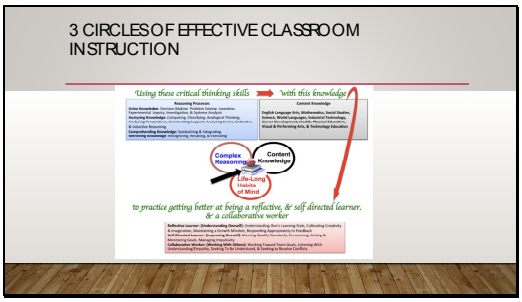

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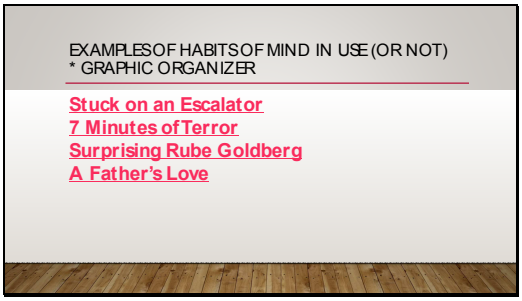

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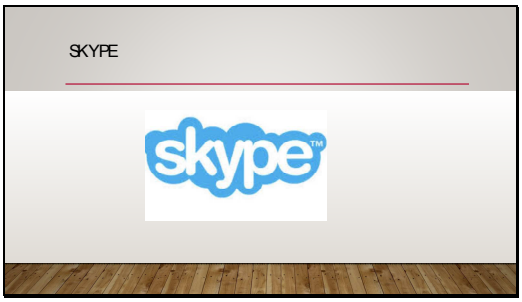

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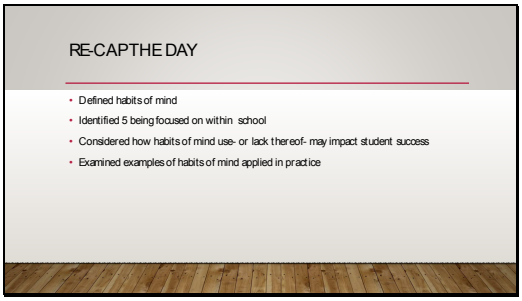

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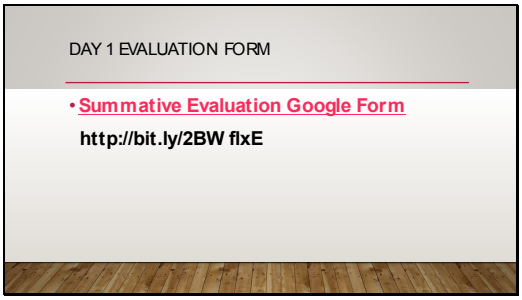
DAY 1 EVALUATION FORM
• Summative Evaluation Google Form
http://bit.ly/2BW flxE

POWERPOINT PRESENTATION FOR DAY 2

Slide 1

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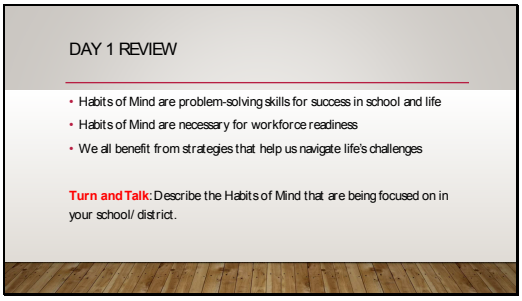

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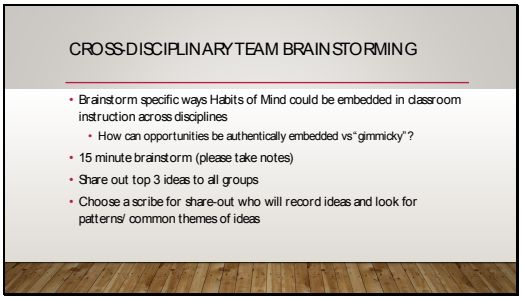

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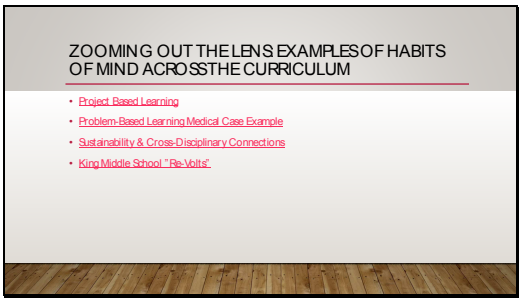

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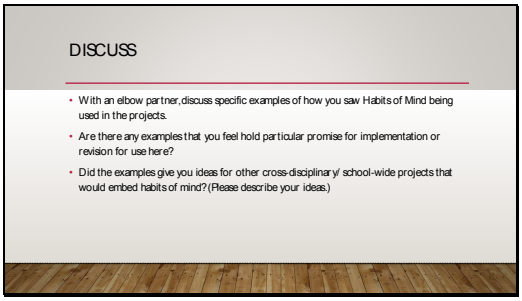

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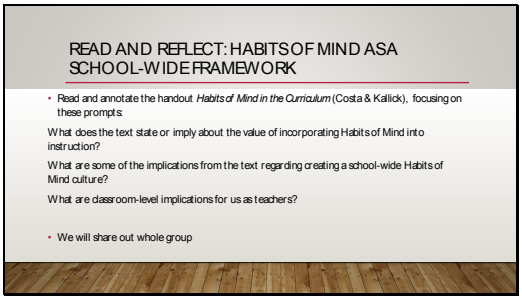

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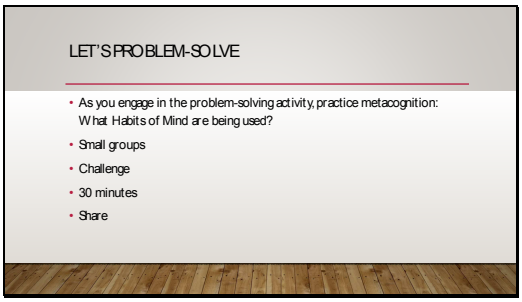

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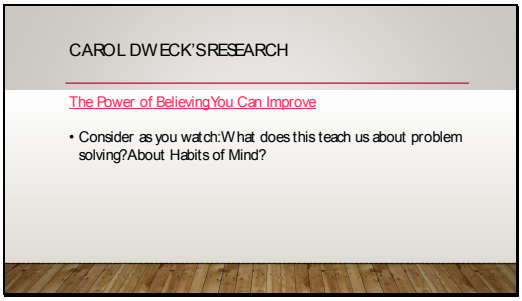

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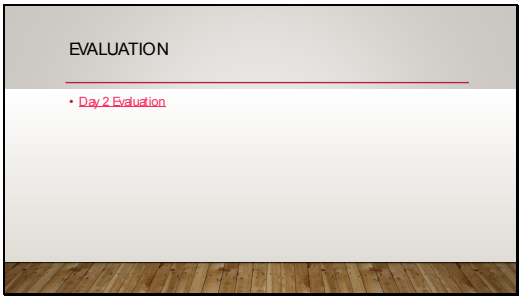

Appendix B: Costa and Kallick's 16 Habits of Mind

- Persisting
- Thinking and communicating with clarity and precision
- Managing impulsivity
- Gathering data through all senses
- Listening with understanding and empathy
- Creating, imagining, innovating
- Thinking flexibly
- Responding with wonderment and awe
- Thinking about thinking (metacognition)
- Taking responsible risks
- Striving for accuracy
- Finding humor
- Questioning and posing problems
- Thinking interdependently
- Applying past knowledge to new situations
- Remaining open to continuous learning

Appendix C: Interview Protocol

Project:

Time of Interview:

Date:

Place:

Interviewer:

Interviewee:

Position of Interviewee:

The purpose of this study is to examine the perceptions of Grade 9 teachers concerning the use of five components of the *Habits of Mind* program to assist their 9th grade English students in achieving academic success. Grade 9 English teachers (current and one recently retired), other Grade 9 content area teachers, a Grade 10 English teacher, the principal, and the English department chair who oversees curriculum, instruction and assessment in grades 9-12 at the research site will be interviewed and surveyed to collect data that will help examine perceptions about Habits of Mind instruction as teachers believe it relates to academic achievement. Confidentiality will be protected by using pseudonyms for any names used in reporting of the research and all records will be kept in a locked file cabinet in the researcher's home. A tape recorder is being used to ensure accuracy of reporting concerning responses.

Question 1: In your own words, how do you define or describe what “Habits of Mind” means to someone who doesn’t know?

Question 2: Before I ask you about each of the 5 Habits of Mind specifically, could you please explain why or why not you find Habits of Mind i*n general* to be worthwhile to incorporate into classroom instruction?

Question 3: Could you please describe why or why not you believe that each of the 5 following Habits of Mind may assist (your) students with academic success?

Thinking Flexibly-

Applying Past Knowledge to New Situations-

Managing Impulsivity-

Remaining Open to Continuous Learning-

Persistence-

Question 4: Thinking about students’ lives beyond high school, how do you feel Habits of Mind may impact students’ success beyond high school?

Question 5: How do you feel Habits of Mind instruction could be improved, if at all, at

this school in order to support students' academic success?

Question 6: How do you feel students can most effectively observe Habits of Mind that may help them be more academically successful?

Thank interviewees for their participation, reassure confidentiality, and notify of potential for future follow- up interviews.

Appendix D: Survey Instrument

Two educational researchers, Art Costa and Bena Kallick, have identified 16 Habits of Mind, or ways of behaving intelligently when facing problems of adversity. Your school has chosen 5 to focus on as a school, although all are considered important.

Question 1: The following 5 Habits of Mind are being focused on in your school. Please describe how you have incorporated each of these into your instructional design. Be as specific as possible, with examples of lessons, assessments, or teaching artifacts. You may choose to paraphrase particular lessons, assessments, etc., or you may scan artifacts and include with your completed survey via e-mail.

Thinking Flexibly-

Applying Past Knowledge to New Situations-

Managing Impulsivity-

Remaining Open to Continuous Learning-

Persistence-

Question 2: Please describe how you have incorporated each of the following Habits of Mind into your professional conversations and development. Please be as specific as

possible:

Thinking Flexibly-

Applying Past Knowledge to New Situations-

Managing Impulsivity-

Remaining Open to Continuous Learning-

Persistence-

Question 3: How do you feel that students' failure to use the following Habits of Mind impacts their academic success?

Thinking Flexibly-

Applying Past Knowledge to New Situations-

Managing Impulsivity-

Remaining Open to Continuous Learning-

Persistence-