LEARNING MINDSETS IN THE SECONDARY CLASSROOM: IMPLICATIONS FOR INSTRUCTION AND PROFESSIONAL DEVELOPMENT

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the School of Education in partial fulfillment

of the requirements for the degree of

Doctor of Education

University of Pittsburgh

2017

UNIVERSITY OF PITTSBURGH

SCHOOL OF EDUCATION

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This exploratory inquiry utilizes survey research to investigate teacher perceptions about learning mindsets in the classroom. The literature indicates that creating a learning culture that produces student motivation leads to sustained effort and increased achievement (Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013). Dweck (2006) refers to this learning mindset as a growth mindset meaning the individual believes his or her intelligence can increase with effort. The opposite would be a fixed mindset which creates a lack of motivation because the individual believes his or her intelligence is static (Dweck, 2006). This inquiry investigated how teachers perceive learning mindsets and operationalize these perceptions in their classroom practices. Additionally, this inquiry investigates the professional development teachers have received and wish to receive related to learning mindsets in the classroom.

The survey utilized in this inquiry was adapted from a survey created and used by Education Week in a national study conducted in May of 2016 (Education Week Research Center, 2016). This study has a collaborative aspect as a fellow doctoral student at the University of Pittsburgh conducted her inquiry with elementary teachers using the same survey instrument used in this inquiry. The survey was divided into three sections: classroom practices,

teacher perceptions, and professional development. Data from all three studies were analyzed and compared in this inquiry.

Findings indicate that teachers have a strong understanding of factors that contribute to student growth mindset. Teachers also believe they are good at fostering a growth mindset, but they don't have as much confidence that their colleagues are proficient at fostering a growth mindset in students. Although teachers appear to have a strong grasp of how to foster a growth mindset in students, areas are identified in which teachers lack an understanding of how a growth mindset connects to and impacts achievement. These findings lead to the conclusion that additional and deeper professional development is necessary for teachers to fully understand the benefits and impact of fostering a growth mindset in students.

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PREFACE

If someone is fortunate enough to find themselves at the end of a challenging journey, such as a doctoral program and the writing of a dissertation, they most certainly have many individuals that have provided a tremendous amount of support and inspiration along the way. This is definitely the case for me.

First, I look back on a very special evening shortly after I completed my teaching certificate. I was substitute teaching and suddenly had the urge to have dinner with my grandmother. During our conversation that night, I told her that I thought I would like to go on and someday get my doctorate. Well Grammie, I did it! After our dinner that night, my grandma passed away. That conversation, her stories about her teaching in a one room schoolhouse, and the fact that she was always an inspiration to me, definitely provided me with a great source of motivation when I needed it most.

Another source of motivation for me was always my two amazing sons, Luke and Jacob. My hero, Luke, passed away when he was two. His life presented him with challenges no child should ever have to face. In spite of these challenges, Luke gave much more to this world in two years than most of us give in a lifetime. Luke, you taught me to have guts and perseverance when things get tough. When I felt defeated during this process, all I had to do is think of you and I had all the inspiration I needed to press on. I love you more than you will ever know Luke! Jacob, my best buddy, I love you more than words can describe. For years, you watched me sit

at my desk with headphones on while I worked. So many times, you wanted me to stop working so I could play with you. Although it wasn't easy, you understood. Now that this journey is ending, I can't wait to spend more time playing with you. I love you bud!

While I was already on this journey, I met the most amazing woman, who is now my beautiful wife, Kylie. I'm one very lucky guy to have you as my wife. You, more than anyone, have put up with my moods and the time I needed to spend away from other things to work on this dissertation. You were always understanding though, and your support never wavered. You need to know that I am extremely grateful for your support, love, for being my amazing wife, and for being the most amazing stepmom to Jacob. I love you to the moon and back sweetie!

Every kid wants to make their mom and dad proud. Although I always knew my parents were proud of me, it was an incredible moment for me when I saw the joy on their faces when their son became Dr. Hadley! Mom and dad, you have been by my side for every up and down in my life. No matter what, you were always there to provide support and encouragement. It goes without saying that I would never have accomplished this or anything else in my life without the love and support you have always given me. Thank you, and I love you!

Lastly, to finish a dissertation, one better have an outstanding committee. I have no hesitation in saying my committee was beyond outstanding. Dr. Wagner, you supported me during my superintendent internship all the way through being on my dissertation committee. I specifically wanted you on my committee for your knowledge on the topic of growth and fixed mindset. Thank you for all of your insight! Dr. Page, you are one of those amazing professors that knows exactly how to connect with her students. You made a daunting subject like statistics easier to understand. I wanted you on my committee for your knowledge and knew that you would help make sure my final product was a quality one. Thank you! Dr. Tananis, I decided

long ago that you would be my advisor. I wanted you as my advisor, because I knew you would challenge me, ensure that you got the best out of me, and that you would always be honest with me. Earning this degree means so much more to me, because I did it with you as my advisor. I can't thank you enough for pushing me to be the best I can be. The growth I have experienced through this process is the direct result of the guidance, support, and challenge you provided. Thank you for your honesty and continued support. You are an amazing advisor, professor, and most of all, person!

1.0 INTRODUCTION

1.1 BACKGROUND

Much of the learning literature points to the importance of the *teacher's role* in influencing student achievement (Rivkin, Hanushek, & Kain, 2005; Rockoff, 2004; Sanders & Rivers, 1996). Teacher effectiveness is the single most important variable that influences student learning (Rivkin, Hanushek, & Kain, 2005; Rockoff, 2004; Sanders & Rivers, 1996). Presently, focus has shifted to not only the teacher's role in influencing student achievement, but also in creating *growth* in his or her students.

In 2009, President Obama signed into law the American Recovery and Reinvestment Act (ARRA). Regarding education, the act provided an investment in innovative strategies that were to improve education for students and lead to long-term gains for schools (The American Recovery and Reinvestment Act, 2009). This investment in education was $4.35 billion that states competed for through the Race to the Top Fund (RTTT). A variety of conditions were required of states to receive RTTT funds. One such condition required states to establish a clear approach to measuring student growth, as well as an evaluation system for teachers and principals that required student growth to be a significant factor (The American Recovery and Reinvestment Act, 2009). Pennsylvania, a state that received RTTT funds, has met this provision. Act 82 of 2012 (Public School Code of 1949, 2012) provided revisions to Chapter 19

(Pennsylvania Department of Education, 2013) of the school code, which provides the rules and regulations for educator effectiveness and the rating tool to be used for all of Pennsylvania's public educators. It now states that 50% of a principal's evaluation is to be determined by building level data and the school performance profile. Building level data and a school's performance profile include data related to academic achievement, closing the achievement gap for various subgroups of students that have not historically performed well, and value-added data. Value-added data indicates how well the building and/or individual teacher is doing with respect to showing a minimum of one year's academic growth for all students. For teachers, no less than 10% of their evaluation is now based on value-added assessment data and 5% is now based on student performance on the Pennsylvania System School Assessment (PSSA). The PSSA math and English Language Arts (ELA) assessments are administered to students in grades three through eight. The PSSA science assessment is administered to students in grades four and eight. A teacher's value-added score indicates how well that individual teacher did with respect to growing his or her students a minimum of one year's academic growth. Student performance data on the PSSA for an individual teacher indicates how his or her students achieved on the PSSA. These data are broken down to indicate the percentage of the teacher's students that scored Advanced, Proficient, Basic and Below Basic on each PSSA (English Language Arts, Math, and/or Science) taken by students the teacher has been responsible for providing instruction. To measure educator effectiveness, Pennsylvania partnered with Standards Aligned System Educational Value-Added Assessment System (SAS EVAAS) as this metric is to provide, "balanced reporting that supports all students' growth while fairly and transparently assessing the effectiveness of educators" (Pennsylvania System for Principal Effectiveness, 2014, para. 17).

1.2 PROBLEM OF PRACTICE

The junior high chosen for this study is like any other Pennsylvania junior high with respect to the accountability measures provided by the Pennsylvania Department of education (PDE). With the passing of Act 82 in 2012 (Public School Code of 1949, 2012), revisions were made to Chapter 19 (Pennsylvania Department of Education, 2013) of the school code, which provides the rules and regulations for educator effectiveness and the rating tool to be used for all of Pennsylvania's public educators. Charlotte Danielson's Framework for Teaching was adopted and utilized to design the observation component for the newly required teacher evaluation tool. Danielson's framework is divided into four domains and twenty-two components that measure teacher effectiveness. In Danielson's (1996) classroom environment domain she captures the essence of this problem of practice in her statement that, "When students are convinced of their capabilities, they are willing to devote energy to the task at hand, and take pride in their accomplishments." (p. 28). All teachers face the challenge of creating a culture and learning environment for each student that motivates him or her to devote energy to learning. When teachers can successfully create this kind of culture and learning environment, research indicates that student motivation for learning increases, more effort is exerted, effort is sustained and thus, students achieve and grow more (Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013).

The value-added measure of growth is now an instrumental component of both administrator and teacher evaluation (Pennsylvania Department of Education, 2013). This measure is used to indicate how much a teacher is "accelerating student progress" (Pennsylvania System for Principal Effectiveness, 2014). With this measure in place to indicate how well a

teacher is *growing* his or her students, this inquiry seeks to gain a greater understanding of the practices that take place in the classroom related to academic growth and that most likely accelerate learning for students. This problem of practice is critical for all stakeholders involved in this inquiry. Principals need to understand these practices to ensure feedback and professional development for teachers promotes them. Teachers need to understand these practices to ensure they incorporate them into instruction. Students need to receive the practices to ensure a maximum opportunity for academic achievement and growth.

1.3 INQUIRY QUESTIONS

Current discussion in education often focuses on ideas around growth and fixed mindset. Dweck (2015) states that mindset is how one perceives his or her ability. This mindset or perception can be either fixed or growth. A fixed mindset means that the person has the perception that intelligence cannot change (Dweck, 2006). A growth mindset means that the person has the perception that intelligence can be developed (Dweck, 2006). This inquiry seeks to explore how teachers perceive these learning mindsets and how they operationalize their perceptions in their classroom practices. Additionally, with student growth becoming such a critical component of educator evaluation, this inquiry will seek to explore how professional development and teacher feedback can provide teachers with the tools necessary to impact student learning mindsets and create opportunities for student growth. The following questions will guide this inquiry.

1. How do selected secondary teachers perceive learning mindsets?
2. How do selected secondary teachers operationalize their perceptions about learning mindsets through classroom and instructional practices?

3. What is the nature of the selected secondary teachers' professional development related to learning mindsets?

2.0 LITERATURE REVIEW

2.1 MOTIVATIONAL FACTORS & ACHIEVEMENT MINDSET

Achievement mindset is the term used in this literature review to capture and/or refer to motivational factors that contribute to the creation of a mindset, which correlates to a greater chance for achievement. The focus of this literature review was on motivational factors that contribute to the development of an achievement mindset, classroom practices that foster the development of these motivational factors, and how professional development and teacher feedback can be utilized to assist teachers in creating a classroom culture that fosters the development of an achievement mindset in students.

The following areas of the literature were explored:

1) *Motivational factors that contribute to an achievement mindset.*
2) *Classroom and teacher practices that influence the development of motivational factors.*
3) *The role professional development and feedback to teachers can play in establishing a culture that fosters an achievement mindset in students.*

2.1.1 Early research on learning and achievement

Research about how one person's thinking and actions can impact another person's thinking and actions is nothing new. Since the early 1900's, psychologists have been interested in how people

learn. Early research focused on the associations between a person's behavior, the stimuli to generate the behavior, and reinforcers that cause a behavior to continue. However, a new focus emerged in the 1950s during what has been termed the "cognitive revolution" (Miller, 2003). This revolution created a shift in focus from stimulus and resulting behaviors to how one thinks. Understanding the person's mind and the process of learning and acquiring knowledge became the focus. This shift is important with respect to student achievement because it speaks directly to how we learn and acquire knowledge. Bandura (1977) described an evolution in cognitive psychology and behavior acquisition. He described this evolution as a shift from thinking that behavior acquisition occurs through the impact of outside influences to a focus on the cognitive process one goes through as they learn behaviors. Bandura (1977) described a new focus on the individual and how his or her observations shape the conceptual understanding of behaviors. As a person receives feedback on their own behaviors, they learn which behaviors are accepted, which then shapes a person's future behavior accordingly (Bandura, 1977).

An additional evolution in the conceptual focus in cognitive psychology is described by Resnick (1985). She described a shift from a focus on the mental process involved in learning to a focus on the actual process of acquiring knowledge. In other words, this focus is on variables, structures, and methods necessary for one to learn, which Resnick (1985) describes as a newly developing cognitive theory of instruction. Resnick (1985) highlighted the importance of educators understanding the ways in which learners acquire knowledge so that they can maximize their ability to build these paths into their instructional practices.

2.1.2 The role of motivation in achievement

The evolution in the framework around cognitive psychology related to learning is important as it relates to how a person shapes his or her own beliefs. It is this shaping of a person's thinking that concerns this research with respect to the role the teacher and classroom play in the development of a student's achievement mindset. Understanding this mindset and how it is developed is important because a student's mindset determines how he or she will act or behave when faced with opportunities to learn and/or challenges encountered in learning. What shapes a student's thinking about his or her ability to learn? What influences this thinking and belief? The literature on this topic continuously pointed to the idea of motivation and factors that contribute to motivation. Motivation being that intrinsic factor that children need to produce effort, which Resnick and Hall (2000) argued, creates ability. So far, the literature has indicated the importance of motivation being present for engagement and effort to occur and then lead to achievement. Later in this review, the literature will indicate the importance for not only having motivation, engagement and effort, but also the importance of having the skills and strategies to apply as one puts forth his or her effort.

With evidence pointing to motivation as a prerequisite for engagement and effort, we look at how motivation is created. Pintrich and DeGroot (1990) looked at motivation and its connections to achievement through the lens of a theoretical framework for conceptualizing student motivation. This framework consists of three components: an expectancy component, value component, and affective component. The expectancy component involves what a student believes they can do (self-efficacy). The value component relates to whether the student feels the task itself is important to do (intrinsic versus extrinsic value). The affective component has to do with students' emotional reactions to a task. The results of this study linked aspects of these

motivational components to students' cognitive engagement and performance. A connection was made between self-efficacy and engagement. Essentially, it was found that students achieve best when they are motivated to use the cognitive strategies they have learned (Pintrich & DeGroot, 1990). What motivates a student to use these strategies is having the belief or self-efficacy that they can complete a task, as well as associating a positive intrinsic value to completing the task. These students put forth a greater effort and persisted more on learning tasks (Pintrich & DeGroot, 1990). However, it was pointed out that self-efficacy and finding intrinsic value in completing a task did not directly and solely contribute to increased achievement. Rather, a learner possessing these values—which highlights the importance of teaching these strategies to students—will increase their use and it is the use of these strategies that increase achievement (Borkowski, Weyhing, & Carr, 1988; Meece, Blumenfeld, & Hoyle 1988; Schunk, 1985).

Certain conditions must be present within the student to create the motivation and subsequent actions that lead to achievement (Pintrich & DeGroot, 1990). Like self-efficacy, Pintrich & DeGroot found that intrinsic value in the work that needs to be completed was strongly related to the use of cognitive strategies. Intrinsic value is created when students believe the work is important and interesting. When this occurs, students are set into action by choosing to complete the work. By acting, a greater opportunity for achievement occurs naturally as the student becomes engaged and uses cognitive strategies as he or she works on a task (Pintrich & DeGroot, 1990). The actions taken by students when these conditions exist, do not guarantee perfection or A+ achievement. However, it is safe to say that a lack of action will never result in growth, whereas action and engagement in learning might.

Bandura's work in the late 70's provided similar insight with respect to building motivation and actions that lead to achievement. Motivation must be present before action, and a

belief that one can achieve some future outcome, or having self-efficacy, must be present to create the motivation (Bandura, 1977). In other words, self-efficacy must be present before the student is motivated to act or behave. Figure 1 represents the difference between efficacy expectations and outcome expectations.

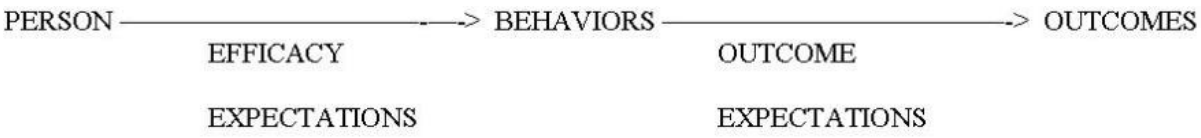


Figure 1. Efficacy Expectations vs. Outcome Expectations, Bandura (1977)

Bandura (1977) defined self-efficacy as a "belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Once motivated by the belief that a future consequence is attainable, the student will then put strategies to use, display effort, and persist toward achieving. However, Bandura (1977), as well as Pintrich & DeGroot (1990) pointed out that the expectation one will achieve an outcome is not enough to reach the desired or expected outcome. The individual must also possess the skills and strategies needed to work toward success on the task. Later in this review, the focus will shift from factors the student needs for achievement to how we can create these factors in the educational setting.

2.1.3 The role of self-efficacy in achievement

A question to consider around the idea of self-efficacy leading to achievement lies within their causal relationship. Is it the belief one can achieve that leads to achievement or having achieved

that leads to the development of one's self-efficacy? Valentine, DuBois, and Cooper (2004) investigated this relationship through the synthesis of longitudinal studies focused on self-beliefs and achievement. Their findings indicated that having self-belief does lead to later achievement. However, their findings indicated a specifically stronger relationship between self-beliefs and achievement when the student's self-beliefs are specifically related to academics and achievement. These findings support Bandura's (1997) notion that the "self" can be a change agent. If we can find ways to help students create a positive self-image or self-belief regarding his or her academic promise, we prepare the student to act with respect to learning, which leads to a greater chance for achievement and growth.

2.1.4 The role of mindset in learning and achievement

The literature has established the importance of understanding the role the student plays in his or her own learning process. How students feel and what students believe either enhances or diminishes motivation to learn. An additional perspective focuses on the idea of mindset. Carol Dweck can be credited for coining the terms *growth* and f*ixed* mindset. A student with growth mindset (Dweck, 2006) believes they can acquire skills and knowledge through effort. That is, the harder they try, the more they will learn and grow. A student with a fixed mindset (Dweck, 2006) believes that their ability is limited and that they can't achieve beyond that limit. That limit can vary; however, having this fixed belief creates actions consistent with the belief. For instance, students may limit effort due to a fear they will look bad if they don't reach a level of achievement they think might be unattainable. The opposite is true of a student with a growth mindset. These students may stumble upon challenges in their learning but forge ahead without any fear of not achieving and simply expend the effort needed to achieve a goal. As Dweck

(2006) stated, “the view you adopt … profoundly impacts the way you lead your life” (p. 6). As educators, we can communicate and interact with students in ways that shape these views and the consequent actions or reactions to learning. Figure 2 depicts key elements of both a growth and fixed mindset.

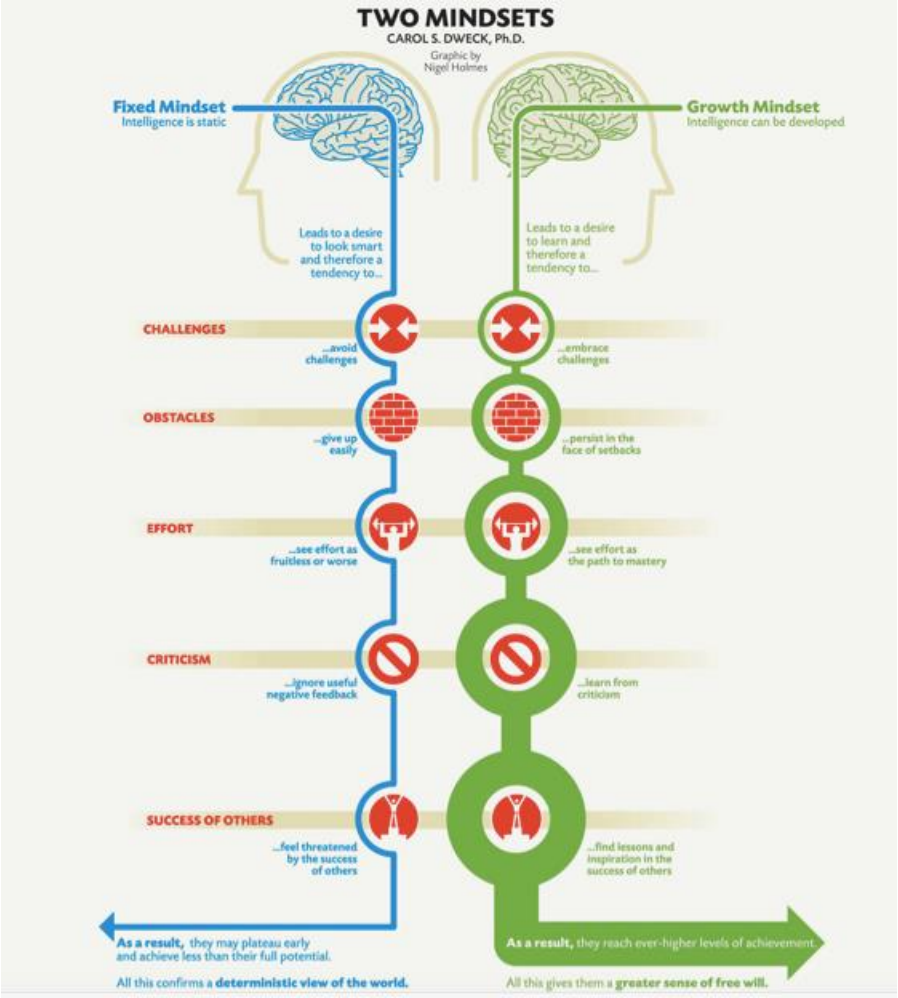


Figure 2. Growth Mindset vs. Fixed Mindset, (Dweck, 2010)

2.1.5 Summary

To summarize, the literature pointed to motivation as a key factor that drives a student to engage or act in learning situations. Prior to motivation, the student must have positive feelings about themselves as learners and about the chance of receiving a positive outcome. The student needs to see value in the work they are being asked to complete and feel some sense of confidence that they can complete it with success. The student must also feel some sense that they can learn and grow. Additionally, the student must possess and apply skills and strategies as they put forth an effort to learn. Once these factors are in place, the student feels motivated to work, chooses to try, uses skills and strategies they have been taught, resulting in a greater chance for achievement and growth. We now shift our attention to the ways we can create and/or increase the chance of students possessing these motivational factors.

2.2 PRACTICES THAT DEVELOP MOTIVATION AND LEAD TO ACHIEVEMENT

To address the question of classroom and teacher practices that develop motivational factors, I have examined the literature to learn how self-efficacy, motivation, effort, and mindset appear to be developed. To show value in investigating the role of the teacher when it comes to developing motivational factors, a key question must be presented. Do children come to us with a disposition for learning that is changeable? In other words, is a child's disposition about learning malleable—meaning it can be shaped and/or taught? Studies have shown that the idea of mindset can be taught and therefore changed (Dweck, 2008; O'Rourke E., Haimovitz, K.,

Ballwebber, C., Dweck, C. S., & Popovic, Z., 2014). Both Dweck (2008) and O'Rourke et al. (2014) used interventions aimed at teaching someone how the brain can make new connections, as well as how someone will create their approach to something in a more positive and persistent way if taught that effort would result in success. In both studies the conceptual model centered on the idea that positively changing someone's perspective and belief about something will result in increased motivation, persistence, and ultimately achievement.

2.2.1 The role of teaching and interventions

O'Rourke et al. (2014) used different incentive structures to help shape student mindset as they played an educational game. Two major differences were present in their experiment. The incentive structures differed with respect to when points were awarded in the game. In a growth mindset approach, students received points when they displayed effort or strategies. In the fixed mindset approach, students only received points as they completed levels. In other words, the students in the fixed mindset condition were taught that they would only be rewarded when they achieved versus the growth mindset condition in which students were awarded just for trying. Also, the kinds of feedback students received while playing the game differed. Students either received feedback that taught them growth mindset concepts or they received neutral feedback that didn't teach growth mindset concepts. What was discovered is that students awarded for trying and who were taught that they can "get smarter" as they struggled and put forth effort were the students that persisted and achieved best. In classrooms, teachers often provide students with incentive structures and are constantly providing feedback. These results suggest that creating incentive structures that reward effort and providing feedback focused on telling

students they can get smarter, can learn, can grow, etc. will help students develop an achievement mindset.

Aronson, Fried, and Good's (2002) work, as well as Blackwell, Tzesniewski, and Dweck's (2007) work provided support for the importance of interventions and feedback. Blackwell et al. (2007) focused on interventions to increase achievement motivation. They were interested in understanding if it is possible to change a student's view about their ability to achieve. An intervention was provided to junior high students, teaching the idea that intelligence is malleable. Students who received this intervention showed increased motivation and achievement (Blackwell et al., 2007). Aronson et al. (2002) were also interested in providing an intervention to students regarding the malleability of intelligence. Experimental groups were taught that with effort their intelligence could change over time. Their study examined the effects of these teachings on both long-term beliefs about intelligence and academic achievement. The results showed that students who received the intervention both increased the belief that intelligence can grow, as well as their academic performance (Aronson et al., 2001).

2.2.2 How interpretation can change mindset and influence motivation

The idea that intelligence is malleable is also a key component in Dweck's (2006) ideas around growth and fixed mindset. Although her work and the work of her colleagues talks about a person possessing one or the other mindset and the resulting actions each mindset causes a person to engage in, a great deal of interest is given to how mindset can be shaped or changed. The word *interpretation* was prevalent in Dweck's research, as it appears children can change or develop a mindset based on how they interpret situations, feedback, human behavior, etc. Once this mindset perspective is developed in a child, it plays a significant role in how the student acts

or feels with respect to learning. Through the research on mindset, educators can take away practices that contribute to building motivation through helping students develop a growth mindset.

Interpreting other's behavior, as well one's own behavior is something that begins as an infant, and continues throughout life. In the educational setting, children interpret behavior related to both social and academic situations. At a very early age, children begin developing their ideas about people. They make associations with things we do as being either "good" or "bad." In earlier work done by Heyman, Dweck, & Cain (1992), it was discovered that children as early as five and six begin to develop beliefs and a mindset about the stability of an individual's traits. These beliefs then impact how these children make interpretations about themselves, as well as others. When children believed that traits were something that would remain stable or fixed, they developed negative views of themselves after receiving negative feedback (Heyman et al., 1992). The reason for this was that having this fixed idea about traits combined with getting negative feedback made the child feel as if they were "bad" and created the belief they couldn't be "good." Because of their disposition with respect to mindset and traits, the child didn't feel they could change and develop the belief, due to receiving feedback that they are "bad" (Heyman et al., 1992).

2.2.3 Implications of mindset perceptions and motivation

Additional research about a child's position on trait stability was conducted by Heyman & Dweck (1998), which showed additional implications in the academic setting. Children that had a fixed idea about traits tended to focus more on a person's ability rather than the process of learning (Heyman & Dweck, 1998). This plays a critical role in the educational setting. By

developing this hyper focus on ability, these children feared taking academic risks that could result in failure. Failure for this student would mean they are not able. Therefore, the student with the fixed mindset would choose to only work on tasks they can have success with and therefore feel as if they are viewed as capable. The converse was true for the student with a growth mindset. These students believed a person can change. Therefore, their focus when faced with educational tasks was on the process needed to complete the task and not on whether they can complete the task. With this belief and focus on process, the student understood that putting forth effort will likely result in an accomplishment or achievement. What this means for educators is the importance of considering their communication with students, both individually and with a group. Will the feedback provided to students communicate something about their ability or the process? Will feedback or communication about traits communicate to an individual or group the belief that a person can change? Students pick up on these subtle but critical cues in our communication, which then shapes their mindset.

2.2.4 The role of feedback and praise

Work done by Mangels, Butterfield, Lamb, Good, and Dweck (2006) provided two illustrations with respect to mindset and feedback. First, the mindset a student had influenced how the student responded to feedback. Second, the type of feedback influenced students with fixed versus growth mindsets differently. In this study, students were provided either positive or negative feedback when faced with a challenge. What was found was that a student with a fixed orientation to learning did not respond positively to negative feedback. On the other hand, students with a growth orientation to learning were more willing to persist when faced with negative feedback during a challenge. What we learn from this is both the importance of

building a growth mindset in students, as well as being cognizant of the kind of feedback we provide.

Feedback is given constantly to students in a variety of ways. Feedback can be given verbally, in the form of performance assessment, through body language, etc. One of the most common forms of verbal feedback provided to students comes in the form of praise. Praise is a natural response and it is easy to provide. When a student is observed doing something well, teachers naturally want to say, "Good job." It is my belief that we are programmed to think that this kind of positive praise will help to build a student up and make them feel good about themselves. Providing praise, on the surface, would seem to be a likely strategy to help boost a student's confidence, which in turn would increase effort and lead to student success. However, the literature has shown that for praise to be productive and increase achievement, it must be appropriately used as a reinforcer. For praise to be effective as a reinforcer and create self-efficacy and motivation, which in turn will increase the use of strategies and skills that increase achievement, it must be contingent, specific, and credible (O'Leary & O'Leary, 1977). To be contingent, praise must be given only at the point when a behavior has produced a desired outcome (Lipe & Jung, 1971; O'Leary & O'Leary, 1977). The student must also be able to identify the specific behavior being praised to ensure the behavior is reinforced, which will increase the use of this behavior over time. For instance, specifically praising the effort and actions that led to a student's successful completion of a task should lead to increasing the use of this behavior by the student. Credibility of the praise can be linked back to being contingent and specific, as well as the way the praise is given. Credibility is diminished when praise is randomly used and is unrelated to correctness or quality of student responses (Brophy, 1981).

When considering feedback and its effectiveness, it is important to look at how the feedback is delivered and how the delivery makes a difference for the person receiving praise. Kamins and Dweck (1999) looked at feedback, praise and criticism, by differentiating between feedback directed at the person and feedback directed at the process. Their interest was in how these different approaches to providing feedback could factor in to how a person will act when faced with setbacks and challenges at a later point in time. Person-directed feedback is geared toward evaluating the actual person, his or her traits, or ability. For instance, telling a person that you are disappointed in them would be person feedback. Process feedback, on the other hand, is directed toward the strategy the person used to complete a task. For instance, telling a person that you like how they organized the blocks. The findings showed that feedback, directed at the person or the process, had significant differences with respect to actions that followed. Persons receiving person-directed feedback developed a pattern of helpless behaviors when faced with setbacks: less persistence, lower intrinsic motivation, impaired performance. Receiving process-directed feedback led to opposite behavior that Kamis and Dweck (1999) refer to as mastery-oriented. In other words, these students were more willing to persist in the face of challenge.

Mueller and Dweck (1998) also conducted feedback research along the similar lines but focused on praise given specifically for intelligence and performance. Their research led to interesting findings about our more capable students. When we see a student who does things in an exceptional manner, a typical response might be to tell that student they are smart. This is feedback directed at the person and his or her ability. What Mueller and Dweck (1998) have found is that these capable students responded to this person-directed feedback or praise by becoming fixated on being able. They began to care more about comparing themselves to others. They tended to choose work that would allow them to continue to feel able and smart, and

therefore avoided more challenging work. In contrast, some students received praise for *how* they completed a task, (process-directed praise or effort expended). These students continued to focus on mastery, be more motivated to learn, showed a greater interest in learning new strategies, and were willing to persist.

Direct feedback, as well as situational feedback has its impact on students due to what the student attributes the feedback or situation to. For instance, a common practice in classrooms can be to build competitive moments into instructional activities. Educators often think this brings about a level of engagement and effort because students naturally want to win. This may appear to be the case; however, are teachers giving consideration given to how students may be responding cognitively to competitive situations? Carol Ames (1984) investigated how students responded to competitive situations. She found that competitive situations bring about our natural tendency to focus on how we compare to others. The focus shifts to how we might rank compared to our peers and not on the value of completing the task. The opposite was true when students were placed in non-competitive situations. These students focused more on the process involved with the task and therefore engaged in and focused on *how* they could complete the task. These students put forth more effort resulting in greater achievement. This is something for educators to consider when designing instructional tasks. With the amount of work that goes into instructional design for teachers, it is understandable that additional thought may not be expended on the ways in which an instructional activity may impact students cognitively. However, as we learned from Ames (1984), understanding how tasks and activities may be interpreted and impact how a student focuses his or her attention, needs to be given critical consideration if educators desire to design instruction that positively impacts engagement and motivation.

2.2.5 The role of communication and attribution

In addition to controlling instructional situations for students, educators also control how they communicate with students. Similar to considering praise, educators may also want to consider paying attention to how their communication with students related to failure impacts the attributions students make for their failure. A term that is used often in the literature is the term *helpless*. The term helpless in this context refers the way in which a student responds to challenges faced in learning situations. For instance, a helpless response would be to choose not to try because one feels they won't succeed. The opposite term that appears in the literature is *mastery*. Mastery refers to a student who responds with persistence and effort and is not focused on or concerned with the possibility of failure. This student's focus is on getting the job done. These different responses can result from attributions the student makes with his or her behaviors and subsequent result of an event. Additionally, the teacher can play a key role in shaping the attributions a student makes between his or her actions and resulting outcomes. To illustrate this, we can look to research conducted by Carol Dweck. In Dweck's 1975 study, she was interested in the effects of retraining what a child attributes his or her failure to. Children naturally attribute failure to a lack of effort or lack of ability. Her study found support for the impact of retraining children to attribute failure to lack of effort. Making this attribution rather than attributing failure to lack of ability caused students to increase engagement in the task, persist, and achieve at greater rates (Dweck, 1975). This is important for teachers to understand as the learning process is filled with moments of failure for students. Students are going to attribute failure to something and teachers can play a critical role to ensure their feedback on failure is focused on effort and not ability, which should increase a student's engagement, persistence and hopefully result in increased achievement.

Research conducted by Schunk (1982) provided additional support for the positive impact of helping students make attributions that will promote achievement. In his study, students were provided with different attributional feedback as they worked on math problems. The feedback either linked achievement with effort or linked achievement with ability. For the students who were provided with the attribution of their achievement being contingent on their effort, greater persistence and greater self-efficacy was observed versus students who made the attribution of their success hinging on their ability (Schunk, 1982). These results indicate how critical it is for teachers to consider the feedback they provide to students, as well as the power feedback can have in impacting engagement, persistence, and achievement.

2.2.6 Summary

To summarize, the research showed both the process children go through, as well how adults can impact the ways in which children construct their perceptions, beliefs and ideas about *self* and behaviors necessary for learning. Children are constantly making interpretations, making attributions, and associating behaviors and achievement to something. The research showed the role the teacher can play by providing communication and opportunities that promote interpretations, attributions, and associations that foster a culture of effort and persistence. The research also showed how important it is to provide training for teachers with respect to a child's ability to grow and get smarter. Training teachers in these practices will provide a greater chance for the development of an achievement mindset, which results in greater motivation, engagement, and achievement.

2.3 EFFECTIVE PROFESSIONAL DEVELOPMENT AND TEACHER FEEDBACK

Questions two and three of this literature review help to establish factors that contribute to student engagement and motivation, as well as practices that can influence these factors in the classroom. The purpose of addressing question three was to review literature regarding effective professional development that can be implemented to promote and foster the use of the practices and ultimately lead to an increase in student engagement, motivation, achievement, and growth. In answering question three, the intent was to gain an understanding of professional development practices that have been proven to be effective. Thus, these practices can be considered for use in designing professional development as a response to the findings of this study.

There is considerable research that covers a broad spectrum of topics related to education. The only way findings in educational research can impact change in schools is when education professionals, teachers and administrators, effectively utilize them to change the practices that are implemented daily within schools. To effectively utilize the research, education leaders must understand the most effective ways to design and implement professional development that will influence change in teacher practices. This review of literature related to professional development sought to provide understanding and guidance about practices that have proven to be effective in the growth of teachers and student achievement.

2.3.1 Basic keys to successful professional development

I have found through the literature, as well as within my own professional experience, that the opportunities for professional development are challenging to find and challenging to develop. This is mainly due to time available, as well as with dedicating the time necessary to build

professional development programs that have structure and consistency. Also, there is a basic lack of knowledge regarding adult learning theory among educational leaders tasked with designing professional development. Thomas Guskey (2003) reviewed and analyzed characteristics that had been identified across a wide range of publications as effective characteristics of professional development. What he discovered is that much of the claims regarding these characteristics are opinion-based and lack sufficient investigation to connect them to true measures of effectiveness, such as achievement (Guskey, 2003). However, he did discover two analyses that showed a link between professional development characteristics and achievement. The National Institute of Science Education (NISE) and Educational Testing Service (ETS) conducted these studies. From these studies Guskey (2003) concluded that one of the key characteristics needed for effective professional development was not only time, but also time spent on professional development endeavors that were organized and purposeful. I share this point first as I find it to be important to consider regardless of the approach to professional development being taken.

When it comes to approaches to professional development, there are a variety of ways and opportunities to provide professional development in K-12 education: teacher induction programs, in-service days, feedback through the observation process, workshops outside the district, workshops inside the district, professional learning communities, staff meetings, etc. Regardless of the way in which professional development is provided to teachers, Elmore (2002) states that, "Schools that seem to do best are those that have a clear idea of what kind of instructional practice they want to produce, and then design a structure to go with it" (p. 2). Elmore (2002) also states, the importance of engaging in "sustained and continuous progress toward a performance goal over time" (p. 2). As different aspects of professional development

are investigated, these points are consistently found as key aspects of effectiveness: focus, structure, and continuity.

Specific areas were identified for investigation. The first topic was professional development in general. What is it and what makes it effective? Second, was the professional learning community? Third, was teacher induction programs. Gaining a deeper understanding of each of these areas provided a framework for developing professional learning opportunities for teachers around achievement mindset.

2.3.2 The evolution and characteristics of effective professional development

Professional development can be defined as the process of improving teacher skills needed to improve student achievement (Hassel, 1999). As I mentioned earlier, this can take place in a variety of platforms. The last couple decades in education have seen an increased focus on educational reform aimed at improving teacher knowledge and classroom practices with the assumption that this will improving student achievement (Cochran-Smith & Lytle, 1999). During this time, a shift has been seen in what is the most effective and impactful way to increase teacher learning and impact student achievement. This shift has seen a narrowing of focus more large-scale training provided by experts to a more local school-based level with a focus on the teacher, instructional practices and classroom learning (Guskey, 2003; Hutchens, 1998; Kent, 2004). Professional development at this level is recognized as an interactive and social process with teacher learning taking place through discourse with colleagues (Cochran-Smith and Lytle, 1999). Bringing professional development to the school and individual teacher level provides the opportunity to change the practices taking place in the school and to impact student achievement (Goodlad, 1992).

In Guskey's (2003) review of characteristics of professional development he concluded that there is a wide variety of ways in which research has gone about determining what is *effective*. Although this variety of interpretation exists within the research, there are commonalities and similarities with respect to professional development practices that have been cited throughout the literature. I have identified the following components to be consistent in the literature related to effective professional development: focus, articulated plan, active involvement, time, and collaboration.

The first step in designing effective professional development is to start out with a clearly defined focus and goal with a clearly communicated plan (Desimone, 2011; Fullan, 1993). Guskey (2003) believes that the goal, as well as the measure for success, must have one single focus, which is to improve student learning. With a clearly defined goal and plan, the next step is to ensure teachers have an opportunity to be active in the learning process. Becoming active in the process can take a variety of forms: observing peers, acting as mentors or coaches, participating in PLCs, etc. Each of these approaches can be described as site-based approaches that provide a real-world context for teacher learning, which Guskey (2003) believed is critical for successful professional development. Guskey (2003) stated that, "Within the unique context of nearly every school there are teachers who have found ways to help students learn well" (p. 750). In other words, experts and expertise exists within each school, which must be tapped into and utilized to shape professional development experiences if they are to be successful.

Duration of time is also critical for effective professional development. Efforts shown to be ineffective did not have focus, lacked attention to the actual challenges or concerns of teachers, and were short in duration (Laine and Otto, 2000). Desimone (2009) found twenty hours or more of contact time with respect to specific professional development activities to be

an indicator of effectiveness with respect to changing teacher practice. However, a focused plan could span one to three years. Not only is an appropriate duration of focused time critical, there must also be an opportunity for feedback and follow-up (Guskey & Yoon, 2009). Reflection and feedback is part of the collaborative and active learning structure of PLCs, mentoring, or peer coaching. These collaborative structures have become more prevalent in schools and represent a newer component and vehicle for professional development in schools.

2.3.3 Characteristics of the professional learning community

The PLC has grown to become widely known as one of the best ways to have teachers collaborate. This new model has grown out of necessity as educators have begun to realize that the original structure and practices of schools has become outdated. DuFour and Eaker (1998) summarized the *factory* model that school structures and practices were grounded in and reflective of the industrial age. Basically, the thought process was that children were the materials that went through the process of education and with certain inputs (instructional practices, curriculum, etc.) desired outcomes would be achieved. Professional development in this model also provided *inputs* or training for teachers. These trainings acted on the assumption that teachers needed guidance about instruction, and that this guidance would then provide for improved classroom practices (Schmoker, 2006). Schmoker (2006) pointed out the critical cycle missing in the old model of professional learning that existed during this time. This missing cycle is the process of providing the opportunity for teachers to translate learning into practice, which is then assessed to gauge ongoing improvement. Thinking has since changed and thus, the concept of professional learning communities has evolved. Dufour and Eaker (1998) stated that research now supports a new model that suggest schools act as learning communities

with a focus on results. To achieve the desired results, these learning communities must work collectively and with a shared vision. DuFour and Eaker (1998) outlined the following characteristics of professional learning communities:

1. Shared Vision
2. Collective Inquiry
3. Collaborative Teams
4. Action Orientation and Experimentation
5. Continuous Improvement
6. Results Orientation

As DuFour and Eaker (1998) described, in the PLC model, groups of teachers are empowered as the experts who work collectively to pool their knowledge and experience. The group functions in a social environment, which allows for reflection, follow-up, feedback, input, critique and sharing. The focus of PLCs is on the results they continuously evaluate as they reflect on practices and support each other through change.

2.3.4 Characteristics of teacher induction programs

Teacher induction programs have also become more prominent over the last couple decades. The reasons for the growth of induction programs have been the need to address a boom in the number of new teachers in the profession and a high rate of teacher turnover (Ingersoll & Strong, 2011). Ingersoll and Smith (2004) shared the following organizational costs related to teacher turnover: low performance, creating and maintaining a learning community, coherence, morale, and stability. To combat these issues, education has seen an increase in the development and refinement of teacher induction programs. In a review of research conducted by Ingersoll and Strong (2011) they found consensus that teacher induction programs do have a positive effect.

Induction programs have been linked to increased retention of teachers, better job satisfaction, and higher student achievement (Ingersoll & Strong, 2011).

Since teacher induction programs have been proven to have a positive impact on both new teachers and the students they teach, it is important to understand the components of a successful induction program. Ingersoll and Smith's (2004) analysis of teacher induction programs revealed two strong components as indicators of a successful program: having a mentor teacher and time to collaborate with other teachers, and having communication with an administrator. These practices were also evident in an analysis of induction programs conducted by Kang and Berliner (2012). In their analysis, they found four practices that were common in induction programs: communication with an administrator, collaboration with other teachers, seminars, and common planning time. Their analysis also produced evidence that seminars, common planning time, and additional classroom assistance are induction activities that had a positive impact on teacher retention.

Similar components can be found in successful teacher induction programs that were described as key components of PLCs. Essentially, the goal is to ensure new teachers feel as if they belong and provide them with an environment in which to learn, gain feedback, and feel supported. Harry Wong (2004) stated that, "The best induction programs provide connection because they are structured within learning communities where new and veteran teachers interact and treat each other with respect and are valued for their respective contributions" (p. 50). Successful teacher induction programs consist of learning communities in which the learners have ownership of their learning, everyone contributes, and where success is a group responsibility rather than an individual responsibility (Wong, 2004).

2.3.5 Providing effective feedback to teachers

Professional development, professional learning communities, and teacher induction programs are usually thought of first when considering the vehicles within the educational system for improving classroom instruction and student learning. However, we cannot overlook what may be, if done correctly, the most impactful way to improve classroom instruction, which is providing effective feedback to teachers. Professional development, PLCs, and induction programs are great ways to take on large initiatives geared toward setting organizational direction. Although these approaches may have an influence on individual teacher practices, direct feedback provided to teachers has been proven to be an effective tool for improving instructional practices (Gersten, Vaughn, Deshler, & Shiller, 1997).

For feedback to be effective, the literature highlighted three overarching themes: timing, content, and who is involved in the process (Van Houten, 1980). Timing of feedback has been proven to be critical if the feedback is going to be received, reflected upon and used to create change. For feedback to be effective, it needs to take place soon after the event in which the feedback is providing a critique (Sheeler, Ruhl, & McAfee, 2004; Levinson-Rose & Menges, 1981). In addition to providing feedback quickly, it has been found that feedback should occur often and be a process (Ilgen, Fisher, & Taylor, 1979). In other words, feedback can't occur once and be expected to create change. The person receiving the feedback must have multiple opportunities to receive feedback for the appropriate reflection to occur that will result in a behavioral change (Ilgen et al., 1979).

The content or the *what* that feedback includes is also critical if feedback is going to be effective. In the literature, I found four major pieces of the content that must be present in feedback for it to be effective. First, feedback needs to present an accurate, clear, and content-

rich representation of data collected (Brinko, 1993; Danielson, 1996; Glickman, 2002). Painting a clear picture of what occurred in the classroom, what was said, how one behaved, and how students responded is important to ensure an honest reflection occurs on the part of the teacher. Second, to be effective, there must be a balance between the positive and negative feedback provided. Davies and Jacobs (1985) suggest that negative feedback be sandwiched between positive feedback. This helps create a positive rapport between the persons giving and receiving the feedback and creates a greater chance the negative feedback will get the attention it needs. Third, feedback can't only include the data gathered. The feedback must also include examples and models of effective practices (Danielson, 1996; Glickman, 2002). It is much easier for someone to make a change when an example of what that change may look like is provided.

Who provides the feedback is the fourth component highlighted in the literature with regard to the effectiveness of feedback. Most importantly, the evaluator must be seen by the teacher as someone who is credible and knowledgeable (Brinko, 1993; Ilgen et al. 1979). If the evaluator hasn't established himself or herself as an authority on the topic of instruction, it creates a challenge for the teacher to invest time and effort into the feedback suggestions made by the evaluator. Assuming the evaluator has established himself or herself as a credible educational leader, feedback must become an interactive and cyclical process between the teacher and evaluator which promotes continual reflection and adjustments to instruction (Cooper, 1982; Glickman, 2002; Ilgen et al., 1979). This cyclical process produces trust, dialogue and action because of the feedback received.

2.3.6 Summary

To summarize, professional development has evolved over the last couple decades. There has been an increased focus on bringing professional development endeavors to the school level and utilizing the expertise that exists within a school to drive reflection, learning, evaluation, and refinement of instructional practices. To be successful, professional development must be focused, well-articulated, and sustained over time. PLCs have emerged as a key component of successful professional development programs as this structure contains the critical components that have proven to be effective. Additionally, teacher induction programs are the beginning to professional development for new teachers and critical for improving teacher performance, student achievement, and retaining teachers. Lastly, to ensure continual reflection and focus on improving classroom practices, teacher feedback must be a focus of educational leaders. The aspects of professional development and teacher feedback discovered through this literature review will be considered when recommendations are made for using professional development and teacher feedback to increase teaching practices that impact student engagement, motivation, and the development of an achievement mindset.

3.0 METHOD

3.1 INTRODUCTION

Education has experienced a recent shift from a focus primarily on academic achievement to now including a focus on student academic growth. This can be seen in educator evaluation, which now places an emphasis on how effective educators are at growing students academically in addition to academic performance (Pennsylvania Department of Education, 2013). As Shechtman et al. (2013) describes, the traditional focus in education has been on learning indicators focused on how much knowledge a student can demonstrate. Therefore, educators have focused most of their energy on improving pedagogy to ensure students learn as much content as possible. However, Yeager and Walton (2011) have explained that even small social-psychological interventions have been shown to be influential and effective for providing achievement gains, or growth. The research is indicating that this shift is important as it moves educators away from focusing primarily on strategies for improving pedagogy and indicates how critical it is that educators incorporate strategies that will impact the way a student feels and perceives aspects of his or her learning. In other words, teachers have a key role in helping students create a learning mindset that will impact both achievement and growth. As Danielson (1996) states, "When students are convinced of their capabilities, they are willing to devote energy to the task at hand, and take pride in their accomplishments" (p. 28). This statement is

indicative of this shift as speaks to the importance of a student believing in his or her abilities as a catalyst for being motivated to learn.

With this shift in mind, this inquiry was conducted as a survey study with secondary teachers to (1) investigate teachers' understanding and perceptions of learning mindsets, (2) how they are operationalizing their understanding and perceptions of learning mindset through instructional practices, and (3) to explore how professional development and feedback to teachers can be effective tools for influencing teacher knowledge and practices that will create learning mindsets that lead to both achievement and growth.

3.2 INQUIRY SETTING

This inquiry took place at a junior high school in a Pittsburgh, Pennsylvania suburban school district. The junior high educates approximately 600 students in grades seven and eight. Approximately 27% of the students are considered economically disadvantaged and approximately 13% of students receive special education services (Pennsylvania School Performance Profile, 2016). The student body makeup is 90% white, 6% black, 2% Asian, 1% multiracial, and less than 1% Hispanic (Pennsylvania School Performance Profile, 2016). The students are drawn from a community population of approximately 27,000 where the median home income is approximately $67,000 and median home value is approximately $140,000. Ninety-four percent of this population has received a high school diploma or higher. The community mirrors that of the junior high with a makeup of approximately 94% white, 4% black, and 1% Asian (United States Census Bureau, 2016).

3.3 PARTICIPANTS

All classroom teachers at this junior high were contacted and their participation in the survey was requested. There is a total of forty-six classroom teachers at the junior high. Eleven teachers teach English Language Arts, six teach math, six teach social studies, seven teach science, four teach special education, and thirteen teach electives (physical education, computers, wood shop, music, etc.). Nineteen teachers receive a Pennsylvania Value-Added Assessment System score (PVAAS) and twenty-seven do not. A teacher's PVAAS score indicates the degree to which the teacher has grown his or her students during an academic year. A cross-tabulation was conducted in chapter five to investigate differences between the core subject teachers that receive a PVAAS score and non-core teachers that do not receive a PVAAS score.

It was suspected that the group of teachers that receive a PVAAS score may have a different perspective with respect to learning mindsets as these teachers' evaluations are impacted by the factors of student achievement and student academic growth. For instance, the new evaluation system requires percentages of their overall evaluation for Pennsylvania teachers be determined by PSSA performance and value-added student growth. Pennsylvania School Code (Pennsylvania Department of Education, 2013) indicates that 50% of a teacher's evaluation is to be determined by multiple measures of student achievement data. Five percent of the teacher's evaluation now comes from student proficiency on the PSSA and no less than 10% comes from value-added assessment system data. According to the PDE, one major difference between achievement and growth is that achievement is highly correlated with demographics where growth is not (Pennsylvania Department of Education, 2016). In other words, demographics can be an indicator of how students may *perform* academically, but they are not an

indicator for *growth*. Student growth varies regardless of demographics and appears to be an indicator of individual teacher impact.

Of the nineteen teachers that receive a PVAAS score, eight teach English Language Arts (ELA), six teach math, and five teach science. PVAAS composite scores for these teachers were retrieved from the private Pennsylvania Department of Education (PDE) Standards Aligned System (SAS) website. These data are not public and are only accessible by teachers and school administration. A teacher's composite score indicates the teacher's overall influence on student growth over the last three years in which growth data was collected. Yellow or red indicate a teacher whose students are losing ground; green indicates growing students a minimum of one academic year; and light or dark blue indicate students exceeding the minimum expected growth of at least one year (Pennsylvania Department of Education, 2015). Of the ELA teachers at this junior high, one teacher had a red composite score, five had green and two had dark blue. Of the math teachers, two had a red composite score, one yellow, two green, and one dark blue. Of the science teachers, two had light blue composite scores, and three had dark blue. With respect to student achievement, data from the 2016 ELA PSSA indicated that 81% of current 7th grade students were proficient and 77% of current 8th grade students were proficient. On the math PSSA, 56% of current 7th grade students were proficient and 46% of current 8th grade students were proficient. On the science PSSA, 75% of the current 8th grade students were proficient (Pennsylvania Department of Education, 2016).

3.4 INQUIRY APPROACH

This inquiry took an exploratory approach using an online survey to investigate the inquiry questions. As Fowler (2014) states, surveys are "aimed at tapping into the subjective feelings" of respondents. The inquiry questions driving this study sought to understand the respondents' subjective perspectives about learning mindsets, ways in which the respondents may be operationalizing these perspectives in practice, and how professional development has informed these teachers on the topic of learning mindsets.

As Yin (2014) describes, utilizing a survey is an appropriate approach when the "goal is to describe an instance or prevalence of a phenomena" (p. 10). The phenomena investigated was the concept of learning mindsets and how teachers' perceptions of learning mindsets might influence instructional practice. The survey gathered data mostly through close-ended scale items. Additionally, two open-ended questions were included in the survey.

3.5 INSTRUMENTATION

Data were gathered using an online survey created in Qualtrics. The survey was adapted, with permission (see Appendix A), from a survey Education Week used in a study titled *Mindset in the Classroom: A National Study of K-12 Teachers* (Education Week Research Center, 2016). The Education Week Research Center conducted this study in May of 2016. The Education Week study sought to understand how familiar teachers were with growth mindset, how teachers were integrating aspects of growth mindset in their day-to-day practice, and examined the degree

to which this group of teachers have received professional development on the topic of growth mindset (Education Week Research Center, 2016).

Similarly, this inquiry examined the learning mindset perspectives of a selected group of secondary teachers, how they operationalize these perspectives, as well as the professional development they have received and desire to receive on this topic. The Education Week survey was modified by grouping questions into the following sections: respondent background information; classroom practices; perspectives on learning mindsets; and professional development. Table 1 illustrates a comparison between the survey used in this inquiry and the Education Week Survey (2016) with respect to how the survey items were ordered. A rationale is also included in the table for the survey item category order used in this inquiry.

Table 1. Comparison of Survey Item Order and Rationale

Survey Item Category	Hadley Survey	Education Week Survey
Classroom Practice	5, 6, 7, 8, 9, 10	6, 7, 9, 10, 11, 23
Learning Mindset Perspective	11, 12, 13, 14, 15, 16	5, 20, 19, 18, 8, 21
Professional Development	17, 18, 19, 20, 21	12, 14, 15, 17, 16
Rationale for Reordering of Survey Items		
A goal of this survey was to have teachers reflect on practices they employ in the classroom and do so without any information included in the survey biasing their responses. Therefore, the classroom practice items were placed at the beginning of the survey and prior to the more detailed definition of the meaning behind a growth mindset.		

Prior to the survey questions on classroom practices, respondents were provided with the same general description of the term growth mindset, as was provided in the Education Week Survey (2016). Prior to the survey questions on learning mindset perspectives, respondents were presented with the same, more detailed definition of the term growth mindset that was provided in the Education Week Survey (2016). The more detailed description was provided prior to the perspective questions to ensure respondents have a clearer understanding of the term as they

respond to these questions and provide their personal perspective. The classroom practices questions began with close-ended scale items for respondents to rate the degree to which they have incorporated practices that support both a growth mindset, as well as those that would support a fixed mindset. In the classroom practices portion of the survey there were also two open-ended questions, which allowed teachers to provide deeper insight as to how they have incorporated growth mindset practices, as well as the challenges they have faced while trying to foster a growth mindset with students. The questions in the section on perspectives provided respondents with close-ended scale items to rate how familiar they are, feel a statement is important, agree, or feel something is difficult. Each of these questions investigated respondents' perspective with respect to growth mindset. In the professional development portion of the survey, respondents were asked to select from a variety of possible responses after each question. The responses selected demonstrated the degree to which each teacher feels they have been provided with professional development on the topic of growth mindset, as well as areas in which they would like to receive additional professional development on this topic.

To provide a more accurate comparison between data collected for this inquiry and the data collected by the Education Week Survey (2016), I kept my survey very similar to the Education Week Survey (2016). Other than changing the order of the survey items so that all the classroom practice, learning mindset perspective, and professional development items were grouped together, only the wording of one survey item was changed. All other survey items that were taken from the Education Week Survey were worded and presented the same as they were in the Education Week Study. Table 2 illustrates the adaptation that was made to the wording of the one survey item, as well as provides a rationale for this adaptation.

Table 2. Survey Item Wording Adaptation and Rationale

Education Week Survey Wording Item #7	Adapted Wording of Survey Item #6	Rationale for Adapted Wording of Survey Item #6
The following list contains statements teachers sometimes make to students. How effective are these statements at encouraging students to learn with a growth mindset?	The following list contains statements teachers sometimes make to students. Reflecting on your communication with students in your typical classroom, how often might you use each statement or a similar variation of each statement?	This question was reworded in a way that asked teachers to reflect on their own use of the statements rather than having the teacher rate the effectiveness of the statements. It was felt that reflecting on the use of the statement versus the effectiveness was more of a reflection of the individual teacher's practice.

3.6 COLLABORATION

This study also had a collaborative aspect, as data was shared between me and Mrs. Ashley Nestor, a fellow University of Pittsburgh doctoral student who was conducting a similar study but focused on elementary teachers. While working on our research and attending the same doctoral study group at the University of Pittsburgh, Nestor and I discovered that our research interest and inquiry questions were identical. Therefore, we decided it would be interesting to conduct separate studies and then compare our findings. Nester and I both received permission from Education Week to utilize a survey they used in a study in May of 2016. The Education Week study focused on the same three areas that we are investigating in our respective studies: *teacher practices in the classroom related to mindset, teacher perspectives on mindsets in the classroom, and professional development and training related to mindsets in the classroom* (Education Week Research Center, 2016). Co-investigatory survey items were chosen and data was compared to explore how teacher perspectives, practices, and professional development compared between the three studies.

Nestor also created a survey that was modified from the Education Week survey. Both of our surveys, although slightly different in item order, utilized questions from the Education Week survey. Additionally, both of our surveys addressed the same three research questions. However, Nestor's inquiry and instrument gathered data from a selected group of elementary school teachers and this inquiry gathered data from a selected group of secondary teachers. Table 3 identifies the co-investigatory survey items in each of our survey instruments. These co-investigatory items are explored in chapter eight.

Table 3. Co-Investigatory Questions in Hadley and Nestor Study

Hadley Survey Item #	Nestor Survey Item #	Inquiry Category	Survey Item
#5	#10	Practices	This school year, how OFTEN have you engaged in the following practices in your typical classroom?
#6	#11	Practices	*Hadley Wording* The following list contains statements teachers sometimes make to students. Reflecting on your communication with students in your typical classroom, how often might you use each statement or a similar variation of each statement? *Nestor & Education Week Wording* The following list contains statements teachers sometimes make to students. How effective are these statements at encouraging students to learn with a growth mindset?
#11	#4	Perceptions	How familiar do you think the following people are with the concept of growth mindset in K-12 education?
#15	#8	Perceptions	To what extent do you agree or disagree that the following are associated with a student growth mindset?
#16	#9	Perceptions	To what extent do you agree with the following statements?
#18	#17	Professional Development	Which of the following topics have been addressed in your training and professional development on growth mindset?
#20	#19	Professional Development	How much have you learned about growth mindset from the following sources?
#21	#20	Professional Development	Which of the following would help you feel better prepared to foster a growth mindset in your students?

3.7 DATA ANALYSIS

Data collected in this inquiry was used to identify how these secondary teachers perceive the concept of learning mindsets, how they operationalize these perceptions through classroom practices, and how professional development has prepared them to incorporate the concepts of growth mindset in practice. The University of Pittsburgh's Qualtircs system was used to collect and then explore the data in this inquiry. Descriptive statistics, primarily cumulative frequency percentages, is the primary method used to analyze these data.

These data were also disaggregated to allow for comparative analyses to be conducted. As described by "Cross Tabulation Analysis – Qualtrics" (n.d.), cross-tabulation is most often used to analyze categorical data. Categorical data compared in this inquiry were male versus female, core content areas vs. non-core content areas, and different levels of experience. Cross-tabulation tables were created to provide a comparison of these variables ("Cross Tabulation Analysis – Qualtrics," n.d.). To test for the statistical significance of each cross-tabulation table, a Chi-square statistic was utilized. The Chi-square statistic indicates whether the variables have a statistically significant relationship ("Cross Tabulation Analysis – Qualtrics," n.d.).

Data from this inquiry has also been compared with data gathered by Nester, as well as with the data gathered in the Education Week survey (Education Week Research Center, 2016). This comparison was done by presenting and describing cumulative frequency percentage similarities and differences. The comparison between this inquiry, Nestor's inquiry, and the Education Week Study was conducted for the items identified in table 2 as co-investigatory items.

Lastly, there are two open-ended items found in the classroom practices section of the survey. An inductive and open coding approach was used for category construction and allowed

for themes to emerge (Merriam, 2009). Emerging themes were connected back to key themes identified in the literature.

Table 4 is provided as a summary of the evidence, method and analysis that will be conducted for each inquiry question.

Table 4. Inquiry Questions, Evidence, Method, and Analysis

Inquiry Question	Evidence	Method	Analysis
1. How do the selected secondary teachers operationalize their perceptions about learning mindsets through classroom and instructional practices?	Closed-Ended Survey Items: ▪ Scale Response Items Open-Ended Survey Items: ▪ Responses	Teacher survey created and administered via Qualtrics. The survey is a reorganized and modified version of Education Week's Mindset in the Classroom Survey (Education Week Research Center, 2016) The survey will include the following sections: ▪ Respondent Background ▪ Classroom Practices ▪ Teacher Perspectives ▪ Professional Development	***Closed-Ended Item Analysis:*** A. Cumulative Frequency Percentages by Item B. Disaggregation with Crosstab/Chi Square: a. Gender b. Content Area c. Years of Experience C. Data Comparison of Co-Investigatory Items - Education Week; Nestor; Hadley a. Describe Cumulative Frequency Percentage Differences/Similarities ***Open-Ended Item Analysis:*** A. Code Emergent Themes a. Inductive Coding Approach i. Connect to Literature Themes ***Survey Items that Align with Research Question #1:*** 5 A-I; 6 A-H; 7; 8; 9 (open-ended); 10 (open-ended)
2. How do the selected secondary teachers perceive learning mindsets?	Closed-Ended Survey Items: ▪ Scale Response Items	As described above.	***Closed-Ended Item Analysis:*** As described above. ***Survey Items that Align with Research Question #2:*** 12 A-I; 13 A-K; 14 A-D; 15 A-I; 16 A-F
3. What is the nature of the selected secondary teachers' professional development related to learning mindsets?	Closed-Ended Survey Items: ▪ Inventory Responses (respondents choose all responses that apply to them)	As described above.	***Closed-Ended Item Analysis:*** As described above. ***Survey Items that Align with Research Question #3:*** 17; 18; 19 A-B; 20 A-O; 21

4.0 INTRODUCTION TO FINDINGS, ANALYSIS, AND DISCUSSION

4.1 PARTICIPANT CHARACTERISTICS

The instructional staff at a junior high school near Pittsburgh Pennsylvania was chosen as the participants for this study. Participants were contacted over a period of two weeks while the electronic survey window was open. The instructional staff at this junior high consisted of 46 teachers. Of the 46 teachers who received the survey, 86.9% (n=40) completed the survey. Of the 40 respondents, 45% (n=18) were male and 55% (n=22) were female. With respect to years of teaching experience, 20% (n=8) of the staff reported having 3 to 10 years of teaching experience, 75% (n=30) reported having 11 to 25, and 5% (n=2) reported having greater than thirty years of teaching experience. The junior high consists of grades 7 and 8. Of the 40 respondents, 22.5% (n=9) teach grade 7, 42.5% (n=17) teach grade 8, and 35% (n=14) teach both grades 7 and 8. All instruction areas were represented in responses. Table 4 indicates the areas of instruction represented among the 40 survey respondents.

Table 5. Percentage of Respondent Instructional Areas

Math	Science	ELA	Social Studies	Special Education	Art	Technology Education	Computer	Physical Education	Music	Other
15.0% n=6	15.0% n=6	22.5% n=9	15.0% n=6	7.5% n=3	5.0% n=2	5.0% n=2	5.0% n=2	5.0% n=2	5.0% n=2	5.0% n=2

4.2 FINDINGS, ANALYSIS, AND DISCUSSION INTRODUCTION

The following three chapters will present the findings, analysis and discussion for each of the three inquiry questions.

1. Chapter Five: *How do the selected secondary teachers operationalize their perceptions about learning mindsets through classroom and instructional practices?*
2. Chapter Six: *How do the selected secondary teachers perceive learning mindsets?*
3. Chapter Seven: *What is the nature of the selected secondary teachers' professional development related to learning mindsets?*

Throughout chapters five, six, and seven italics have been used when referring to something that was included in the survey, such as the choices made available to respondents in the survey. Most survey items presented respondents with a four or five-point scale. To report these data, cumulative frequency percentages were calculated and reported. Tables were also created and provide a visual representation of the data reported. Each of the following three chapters concludes with a discussion, implications, and recommendations section.

Following chapters five, six, and seven is a chapter dedicated to the collaborative aspect of this inquiry. Chapter eight compares data and findings for the selected co-investigatory questions. A comparison and discussion is presented for the Education Week, Nestor, and Hadley findings. This chapter will be divided into three sections: *practices, perceptions, and professional development.*

5.0 CLASSROOM PRACTICES FINDINGS, ANALYSIS, AND DISCUSSION

5.1 INTRODUCTION

Survey items five through ten sought to provide data in response to the first inquiry that was investigated, which asked, *how do the selected secondary teachers operationalize their perceptions about learning mindsets through classroom and instructional practices?* Prior to responding to these items, teachers were provided with a general description of the purpose of the survey, as well as an introduction to the term growth mindset. The description stated that *this survey examines teachers' views regarding mindsets in K-12 education. Throughout the survey, we use the term "growth mindset" to identify one way of thinking about learning and intelligence. This concept may also commonly be referred to using different terminology, such as "learning mindset" or "incremental mindset"* (Education Week Research Center, 2016). Following this description, respondents were presented with items asking them to reflect on their perceptions on a variety of instructional practices. Some of the practices presented indicate the promotion of growth mindset practices and some indicate the promotion of fixed mindset practices. Additionally, respondents were presented with items asking them to assess the degree to which they have integrated the concept of growth mindset, how they have integrated this concept, and challenges they have faced when attempting to foster a growth mindset. Two of these items were open-ended and were analyzed for emerging themes across all responses.

5.2 INSTRUCTIONAL PRACTICE FINDINGS

Survey item five presented nine different classroom practices. Five of these practices align with the promotion of growth mindset practices and four align with the promotion of fixed mindset practices (Dweck, 2006, 2007, 2008, 2010; Education Week Research Center, 2016; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013). Respondents were asked to reflect on how often they engaged in each practice ranging from *every day (5)* to *never (1)*. To report these data, responses of *every day (5)* and *a few times as week (4),* as well as *a few times a month (3)* and *a few times a year (1)* have been combined and are reported as cumulative frequency percentages. Table 6 presents the cumulative frequency percentage of response for each growth mindset practice.

Table 6. Percentage of Growth Mindset Practice Responses (n=40)

Growth Mindset Practices	A Few Times a Week or More		A Few Times a Month or Less		Never Used	
	%	n	%	n	%	n
A. Praising students for their effort	100.0	40	-	-	-	-
B. Encouraging students to try new strategies when they are struggling	97.5	39	2.5	1	-	-
C. Encouraging students who are already doing well to keep trying to improve	92.5	37	7.5	3	-	-
D. Praising students for their learning strategies	75.0	30	22.5	9	2.5	1
E. Suggesting that students seek help from other students on schoolwork	50.0	20	37.5	15	12.5	5

At least 50% (n=20) of respondents indicated using each of the growth mindset practices either *every day* or a *few times a week*. Over 92% (n=37) of respondents indicated using three of these growth mindset practices *a few times a week or more*. The growth mindset practice respondents reported using the most was *praising students for their effort* with 100.0% (n=40) indicating the use of this practice *a few times a week or more*.

In contrast to the growth mindset practices, where over 90.0% or respondents indicate using three of the practices at least weekly, there was much more disparity with respect to how many respondents reported using the fixed mindset practices. Table 7 presents the percentage of response for each fixed mindset practice.

Table 7. Percentage of Fixed Mindset Practice Responses (n=40)

Fixed Mindset Practices	A Few Times a Week or More		A Few Times a Month or Less		Never Used	
	%	n	%	n	%	n
A. Praising students for earning good scores or grades	80.0	36	17.5	7	2.5	1
B. Telling students that it is alright to struggle, not everyone is good at a given subject	65.0	26	22.5	9	12.5	5
C. Praising students for their intelligence	57.5	23	37.5	15	5.0	2
D. Encouraging students by telling them a new topic will be easy to learn	42.5	17	45.0	18	12.5	5

Each of the four practices were indicated to be used in the full range from *every day* to *never*. The fixed mindset practice that was indicated to be used most often was *praising students for earning good scores or grades*. Eighty percent (n=32) indicated using this practice *a few times a week or more*. Respondents also indicated at a high percentage that they often *tell students that it is okay to struggle, that not everyone is good at a given subject.* Sixty-five percent (n=26) of respondents indicate using this practice *a few times a week or more*.

Table 8 compares the top four reported growth and fixed practices that were indicated to be used *a few times a week or more*.

Table 8. Comparing the Reported Use of Growth vs. Fixed Practices (n=40)

Percent of Respondents Using Growth Mindset Practices A few Times a Week or More			Percent of Respondents Using Fixed Mindset Practices A few Times a Week or More		
Growth Practices	**%**	**n**	**Fixed Practices**	**%**	**n**
A. Praising students for effort	100.0	40	A. Praising students for earning good scores or grades	80.0	32
B. Encouraging students to try new strategies when they are struggling	97.5	39	B. Telling students that it is alright to struggle, not everyone is good at a given subject	65.0	26
C. Encouraging students who are already doing well to keep trying to improve	92.5	37	C. Praising students for intelligence	57.5	23
D. Praising students for their learning strategies	75.0	30	D. Encouraging students by telling them a new topic will be easy to \ learn	42.5	17

This comparison makes it clear that respondents have indicated a greater and more consistent use of growth mindset practices versus the fixed mindset practices. Seventy-five percent (n=30) of respondents or more have indicated using four growth mindset practices either *a few times a week or more.* This contrasts with the fixed mindset practices where only one practice was indicated to be used by 80% (n=32) of respondents *a few times a week or more.*

5.3 TEACHER FEEDBACK FINDINGS

Survey item six asked respondents to reflect on eight different statements and consider how often they might use each statement in their typical classroom. Four of the statements are aligned with the promotion of growth mindset and four are aligned with the promotion of fixed mindset. Respondents could indicate their use of each statement ranging from *very often (5)* to *never (1).* To report these data, responses of *5* and *4*, as well as *3* and *1* have been combined and are reported as cumulative frequency percentages. Table 9 indicates the cumulative frequency percent of response to each of the statements indicative of a growth mindset practice.

Table 9. Percentage of Growth Mindset Statement Responses (n=40)

Growth Mindset Feedback	Often		Sometimes		Never	
	%	n	%	n	%	n
A. "Great job. You must have worked really hard on this."	82.5	33	17.5	7	-	-
B. "You really studied for your test and your improvement shows it."	68.5	27	27.5	11	5.0	2
C. "I really like the way you tried all kinds of strategies on that problem until you finally got it."	40.0	16	47.5	19	12.5	5
D. "I love how you stayed at your desk and kept your concentration in order to keep working on that problem."	40.0	16	40.0	16	20.0	8

In contrast to the responses in survey item five, which measured the use of classroom practices, for which at least 92.0% (n=37) of respondents indicated using three of the growth mindset practices *a few times a week or more*, responses to the growth mindset *feedback* items here were not as strong. Two of the growth mindset feedback items were indicated to be used *often* (the equivalent to *a few times a week or more*) by 82.5% (n=33) and 68.5% (n=27) respectively. The other two growth mindset feedback items were reported to be used *often* by less than 50% of respondents.

Table 10 illustrates the percentage of respondents that indicated how often they reported using each of the fixed mindset feedback statements.

Table 10. Percentage of Fixed Mindset Statement Responses (n=40)

Fixed Mindset Feedback	Often		Sometimes		Never	
	%	n	%	n	%	n
A. "See, you are good at this subject. You got an "A" on your last test."	37.5	15	47.5	19	15.0	6
B. "Look at how smart you are."	35.0	12	42.5	17	22.5	9
C. "You are one of the top students in the class."	25.0	10	47.5	19	37.5	11
D. "This is easy. You will get this in no time."	20.0	8	55.0	22	25.0	10

Overall, respondents indicated using the fixed mindset feedback statements less frequently. The cumulative frequency percentages were 37.5% (n=15) and 35.0% (n=14) respectively for using the top two fixed mindset statements *often*. The cumulative frequency

percent for using the bottom two fixed mindset feedback statements *often* was only 25.0% (n=10) and 20.0% (n=8) respectively.

Table 11 compares the cumulative frequency percentage for reported use of the growth and fixed mindset feedback statements.

Table 11. Comparison of Growth vs. Fixed Mindset Feedback Statements

Top Reported Use of Growth Mindset Statements		Lowest Reported Use of Growth Mindset Statements		Top Reported Use of Fixed Mindset Statements		Lowest Reported Use of Fixed Mindset Statements	
%	n	%	n	%	n	%	n
82.5	33	40.0	16	37.5	15	25.0	10
68.5	27	40.0	16	35.0	14	20.0	8

This table helps to illustrate that, although respondents indicated relatively frequent use of two of the growth mindset feedback statements, there is somewhat equal use of the lowest reported growth mindset statements and the top reported fixed mindset statements (highlighted in the table).

5.4 TEACHER REPORT ON THE INTEGRATION OF GROWTH MINDSET PRACTICES

Survey items seven through ten asked respondents to reflect on how they have integrated growth mindset into teaching expectations and practice. Items seven and eight sought to gauge the degree to which teachers feel they have integrated growth mindset practices, as well as if they agreed integrating growth mindset practices would impact learning and instruction in their classroom.

Item seven provided respondents with a five-point scale from *deeply integrated (5)* to *not at all integrated (1)* in which they were asked to indicate the degree to which they feel they have integrated growth mindset into teaching expectations and practices. Responses of a *5* and *4*, as well as *3* and *2* have been combined into cumulative frequency percentages for reporting purposes. Table 12 presents the cumulative frequency percentages of responses indicating the degree to which respondents feel they have integrated the concept of growth mindset into expectations and practice.

Table 12. Reported Integration of Growth Mindset into Practice (n=40)

	Deeply		**Somewhat**		**Not at All**	
	%	**n**	**%**	**n**	**%**	**n**
To what extent have you integrated growth mindset into your teaching expectations and practice?	62.5	25	35.0	14	2.5	1

Item eight presented a scale from *strongly agree* to *strongly disagree* in which respondents were asked to indicate the degree to which they agree that integrating the concept of growth mindset into expectations and practice would improve student learning and/or their instruction. Responses of *strongly agree* and *agree,* as well as *disagree* and *strongly disagree* have been combined and are reported as cumulative frequency percentages. Table 13 presents the cumulative frequency percentages of agreement with respect to how respondents feel integrating the concept of growth mindset will impact learning and instruction in their classroom.

Table 13. Integrating Growth Mindset Impacts Learning and Instruction (n=40)

	Agree		**Disagree**	
	%	**n**	**%**	**n**
A. Improve student learning	100.0	40	-	-
B. Improve my own instruction and classroom practices	100.0	40	-	-
C. Significantly change my classroom instruction	87.5	35	12.5	5

The cumulative frequency percent of respondents who *agreed* that integrating the concept of growth mindset would both improve student learning, as well as improve their own instruction and classroom practices was 100% (n=40). Although all respondents indicated that they felt integrating the concept of growth mindset would *improve* instruction, responses were not as strong with respect to whether respondents felt integrating this concept would *change* their classroom instruction.

Survey items nine and ten were open-ended items. Thirty-two of forty respondents provided a response to these two open-ended items. For each of these survey items, an inductive approach was taken to allow themes to emerge from the written responses (Merriam, 2009). The process used is what Merriam (2009) describes as category construction using open coding (p. 178). Each response was read and notations were made for any bit of data related to the inquiry question. These bits of data were then reviewed and combined to create themes or categories that emerged from the responses. These categories are what Merriam (2009) describes as conceptual elements that span across many of the individual responses (p. 181). These themes were then connected back to themes that had emerged from the literature.

Item nine asked respondents to describe *how* they have integrated the concept of growth mindset into expectations and practices. Four themes emerged from the open-ended responses to survey item nine. Each of these themes emerged because of their connection to what the literature described as ways in which a growth mindset can be cultivated. The themes identified in the literature were *providing process praise versus person praise, directly teaching students they can improve through effort, setting goals and using assessment to monitor and observe progress, and using a variety of teaching approaches to meet the needs of learners.* Table 14

presents each emerging theme, its alignment with themes from the literature, and examples of respondent responses.

Table 14. How Respondents Report Integrating Growth Mindset

Emerging Theme	Theme Identified in the Literature	Literature	Example of Respondent Responses
Praising Effort	Providing process praise versus person praise	Brophy,1981; Dweck, 2010; Blackwell, et al., 2007; Dweck, 2006; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Resnick, 1995	"I praise their efforts and work."
Emphasis on Growth and Improvement	Directly teaching students they can improve through effort	Blackwell, et al., 2007; Pintrich & DeGroot, 1990; O'Rourke, et al., 2014; Resnick & Hall, 2000	"I remind them that effort/progress is more important to me than a student who doesn't try but always succeeds." "I tell students that if they want to improve, they have to practice."
Use of Pre and Post Assessments	Setting goals and using assessment to monitor and observe progress	Ames, 1984; Dweck, 2010; Meece et al., 1988; O'Rourke, et al., 2014	"It helps their intrinsic motivation in directly seeing their progress daily." "I have students self-assess their achievement in each area."
Differentiating Instruction	Variety of teaching approaches to meet the needs of learners	Ames, 1984; Dweck, 2008, 2010; Mangels et al., 2006; Resnick,1999; Resnick & Hall, 2000; Yeager & Walton, 2011	"Through varied and diverse lessons and practices." "I try to help students use a variety of strategies to comprehend."

Survey item ten asked respondents to describe the challenges they have faced with their attempts to foster a growth mindset in their students. Three themes emerged from the responses that aligned with themes identified in the literature as roadblocks for developing a growth mindset. The themes identified in the literature were *learned helplessness, self-belief and its impact on achievement, and attribution.* Table 15 presents each emerging theme, its alignment with themes from the literature, and examples of respondent responses.

Table 15. Reported Challenges When Attempting to Foster a Growth Mindset

Emerging Theme	Theme Identified in the Literature	Literature	Example of Respondent Responses
Attitude developed from the school experience	Learned helplessness	Ames, 1992; Bandura, 1977, 1997; Bannister, 1986; Borowski et al., 1988; Dweck, 1975; Heyman & Dweck, 1998; Mangels et al., 2006; Schunk, 1982, 1985; Valentine et al., 2004	"Some kids have learned by this point that school is hard and they can't keep up." "Students do not have much patience when they get the problem wrong the first time they try." "There are always challenges when an advanced student gets to a topic that requires more work and effort than they are used to doing. I notice a lot of resistance if the problem takes longer than a few minutes."
Student self-perception	Self-belief and its impact on motivation and achievement	Ames, 1992; Bandura, 1977, 1997; Bannister, 1986; Borowski et al., 1988; Dweck, 1975; Heyman & Dweck, 1998; Mangels et al., 2006; Schunk, 1982, 1985; Valentine et al., 2004	"The greatest challenge that I have notices are the students' perceptions of themselves." ". . .lack of belief in themselves. A give up and go home attitude."
Comparing self to others	Attribution	Ames, 1992; Bandura, 1977, 1997; Bannister, 1986; Borowski et al., 1988; Dweck, 1975; Heyman & Dweck, 1998; Mangels et al., 2006; Schunk, 1982, 1985; Valentine et al., 2004	"Students make fun of other students who are trying to do well and improve." "Some students compare themselves to other student progress."

5.5 CROSS-TABULATION ANALYSIS

Cross-tabulation and Chi-square analyses were conducted to investigate whether any significance existed with respect to the promotion of growth and fixed mindset practices and gender, years of experience, or content area. This analysis was conducted because I suspected that differences

might exist between the various subgroups of teachers regarding their learning mindset perceptions and how those perceptions are put into practice. For instance, years of service was investigated with respect to promoting a growth or fixed mindset. I hypothesized that veteran teachers may have become more cynical and set in their ways in how they perceive student learning and therefore, possibly promote more of the fixed mindset practices in the classroom. On the other hand, I believe teachers new to the profession tend to enter the field of education with a hope and belief that they will have a profound impact on students. For this reason, I thought these teachers would be more likely to promote more growth mindset practices. Also compared were content teachers and special area teachers. My hypothesis with these groups was that core content teachers might promote more fixed mindset and special area teachers might promote more growth mindset practices. My reasoning for this hypothesis was my belief that the core content teachers might have developed a more fixed mindset view from years of assessing students and seeing a range from students who do well to those that struggle in their content area. I feel that special area teachers tend to be more open-minded and believe all students can achieve and learn if they try to apply themselves in their special area. Therefore, these teachers might have developed more of a growth mindset perspective with respect to their students' ability to learn in their special area. With respect to the subgroups of male and female, I was more curious to see if any differences existed, and I did not have a strong hypothesis one way or the other.

Cross-tabulation is estimated to be used "in more than 90% of all research analyses" to compare and analyze categorical variables (Qualtrics, 2011). A Chi-square analysis was also conducted to test for statistical significance of each cross-tabulation (Qualtrics, 2011). Chi-square is used to determine if the two variables being compared are independent of one another. If the variables are determined to be independent of one another, it can be determined that there

is no statistically significant relationship between them. If the two variables are determined to be dependent of one another, having a probability of chance observation at the .05 or 5% (p-value) level, it can be determined that there is statistical significance between the two variables (Qualtrics, 2011). This is the measure that was utilized for each cross-tabulation to determine whether a statistically significant relationship was indicated.

The following six cross-tabulations were conducted: *promotes growth or fixed mindset practices and gender; promotes growth or fixed mindset practices and years of experience; promotes growth or fixed mindset practices and content areas.* In survey items five and six there were a total of nine items that respondents indicated the degree to which they promote growth mindset classroom practices and eight items that respondents indicated the degree to which they promote fixed mindset classroom practices. For item five, respondents chose a response on a scale from *every day* to *never* (5 to 1). For each cross-tabulation analysis, responses of *every day* and *a few days a week* (5 or 4), as well as *few times a month, a few times a year,* and *never* (3, 2, or 1) were combined. For item six, respondents also responded on a scale from *very often to never* (5 to 1). Responses of *very often and often* (5 or 4), as well as responses from less than *often* to *never* (3, 2, or 1) were combined.

Across each of the items indicating the promotion of growth mindset or fixed mindset practices, each respondent's responses were summed. Respondents whose scores summed thirty-six or more indicated they promote growth or fixed mindset practices *a few times a week or more*. Respondents whose scores summed thirty-five or less indicated they promote growth or fixed mindset practices *less than a few times a week*.

For each of the cross-tabulations a p-value of .05 or less was required to indicate a statistically significant relationship between the variables being compared. In each of the six

cross-tabulations conducted, p-values were found to be greater than .05 indicating all variables compared were independent of one another. Therefore, no statistically significant relationship was found between the promotion of growth and fixed mindset practices and gender, years of experience, or content areas.

Tables 16, 17, and 18 present the results for each of the cross-tabulation analyses that were conducted. The original cross-tabulation tables generated in Qualtrics can also be found in Appendix G.

Table 16. Promoting a Fixed or Growth Mindset and Gender (n=40)

	Male	Female	p-value	Chi Square
Promotes a Growth Mindset A Few Times a Week or More	9	12		
Promotes a Growth Mindset Less Than a Few Times a Week	9	10	0.77	0.08
Promotes a Fixed Mindset A Few Times a Week or More	4	2		
Promotes a Fixed Mindset Less Than a Few Times a Week	14	20	0.25	1.34

Table 17. Promoting a Fixed or Growth Mindset and Years of Experience (n=40)

	0-15 Yrs.	16-30+ Yrs.	p-value	Chi Square
Promotes a Growth Mindset A Few Times a Week or More	8	13		
Promotes a Growth Mindset Less Than a Few Times a Week	8	11	0.80	0.07
Promotes a Fixed Mindset A Few Times a Week or More	3	3		
Promotes a Fixed Mindset Less Than a Few Times a Week	13	21	0.59	0.29

Table 18. Promoting a Fixed or Growth Mindset and Content Area (n=40)

	Core Content	Special Content	p-value	Chi Square
Promotes a Growth Mindset A Few Times a Week or More	16	5		
Promotes a Growth Mindset Less Than a Few Times a Week	12	7	0.37	0.81
Promotes a Fixed Mindset A Few Times a Week or More	4	2		
Promotes a Fixed Mindset Less Than a Few Times a Week	24	10	0.85	0.04

5.6 DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The inquiry question investigated in this chapter asked, *how do the selected secondary teachers operationalize their perceptions about learning mindsets through classroom and instructional practices?* The purpose of this inquiry question was to gain an understanding for how teachers are putting their learning mindset perceptions into practice in the classroom. This was investigated through teachers' responses to survey items asking them to reflect on their perceptions of classroom practices, feedback provided to students, how they have attempted to foster a growth mindset in students, as well as the challenges faced while attempting to foster a growth mindset in students.

The literature has provided support that certain practices help to promote a growth mindset in students and result in greater achievement (Aronson et al., 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Dweck, Walton, & Cohen, 2014: Blackwell et al., 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels et al., 2006; O'Leary & O'Leary, 1977; O'Rourke et al., 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine et al., 2004). However, there have been recent concerns expressed that teachers may have misunderstandings with respect to *how* they should be implementing growth mindset practices (Education Week Research Center, 2016). Carol Dweck (2015) expressed concerns that teachers are taking the research on growth mindset and only focusing on encouraging effort and not spending time teaching strategies that need to be coupled with effort for maximum achievement to occur. The literature has expressed that teaching strategies must coexist with effort for achievement to be maximized (Dweck et al., 2014; Pintrich & DeGroot, 1990). Although this study wasn't designed to investigate whether teachers are teaching these kinds of strategies, findings in this study clearly indicate that the group of teachers

surveyed report that they focus a lot on providing praise and encouraging effort. One hundred percent of respondents (n=40) reported they praise effort either *every day* or *a few times a week.* It is important to point out, however, that the word *praise* was presented in both growth and fixed mindset practices. An average of 35 (88%) respondents reported using the growth mindset *praise* practices and an average of 30 (75%) respondents reported using the fixed mindset *praise* practices weekly. The literature clearly indicates that providing feedback, such as praise, is a critical piece in the development of a growth mindset. The key to using feedback appropriately, however, is to promote a growth mindset in students is to link the feedback to the process by pointing out the effort that has led to achievement (Brophy,1981; Dweck, 2007; Blackwell et al., 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Resnick, 1995). One implication identified in this study is the fact that this group of teachers is using *praise* that promotes both growth and fixed mindset. This leads to a few questions. Do respondents understand the differences between the praise statements they are using with students? How many respondents are using both growth and fixed praise practices on a regular basis? Are respondents using the growth mindset practices with one group of students and the fixed practices with a different group of students? I recommend that these questions be considered and investigated in future research on this topic. I also recommend that instructional leaders pay close attention to the practice of praise as they conduct observations and classroom walkthroughs. Data should be collected on how and when the teacher is providing praise. Also, instructional leaders should gather data during observations and walkthroughs on whether teachers are teaching strategies along with the praise being given. It isn't enough to tell students they are doing a good job. Effective pedagogy coupled with robust content serves as the foundation of learning. To be most effective, praise needs to be centered on actual learning rather than a more general and unfocused

practice. Instructional leaders might add a critique of how praise is being used by teachers as they evaluate other aspects of pedagogy and content.

Like what was seen with the reported use of both growth and fixed mindset *praise*, respondents indicated the use of both growth and fixed mindset practices. However, there is clearly stronger use of growth mindset practices across all respondents. For instance, an average of 37 (93%) respondents reported the use of practices that promote a growth mindset on at least a weekly basis. Conversely, an average of 24 (60%) respondents reported the use of practices that promote a fixed mindset on a at least a weekly basis.

A similar comparison was seen with respect to how teachers reported their use of feedback with students. An average of 23 (58%) respondents reported using feedback that promotes a growth mindset when, on average only 12 (30%) respondents reported using feedback that promotes a fixed mindset. Based on these findings, it appears fair to say that this group of secondary teachers has reported a greater use of practices and feedback that promote a growth mindset versus practices and feedback that promote a fixed mindset.

Finding that this group of secondary teachers reports a greater use of growth mindset practices is encouraging as the literature clearly indicates that the use of growth mindset practices leads to greater achievement. For instance, attributing achievement to effort when providing feedback to students has been linked to improving a student's self-efficacy and leading to greater achievement (Brophy, 1981; Dweck, 2006, 2010; Blackwell et al., 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Resnick & Hall, 1985; Schunk, 1982, 1985; Valentine et al., 2004). It appears this group of secondary teachers is on the right track; however, a serious implication exists as teachers are using practices that promote both a growth and fixed mindset. Additional investigation is recommended to see if strategies are being taught and to see when,

how and with whom growth mindset practices are utilized. An important issue not addressed in this study is how teachers might be using these practices differently with different students. Although these teachers are reporting a stronger use of growth mindset practices, are they using those practices for all students? It is possible that they use the growth mindset practices often, but only with those students they feel deserve it. It is possible that there are students the teachers have given up on and that do not receive the growth mindset practices. I recommend that instructional leaders pay attention to the distribution of each practice during observations and walkthroughs. Feedback needs to be provided to teachers to alert them of any uneven distribution of these practice and to ensure that there is fair and equal use the practices that have been proven to promote a growth mindset. Lastly, I recommended that this group of teachers receive training on how classroom practices and feedback impact the learning mindset of their students. Research that shows the connections between developing a growth mindset and its impact on achievement should be shared.

Another note to make regarding findings in chapter five is that 100% (n=40) of respondents indicated that they believe integrating growth mindset practices will improve student learning, as well as improve their own instruction and classroom practices. Also, 62.5% (n=25) of respondents indicated that they have deeply integrated growth mindset into their practice. This finding will be reflected on and tied into findings in chapter six where discrepancies were found with respect to how respondents indicated the level of integration, personal knowledge of strategies, as well as their perceptions of the knowledge level other staff members have on this topic.

Lastly, although the cross-tabulations and chi square analysis did not show any statistically significant relationships between subgroups of teachers, I did analyze these findings

to see if there were any practically significant points that could be made. I found that length of teaching experience seemed not to be a factor in how frequently teachers practiced growth mindset with students. Surprising to me and not consistent with my hypothesis on the impact of experience, teachers with 0 – 15 years of experience had a slightly higher percentage that reported using fixed mindset practices *a few times a week or more*, 19% versus 12% respectively. Also, it was the more experienced teachers that reported a slightly higher percentage that use the growth mindset practices *a few times a week or more*, 54% versus 50% respectively. I can only hypothesize that maybe through experience teachers have learned which practices work best with students. This would be an interesting area to investigate further with a larger sample of teachers.

Similarly, there were no reported gender differences in the use of practices to promote growth mindset. However, there was a gender difference reported with males indicating a higher use of fixed mindset practices as compared to their female colleagues. More male teachers, 22% (n=4), versus only 9% (n=2) of female teachers reported using practices that promote a fixed mindset *a few times a week or more.* I can only hypothesize that maybe male teachers are more rigid in their thinking and expectations regarding student learning. I would recommend additional studies be conducted with larger samples of teachers to further explore and identify if there are any true differences between male and female perspectives on learning mindsets.

Lastly, as it relates to this sample of secondary teachers, my hypothesis on core content teachers and special area teachers was proven wrong. The core content teachers reported a much higher percentage of teachers, 57% (n=16), that use practices that promote a growth mindset *a few times a week or more.* Only 42% (n=5) of special area teachers reported using practices that promote a growth mindset *a few times a week or more.* As an experienced administrator, I

suspect that this difference may be influenced by various content-specific areas and perceptions of students. Future studies on the different perspectives of these subgroups of teachers would be interesting and may provide some insightful information regarding how teachers develop their perceptions of learning mindsets.

In summary, this group of secondary teachers has provided the indication that they believe the implementation of growth mindset practices is important to learning and instruction. As one might expect, since they believe these practices are important, there was a strong indication that growth mindset practices are implemented by these teachers. However, they also indicate a somewhat strong use of fixed mindset practices. As was stated earlier, this leads to additional questions that would be helpful to investigate about exactly when, how and with whom this group of teachers is using each practice. The specifics about when, how and with whom teachers use these practices would provide a greater understanding of whether the practices are truly being utilized in a manner that will help cultivate a growth mindset.

6.0 TEACHER PERCEPTIONS FINDINGS, ANALYSIS, AND DISCUSSION

6.1 INTRODUCTION

Survey items eleven through sixteen sought to provide data in response to the second question investigated which asked, h*ow do the selected secondary teachers perceive learning mindsets?* Prior to responding to these items, respondents were provided with a definition of growth mindset. The definition stated that *growth mindset is the belief that intelligence can be developed through effort rather than being fixed or static* (Education Week Research Center, 2016). Following this definition, respondents were presented with items asking them how familiar personnel at their schools is with the concept of growth mindset and how well different personnel have done with implementing growth mindset. Additionally, respondents were presented with items asking them to assess the importance of various factors related to student success in school. It is important to point out that only thirty-eight of the forty participants completed these survey items.

6.2 PERCEPTIONS RELATED TO SELF AND SCHOOL PERSONNEL

Survey items eleven and sixteen asked respondents to reflect on the concept of growth mindset and how familiar personnel at the school is with the concept, as well as how well they have done

fostering the concept. Each of these survey items presented either a four or five-point scale. A four-point scale was presented when items asked the degree to which respondents *agreed* with an item. A five-point scale was presented when items asked to indicate a degree of *familiarity, importance, or ease.* For reporting purposes in this chapter, cumulative percentages for responses of *four or five*, as well as *one*, *two* or *three* will be reported. Also, cumulative percentages for *strongly agree* and *agree,* as well as *disagree* and *strongly disagree* will be reported.

Item seventeen asked respondents how familiar they feel they are, their administrator and other teachers in the building with the concept of growth mindset. Table 19 presents the percentage of respondents that felt various personnel at the school were familiar with the concept of growth mindset.

Table 19. Reported Familiarity with the Concept of Growth Mindset (n=38)

	Very Familiar to Familiar		**Somewhat Familiar to Not at All Familiar**	
	%	**n**	**%**	**n**
A. You personally	65.8	25	34.2	13
B. Administrator at your school	63.1	24	36.7	14
C. Teachers in your school	39.5	15	60.6	23

Respondents had the choice of selecting from a scale of *very familiar (5)* to *not at all familiar (1)* to indicate how familiar they felt they, their administrator, and the teachers in their building are with the concept of growth mindset. Most teachers, 65.8% (n=25) felt they are familiar with growth mindset. Sixty-three percent (n=24) felt their administrator was familiar. Interestingly, although most teachers felt they were familiar with the concept, only 39.5% (n=15) felt their colleagues were familiar.

Item sixteen asked respondents to consider how much they agreed or disagreed with a set of statements about growth mindset. Respondents had four choices. Two of these choices indicated a level of agreement and two indicated levels of disagreement. In table 20 the levels of agreement and disagreement have been combined and indicate a cumulative frequency percent of respondents that *agreed* or *disagreed* with each statement.

Table 20. Percent of Agreement or Disagreement About Growth Mindset Statements (n=38)

	Agree		**Disagree**	
	%	n	%	n
A. I am good at fostering a growth mindset in my students.	100.0	38	-	-
B. I think that fostering a growth mindset in students is part of my job duties and responsibilities.	100.0	38	-	-
C. I believe all students can and should have a growth mindset.	100.0	38	-	-
D. I think administrators at my school are good at fostering a growth mindset in students.	94.7	36	5.6	2
E. I think other teachers at my school are good at fostering a growth mindset in students.	92.1	35	7.9	3
F. I have adequate solutions and strategies to use when students do not have a growth mindset.	81.6	31	18.42	7

Responses to these items indicate that this group of teachers feels rather confident that they, as well as others in the school are good at fostering a growth mindset in students. One hundred percent (n=38) feel all students should have a growth mindset, that it is their responsibility to foster a growth mindset in students, and that they do a good job fostering a growth mindset in students. Most respondents also felt that the building administrator and other teachers are good at fostering a growth mindset; 94.7% (n=36) and 92.1% (n=35) respectfully. Interestingly, although most teachers felt they are good at fostering a growth mindset with students, only 81.6% (n=31) reported having the strategies necessary to foster a growth mindset.

Item twelve asked respondents to indicate how important they feel different factors are for student achievement. Respondents could indicate importance on a scale from *very important*

(5) to *not important at all (1)* for each factor. Table 21 presents the cumulative frequency percentage of response to each factor.

Table 21. Factors Indicated as Important for Achievement (n=38)

	Very Important - Important		**Somewhat Important – Not at All Important**	
	%	n	%	n
A. School climate	100.0	38	-	-
B. Student engagement and motivation	97.4	37	2.6	1
C. Teaching quality	97.3	37	2.6	1
D. Use of growth mindset with students	97.3	37	2.6	1
E. Parental support and engagement	94.8	36	5.3	2
F. School safety	92.1	35	7.9	3
G. Social and emotional learning	92.1	35	7.9	3
H. School discipline policies	86.8	33	13.1	5
I. Family background	71.1	27	29.0	11

In looking at cumulative frequency percentages for responses of *very important* or *important* it can be stated that 90% (n=34) or more of the respondents found all but one of these factors to be either *very important* or *important* for students to be able to achieve. The factor indicated as the least important for achievement was *family background. Family background* was only indicated to be *very important* or *important* by 71.1% (n=27) of the respondents.

6.3 PERCEPTIONS RELATED TO STUDENT ATTITUDES AND SUCCESS

Item thirteen asked teachers to reflect on their perceptions of student attitudes and beliefs as they relate to student success. Respondents could choose on a scale from *strongly agree* to *strongly disagree.* To present findings for this item, a cumulative frequency percent will be given for responses indicating a level of agreement and for those indicating a level of disagreement. Table

22 presents the percentage of respondents *agreeing* or *disagreeing* with each student attitude or belief.

Table 22. Percent of Agreement or Disagreement on Student Attitudes & Beliefs (n=38)

	Agree		**Disagree**	
	%	n	%	n
A. They can find help at school when they have difficulties	100.0	38	-	-
B. Their academic abilities will increase through effort	97.4	37	2.6	1
C. They have the ability to learn challenging material	97.4	37	2.6	1
D. They belong in the school community	97.4	37	2.6	1
E. Their work in school has value for them	94.7	36	5.3	2
F. They can be successful in school	94.7	36	5.3	2
G. They can learn from failure and are willing to try new things in school	92.1	35	7.9	3
H. Doing well in school will lead to a good career	92.1	35	7.9	3
I. Administrators and teachers know students personally	89.5	34	10.5	4
J. Administrators and teachers treat all students equally and fairly	87.3	33	13.2	5
K. They have some autonomy and choice in the topics they study	68.4	26	31.6	12

The findings from item twelve indicate that 92% (n=35) or more of the respondents felt that all but three of the eleven student attitudes or beliefs are important for student success. To summarize, at least 92% (n=35) of teachers agreed that students who *believe in their ability, believe school is important for their future, feel they belong, and believe that effort is important* are all attitudes and beliefs that will lead to student success. Although there was still relatively strong agreement for three of the attitudes and beliefs, the three that received the most response of disagreement were *the student being known personally by school personnel (10.5%, n=4), being treated equally and fairly (13.2%, n=5),* and *having choice in topics of study (31.6%, n=12).*

Item fourteen asked teachers how easy or difficult it is to teach students with certain characteristics. Four different characteristics were presented and responses were given on a scale

ranging from *very easy (5)* to *very difficult (1).* To explain these findings, a cumulative frequency percent will be given for responses of *four* or *five*, which would indicate it is *easy* to teach students with that characteristic. Also, a cumulative frequency percent will be presented for responses of a *three* or less, which indicate the characteristic presents *some level of difficulty* when teaching a student possessing that characteristic. Table 23 presents the cumulative frequency of response for each student characteristic.

Table 23. How Easy or Difficult it is to Teach Students with Each Characteristic (n=38)

	Very Easy to Easy		**Somewhat Difficult to Very Difficult**	
	%	n	%	n
A. Students who have grit and perseverance	97.4	37	2.6	1
B. Students who believe that intelligence is malleable	86.8	33	13.2	5
C. Students who have innate ability in the subject you teach	76.3	29	23.7	9
D. Students who believe that intelligence is fixed or static	18.4	7	81.6	31

The characteristics listed in A and B for this item indicate characteristics of a growth mindset. Teachers responded most positively to items A (97.4%, n=37) and B (86.8%, n=33) indicating they felt students possessing these growth mindset characteristics were easiest to teach. Teachers clearly felt that students with a fixed mindset were more difficult to teach (86.8%, n=31).

Item fifteen asked teachers to indicate their level of agreement regarding how much they felt a variety of items were associated with a growth mindset. Respondents could choose on a scale from *strongly agree* to *strongly disagree*. Table 24 presents the cumulative frequency percent of *agreement* for each item, indicating the degree to which the teachers felt the item was associated with growth mindset.

Table 24. Percent Agreement with Factors Associated with Student Growth Mindset (n=38)

	Agree		Disagree	
	%	n	%	n
A. Good attendance	100.0	38	-	-
B. Persistence in schoolwork	100.0	38	-	-
C. Excitement about learning	100.0	38	-	-
D. Consistent completion of homework assignments	97.4	37	2.6	1
E. High levels of effort on schoolwork	97.4	37	2.6	1
F. Frequent participation in class discussions	94.7	36	5.3	2
G. Frequent participation in extracurricular activities	94.7	36	5.3	2
H. Good course grades	89.4	34	10.4	4
I. High standardized test scores	71.0	27	28.9	11

Overall, 71% (n=27) or more of the respondents *agreed* that each of these factors are associated with student growth mindset. However, three of these factors stand out as 100% (n=38) of respondents felt they were factors associated with student growth mindset: *good attendance, persistence in schoolwork,* and *excitement about learning.* The factor respondents *agreed* with as the least associated with a growth mindset was *high standardized test scores* (71.0%, n=27).

6.4 DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The inquiry question analyzed in this chapter asked, *how the selected group of secondary teachers perceive learning mindsets?* This question sought to provide an understanding of what these teachers found to be important with respect to student characteristics and other factors that might play a critical role in student success. The researcher believed that responses to these

items should provide insight as to perceptions these teachers hold and whether these perceptions align with growth or fixed mindset.

Essentially, the survey items for this inquiry question explored two main areas. First, there were survey items asking teachers to report their perceptions of staff familiarity and effectiveness with respect to growth mindset. Second, there were survey items that had teachers report on their perceptions of factors related to student attitudes and characteristics that lead to student success. There are strong conclusions that can be drawn from these data, but some interesting contradictions or inconsistencies will also be discussed.

One conclusion that can be identified from these data is that 100% (n=38) of respondents believe that fostering a growth mindset is part of their job and responsibilities, believe that all students should have a growth mindset, and feel they are good at fostering a growth mindset. However, this is inconsistent with responses given to a few of the other items in the survey. In item sixteen, although 100% (n=38) reported they are good at fostering a growth mindset, only 81.6% (n=31) feel they have adequate strategies and solutions to foster a growth mindset. In item seven, 62.5% (n=25) of respondents indicated they have deeply integrated the concept of growth mindset. Also, in item seventeen 65.8% (n=25) of respondents indicated they are familiar or very familiar with the concept of growth mindset. One implication is the inconsistency identified around how much confidence this group of secondary teachers has with respect to how good they are at fostering a growth mindset, yet not all report they are familiar with the concept. Also, not all have reported to have deeply integrated the concept and when they have integrated the concept, not all have adequate strategies to do so. These conclusions lead to a few thoughts and/or questions. First, when presented with something that sounds like *good* practice and *good* for students, the researcher believes that teachers have a natural tendency

to believe they are doing those things and that they are good at doing them. A deeper investigation using classroom observations is recommended as this would be helpful in gathering more data to show how deeply teachers are truly fostering growth mindset. This would also help to identify the additional strategies and solutions teachers may need to help them foster growth mindset with students.

Another interesting finding was the discrepancy between how respondents reported their personal familiarity and effectiveness with growth mindset and that of their colleagues. First, 65.8% (n=38) felt they were familiar to very familiar with the concept of growth mindset, yet only 39.5% (n=15) felt other teachers in the school were familiar or very familiar. Also, although 100% (n=38) reported they are good at fostering a growth mindset, only 92.1% (n=35) believed their colleagues were good at fostering a growth mindset. The implication drawn from these findings is that this group of secondary teachers may be working too much in their own silos and not interacting enough around this topic. Further investigation is recommended to understand how much sharing is occurring, what kinds of professional learning community meetings, as well as professional development is taking place on the concept of growth mindset. I would recommend that instructional leaders assist teachers in developing a strong professional learning community on the topic of growth mindset. We will see later, in response to the professional development survey items, that teachers are interested in learning more about growth mindset and are interested in learning specifically how growth mindset practices relate to their content area. A professional learning community is an approach that will provide teachers with time to collaborate, reflect, and share with teachers in their department or grade. Lastly, since teachers are reporting such confidence with fostering a growth mindset, I would also

suggest that instructional leaders look for those that are in fact doing a good job at promoting a growth mindset and have these teachers share examples that are working well for them.

Respondents were asked to report their perceptions with respect to factors associated with growth mindset and important for student success. The literature indicates that self-efficacy, effort, engagement, and motivation are necessary factors that lead to effort and achievement (Bandura, 1997; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Resnick & Hall 2000; Valentine et. Al, 2004). It can be concluded that this group of teachers value these same factors. One hundred percent (n=38) of respondents indicated that persistence, as well as excitement about learning to be factors associated with growth mindset. Also, 97.4% (n=37) indicated high levels of effort on school work as a factor associated with growth mindset. Teachers were also able to identify attitudes and beliefs that are consistent with the literature and associated with having a growth mindset. Ninety-two percent (n=35) of teachers identified the following student attitudes needed for success: *persistence, effort, be challenged, learn from failure, and having self-efficacy*. From these findings, it can be concluded that this group of secondary teachers has a strong understanding of the factors that need to be present in their students for them to be successful. It is recommended that school leaders focus professional development on helping teachers understand their role in helping students develop these attitudes and characteristics by using growth mindset practices in the classroom.

Although it was concluded this this group of secondary teachers has a good grasp of factors associated with the concept of growth mindset, as well as what needs to be present in students for them to be successful, a question is raised due to how respondents responded to items asking about grades and standardized test scores. The literature indicated that having growth mindset characteristics leads to greater achievement (Dweck, 2006, 2008, 2010; Dweck

et al., 2014; Blackwell et al., 2007; Mangels et al., 2006; O'Rourke et al., 2014; Pintrich & DeGroot, 1990; Resnick & Hall, 2005; Robertson-Kraft & Duckworth, 2013; Schunk, 1982, 1985; Valentine et al., 2004). However, an implication identified is that this group of teachers is not making the connection between factors and characteristics associated with growth mindset and the achievement aspect of growth mindset as indicated in the literature. Only 89.4% (n=34) agreed that good course grades and 71.0% (n=27) agreed that high standardized test scores were associated with student growth mindset. This conclusion, like earlier conclusions, leads to the speculation that this group of teachers may need to be engaged in further discussion and learning around the concept growth mindset. This will be explored and discussed further at the end of chapter seven, which focuses on the training and professional development this group of teachers has received and wishes to receive on the topic of learning mindsets.

7.0 PROFESSIONAL DEVELOPMENT FINDINGS, ANALYSIS, AND DISCUSSION

7.1 INTRODUCTION

Survey items seventeen through twenty-one sought to provide data in response to the third inquiry question investigated, which asked, *what is the nature of the selected secondary teachers' professional development related to learning mindsets?* The purpose of asking this question was to gain a deeper understanding of the training this selected group of teachers has received on the concept of growth mindset, where this training has come from, and what topics they feel they have learned about. Additionally, respondents were asked to provide insight regarding the areas they desire more training to help them feel more confident and comfortable when attempting to foster a growth mindset with students. These findings will be helpful in two ways. First, the findings will provide some insight and background about how respondents responded to survey items addressing the first two inquiry questions that were investigated. Second, the findings will be helpful to the researcher as a practitioner who seeks to develop professional development that assist teachers in developing a culture that fosters a growth mindset with students.

7.2 PROFESSIONAL DEVELOPMENT RECEIVED

Survey items seventeen and nineteen asked respondents to report where they have received training on the concept of growth mindset, as well as the extent to which they have received professional development on this concept. Item seventeen first asked respondents to report the degree to which they have received training on this concept, as well as if they desired more training. Thirty-eight respondents provided a response to this survey item. Table 25 presents the percentage of response for each level of training received and desired.

Table 25. Growth Mindset Training Received and Desire to Receive (n=38)

	%	n
A. I have had no training and want some more	52.6	20
B. I have had some training and want more	26.3	10
C. I have had some training and do not want more	18.4	7
D. I have not had training and do not want any	2.6	1

To analyze these data, I combined responses that indicated receiving training versus not receiving training, as well as those reporting the desire for more training versus those not desiring any further training. The percentage of respondents that reported they have received some training was 44.7% (n=17) and the percentage of respondents who have not received any training was 55.2% (n=21). The percentage of respondents that reported wanting more training was 78.9% (n=30) and the percentage of respondents that reported not wanting any more training was 21.0% (n=8).

Item nineteen asked respondents to indicate where they have received training to prepare them to address student growth mindset. Two choices were provided: *pre-service training or in-service* and *professional development training*. Respondents were presented a scale from *strongly agree* to *strongly disagree* in which to provide a response to each item. Findings will be

grouped and cumulative frequency percentages reported for *agree* and *disagree.* It is important to note that only thirty-seven respondents responded to the first item and only thirty-five responded to the second item. Table 26 presents the percentage of response for each area of receiving training on the concept of student growth mindset.

Table 26. Where Respondents Have Received Training

	Agree		**Disagree**		
	%	n	%	n	Total n
A. My in-service training and professional development have prepared me to address student growth mindset in my instruction	54.3	19	45.7	16	35
B. My pre-service education and training have prepared me to address student growth mindset in my instruction	54.1	20	45.9	17	37

For both pre-service item and in-service/professional development, approximately half of respondents indicated they *agreed* and approximately half indicated they *disagreed* that each area of training has prepared them to address student growth mindset in their instruction.

7.3 GROWTH MINDSET TOPICS ADDRESSED IN PROFESIONAL DEVELOPMENT

Item eighteen asked respondents to reflect on the growth mindset topics that have been addressed in professional development they have received. Respondents could respond to each topic indicating whether or not the topic has been addressed in their professional development. Respondents also had the option of choosing *other* and writing in a response. Table 27 presents the frequency percentage reported for each topic.

Table 27. Growth Mindset Topics Addressed in Professional Development (n=38)

	%	n
A. Encouraging students to try new strategies when they are struggling to learn a concept	60.3	23
B. Helping students see error or failure as an opportunity to learn and improve	39.5	15
C. Developing your own classroom-based assessments to capture growth mindset	31.6	12
D. Using growth mindset with specific student groups (e.g., students with disabilities)	29.0	11
E. Other (please specify):	23.7	9
F. Collaborating with colleagues to teach using growth mindset	18.4	7
G. Helping students understand that the brain is like a muscle and physically changes with training	15.8	6
H. Curriculum materials and resources to teach growth mindset	15.8	6
I. Using growth mindset to teach state standards in English Language Arts and literacy	7.9	3
J. Using growth mindset to teach standards in science	5.3	2
K. Using growth mindset to teach state standards in mathematics	5.3	2

These findings indicate that the most popular topics addressed in professional development are those that would be considered most directly related to developing a growth mindset in students (Brinko, 1993; Brophy,1981; Dweck, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Dweck, 2006; Kamins & Dweck, 1999; Mueller & Dweck, 1998; Resnick, 1995). Those topics are *teaching students to use new strategies* and *helping students see failure as an opportunity*. These topics were indicated by 60.3% (n=23) and 39.5% (n=15) of respondents respectively. The topics that were indicated to be addressed the least in professional development were those associated with individual subject areas. Reporting *other* and writing in a response was indicated by 23.7% (n=9) of the respondents. The responses written in for *other* were mostly *no training received* and one respondent indicated *cooperative learning strategies* as a topic learned in professional development.

7.4 SOURCES OF GROWTH MINDSET PROFESSIONAL DEVELOPMENT

Item twenty asked respondents to report how much they have used different sources to learn about growth mindset. For each source, respondents responded on a scale from *a lot (5)* to *not very much (1).* Additionally, respondents could report that they *never used the source.* Respondents also had the opportunity to choose *other* and write in a source they have used to learn about growth mindset. To report the findings for item twenty, a cumulative frequency percent will be reported for a *four* or *five* indicating the source has been used *quite a bit* or *a lot.* A cumulative frequency percent will be reported for a response of one, *two,* or *three* indicating the source has been used *somewhat* to *not very much.* Also, a frequency percent will be reported for the percent of respondents indicating they have *never used the source.* Table 28 presents the percent of response reported by respondents for each source.

Table 28. Sources Used to Learn About Growth Mindset (n=38)

	Used A Lot or Quite a Bit		**Used Somewhat to Not Very Much**		**Never Used**	
	%	**n**	**%**	**n**	**%**	**n**
A. Administrators at your school	44.7	17	39.5	15	15.8	6
B. Teachers at your school	39.6	15	44.7	17	15.8	6
C. Homemade or DIY resources found on the internet	31.6	12	55.3	21	13.2	5
D. Courses, trainings, or professional development	21.1	8	60.6	23	18.4	7
E. District personnel	18.4	7	60.6	23	21.1	8
F. Professional association	18.4	7	63.2	24	31.6	12
G. News media (print or on-line)	18.4	7	50.0	19	31.6	12
H. Homemade or DIY resources found in books	13.2	5	55.3	21	31.6	12
I. National education research or advocacy organization	7.9	3	63.2	24	29.0	11
J. District website, publications, or communication	7.9	3	60.6	23	31.6	12
K. Social media	7.9	3	47.3	18	44.7	17
L. Other (please specify)	7.9	3	7.9	3	84.2	32
M. State department website, publication, or communication	5.3	2	63.2	24	31.6	12
N. For-profit company	2.6	1	52.6	20	44.7	17

The findings for item twenty indicate that the most used resources to learn about growth mindset are the *administrator at the school (44.7%, n=17), teachers at the school (39.6%, n=15),* and the i*nternet (31.6%, n=12).*

7.5 DESIRES FOR FUTURE PROFESSIONAL DEVELOPMENT

Item twenty-one asked respondents to indicate the areas of professional development that would help them feel better prepared to foster a growth mindset with their students. Table 29 presents the frequency percent of response for each area of professional development.

Table 29. Desires for Future Professional Development (n=38)

	%	n
A. More information about how growth mindset changes expectations for my instructional practice	57.9	22
B. More information about how growth mindset changes expectations for students	57.9	22
C. Curricular resources aligned to growth mindset	57.9	22
D. More time for training and professional development	57.9	22
E. More planning time	50.0	19
F. More collaboration time with colleagues	44.7	17
G. Assessments aligned to growth mindset	39.5	15
H. Other (please specify)	2.63	1

The findings indicated by data provided in item twenty-one indicate that 58.0% (n=22) of respondents wish to receive more information on *how growth mindset changes instruction, changes student expectations,* as well as *resources aligned to growth mindset.* Additionally, respondents indicated a desire for having *more time for professional development* (57.9%, n=22) and for *more planning time* (50%, n=19).

7.6 DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The inquiry question analyzed in this chapter asked, *what is the nature of the selected secondary teachers' professional development related to learning mindsets?* This question sought to gain a deeper understanding of the training this selected group of teachers has received on the concept of growth mindset, where this training has come from, and what topics they feel they have learned about. Additionally, respondents were asked to provide insight regarding the areas they desire more training to help them feel more confident and comfortable when attempting to foster a growth mindset with students.

Findings related to training and professional development lead to the conclusion that additional training on the concept of growth mindset is needed. About half of the respondents indicated they have received training in their preservice training and about half indicated they have received training through in-service and professional development. However, this was contradicted when 55.2% (n=21) of respondents also indicated they have not received growth mindset training and 78.9% (n=30) of respondents indicated that they wish to receive more growth mindset training. It is speculated that this discrepancy exists because teachers feel the concept of growth mindset has been touched upon or referenced in different trainings, but it has not been a specific topic or initiative in previous training or professional development.

With respect to the sources this group of teachers have used to learn about growth mindset, 50% (n=20) of respondents indicated they have received some degree of training from thirteen of the fourteen sources presented. Close to 70% (n=27) indicated they have learned about growth mindset from seven of the fourteen sources presented. Although the most frequently cited source was administrators at the school and other teachers at the school, these findings reinforce the speculation that the concept of growth mindset has not been a clear topic

or initiative for this group of teachers. The implication that exists with growth mindset not being a clear initiative and topic of learning for these teachers is that there will be inconsistencies around understanding and implementation. It is recommended that administrators working with this group of teachers initiate professional development, as well as opportunities to collaborate with colleagues around the concept of growth mindset. As I recommended earlier, a professional learning community is an excellent way to get teachers talking about, reflecting on, and sharing strategies related to growth mindset. The professional development literature reviewed showed that the dedicated and sustained time for reflection on practice provided by a professional learning community is most effective in changing practice (DuFour & Eaker, 1998; Gusky & Yoon, 2009; Schmoker, 2006).

With respect to the exposure this group of teachers has had to topics related to growth mindset, it can be concluded that more information is needed around how to use growth mindset with students and specifically within each of the content areas. Less than 30% (n=11) of respondents indicated that growth mindset has been a topic addressed in these areas. Also, 57.9% (n=22) of respondents have indicated a desire for more professional development related to how growth mindset can change their instructional practices, change expectations for students, and be aligned to curriculum.

The literature reviewed on professional development indicated that the most effective professional development has a clearly defined and communicated focus (Desimone, 2003; Fullan, 1993; Gusky, 2003). Also, Elmore (2002) emphasized that professional development initiatives need to have a clear structure and be sustained over time to effectively impact changes in instruction. It is recommended that instructional leaders working with this group of teachers develop a clearly defined initiative and plan for providing professional development on the

concept of growth mindset. The best model for delivering this professional development would be through professional learning communities. The professional learning community will create the cycle of input, feedback, follow-up, and reflection needed to have growth mindset practices understood and implemented in a way that will create a change in practice and have an impact on student learning (DuFour & Eaker, 1998; Gusky & Yoon, 2009; Schmoker, 2006).

Lastly, the following suggestions emanate from my experience as a teacher and administrator, and have been reinforced through this inquiry and my perusal of the literature. I strongly believe that instructional leaders need to take a holistic approach if interested in developing a growth mindset in students. This means working to create a building-wide growth mindset culture. One way to do this is to involve students in creating goals, working toward these goals, and actively monitoring their progress toward these goals, which has been proven to increase achievement (Dweck, Walton, & Cohen, 2014). I would also get teachers involved in creating that building-wide culture by having them teach explicit lessons on growth mindset to students, as well as create bulletin boards to remind students of growth mindset qualities and characteristics. Lastly, it is critical to continually provide teachers with reminders and information on the topic of growth mindset so that it remains fresh and at the forefront of their thoughts. This can be done by providing short but impactful quotes, pictures, or charts related to growth mindset on weekly memos to the staff. These constant reminders will keep the discussion going, as well as provide teachers with food for thought that they can utilize in their practice with students.

8.0 COMPARING THE HADLEY, NESTOR, & EDUCATION WEEK STUDIES

The original study conducted with this survey instrument was conducted by Education Week, and surveyed a national sample of 603 teachers. Permission was granted by Education Week to both me and a fellow doctoral student, Ashley Nestor. While working on our doctoral work and attending the same study group, we discovered that our research and inquiry questions were identical. Nestor is the Director of Elementary Education at a school district in a suburb of Pittsburgh, PA. Nestor and I conducted the same inquiry; however, Nestor conducted her study at one of the elementary schools in her school district, and I conducted mine at a junior high school. With permission from Education Week, we both made modifications to the Education Week Survey (2016) to conduct our studies. The purpose of this chapter will be to compare the results of this study, Nestor's study, and the Education Week study.

After conducting our surveys and gathering our data, Nestor and I chose the following co-investigatory items to compare. Items were chosen from each of our inquiry questions and survey sections: practices, perceptions, and professional development. The co-investigatory questions that will be compared are shown in Table 30.

Table 30. Co-investigatory Questions: Hadley, Nestor, Education Week

Hadley Survey Item #	Nestor Survey Item #	Education Week Survey Item#	Inquiry Category	Survey Item
#5	#10	#6	Practices	This school year, how OFTEN have you engaged in the following practices in your typical classroom?
#6	#11	#7	Practices	*Hadley Wording* The following list contains statements teachers sometimes make to students. Reflecting on your communication with students in your typical classroom, how often might you use each statement or a similar variation of each statement? *Nestor & Education Week Wording* The following list contains statements teachers sometimes make to students. How effective are these statements at encouraging students to learn with a growth mindset?
#11	#4	#5	Perceptions	How familiar do you think the following people are with the concept of growth mindset in K-12 education?
#15	#8	#8	Perceptions	To what extent do you agree or disagree that the following are associated with a student growth mindset?
#16	#9	#21	Perceptions	To what extent do you agree with the following statements?
#18	#17	#14	Professional Development	Which of the following topics have been addressed in your training and professional development on growth mindset?
#20	#19	#17	Professional Development	How much have you learned about growth mindset from the following sources?
#21	#20	#16	Professional Development	Which of the following would help you feel better prepared to foster a growth mindset in your students?

8.1 PRACTICES COMPARISON

To compare findings across these three studies, a cumulative frequency percent of responses indicating agreement (*strongly agree* or *agree*) or a *four* and *five* from any item with five-point scale will be reported from each survey. The first items presented will represent responses to survey items that investigated teacher perceptions on learning mindsets in relation to classroom practices. Practices will be chosen to illustrate a comparison of data across the three studies. Table 31 presents the comparison data for the question that asked how often the respondent has engaged in different practices in their typical classroom.

Table 31. Comparison of Practices and Feedback that Promote Growth or Fixed Mindset

		Promotes Which Mindset	Ed Week %	Nestor %	Hadley %
A.	Praising students for their effort	Growth	94.0	100.0	100.0
B.	Encouraging students to try new strategies	Growth	91.0	100.0	97.5
C.	Encouraging students who are already doing well to keep trying to improve	Growth	92.0	100.0	92.5
D.	"Great job. You must have worked really hard on this."	Growth	81.0	92.5	82.5
E.	"You really studied for your test and your improvement shows it."	Growth	86.0	97.5	68.5
F.	Praising students for earning good scores or grades	Fixed	58.0	50.0	80.0
G.	Telling students that it is alright to struggle, not everyone is good at a given subject	Fixed	66.0	92.5	65.0
H.	Praising students for intelligence	Fixed	49.0	53.9	57.5
I.	"See, you are good at this subject. You got an "A" on your last test."	Fixed	32.0	30.0	37.5
J.	"Look how smart you are."	Fixed	25.0	27.5	35.0

The comparison of these data indicate that teachers from each of these studies perceive their practices to be more in line with practices that promote a growth mindset rather than a fixed mindset. However, since all three studies reveal that 50.0% or more of the teachers surveyed indicate the use of at least three of the fixed mindset practices *a few times a week or more*, it is fair to say that the teachers surveyed across all three studies may need additional professional development to help them understand how the use of each kind of learning mindset practice might impact the learner.

Table 32 illustrates a comparison of how teachers in each study reported their use of feedback to students that promote either a growth or fixed mindset.

Table 32. Comparison of Feedback that Promotes Growth or Fixed Mindset

	Promotes Which Mindset	Ed Week	Nestor	Hadley
		%	%	%
A. "Great job. You must have worked really hard on this."	Growth	81.0	92.5	82.5
B. "You really studied for your test and your improvement shows it."	Growth	86.0	97.5	68.5
C. "See, you are good at this subject. You got an "A" on your last test."	Fixed	32.0	30.0	37.5
D. "Look how smart you are."	Fixed	25.0	27.5	35.0

The general statement can be made that the teachers across all three studies clearly indicate a more frequent use of feedback with students that promotes a growth mindset. Across all three studies it can be stated that teachers did not report use of the feedback statements that promote a fixed mindset as they did in response to the practices that promote a fixed mindset. Another observation is that a greater percentage of teachers surveyed in the Nestor study consistently report frequent use of all the practices and feedback that promote a growth mindset. This may be the result of the fact that Nestor, in her role as Director of Elementary Education, has provided significant professional development around learning mindsets. This will also be illustrated in the next section, which reports the comparisons of teacher perceptions of learning mindsets.

8.2 PERCEPTIONS COMPARIOSN

This next section will present data from all three studies related to how teachers in each study perceive learning mindsets. Table 33 presents data in response to teachers being asked to indicate how familiar certain personnel at their schools are with growth mindset.

Table 33. Comparison of Familiarity with Growth Mindset

	Ed Week	Nestor	Hadley
	%	%	%
A. You personally	77.0	85.0	65.8
B. Administrators at your school	56.0	95.0	63.1
C. Teachers at your school	39.0	82.5	39.5

As we see in table 30, the teachers in Nestor's study clearly indicate that administrators at their school are the most familiar with growth mindset (95.0%). One trend that is seen between the Hadley and Education Week study is that teachers seem to indicate a greater confidence in their own familiarity with growth mindset, yet don't believe the other teachers at their school are very familiar with the concept. Nestor's survey yielded different results in that teachers perceived their own familiarity with growth mindset to be like the familiarity of the other teachers at their school. This is most likely due to this group of teachers receiving professional development on the topic and therefore having more awareness of how familiar other teachers at their school should be with the concept of growth mindset.

Table 34 illustrates how teachers across all three studies reported their personal perceptions about learning mindsets.

Table 34. Comparison of Agreement with Each Statement

	Ed Week	Nestor	Hadley
	%	%	%
A. I'm good at fostering growth mindset with students	84.0	97.5	100.0
B. I think other teachers at my school are good at fostering a growth mindset	62.0	90.0	92.1
C. I have adequate solutions and strategies to use when students do not have a growth mindset	50.0	82.5	81.6

One observation made across all three studies is that teachers consistently report a greater confidence in their own ability versus the ability of their colleagues to foster a growth mindset with students. Also, in all three studies teachers report confidence in their own ability to foster a

growth mindset with students, yet they don't indicate as strongly when it comes to having adequate solutions and strategies to help them foster a growth mindset with students. This appears contradictory and may indicate that these teachers need more professional development to assist them in developing a clearer understanding of learning mindset practices and strategies, as well as the differences between those that promote a growth or fixed mindset in students.

Lastly, teachers in each study were asked what factors they felt were most associated with a student's growth mindset. Table 35 presents the percent of agreement respondents indicated for four of these factors.

Table 35. Comparison of Agreement with Factors Associated with Student Growth Mindset

	Ed Week	**Nestor**	**Hadley**
	%	**%**	**%**
A. Persistence in schoolwork	99.0	100.0	100.0
B. Excitement about learning	99.0	97.5	100.0
C. Good course grades	63.0	80.0	89.4
D. High standardized test scores	28.0	47.5	71.0

Greater than 97.0% of respondents in all three studies clearly agreed that *persistence and excitement about learning* are the two factors they most associate with students having a growth mindset. The other two factors presented in table 35 indicate a consistent finding across all three studies in that all teachers surveyed are not making a connection between students having these growth mindset characteristics and their impact on increasing achievement. The literature indicates that having growth mindset characteristics leads to greater achievement (Dweck, 2006, 2008, 2010; Dweck et al., 2014; Blackwell et al., 2007; Mangels et al., 2006; O'Rourke et al, 2014; Pintrich & DeGroot, 1990; Resnick & Hall, 2005; Robertson-Kraft & Duckworth, 2013; Schunk, ,1982, 1985; Valentine et al., 2004). This finding also indicates that all teachers, although they can identify characteristics that should result in higher achievement, more

professional development is needed to foster a deeper understanding and the use of practices that result in developing these student characteristics. With a deeper understanding of growth mindset practices, teachers should make the connection between how a growth mindset helps to foster achievement.

8.3 PROFESSIONAL DEVELOPMENT COMPARISON

This next section will present data from all three studies related to professional development. Table 36 presents data in response to teachers being asked what topics have been addressed in professional development related to the topic of growth mindset.

Table 36. Topics Addressed in Professional Development

	Ed Week	Nestor	Hadley
	%	%	%
A. Encouraging students to try new strategies when they are struggling to learn	80.0	87.2	60.5
B. Helping students see error or failure as an opportunity to learn and improve	76.0	79.5	39.5
C. Collaborating with colleagues to teach using growth mindset	35.0	43.6	18.4
D. Curriculum materials and resources	30.0	43.6	15.8
E. Using growth mindset to teach standards in ELA, Science, Math	<25.0	<31.0	<8.0

The same two topics were identified in all three studies as topics most often addressed in professional development. It is the opinion of this researcher that these two topics are most likely indicated as topics addressed in professional development because they are general enough to be included in a variety of professional development topics related to student achievement and not necessarily directly related to professional development targeting a deeper understanding of growth mindset. Teachers in all three studies are clearly indicating that the topics covered in professional development have not allowed for collaboration with colleagues and have not made

specific connections to how growth mindset can be taught using curricular materials, as well as in specific content areas.

The final two comparisons will only be made between the Nestor and Hadley studies as Education Week did not report findings for these two items. Table 37 indicates how respondents report they have been learning about growth mindset.

Table 37. Sources Used to Learn About Growth Mindset

	Nestor	Hadley
	%	%
A. Administrators at your school	76.9	44.7
B. Teachers at your school	55.3	39.6
C. Resources found on the internet	46.2	31.6

Table 37 presents the three most common sources respondents in both studies indicated as ways they have learned about growth mindset. These data support a claim made earlier that teaches in Nestor's school have received more professional development on the topic of growth mindset from administrators. About 77.0% of respondents at Nestor's school versus only 45.0% at Hadley's school indicated administrators at their school as a source for learning about growth mindset. An interesting finding in both studies is that the source receiving the second highest percentage was *teachers at your school*. This is a curious finding as responses to other survey items indicated that respondents in both studies didn't feel their colleagues were as familiar with the concept or as good as at fostering a growth mindset as they were.

The final comparison made between the Nestor and Hadley studies will present how respondents reported their desires for future professional development on the topic of growth mindset. Additionally, it is important to note that respondents in all three studies indicated a desire to learn more about the concept of growth mindset. Table 38 indicates the percentage of respondents from each study that indicated they would like to learn more about growth mindset.

Table 38. Percentage of Respondents Wanting More Training on Growth Mindset

	Ed Week	Nestor	Hadley
	%	%	%
A. I would like more growth mindset training	85.0	82.0	79.0

Table 39 presents the top three desires respondents indicated for future professional development in the Nestor and Hadley studies.

Table 39. Desires for Future Professional Development

	Nestor	Hadley
	%	%
A. More information about how growth mindset changes expectations for instruction	56.4	57.9
B. More information about how growth mindset changes expectations for students	56.4	57.9
C. Curricular resources aligned to growth mindset	66.7	57.9

These findings indicate a consistent desire from respondents in both studies for future trainings that dive more deeply into the impact growth mindset can and should have on instruction and their students. Also, teachers would like to have a better understanding of how the concept of growth mindset can be integrated with their curricular resources. These findings show support for earlier an earlier finding in which teachers indicated what I will call a more surface understanding with respect to the big ideas around growth mindset, but the lack of acknowledgement that students with a growth mindset should achieve at a higher level. Additionally, these findings indicate that teachers want future trainings to go beyond the ideas of growth mindset and into the actual practices they can use to change instruction and create a positive impact their students and student achievement.

9.0 PROFESSIONAL REFLECTION

As I reflect on this journey, I find myself reflecting in three distinct areas: scholarly, professionally, and personally. In each of these areas, I can sum up the result of my journey in one word – growth. It is both rewarding and encouraging to think back on where I was in each of these areas and where I see myself today. The learning and growth I have experienced throughout this process has, without a doubt, made me a better scholar, professional, and person.

As a scholar, I have grown in many ways. I have grown in my knowledge, practice, and writing. As I began the writing process for my dissertation, I wanted to make bold but unsupported claims. I felt I could make these claims because I had lived through the situations I was referencing. However, I quickly learned the importance of finding a foundation in the literature and allowing the literature to speak for or against any idea or thought I wished to claim. I also learned about the vast depth of the literature. I am fascinated by how interconnected many of the ideas are within educational and psychological literature. I became comforted in my discovery that so many of the ideas, topics, and claims that are part of the current discussions in education, have a foundation rooted in a very long line of research. To be an effective educational leader, I will always rely on the literature for support the direction. I believe that a leader must never lead solely from his or her gut feeling or desire. He or she must always remain an informed scholar to be viewed as a reliable leader.

Professionally, my job as an educational leader is multifaceted. I am charged with creating and executing an instructional vision. My leadership influences and shapes the culture of the building. Additionally, I oversee the growth and development of hundreds of students, as well as the professional staff. Saying that this journey has informed me and helped me grow in each of these areas would be an understatement. My growth as a scholar is intertwined with my growth as a professional. I am more informed and much more strategic in my leadership today versus when I began this process. When I speak to staff about our vision and direction, plan professional learning, or provide instructional feedback, I am always referring to and drawing upon what I have learned through the literature. I thoroughly enjoy the process of bringing what I have learned through the literature to the many aspects of my professional life. Discussions are richer and actions are informed and developed with a much clearer direction because of the support provided by the literature. This process has shaped me into an informed leader who leads with passion and confidence.

The area I feel I have had the most profound grown is personally. It is somewhat ironic that my dissertation focused on growth and fixed mindset. Prior to beginning this process, I would not have hesitated to state that I possess a growth mindset. However, my exploration of the literature has caused me to pause and reflect on myself and the mindset(s) that I possess when facing different situations and challenges, both personal or professional. What I found is that I have a growth mindset in many ways, but also have demonstrated a fixed mindset at times. For instance, I have identified situations where I felt I was being humble when in fact I was attempting to cover up a deeper fixed belief about my own ability. Fortunately, the one trait I am confident I possess is what Angela Duckworth refers to as *grit*. I have certainly faced some ups and downs along the way, and I've had mentors of mine point out what they have perceived as a

lack of confidence. I now see that this perception has been caused by me projecting that fixed mindset view of myself. However, my grit, internal drive, and confidence has pushed me to overcome these beliefs. My constant reflection during this journey, as well as giving the proper consideration to the input from others, has caused me to reshape my beliefs and develop a growth mindset outlook of myself as a scholar, professional, and person.

No one ever said this process or journey would be easy. In fact, they said the exact opposite. Now, I understand what they meant, and I conclude this process with an extreme amount of gratitude for the growth it has provided me. Although this dissertation process may be coming to its conclusion, my journey has only just begun. I look forward to taking what I have learned during this process to continue my learning and growth as a scholar, professional, and person.

APPENDIX A

PERMISSION TO UTILIZE EDUCATION WEEK'S SURVEY

Original Message

From: Hadley, Jeffrey M <jmh199@pitt.edu>
Sent: Saturday, October 8, 2016 5:39 PM
To: Holly Yettick
Subject: Permission to Utilize Survey

Ms. Yettick,

I am writing to seek your permission to utilize the survey that was used in the Education Week's study Mindset in the Classroom (http://www.edweek.org/media/ewrc_mindsetintheclassroom_sept2016.pdf) as part of my research design for my doctoral studies at the University of Pittsburgh. The University of Pittsburgh IRB process requires written permission.

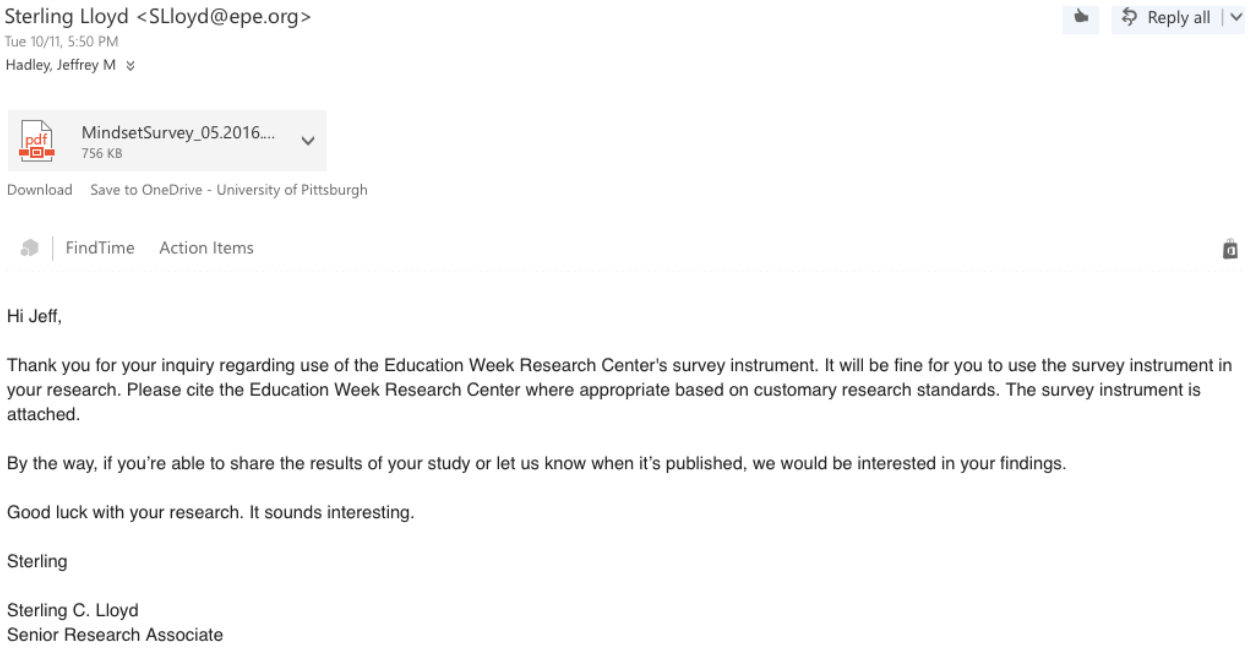
My research will be a case study exploring how teachers (grades 7 & 8) perceive mindset and how they operationalize this mindset in their instructional and classroom practices. I am also going to explore the nature of the relationship between perceived mindset and how well the teacher has produced academic growth according to Pennsylvania Value-Added Assessment System data.

Would you be so kind to reply and grant me permission to utilize this survey as part of the research design for my study?

With sincere thanks!
Jeff Hadley
Doctoral Student
University of Pittsburgh

Figure 3. Permission to Utilize *Education Week's* Survey

Figure 3 (continued)



Sterling Lloyd <SLloyd@epe.org>
Tue 10/11, 5:50 PM
Hadley, Jeffrey M

Reply all

MindsetSurvey_05.2016....
756 KB

Download Save to OneDrive - University of Pittsburgh

FindTime Action Items

Hi Jeff,

Thank you for your inquiry regarding use of the Education Week Research Center's survey instrument. It will be fine for you to use the survey instrument in your research. Please cite the Education Week Research Center where appropriate based on customary research standards. The survey instrument is attached.

By the way, if you're able to share the results of your study or let us know when it's published, we would be interested in your findings.

Good luck with your research. It sounds interesting.

Sterling

Sterling C. Lloyd
Senior Research Associate

APPENDIX B

SURVEY ITEMS ALIGNMENT WITH LITERATURE

Table 40. Survey Items Alignment with Literature

Classroom Practices Survey Items	Ties to Research
Item #5: How often have you engaged in the following practices in your typical classroom?	Aronson, Fried, &Good, 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels, Butterfield, Lamb, Good & Dweck, 2006; O'Leary & O'Leary, 1977; O'Rourke, Haimovitz, Balwebber, Dweck & Popovic, 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine, DuBois, & Cooper, 2004
Item #6: The following list contains statements teacher sometimes make to students. How often might you use each statement or a similar variation of each statement?	Aronson, Fried, &Good, 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels, Butterfield, Lamb, Good & Dweck, 2006; O'Leary & O'Leary, 1977; O'Rourke, Haimovitz, Balwebber, Dweck & Popovic, 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine, DuBois, & Cooper, 2004
Item #7: To what extent have you integrated growth mindset into your teaching expectations and practice?	Aronson, Fried, &Good, 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels, Butterfield, Lamb, Good & Dweck, 2006; O'Leary & O'Leary, 1977; O'Rourke, Haimovitz, Balwebber, Dweck & Popovic, 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine, DuBois, & Cooper, 2004
Item #8: To what extent do you agree that integrating growth mindset into your teaching will produce the following results?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item #9: How have you integrated student growth mindset into your teaching expectations and practice? (Open Ended Question)	Aronson, Fried, &Good, 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels, Butterfield, Lamb, Good & Dweck, 2006; O'Leary & O'Leary, 1977; O'Rourke, Haimovitz, Balwebber, Dweck & Popovic, 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine, DuBois, & Cooper, 2004

Table 40 (continued)

Item #10: What are the most significant challenges you have faced in trying to foster a growth mindset in students? (Open Ended Question)	Aronson, Fried, &Good, 2002; Dweck, 1975, 2006, 2007, 2008, 2010; Blackwell, Tzesniewski, and Dweck, 2007; Bandura, 1977; Heyman & Dweck, 1998; Kamins & Dweck, 1999; Lipe & Jung, 1971; Mangels, Butterfield, Lamb, Good & Dweck, 2006; O'Leary & O'Leary, 1977; O'Rourke, Haimovitz, Balwebber, Dweck & Popovic, 2014; Resnick & Hall, 2000; Pintrich & DeGroot, 1990; Schunk, 1982, 1985; Valentine, DuBois, & Cooper, 2004
Learning Mindset Perceptions Survey Items	**Ties to Research**
Item #11: How familiar are the following people with growth mindset?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item #12: How important are the following factors to student achievement?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item # 13: To what extent do you agree that the following student beliefs are important to school success?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item #14: How easy or difficult do you believe it is to teach students with the following characteristics?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item #15: To what extent do you agree that the following are associated with a student's growth mindset?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Item #16: To what extent do you agree with the following statements?	Dweck, 2006, 2007, 2008, 2010; Resnick, 1985, 2000; Robertson-Kraft, & Duckworth, 2013; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013; Tough, 2013
Professional Development Survey Items	**Ties to Research**
Item #17: Which of the following best describes your experience with professional development and training related to growth mindset?	Desimone, 2003; DuFour & Eaker, 1998; Elmore, 2002; Fullan, 1993; Goodlad, 1992; Guskey, 2003; Hutchens, 1998; Hassel, 1999; Kent, 2004; Laine & Otto, 2000; Wong, 2004
Item #18: Which of the following topics have been addressed in your training and professional development on growth mindset? Select all that apply.	Desimone, 2003; DuFour & Eaker, 1998; Elmore, 2002; Fullan, 1993; Goodlad, 1992; Guskey, 2003; Hutchens, 1998; Hassel, 1999; Kent, 2004; Laine & Otto, 2000; Wong, 2004
Item #20: My training has prepared me to address student growth mindset.	Desimone, 2003; DuFour & Eaker, 1998; Elmore, 2002; Fullan, 1993; Goodlad, 1992; Guskey, 2003; Hutchens, 1998; Hassel, 1999; Kent, 2004; Laine & Otto, 2000; Wong, 2004

APPENDIX C

TEACHER SURVEY INSTRUMENT – TEXT VIEW

Instrument modified, with permission, from the survey used in the study, *Mindset in the Classroom: A National Study of K-12 Teachers* (Education Week Research Center, 2016).

Thank you for taking the time to participate in this survey.

This inquiry will explore teacher perceptions with respect mindset and their experience with incorporating growth mindset practices in the classroom. Some of the survey questions will ask about your classroom practices. If you teach more than one class, please think of your typical class when responding to those questions.

There are no right or wrong answers to the following survey questions. Your participation in this survey is completely voluntary. Your responses are in no way linked to your email address, name, school name, and school district.

Your responses are critical to the success of this study, and I thank you for taking the time to complete this survey. The survey should take you approximately 10 to 15 minutes.

Respondent Background

Item #1: Years of service in education.

- Less than 3 years
- 3-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- More than 30 years

Item #2: What grade do you teach?

a. 7
b. 8

Item #3: What subject/content do you teach?

a. Mathematics
b. Science
c. English Language Arts
d. Social Studies
e. Science
f. Special Education
g. Art
h. Technology Education
i. Wood Shop
j. Health
k. Computer
l. Physical Education
m. Music
n. Other

Item #4: Please indicate your gender.

a. Female
b. Male

Classroom Practices

This survey examines teachers' views regarding mindsets in K-12 education. Throughout the survey, the term "growth mindset" is used to identify one way of thinking about learning and intelligence. This concept may also commonly be referred to using different terminology, such as "learning mindset" or "incremental mindset."

Item #5: This school year, how OFTEN have you engaged in the following practices in your typical classroom?

Likert Scale: Never, A few times a year, A few times a month, A few times a week, Every day

- Praising students for their effort
- Encouraging students to try new strategies when they are struggling
- Telling students that it is alright to struggle, not everyone is good at a given subject
- Encouraging students who are already doing well to keep trying to improve
- Praising students for their intelligence
- Suggesting that students seek help from other students on schoolwork
- Encouraging students by telling them a new topic will be easy to learn

- Praising students for earning good scores or grades
- Praising students for their learning strategies

Item #6: The following list contains statements teachers sometimes make to students. Reflecting on your communication with students in your typical classroom, how often might you use each statement or a similar variation of each statement? Please rate your response on a five-point scale, where 5 is "Very Often" and 1 is "Never."

Likert Scale: Never 1.. 2.. 3.. 4.. 5 Very Often

- This is easy. You will get this in no time.
- Great job. You must have worked really hard on this.
- See, you are good at this subject. You got an A on your last test.
- You really studied for your test and your improvement shows it.
- Look at how smart you are.
- You are one of the top students in the class.
- I really like the way you tried all kinds of strategies on that problem until you finally got it.
- I love how you stayed at your desk and kept your concentration in order to keep working on that problem.

Item #7: To what extent have you integrated growth mindset into your teaching expectations and practice?

Likert Scale: Not At All Integrated 1.. 2.. 3.. 4.. 5 Deeply Integrated

Item #8: To what extend do you agree or disagree that integrating the concept of student growth mindset into your teaching expectations and practice will produce the following results?

Likert Scale: Strongly Agree, Agree, Disagree, Strongly Disagree

- Improve student learning
- Improve my own instruction and classroom practices
- Significantly change my classroom instruction

Item #9: How have you integrated student growth mindset into your teaching expectations and practice? (Open-Ended Question)

Item #10: What are the most significant challenges you have faced in trying to foster a growth mindset in students? (Open-Ended Question)

Learning Mindset Perceptions

In this survey, growth mindset is defined as the belief that intelligence can be developed through effort rather than being fixed or static.

Item #11: How familiar do you think the following people are with the concept of growth mindset in K-12 education? Please rate your response on a five-point scale, where 5 is "very familiar

Likert Scale: Not all familiar 1.. 2 ..3 ..4 ..5 Very familiar

- You personally
- Administrators in your school
- Teachers in your school

Item #12: How important do you feel the following factors are to student achievement? Please rate your responses on a five-point scale, where 5 is "very important" and 1 is "not important at all."

Likert Scale: Not at all important 1.. 2.. 3 ..4 ..5 Very Important

- Student engagement and motivation
- Teaching quality
- School climate
- School safety
- Social and emotional learning
- Parental support and engagement
- Use of growth mindset with students
- School discipline policies
- Family background

Item #13: To what extent do you agree that the following student attitudes and beliefs are important to school success?

Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree

Students believe that…

- They can learn from failure and are willing to try new things in school
- They can find help at school when they have difficulties
- Their work in school has value for them
- They can be successful in school
- They belong in the school community
- Administrators and teachers know students personally
- Their academic abilities will increase through effort
- They have the ability to learn challenging material
- Administrators and teachers treat all students equally and fairly
- They have some autonomy and choice in the topics they study
- Doing well in school will lead to a good career

Item #14: How easy or difficult do you believe it is to teach students with the following characteristics? Please rate your responses on a five-point scale, where 5 is "very easy" and 1 is "very difficult."

Likert Scale: Very Difficult, Difficult, Neither Easy nor Difficult, Easy, Very Easy

Students who…

- Have grit and perseverance
- Believe that intelligence is malleable
- Have innate ability in the subject you teach
- Believe that intelligence is fixed or static

Item #15: To what extent do you agree or disagree that the following are associated with a student growth mindset?

Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree

- Excitement about learning
- Persistence in schoolwork
- High levels of effort on schoolwork
- Frequent participation in class discussions
- Good attendance
- Consistent completion of homework assignments
- Frequent participation in extracurricular activities
- Good course grades
- High standardized test scores

Item #16: To what extent do you agree with the following statements?

Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree

- All students and should have a growth mindset

- Fostering a growth mindset in students is part of my job duties and responsibilities
- I am good at fostering a growth mindset in my students
- Administrators at my school are good at fostering a growth mindset in students
- Other teachers at my school are good at fostering a growth mindset in students
- I have adequate solutions and strategies to use when students do not have a growth mindset

Professional Development

Item #17: Which of the following best describes your experience with professional development and training related to growth mindset?

- ☐ I have had some training and want more
- ☐ I have had some training and do not want more
- ☐ I have had no training and want some
- ☐ I have had no training and do not want any

Item #18: Which of the following topics have been addressed in your training and professional development on growth mindset? Select all that apply.

- ☐ Encouraging students to try new strategies when they are struggling to learn a concept
- ☐ Helping students see error or failure as an opportunity to learn and improve
- ☐ Helping students understand that the brain is like a muscle and physically changes with training
- ☐ Using growth mindset with specific student groups (e.g., students with disabilities)
- ☐ Collaborating with colleagues to teach using growth mindset
- ☐ Developing your own classroom-based assessments to capture growth mindset
- ☐ Curriculum materials and resources to teach using growth mindset
- ☐ Using growth mindset to teach standards and other academic subjects
- ☐ Using growth mindset to teach state standards in English Language Arts and literacy
- ☐ Using growth mindset to teach state standards in mathematics
- ☐ Other
- ☐ Not applicable

Item #19: My training has prepared me to address student growth mindset.

Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree

- Pre-service teaching
- In-service training and professional development

Item #20: How much have you learned about growth mindset from the following sources? Please rate your response on a five-point scale where 5 is "a lot" and 1 is "not very much."

- Homemade or DIY resources you found on the internet
- Homemade or DIY resources you found in books
- Teachers at your school
- Administrators at your school
- District personnel
- District website, publications, or communication
- State department website, publication, or communication
- Professional association
- National education research or advocacy organization
- For-profit company
- News media (print or online)
- Social media
- Conferences or seminars
- Courses, trainings, or professional development
- Other (please specify)

Item #21: Which of the following would help you feel better prepared to foster a growth mindset in your students? Select all that apply.

- ☐ More information about how growth mindset changes expectations for y instructional practice
- ☐ More information about how growth mindset changes expectations for students
- ☐ Curricular resources aligned to growth mindset
- ☐ Assessments aligned to growth mindset
- ☐ More planning time
- ☐ More collaboration time with colleagues
- ☐ More time for training and professional development
- ☐ Other (please specify)

APPENDIX D

TEACHER SURVEY INSTRUMENT – QUALTRICS VIEW

Instrument modified, with permission, from the survey used in the study, *Mindset in the Classroom: A National Study of K-12 Teachers* (Education Week Research Center, 2016).

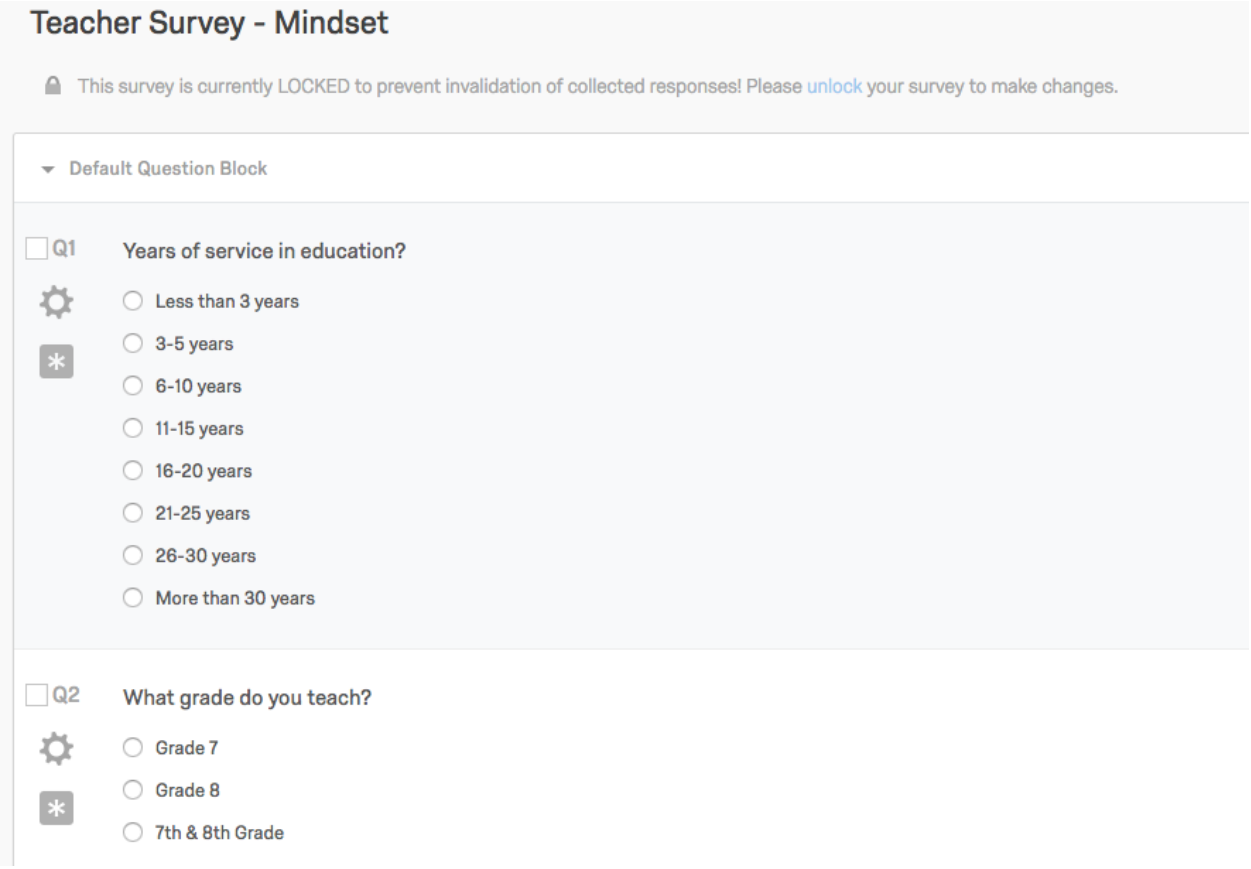
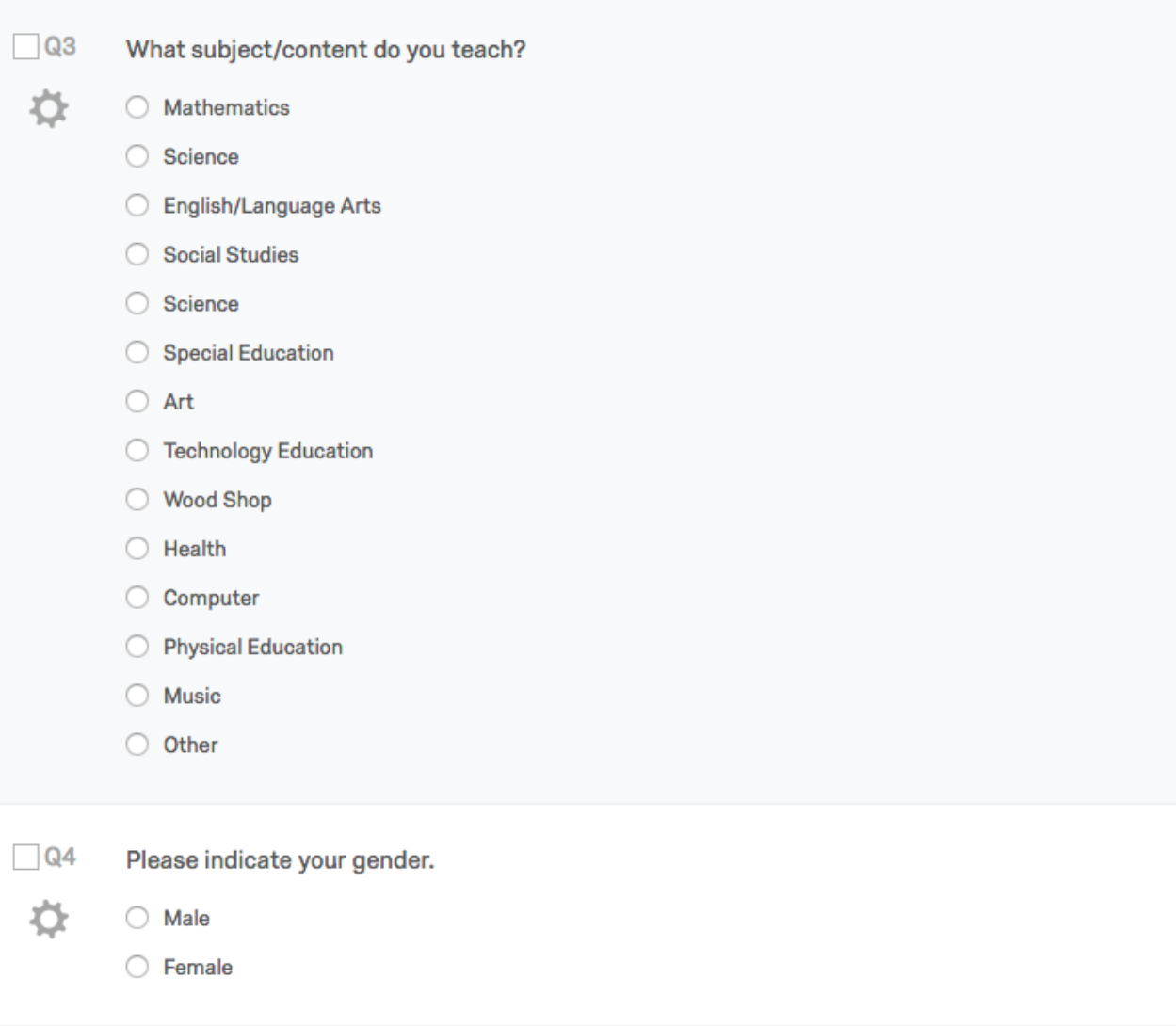


Figure 4. Teacher Survey Instrument – Qualtrics View

Figure 4 (continued)



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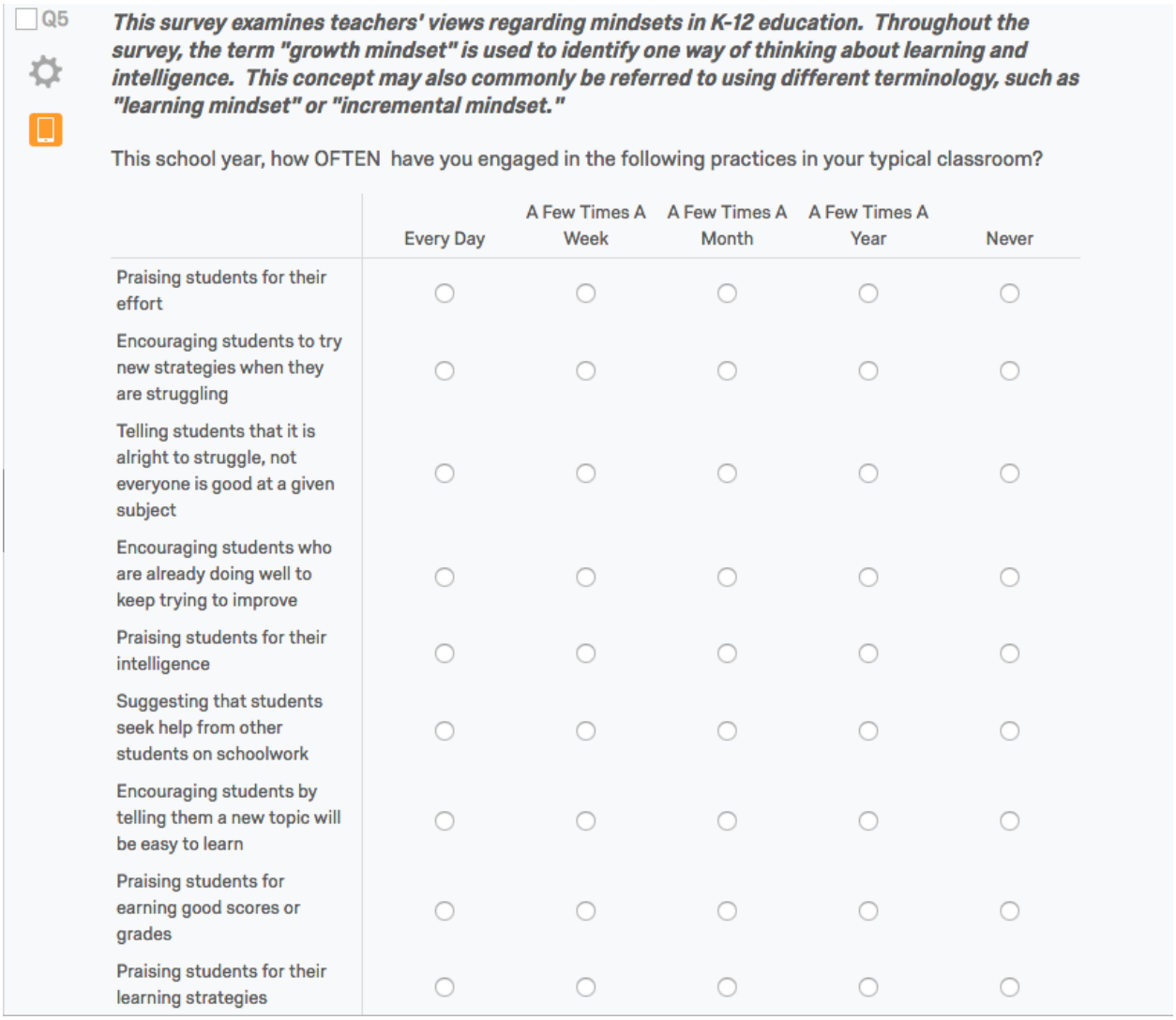


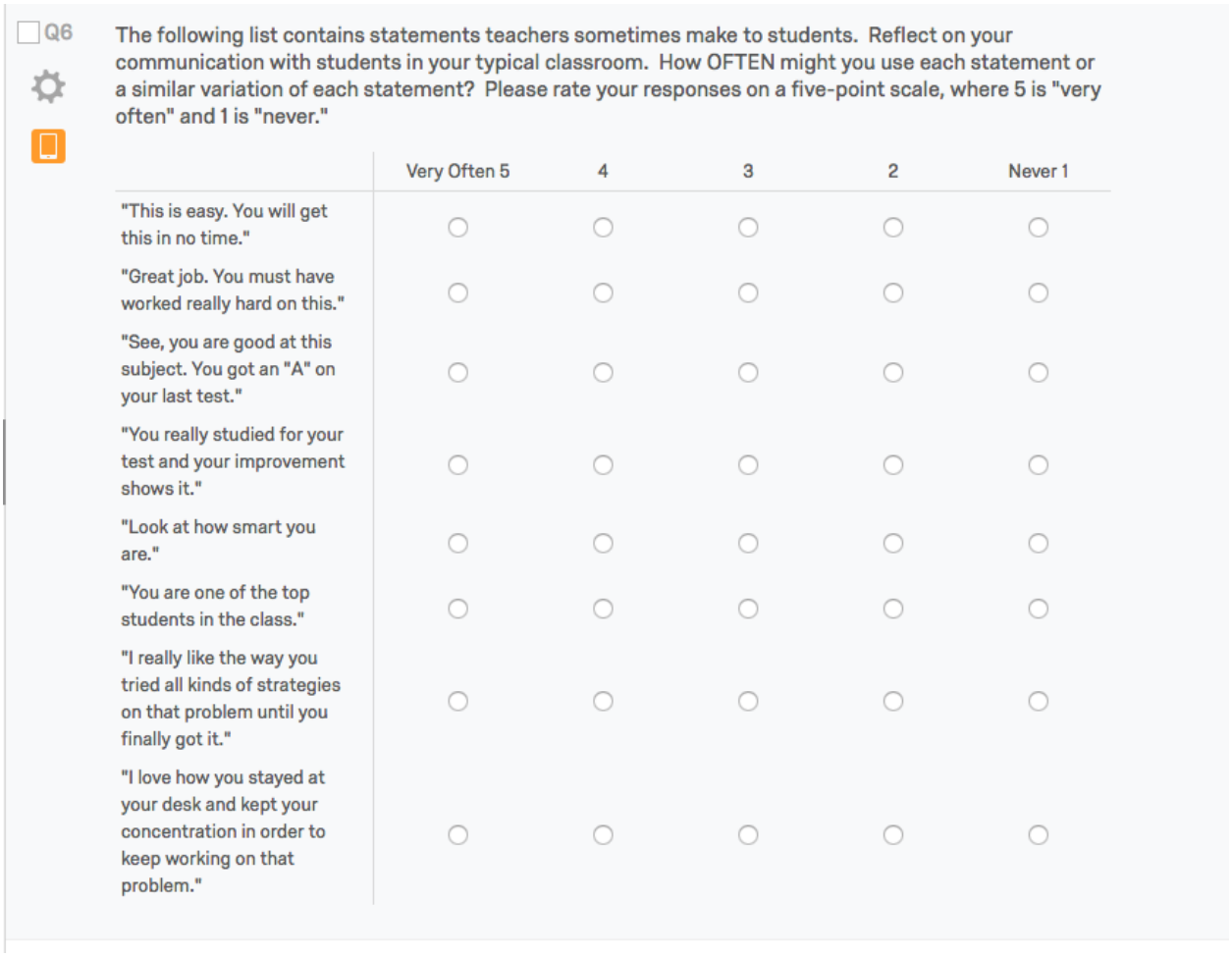
Q5

This survey examines teachers' views regarding mindsets in K-12 education. Throughout the survey, the term "growth mindset" is used to identify one way of thinking about learning and intelligence. This concept may also commonly be referred to using different terminology, such as "learning mindset" or "incremental mindset."

This school year, how OFTEN have you engaged in the following practices in your typical classroom?

	Every Day	A Few Times A Week	A Few Times A Month	A Few Times A Year	Never
Praising students for their effort	○	○	○	○	○
Encouraging students to try new strategies when they are struggling	○	○	○	○	○
Telling students that it is alright to struggle, not everyone is good at a given subject	○	○	○	○	○
Encouraging students who are already doing well to keep trying to improve	○	○	○	○	○
Praising students for their intelligence	○	○	○	○	○
Suggesting that students seek help from other students on schoolwork	○	○	○	○	○
Encouraging students by telling them a new topic will be easy to learn	○	○	○	○	○
Praising students for earning good scores or grades	○	○	○	○	○
Praising students for their learning strategies	○	○	○	○	○

Figure 4 (continued)

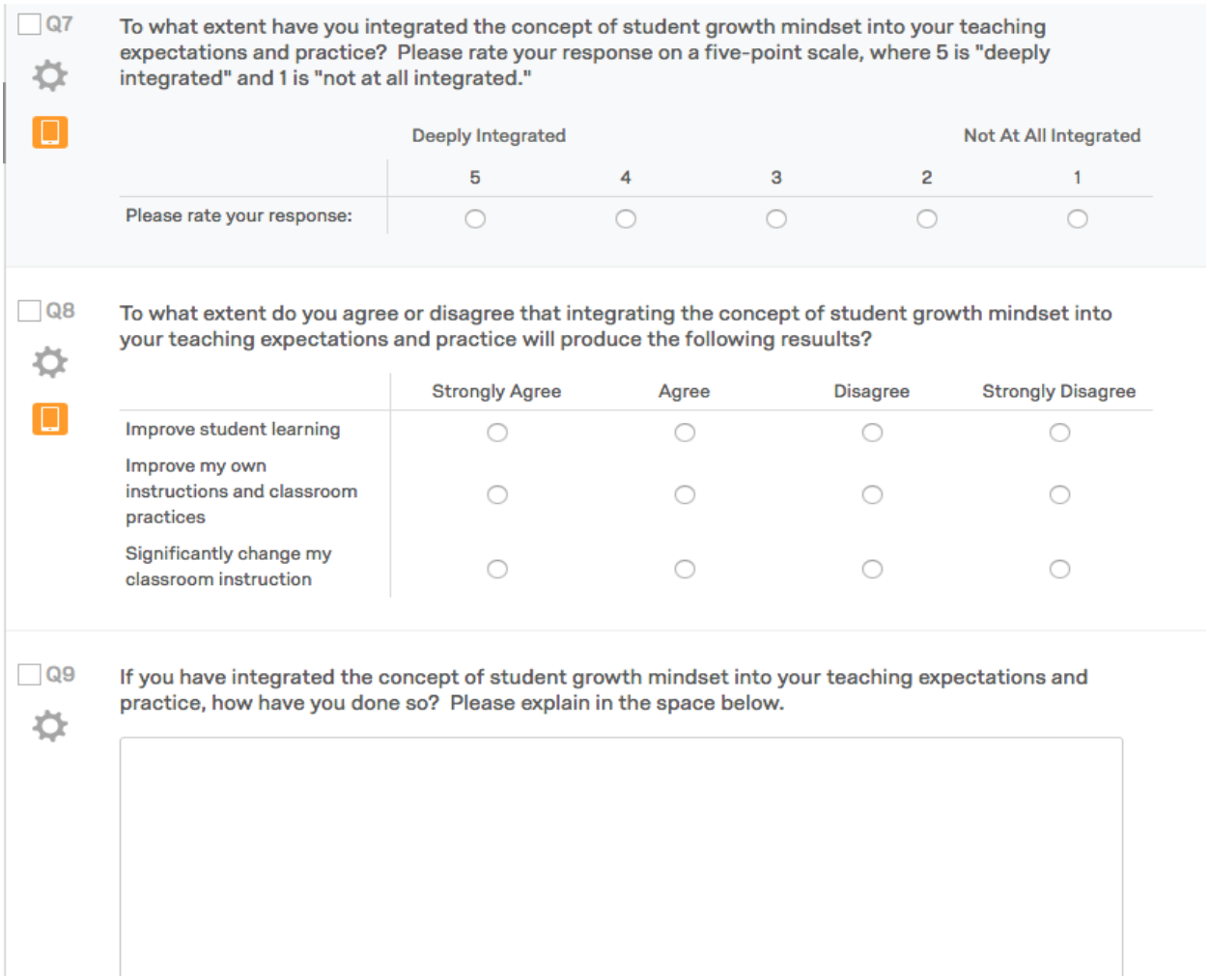


Q6

The following list contains statements teachers sometimes make to students. Reflect on your communication with students in your typical classroom. How OFTEN might you use each statement or a similar variation of each statement? Please rate your responses on a five-point scale, where 5 is "very often" and 1 is "never."

	Very Often 5	4	3	2	Never 1
"This is easy. You will get this in no time."					
"Great job. You must have worked really hard on this."					
"See, you are good at this subject. You got an "A" on your last test."					
"You really studied for your test and your improvement shows it."					
"Look at how smart you are."					
"You are one of the top students in the class."					
"I really like the way you tried all kinds of strategies on that problem until you finally got it."					
"I love how you stayed at your desk and kept your concentration in order to keep working on that problem."					

Figure 4 (continued)



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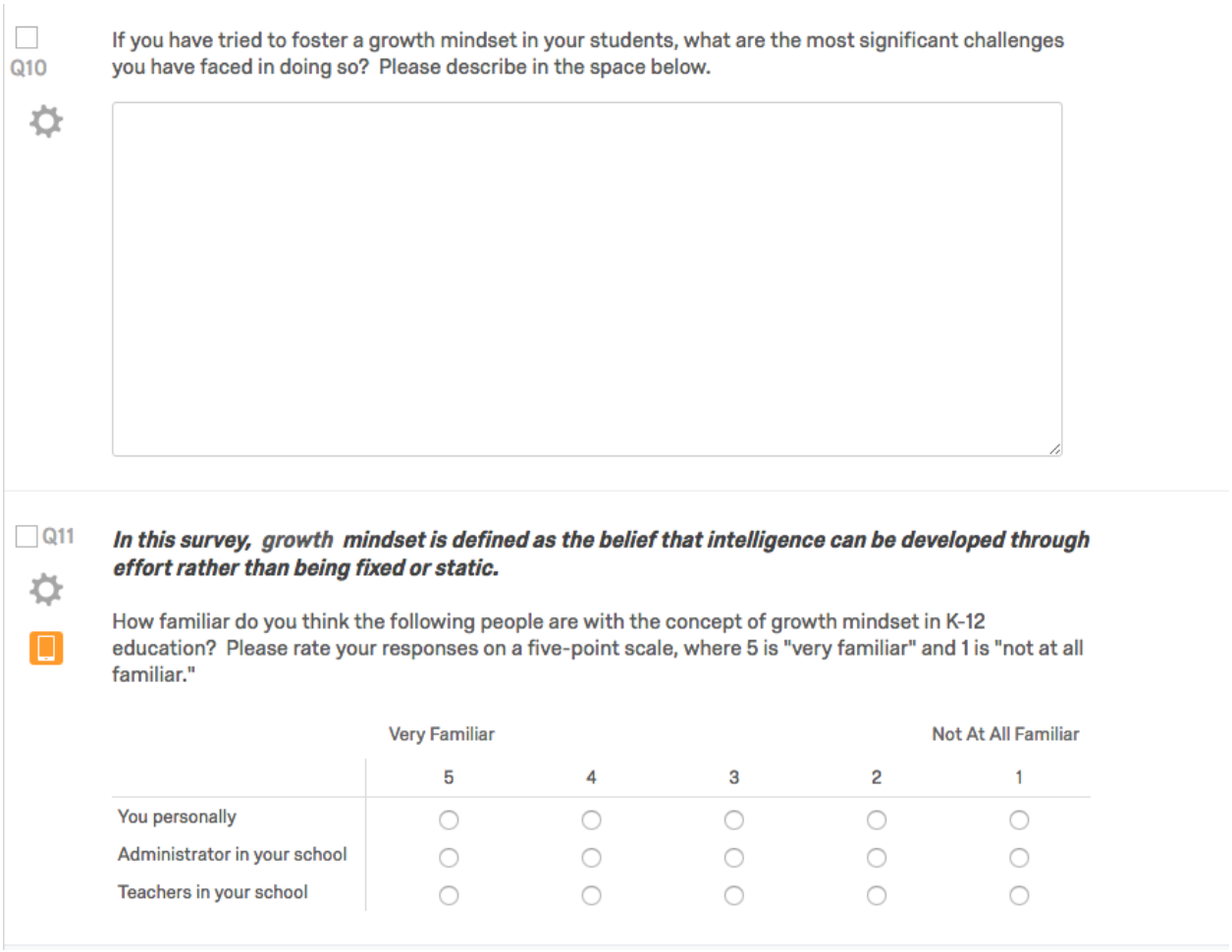

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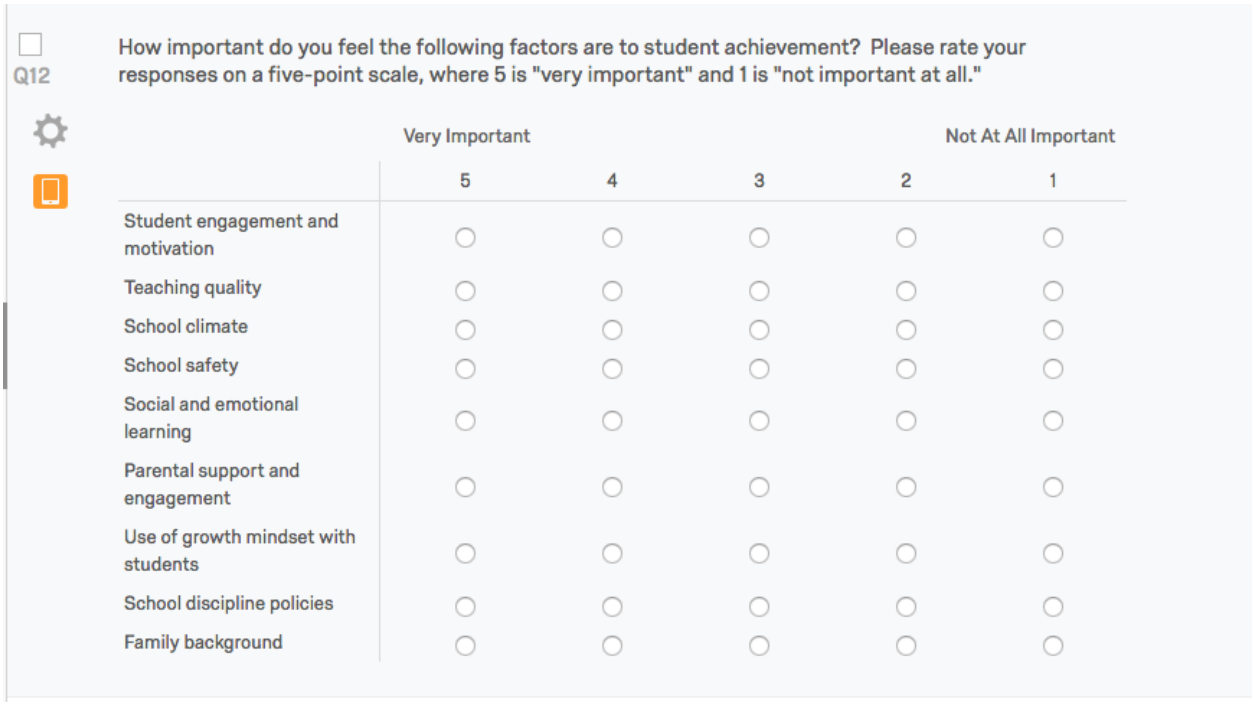
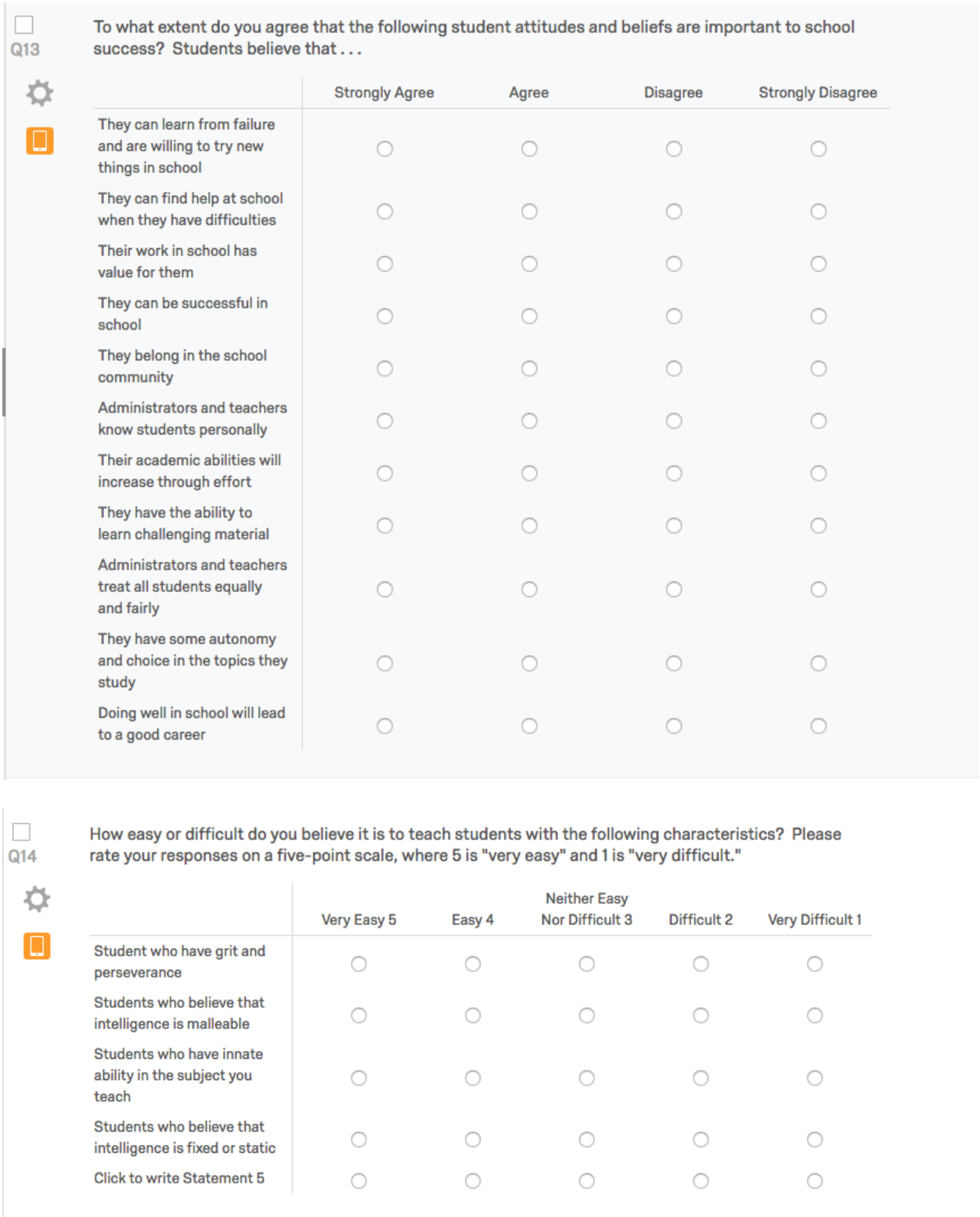


Q12

How important do you feel the following factors are to student achievement? Please rate your responses on a five-point scale, where 5 is "very important" and 1 is "not important at all."

	Very Important				Not At All Important
	5	4	3	2	1
Student engagement and motivation	○	○	○	○	○
Teaching quality	○	○	○	○	○
School climate	○	○	○	○	○
School safety	○	○	○	○	○
Social and emotional learning	○	○	○	○	○
Parental support and engagement	○	○	○	○	○
Use of growth mindset with students	○	○	○	○	○
School discipline policies	○	○	○	○	○
Family background	○	○	○	○	○

Figure 4 (continued)



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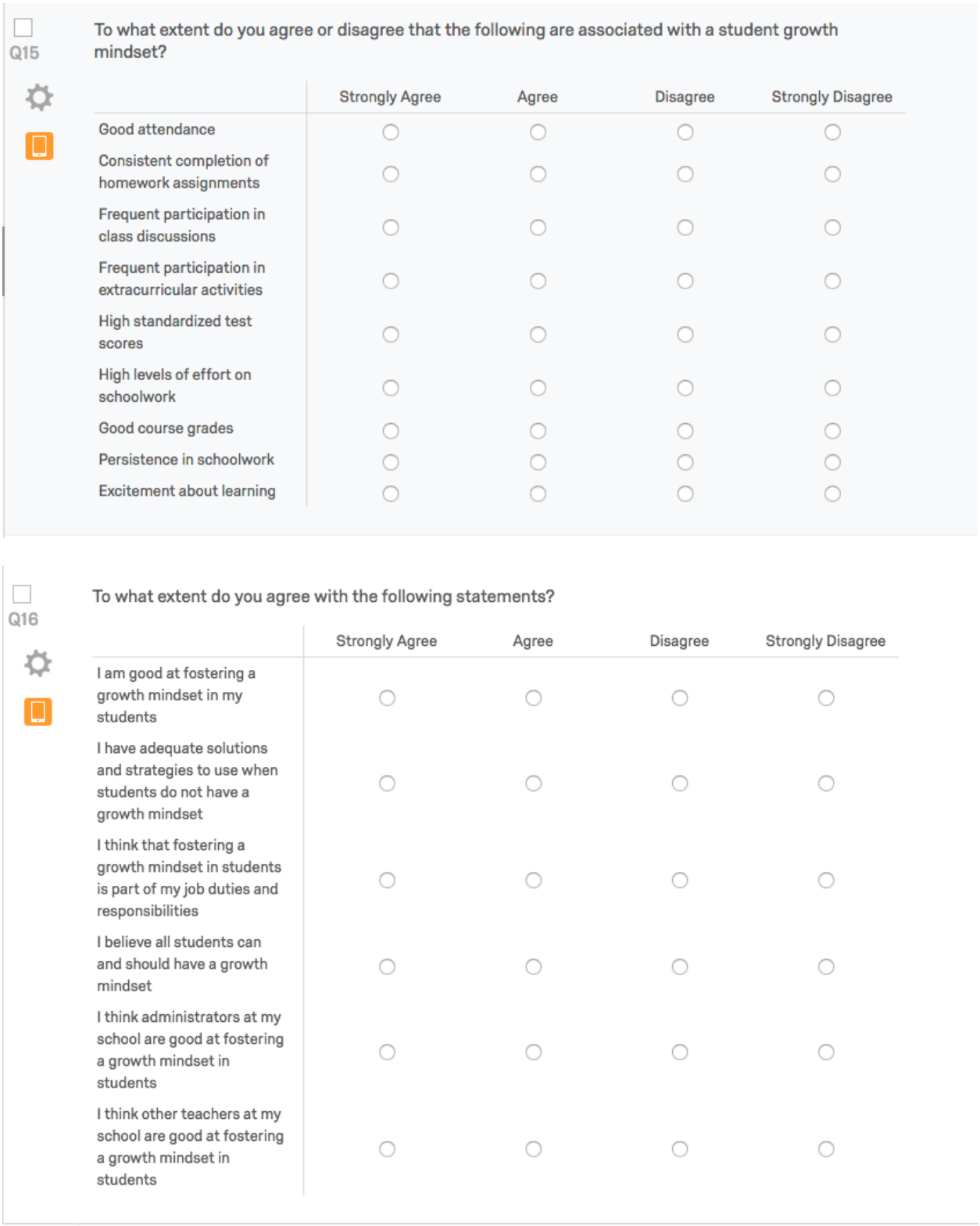


Q15

To what extent do you agree or disagree that the following are associated with a student growth mindset?

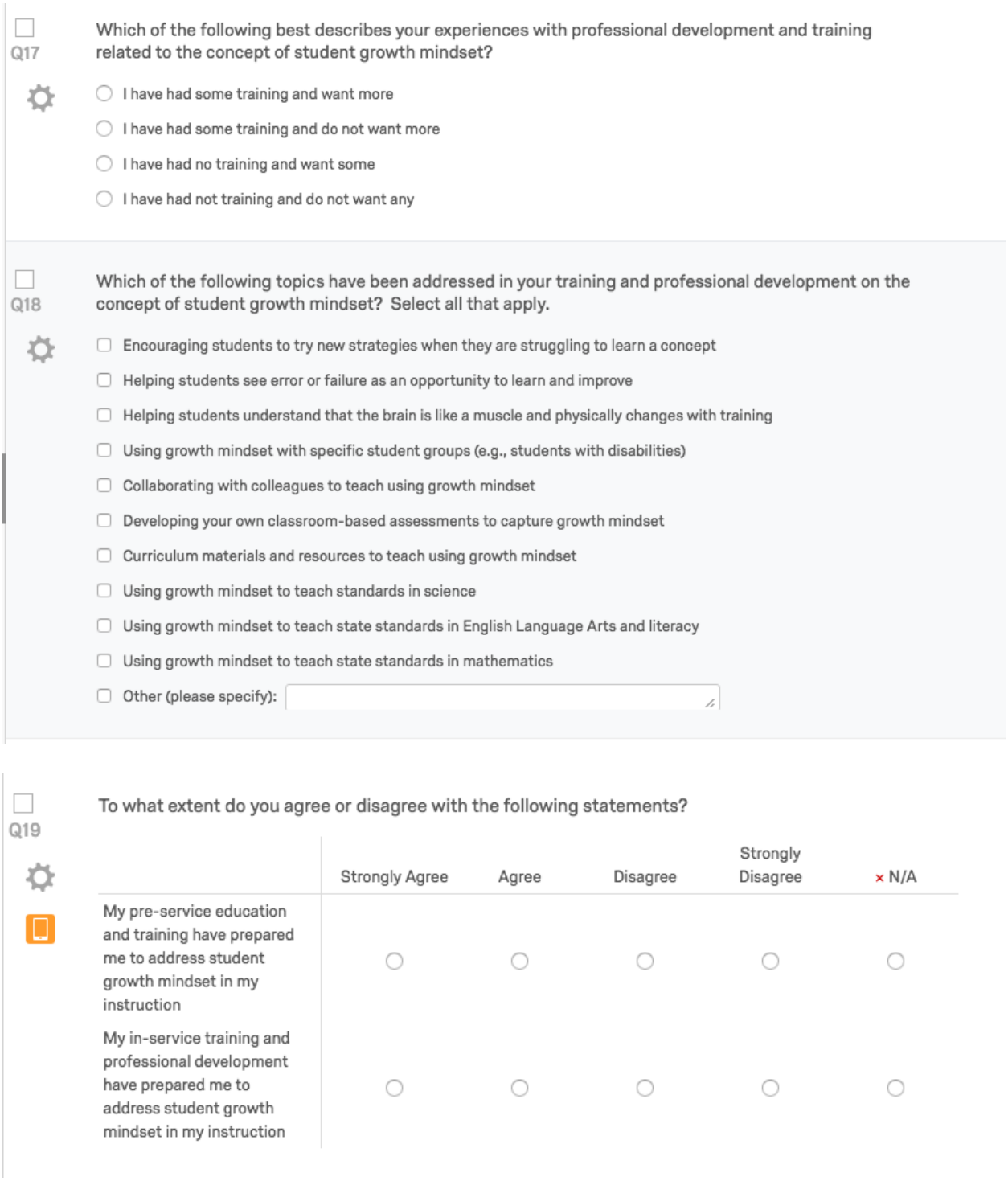
	Strongly Agree	Agree	Disagree	Strongly Disagree
Good attendance	○	○	○	○
Consistent completion of homework assignments	○	○	○	○
Frequent participation in class discussions	○	○	○	○
Frequent participation in extracurricular activities	○	○	○	○
High standardized test scores	○	○	○	○
High levels of effort on schoolwork	○	○	○	○
Good course grades	○	○	○	○
Persistence in schoolwork	○	○	○	○
Excitement about learning	○	○	○	○

Q16

To what extent do you agree with the following statements?

	Strongly Agree	Agree	Disagree	Strongly Disagree
I am good at fostering a growth mindset in my students	○	○	○	○
I have adequate solutions and strategies to use when students do not have a growth mindset	○	○	○	○
I think that fostering a growth mindset in students is part of my job duties and responsibilities	○	○	○	○
I believe all students can and should have a growth mindset	○	○	○	○
I think administrators at my school are good at fostering a growth mindset in students	○	○	○	○
I think other teachers at my school are good at fostering a growth mindset in students	○	○	○	○

Figure 4 (continued)



Q17

Which of the following best describes your experiences with professional development and training related to the concept of student growth mindset?

- I have had some training and want more
- I have had some training and do not want more
- I have had no training and want some
- I have had not training and do not want any

Q18

Which of the following topics have been addressed in your training and professional development on the concept of student growth mindset? Select all that apply.

- Encouraging students to try new strategies when they are struggling to learn a concept
- Helping students see error or failure as an opportunity to learn and improve
- Helping students understand that the brain is like a muscle and physically changes with training
- Using growth mindset with specific student groups (e.g., students with disabilities)
- Collaborating with colleagues to teach using growth mindset
- Developing your own classroom-based assessments to capture growth mindset
- Curriculum materials and resources to teach using growth mindset
- Using growth mindset to teach standards in science
- Using growth mindset to teach state standards in English Language Arts and literacy
- Using growth mindset to teach state standards in mathematics
- Other (please specify):

Q19

To what extent do you agree or disagree with the following statements?

	Strongly Agree	Agree	Disagree	Strongly Disagree	× N/A
My pre-service education and training have prepared me to address student growth mindset in my instruction					
My in-service training and professional development have prepared me to address student growth mindset in my instruction					

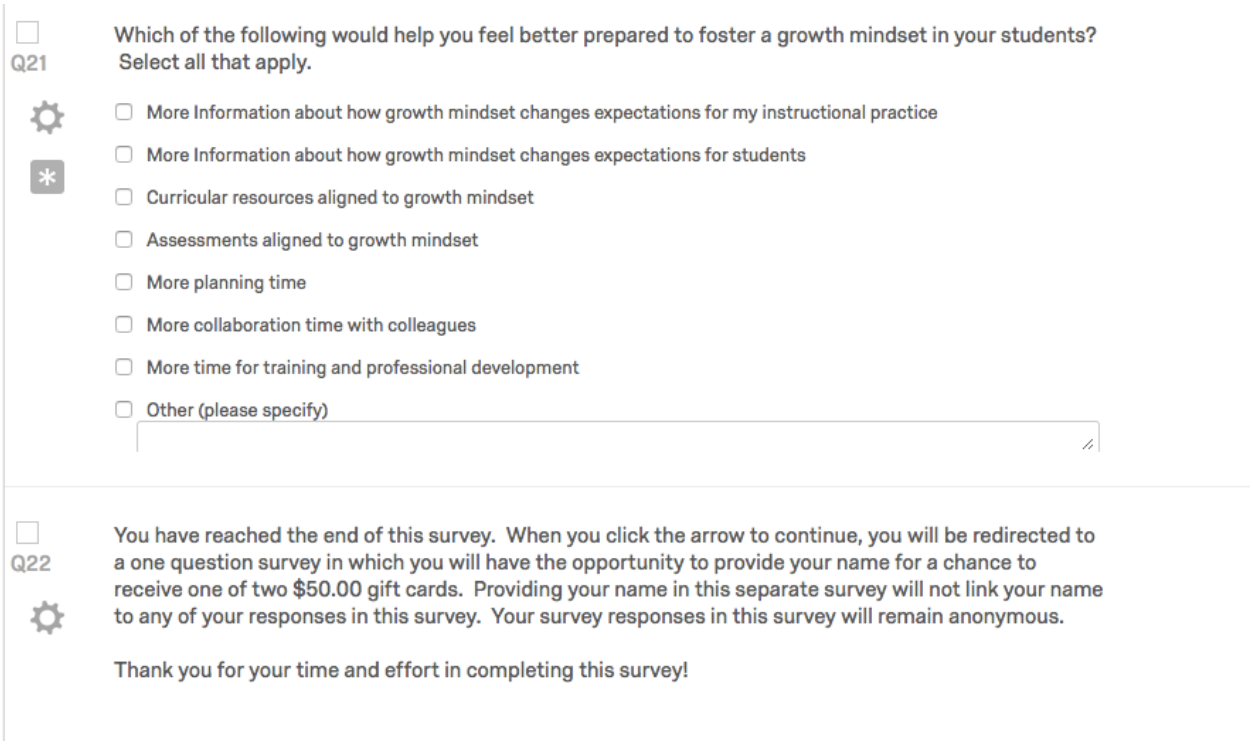
Figure 4 (continued)

Q20

How much have you learned about growth mindset from the following sources? Please rate your response on a five-point scale where 5 is "a lot" and 1 is "not very much."

	5 A Lot	4	3	2	1 Not Very Much	N/A - I Have Not Used Such Sources
Homemade or DIY resources you found on the internet	○	○	○	○	○	○
Homemade or DIY resources you found in books	○	○	○	○	○	○
Teachers at your school	○	○	○	○	○	○
Administrators at your school	○	○	○	○	○	○
District personnel	○	○	○	○	○	○
District website, publications, or communication	○	○	○	○	○	○
State department website, publication, or communication	○	○	○	○	○	○
Professional association	○	○	○	○	○	○
national education research or advocacy organization	○	○	○	○	○	○
For-profit company	○	○	○	○	○	○
News media (print or online)	○	○	○	○	○	○
Social media	○	○	○	○	○	○
Conferences or seminars	○	○	○	○	○	○
Courses, trainings, or professional development	○	○	○	○	○	○

Figure 4 (continued)



APPENDIX E

SITE LETTER REQUESTING PERMISSION TO CONDUCT THE SURVEY

To: Superintendent/Building Principal

From: Jeffrey M. Hadley, Doctoral Candidate
University of Pittsburgh
School of Education

Date: December, 2016

As a doctoral student at the University of Pittsburgh, I am conducting research related to Carol Dweck's work with mindsets. The purpose of this research is to explore secondary teachers' perceptions on learning mindsets and how these perceptions are operationalized in classroom/instructional practices. Additionally, this research will seek information regarding secondary teachers' preparation around the topic of learning mindsets. For that reason, I am requesting your permission to contact your district's junior high school teachers and ask that they complete a brief online survey (approximately 15-20 minutes).

My study is also unique in that it has a co-investigatory nature to it. I am collaborating with Mrs. Ashley Nestor, Director of Elementary Curriculum at Fox Chapel Area School District. Mrs. Nestor is conducting a similar study with a similar instrument but with elementary teachers. We will be sharing our findings and comparing the learning mindset perspectives, practices, and degree of preparation among both elementary and secondary teachers.

Participation in this study is strictly voluntary and confidentiality will be maintained by using the University of Pittsburgh's *Qualtrics* electronic survey system. Participants may withdraw from the study at any time. The teachers' names, name of the school district, and name of the school will not be used in this study. There are no foreseeable risks associated with this study, nor are there any direct benefits to the district, school, or participants. One prize will be raffled off as an incentive for completing the survey. The survey will take approximately 20 minutes to complete.

Upon receiving your permission, I will contact the teachers via email to request their participation in the study. They will be provided with an overview of the study and a link to access the online survey through Qualtrics.

If you have any questions or concerns regarding this study, you can reach me at jmh199@pitt.edu or 412-951-9798. I appreciate your time and hope to hear from you soon.

Sincerely,
Jeffrey M. Hadley
Doctoral Candidate
University of Pittsburgh

APPENDIX F

LETTER TO REQUEST PARTICIPATION IN THE STUDY

To: Superintendent/Building Principal

From: Jeffrey M. Hadley, Doctoral Candidate
University of Pittsburgh
School of Education

Date: October, 2016

As a doctoral student at the University of Pittsburgh, I am conducting research related to Carol Dweck's work with mindsets. My study will explore perspectives on mindsets and how a they operationalize this perspective through instructional practices. Additionally, this study will examine the extent to which teachers feel they are prepared to incorporate mindset practices in instruction.

I am seeking your approval to contact teachers at your junior high via email to request their participation in my study. I will only be contacting teachers at your junior high that receive a PVAAS score. Participation in this study is strictly voluntary and confidentiality will be maintained by using the University of Pittsburgh's *Qualtrics* electronic survey system. Participants may withdraw from the study at any time. The teachers' names, name of the school district, and name of the school will not be used in this study. There are no foreseeable risks associated with this study, nor are there any direct benefits to the district, school, or participants. There is no financial compensation for participation. The survey will take approximately 10 minutes to complete.

Upon receiving your permission, I will contact the teachers via email to request their participation in the study. They will be provided with an overview of the study and a link to access the online survey. At the conclusion of the survey, they will be invited to participate in a follow-up interview where I intend to gain a deeper understanding of their perception of growth and fixed mindset and the practices they employ in the classroom with students that may

operationalize their perceived mindset. All responses to the interview will also be kept confidential.

If you have any questions or concerns regarding this study, you can reach me at jmh199@pitt.edu or 412-951-9798. I appreciate your time and hope to hear from you soon.

Sincerely,
Jeffrey M. Hadley
Doctoral Candidate
University of Pittsburgh

APPENDIX G

CROSS-TABULATION TABLES

		Gender			
		Male *A*	Female *B*	T-Test	Total
Promotes a Growth MIndset	Less Than a Few Times a Week *A*	9	10	A-B: T Value: 0.28 DF: 37.51 T Value: 0.78	19
	A Few Tims a Week or More *B*	9	12	-	21
	T-Test	-	-	-	-
	Total	18	22	-	40

		Gender
Promotes a Growth MIndset	Chi Square	0.08
	Degrees of Freedom	1
	p-value	0.77

Figure 5. Promotes Growth Mindset Practices And Gender (N=40)

		Gender			
		Male *A*	Female *B*	T-Test	Total
Promotes a Fixed Mindset	Less Than a Few Tims a Week *A*	14	20	A-B: T Value: 1.12 DF: 6.76 T Value: 0.30	34
	A Few Tims a Week or More *B*	4	2	-	6
	T-Test	-	-	-	-
	Total	18	22	-	40

		Gender
Promotes a Fixed Mindset	Chi Square	1.34*
	Degrees of Freedom	1
	p-value	0.25

**Note: The Chi-Square approximation may be inaccurate - expected frequency less than 5.*

Figure 6. Promotes Fixed Mindset Practices and Gender (N=40)

		Years of Service in Education			
		0-15 Years Experience *A*	16-30+ Years Experience *B*	T-Test	Total
Promotes a Growth Mindset	Less Than a Few Tims a Week *A*	8	11	A-B: T Value: 0.25 DF: 37.44 T Value: 0.80	19
	A Few Tims a Week or More *B*	8	13	-	21
	T-Test	-	-	-	-
	Total	16	24	-	40

		Years of Service in Education
Promotes a Growth Mindset	Chi Square	0.07
	Degrees of Freedom	1
	p-value	0.80

Figure 7. Promotes Growth Mindset Practices And Years Experience (N=40)

		Years of Service in Education			
		0-15 Years Experience *A*	16-30+ Years Experience *B*	T-Test	Total
Promotes a Fixed Mindset	Less Than a Few Tims a Week *A*	13	21	A-B: T Value: 0.49 DF: 6.51 T Value: 0.64	34
	A Few Times a Week or More *B*	3	3	-	6
	T-Test	-	-	-	-
	Total	16	24	-	40

		Years of Service in Education
Promotes a Fixed Mindset	Chi Square	0.29*
	Degrees of Freedom	1
	p-value	0.59

**Note: The Chi-Square approximation may be inaccurate - expected frequency less than 5.*

Figure 8. Promotes Fixed Mindset Practices and Years Experience (N=40)

		Content Areas			
		Core Content Areas *A*	Special Content Areas *B*	T-Test	Total
Promotes a Growth Mindset	Less Than a Few Tims a Week *A*	12	7	A-B: T Value: 0.88 DF: 36.12 T Value: 0.39	19
	A Few Tims a Week or More *B*	16	5	-	21
	T-Test	-	-	-	-
	Total	28	12	-	40

		Content Areas
Promotes a Growth Mindset	Chi Square	0.81
	Degrees of Freedom	1
	p-value	0.37

Figure 9. Promotes Growth Mindset Practices and Content Areas (N=40)

		Content Area			
		Core Content Areas *A*	Special Content Areas *B*	T-Test	Total
Promotes a Fixed Mindset	Less Than a Few Times a Week *A*	24	10	A-B: T Value: 0.17 DF: 6.50 T Value: 0.87	34
	A Few Tims a Week or More *B*	4	2	-	6
	T-Test	-	-	-	-
	Total	28	12	-	40

		Content Area
Promotes a Fixed Mindset	Chi Square	0.04*
	Degrees of Freedom	1
	p-value	0.85

**Note: The Chi-Square approximation may be inaccurate - expected frequency less than 5.*

Figure 10. Promotes Fixed Mindset Practices and Content Area (N=40)

BIBLIOGRAPHY

Ames, C. (1984). Achievement attributions and self-instructions under competitive and individualistic goal structures. *Journal of Educational Psychology, 76*(3), 478-487. doi:10.1037//0022-0663.76.3.478

Aronson, J., Fried, C., & Good, C. (2002). Reducing the effects of stereotype threat of African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology, 38*, 113-125.

Assessing the Fit of Regression Models. (n.d.). Retrieved December 11, 2016, from http://www.theanalysisfactor.com/assessing-the-fit-of-regression-models/

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*. 84(2), 191-215.

Bandura, A. (1997). Self-efficacy: the exercise of control. New York: Freeman.

Bannister, B. D. (1986). Performance outcome feedback and attributional feedback: Interactive effects on recipient responses. *Journal of Applied Psychology, 71*(2), 203-210. doi:10.1037//0021-9010.71.2.203

Blackwell, L., Trzensiewski, K. & Dweck, C. S (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78, 246-263.

Borowski, J., Weyhing, R. & Carr, M. (1988). Effects of attributional retraining on strategy-based reading comprehension in learning-disabled students. *Journal of Educational Psychology, 80,* 46-53.

Brinko, K.T. (1993). *The practice of giving feedback to improve teaching: What is effective?* The Journal of Higher Education. Vol. 64, No. 5, pp. 574-593.

Brophy, J. (1981). Teacher Praise: A Functional Analysis. *Review of Educational Research,51*(1), 5. doi:10.2307/1170249

Cochran-Smith, M. & Lytle, S. I., (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education,* 24, 249-305.

Cooper, C. R. (1982). Getting inside the instructional process. *Journal of Instructional Development, 5*(3), 2-10. doi:10.1007/bf02905490

Cross Tabulation Analysis - Qualtrics. (n.d.). Retrieved October 19, 2016, from https://www.qualtrics.com/wp-content/uploads/2013/05/Cross-Tabulation-Theory.pdf

Danielson, C. (1996). *Enhancing professional practice: A framework for teaching*. Alexandria, VA: Association for Supervision and Curriculum Development.

Danielson, C. (2006). *Enhancing professional practice: A framework for teaching.* Alexandria, VA: ASCD.

Davies, D., & Jacobs, A. (1985). "Sandwiching" Complex Interpersonal Feedback. *Small Group Research, 16*(3), 387-396. doi:10.1177/0090552685163008

Desimone, L. M., (2011). A primer on effective professional development. *Phi Delta Kappa International.* 92 (6), 68-71.

Desimone, L. M., (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher,* 38 (3), 181-199.

Dweck, C. S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology.* 31 (4), 674-685.

Dweck, C. S. (2006). *Mindset: The new psychology of success.* New York: Ballantine Books.

Dweck, C. S. (2007). The perils and promises of praise. *Education Leadership, 65.*

Dweck, C. S. (2008). The secret to raising smart kids. *Scientific American Mind, 18*(6), 36-43.

Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science,* 17(6), 391 – 394.

Dweck, C. S. (2010). Mind-sets and equitable education. *Principal Leadership.* 26-29.

Dweck, C. S. (2010). Even geniuses work hard. *Educational Leadership.* 16-20.

Dweck, C. (2015, September 22). Carol Dweck Revisits 'Growth Mindset' *Education Week*. Retrieved September 15, 2016, from http://www.edweek.org/ew/articles/2015/09/23/carol-dweck-revisits-the-growth-mindset.html?cmp=cpc-goog-ew-growth mindset&ccid=growth mindset&ccag=growth mindset&cckw=%2Bgrowth%20%2Bmindset&cccv=content ad&gclid=Cj0KEQjwn_3GBRDc8rCnup-1x8wBEiQAdw3OAYKmu0giOq1SY1ZpWQfk015AQF2hvXVjRdiIXApHMVgaAos88P8HAQ

Dweck, C. S., Walton, G. M., & Cohen, G. L. (2014). Academic tenacity: Mindset and skills that promote long-term learning. *Bill & Melinda Gates Foundation.*

DuFour, R. & Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement.* Alexandria, VA: Solution Tree Press.

Education Week Research Center (2016). *Mindset in the classroom: A national study of k-12 teachers.* Bethesda, MD.

Elmore, R. (2002, January/February). The limits of "change." *Harvard Education Letter.* Retrieved from http://readingfirst.scoe.net/documents/summit3/articles/limits_change.pdf

Fowler, F. J. (2014). *Survey research methods* (5th ed.). Thousand Oaks, CA: Sage Publications.

Fullan, M. (1993). *Change forces: Probing the depths of educational reform.* London; Falmer Press.

Gersten, R., Vaughn, S., Deshler, D., & Schiller, E. (1997). *What we know about using research findings: Implications for improving special education practice.* Journal of Learning Disabilities, 30, 446–476.

Glickman, C. (2002). *Leadership for learning: how to help teachers succeed.* Alexandria, VA: Association of Supervision and Curriculum Development.

Goodlad, J. I. (1992). On taking school reform seriously. *Phi Delta Kappan,* 232-238.

Guskey, T. R. (2003). What makes professional development effective? *Phi Delta Kappan, Vol. 84 (10),* p. 748-750.

Guskey, T. R., & Yoon, K. S. (2009). What works in professional development? *Phi Delta Kappan, Vol. 9 0(7),* p. 495-500.

Hassel, E. (1999). *Professional development: Learning from the best.* Oak Brook, IL: North Central Regional Educational Laboratory.

Heyman, C. D. & Dweck, C. S. (1998). Children's thinking about traits: Implications for judgments of the self and others. *Child Development.* 64(2), 391 – 403.

Heyman, C. D., Dweck, C. S. & Cain, K. M. (1992). Young children's vulnerability to self-blame and helplessness: Relationship to beliefs about goodness. *Child Development,* 63, 401-415.

Hutchens, J. (1998). Research and professional development collaborations among university faculty and education practitioners. Arts Education Policy Review, 99(5), 35-40.

Ilgen, D. R., Fisher, C. D., & Taylor, M. S. (1979). Consequences of individual feedback on behavior in organizations. *Journal of Applied Psychology, 64*(4), 349-371. doi:10.1037/0021-9010.64.4.349

Ingersoll, R., & Smith T. (2004). Do teacher induction and mentoring matter? *NASSP Bulletin,* 88 (638), 28-40.

Ingersoll, R., & Strong, M. (2011). The impact of induction and mentoring for beginning teachers: A critical review of the research. *Review of Educational Research,* 81 (2), 201-233.

Kamins, M. L., & Dweck, C. S. (1999). Person versus process praise and criticism: Implications for

contingent self-worth and coping. *Developmental Psychology, 35*(2), 835 – 847.

Kang, S., & Berliner, D. C. (2012). Characteristics of teacher induction programs and turnover rates of beginning teachers. *The Teacher Educator.* 47 (4), 268-282.

Kent, A. M., (2004). Improving teacher quality through professional development. *Education. 124 (3), 427-435.*

Laine, S. W. M., & Otto, C. (2000). *Professional development in education and the private sector: Following the leaders.* Oak Brook, IL: North Central Regional Educational Laboratory.

Levinson-Rose, J., & Menges, R. J. (1981). Improving College Teaching: A Critical Review of Research. *Review of Educational Research, 51*(3), 403. doi:10.2307/1170213

Lipe, D., & Jung, S. Manipulating incentives to enhance school learning. *Review of Educational Research*, 1971, *41,* 249 – 280.

Mangels, J. A., Butterfield, B., Lamb, J., Good, C., & Dweck, C. S. (2006). Why do beliefs about intelligence influence learning success? A social cognitive neuroscience model. *The Author,* 1, 78 – 86.

Meece, J., Blumenfeld, P., & Hoyle, R. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, 80, 514-523.

Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation (Jossey-Bass Higher & Adult Education Series).* San Francisco, CA: Jossey-Bass, John Wiley and Sons.

Mertens, D. M., & Wilson, A. T. (2012). *Program evaluation theory and practice: A comprehensive guide*. New York, NY: Guilford Press.

Miller, G. A. (2003, March). The cognitive revolution. *TRENDS in Cognitive Sciences, 7*(3), 141-144. Retrieved March 22, 2016, from http://www.cs.princeton.edu/~rit/geo/Miller.pdf

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology,75*(1), 33-52. doi:10.1037//0022-3514.75.1.3

O'Leary, K., & O'Leary, S. (Eds.). *Classroom management: The successful use of behavior modification (*2nd ed.). New York; Pergamon, 1977.

O'Rourke E., Haimovitz, K., Ballwebber, C., Dweck, C. S., & Popovic, Z. (2014). Brain points: A growth mindset incentive structure boosts persistence in an educational game. *ACM Digital Library*. http://dx.doi.org/10.1145/2556288.2557157

Pennsylvania Department of Education, (2013). *Title 22 – Education*: *Educator Effectiveness Rating Tool; Classroom Teachers,* PA Bulletin. 43 (25). Retrieved on October 29, 2015 from http://www.pabulletin.com/secure/data/vol43/43-25/43_25_rr.pdf

Pennsylvania Department of Education. (2015). *Guide to PVAAS Reporting* [Brochure]. PA: Author.

Pennsylvania Department of Education. (2014). *Pennsylvania System for Principal Effectiveness* [Brochure]. Retrieved April 1, 2016, from https://www.sas.com/content/dam/SAS/en_us/doc/factsheet/education-evaas-104850.pdf

Pennsylvania Department of Education. 2016. Retrieved from http://www.education.pa.gov/pages/pssa-information.aspx#tab-1).

Pennsylvania Department of Education. 2016. Retrieved from http://www.education.pa.gov/K-12/Assessment%20and%20Accountability/Pennsylvania%20Value%20Added%20Assessment%20System/Pages/default.aspx#tab-1

Pennsylvania School Performance Profile. 2016. Retrieved from http://paschoolperformance.org/Profile/4410

Pintrich, P. R. & DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology.* 82(1), 33-40.

Public School Code of 1949 – Omnibus Amendments. (2012). P. L. 684, No. 82, Retrieved on October 29, 2015 from http://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2012&sessInd=0&act=82

Qualtrics, Cross Tabulation Analysis. (2011, November 01). Retrieved February 22, 2017, from https://www.qualtrics.com/wp-content/uploads/2013/05/Cross-Tabulation-Theory.pdf

Resnick, L. B. (1985). Comprehending and learning: Implications for a cognitive theory of instruction. *Learning Research and Development Center, University of Pittsburgh,* 431-443.

Resnick, L. B. & Hall, M. W. (2000). Principles of learning for effort-based education. *University of Pittsburgh,* 1-22.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. Econometrica, 73(2), 417-458.

Robertson-Kraft, C., & Duckworth, A. L. (2013). True grit: Trait-level perseverance and passion for long-term goals predict effectiveness and retention among novice teachers. Teachers College Record. Retrieved from https://upenn.app.box.com/s/81h02pjga2igfzsb0qk2

Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review, 94(2), 247-252.*

Sanders, W. L., & Rivers, J. C. (1996). Cumulative and residual effects of teachers on future student academic achievement. *Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center.*

Schmoker, M. (2006). *Results now: How we can achieve unprecedented improvements in teaching and learning.* Alexandria, VA; Association for Supervision and Curriculum Development.

Schunk, D. (1982). Effects of effort attributional feedback on children's perceived self-efficacy and achievement. *Journal of Educational Psychology,* 74, 548-556.

Schunk, D. (1985). Self-efficacy and school learning. *Psychology in the Schools, 22, 208-223.*

Shechtman, N., DeBarger, A. H., Dornsife, C., Rosier, S., & Yarnall, L. (2013). *Promoting grit, tenacity, and perseverance: Critical factors for success in the 21st century* (pp. 1-126, Rep.).

Scheeler, M. C., Ruhl, K. L., & McAfee, J. K. (2004). Providing Performance Feedback to Teachers: A Review. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children, 27*(4), 396-407. doi:10.1177/088840640402700407

The American Recovery and Reinvestment Act of 2009: Saving and Creating Jobs and Reforming Education. (2009, March 7). Retrieved April 17, 2016, from http://www2.ed.gov/policy/gen/leg/recovery/implementation.html

Tough, P. (2013). *How children succeed: Grit, curiosity, and the hidden power of character*. New York, NY: Houghton Mifflin Harcourt Publishing Company.

U.S. Department of Education Center for Technology in Learning. 2016. Retrieved from https://www.census.gov/search-results.html?q=Plum%20borough,%20PA

United States Census Bureau. 2016. Retrieved from https://www.census.gov/searchresults.html?q=Plum borough, PA.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relationship between self-beliefs and academic achievement: a meta-analysis review. *Educational Psychologist, 39(2), 114-133.*

Van Houten, R. (1980). *Learning through feedback.* NY: Human Sciences Press.

Wong, H. K., (2004). Induction programs that keep new teachers teaching and improving. *NASSP Bulletin. 88 (638), 41-58.*

Yeager, D. S., & Walton, G. M. (2011). Social-Psychological Interventions in Education: They're Not Magic. *Review of Educational Research,81*(2), 267-301. doi:10.3102/0034654311405999

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: SAGE Publications.