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Supporting a Growth Mindset in High School Classroom Teachers

A Dissertation by

Peter Abboud

Brandman University

Irvine, California

School of Education

Submitted in partial fulfillment of the requirements for the degree of

Doctor of Education in Organizational Leadership

December 2017

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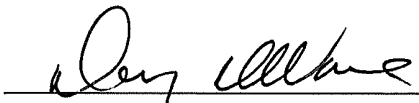
The dissertation of Peter Abboud is approved.



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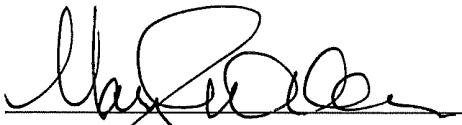

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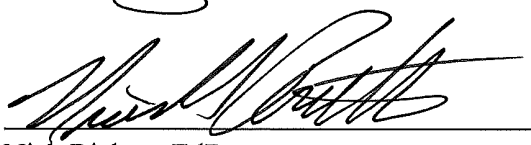

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December 2017

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ABSTRACT

Supporting a Growth Mindset in High School Classroom Teachers

by Peter Abboud

Purpose. The purpose of this qualitative case study was to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers.

Methodology. This qualitative case study used interviews from 12 high school principals to gain an understanding for how they supported a growth mindset in their classroom teachers. The population for the case study was northern California high school principals, and the sample included high school principals from Napa, Sonoma, Solano, Marin, Alameda, and Contra Costa counties. To participate in the study, principals needed to be serving in at least their third year as principal at their school site, were principal at the time their school earned its most recent WASC accreditation, and received a WASC accreditation term of six years with a two day visit or better.

Findings. A total of 15 common themes emerged among the 3 research sub-questions of the study. These findings touched on the importance of school culture, providing feedback to teachers, and celebrating successes. Additionally, themes emerged about the characteristics of teachers with a growth mindset, including their desire to try new things and learn from feedback.

Conclusions. Four main conclusions were drawn based on the findings of this study. First, principals should intentionally address the culture at their school. Second, principals should determine and communicate a clear school-wide focus. Third,

principals should find creative ways to celebrate teachers' successes. Lastly, principals should invest in the professional learning community (PLC) structure at their schools.

Recommendations. Recommended action items based on the research included districts providing ongoing instructional coaching training to principals so that they can better guide teachers in reflection and learning. School districts need to also explicitly train principals in the concept of growth mindset. Furthermore, school districts need to reflect on and evaluate the effectiveness of their teacher evaluation process. Principals should explore creative and innovative ways to recognize teachers for their successes and implement professional learning communities at their school sites. Additionally, principals need to find ways to include the student point of view in the teacher learning process.

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CHAPTER I: INTRODUCTION

Different countries differently approach education, whether it is the pedagogy, the focus on particular content areas, or the number of hours spent in school or studying (Program for International Student Assessment [PISA] Tests, 2015). PISA measures student abilities in reading and the math and science field from various countries. The 2015 data showed that Asian countries, particularly Singapore, performed exceptionally well; whereas many countries saw a gender gap in favor of males and that socioeconomically disadvantaged students tended to score poorly (McPhillips, 2016).

The United States provides much freedom to the states in how they manage their educational systems. California has many accountability measures and various data points that are regularly examined. A glance at California's Data Quest website showed several assessments, including the California Assessment of Student Performance and Progress (CAASPP), the California English Language Development Test (CELDT), the Scholastic Aptitude Test (SAT), the ACT, and Advanced Placement (AP) exams. California is experiencing an increase in students classified as English language learners (ELLs) and socioeconomically disadvantaged (California Department of Education, n.d.).

The interest in so many data points and an increasingly challenging student population made it critical for teachers to have the skills necessary to be successful in these high-stakes environments. Effective professional development was identified as the key to equipping teachers with these skills (Gulamhussein, 2015). However, the effectiveness of professional development was highly impacted by teacher mindset (Gero, 2013; Stenzel, 2015). People with a growth mindset, the belief their ability to learn was not fixed (Dweck, 2006), were more likely to have grit, or the passion,

perseverance, and stamina to achieve long term goals (Duckworth, 2013). It was this growth mindset and grit, not so much talent, that determined a person's success (Duckworth, 2013; Dweck, 2006). Duckworth's (2013) study discovered that students with a growth mindset and more grit were more likely to graduate from high school and that teachers with the same qualities were more likely to be successful, even when working in under-resourced or disadvantaged schools.

Much research was conducted on how to develop a growth mindset in students (Duckworth, 2013; Dweck, 2006), but little research existed on how to do so with adults. This dissertation examined how to develop a growth mindset among teachers, which in turn, could make them more receptive to professional development, increase their grit, and increase their likelihood of success when working with challenging students and educational systems.

Background

Most of literature about mindset asserted that individuals with a growth mindset were most likely to learn and grow at higher levels (Duckworth, 2016; Dweck, 2006). Additionally, teachers with a growth mindset were more likely to respond to professional development (Gero, 2013), which was critical for its success and the academic success of students (Gulamhussein, 2015).

Growth and Fixed Mindsets

Several studies explored how an individual's mindset impacted their learning (Duckworth, 2016; Dweck, 2006; Kamins & Dweck, 1999; McWilliams, 2015). Most of these studies focused on students. People with a growth mindset "believe you can always substantially change how intelligent you are" (Dweck, 2006, p. 12) and that perseverance,

not necessarily talent, determined success (Duckworth, 2009). Conversely, those with a fixed mindset believed "intelligence is something very basic that you can't change much" (Dweck, 2006, p. 12). These students were more likely to be hindered when confronted with roadblocks (Duckworth, 2016; Dweck, 2006).

Few students exhibited a strong growth or fixed mindset. Rather, they tended to have a more moderate mindset. McWilliams (2015) studied 100 ninth grade students and determined that 72 of them were considered to have moderate mindsets. Dweck (2006) also asserted that an individual's mindset varied depending on the situation.

Mindset and learning. Most of the research supported the claim that students with a growth mindset learned at higher levels. One longitudinal study with seventh grade students determined that those with a growth mindset outperformed those with a fixed mindset in math (Blackwell, Trzesniewski, & Dweck, 2007). McWilliams (2015) studied ninth grade students who typically saw a decline in achievement once entering high school; students with a growth mindset could better persevere through the challenges of transitioning to high school.

Developing a Growth Mindset in Students

The general consensus among mindset studies showed that teachers had a strong influence on whether their students developed a growth or fixed mindset (M. Anderson, 2016; Dweck, 2006, 2007; Kamins & Dweck, 1999; Ostroff, 2016). Teachers contributed to growth mindset thinking for their students by acknowledging the students' efforts and their role as learners rather than acknowledging their abilities (M. Anderson, 2016). Similarly, teachers who provided process-oriented feedback to students that recognized their effort supported the development of a growth mindset. Conversely,

people-oriented feedback such as "you are so smart" was less supportive of growth mindset thinking (Kamins & Dweck, 1999) and could actually undermine performance (Dweck & Mueller, 1998). Table 1 provides examples of language representing the fixed and growth mindset from the perspective of the teacher as learner.

Table 1

Language: Teachers as Learners

Scene	Fixed Mindset	Growth Mindset
Sharing a piece of personal writing to demonstrate a skill or technique in a middle school writing lesson	"I'm not a very good writer, but let me show you one way to describe a character."	"This is still a rough draft and I have some revising to do. Let me show you how I'm working on describing a character."
Talking with high school students between classes about an upcoming band concert	"I've never been good at music. I played the clarinet in high school and was terrible!"	"I wish I'd worked harder at music as a kid. I played the clarinet in high school, but I didn't put in the practice time needed to make the marching band."
During a read aloud, a 1st grader exclaims: "You're a great reader!"	"I love to read. It's always something I've been good at."	"I love to read. I've practiced a lot, ever since I was a kid!"

Note. Take from M. Anderson (2016, p. .70)

Similarly, M. Anderson (2016) provided examples of the type of language that could be used with students that supported either a fixed or growth mindset. Table 2 provides three examples from the student as learner perspective.

Table 2

Language: Students as Learners

Scene	Fixed Mindset	Growth Mindset
A class had a rough day with a substitute teacher the day before.	"I guess this is the kind of class that can't be trusted when I'm not around."	"Let's think about some strategies you can use as a class the next time I need to be out of the room. I know you can do better than yesterday."
A student has crafted a poem that is stunningly good.	"This poem is amazing! You are such a talented writer."	"This poem has such depth of feeling with so few words! Tell me about how you wrote this!"
Classmates are talking about a student in the school who has just won a state level chess tournament.	"Chris is really talented, isn't he? It's like he was born holding a chess piece!"	"I bet Chris works really hard. How many hours a week do you think he plays chess to be that good?"

Note. Taken from M. Anderson (2016, p. 70)

Additionally, specific activities teachers could do in their classrooms to support students in developing a growth mindset were identified. M. Anderson (2016) suggested activities such as asking students to identify a skill they were good at (e.g., riding a bike, swimming, reading) and then recognize the activities and effort it took to master that skill. Dweck (2007) recommended explicitly teaching students about the neuroplasticity of the brain and the process the brain underwent when learning something new, noting that students who understood how the brain worked took more ownership of their learning.

Even the most confident and competent teachers sometimes found it challenging to develop a growth mindset despite using the strategies proven effective by the literature (Delasandro, 2016). Oftentimes, the educational structures in place were not supportive

of a growth mindset. For example, the focus on grade point average (GPA) pushed students to pursue a high GPA rather than focus on the learning process (Delasandro, 2016).

Specific programs impacting student mindset. Programs were developed with the potential for supporting students in developing a growth mindset, such as Advancement via Individual Determination (AVID, 2016). AVID was designed to use a series of strategies to support students in their learning during school. The program claimed to prepare students to be successful in high school and college, and was especially beneficial and effective for students who were the first in their families to attend college. Instructional strategies included teaching students to take thorough notes, reflect on their learning, and take ownership of their learning, especially when they struggled, by asking questions of their peers and teachers. The AVID program also focused on developing positive relationships between teachers and students (AVID, 2016).

According to Becker (2012), AVID students completed activities in their classes aligned more with a growth mindset than a fixed mindset; however, the quantitative data from the study were not indicative that AVID helped develop a growth mindset in students. The study examined a group of students enrolled in the AVID program for two years and another group of demographically similar students not enrolled in AVID. Both groups of students were asked to report their perceptions of intelligence on a survey to determine the extent to which they had a growth mindset. The difference between the two groups was not statistically significant, leading the researcher to believe that AVID did not necessarily develop a growth mindset in students (Becker, 2012).

The Brainology Program (2016) claimed to teach students about the brain and to help them develop a growth mindset. Students received 2.5 hours of instruction about the brain along with another 10 hours of classroom activities. This program was developed by Mindset Works, an organization associated with Carol Dweck, a seminal author on mindset (Brainology Program, 2016). However, Wilkins (2014) found no significant effect on mindset from the use of the Brainology Program. Antink (2010) examined a program also associated with Mindset Works, within the context of a geometry standardized test, and found that students who participated in the program had insignificant gains on the assessment.

Teacher Mindset and Professional Learning

The general consensus among the literature was that professional development was important for teacher and student success and that a positive teacher mindset, or growth mindset, was critical for ensuring the professional development was effective (Gero, 2013; Gulamhussein, 2015; Stenzel, 2015; Ugol, 2015). For example, Gero (2013) conducted a study to determine how teacher beliefs impacted the effectiveness of professional development. The researcher surveyed a group of teachers with questions aimed to determine their professional learning behaviors (e.g., how often they sought support from an instructional coach, how often they signed up for professional development, how often they sought feedback from a colleague, the likelihood they would sign up to be observed by a colleague). The survey also asked questions to describe the teachers' mindset. The questions asked teachers to rate their agreement with statements such as whether teachers could change, whether professional development was beneficial, and whether teacher was based on natural ability (Gero, 2013). The use

of language related to natural ability and the idea that teaching abilities could not be changed aligned closely with Dweck's (2006) definitions of growth and fixed mindsets. Gero (2013) found that teachers with a more positive, growth mindset were more likely to engage in effective professional development.

Similarly, another study found that teachers with a growth mindset were more receptive to instructional coaching (Stenzel, 2015). This quantitative study surveyed teachers to determine the extent to which they had a growth or fixed mindset and gauge their perception of instructional coaching. The analysis determined the strength of the relationship between teacher mindset and the perception of coaching. The researcher found that although perceptions of instructional coaching varied (some looked at it positively whereas others were offended by it), the perception was largely dependent on teacher mindset (Stenzel, 2015).

Additionally, Ugol (2015) saw teacher attitudes toward a new literacy program, which was more student-centered rather than teacher-centered, varied depending on mindset. Teachers who had more of a fixed mindset were frustrated with the program and less likely to embrace it, unlike teachers with a growth mindset who were open to trying it out (Ugol, 2015).

Based on the literature, the general consensus was that a fixed or growth mindset strongly determined an individual's success and ability to learn new things (M. Anderson, 2016; Becker, 2012; Duckworth, 2009, 2016; Dweck 2006). When it came to teachers, mindset was a strong indicator of their success with their students and their success when engaging in professional learning (Gero, 2013; Stenzel, 2015; Ugol, 2015).

Role of Principal in Professional Development

The principal at a school site had a strong impact on the school culture, teacher mindset, and thus, the effectiveness of professional development (Wagner, 2014). This was important given that student success was closely tied to professional development (Gulamhussein, 2015) and because teacher mindset was closely tied to the effectiveness of professional development (Gero, 2013; Stenzel, 2015; Ugol, 2015).

Wagner (2014) discussed how a principal's attitude, behavior, and actions had a strong impact on the school's culture and how that culture created the conditions for student learning. Furthermore, teachers implementing a new strategy from professional development needed to be supported and this support could come from the school's principal (Gulamhussein, 2015).

How Principals Impact Mindset

Four strategies that principals could employ when supporting a growth mindset in adults were identified: modeling the behavior, creating space for new ideas, building time for self-reflection, and providing formative feedback (Heggart, 2015).

Modeling the behavior. Principals should model what a growth mindset looks like for teachers. Principals could help their teachers take on the role of learner by learning side-by-side with them (Gerstein, 2014; Heggart, 2015) and explicitly emphasizing that an individual's ability could be developed (Dweck, 2006; Saphier, 2017).

Creating space for new ideas. For individuals to embrace a growth mindset, they needed to feel comfortable taking risks and trying new things. Principals needed to emphasize the learning (Heggart, 2015). Principals could promote a growth mindset in

teachers by using language that recognized and encouraged effort, and celebrated teacher progress (M. Anderson, 2016; Dweck, 2006). Roussin and Zimmerman (2014) also emphasized the importance of how such behaviors helped leverage trusting relationships.

Building time for self-reflection. Teachers needed to have ample opportunities to reflect on their learning and determine the next steps to push their learning even further (Heggart, 2015). Individuals were likely to embrace a growth mindset when they recognized the learning that they accomplished (D. Anderson & Ackerman Anderson, 2010; Saphier, 2017) and genuinely believed that in the future they would make even more progress (Dweck, 2006).

Providing formative feedback. The final strategy was utilizing formative feedback to help teachers improve (Dweck, 2006; Heggart, 2015). It was important to build in opportunities for teachers to seek and utilize feedback that was valuable and meaningful to them. Doing this required a positive and trusting school culture that valued feedback and honesty for the purposes of professional development (Roussin & Zimmerman, 2014).

Gaps in the Research

Although strong evidence was found that having a growth mindset resulted in increased student learning (Dweck, 2006, 2007; Kamins & Dweck, 1999) and that teachers had a strong influence on student mindset (M. Anderson, 2016; Kamins & Dweck, 1999), there was little research on how to develop a growth mindset in teachers. Teachers with a growth mindset were more receptive to instructional coaching and professional development (Stenzel, 2015). If researchers could determine how to develop

a growth mindset in teachers so they were more receptive to professional development, they should see an increase in student achievement.

Statement of the Research Problem

Several research studies and books discussed the importance of mindset. Dweck (2006) asserted that individuals with a growth mindset were more likely to be open to feedback and in turn, learned and grew more quickly than their counterparts with a fixed mindset who did not believe that intelligence could grow and change with effort. Individuals with a growth mindset tended to be gritty and persevered despite obstacles (Duckworth, 2016).

Additionally, studies discussed the importance of mindset in classroom teachers. These studies found that teachers with a positive or growth mindset were more receptive to professional learning (Gero, 2013) and to instructional coaching and feedback (Stenzel, 2015). However, not all individuals had a growth mindset and many people had a moderate mindset somewhere between a growth and fixed mindset (Dweck, 2006; McWilliams, 2015).

Professional development was important to student learning (Gulamhussein, 2015), and positive adult mindset was important to effective professional development (Duckworth, 2016; Dweck, 2006; Gero, 2013; Stenzel, 2015). Much of the current research focused on developing a growth mindset in students (M. Anderson, 2016; Kamins & Dweck, 1999) whereas little research examined how to develop a growth mindset in teachers. Adding to the body of literature about developing a growth mindset in teachers could result in increased student achievement over time (Dweck, 2006; Gero, 2013).

Purpose Statement

The purpose of this qualitative case study was to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers.

Research Questions

Central Question

The central research questions guiding this study was: What strategies do California public high school principals use to support a growth mindset in their classroom teachers?

Sub-questions

The additional sub-questions addressed through this study were:

1. How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?
2. What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?
3. What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?

Significance of the Problem

Effective professional development for teachers was key to ensuring they had the knowledge and skills necessary to address the varied needs of a diverse student population (Gulamhussein, 2015). Teacher mindset was closely linked to the effectiveness of that professional development (Gero, 2013; Stenzel, 2015). California has an especially diverse population of students with unique needs. The percentage of

Latino students, students of low socioeconomic status, and students classified as English language learners (ELLs) continues to increase (California Department of Education [CDE], n.d.).

Significant research in the field showed the positive impact a growth mindset had on learning. Individuals with a growth mindset believed the harder they tried and the more effort they put toward a particular task would make them more successful. They believed their intelligence was not fixed and they could grow and learn over time (Dweck, 2006). Furthermore, research studies and publications discussed strategies teachers could use to build a growth mindset in their students. These ranged from utilizing reflection strategies, sharing stories of one's own learning, providing process-specific feedback, and praising students' effort (M. Anderson, 2016; Auten, 2014; Dweck, 2006; Ostroff, 2016).

What was lacking in the field was research about how to develop a growth mindset in adults, specifically high school classroom teachers. This study examined strategies that high school principals utilized to support classroom teachers in developing and sustaining a growth mindset. These strategies could then be used by a broader population of school site leaders to create positive learning cultures on their campuses by supporting a growth mindset that could result in more impactful professional development and thus, more effective and successful classroom teachers.

Definitions

Fixed Mindset. Individuals with a fixed mindset believed that intelligence cannot be changed with effort and did not persevere in the face of obstacles and setbacks (Dweck, 2006).

Grit. Closely related to growth mindset, grit was an individual's passion, perseverance, and stamina that allowed him/her to push forward in the face of obstacles (Duckworth, 2013, 2016).

Growth Mindset. Individuals with a growth mindset believed that intelligence could be changed with effort and tended to reflect and put in additional effort to persevere when faced with obstacles and setbacks (Dweck, 2006).

Professional Development. Professional development was the regular learning and application typically discussed within the context of classroom teachers. Effective professional development included time to learn new content, allowed individuals to reflect and apply their learning, and included time for follow up.

Delimitations

This qualitative study examines the strategies that high school principals used to support a growth mindset in their classroom teachers. For the purposes of this study, high school principals were those leading schools with grade levels 9 through 12. The research was delimited to high school principals in Napa, Solano, Sonoma, Marin, Contra Costa, and Alameda counties working at schools that earned a Western Association of Schools and Colleges (WASC) accreditation term of six years with a one-day visit or better. The study was also delimited to principals in at least their third year as principal at the school for which they were employed at the time of the study, and who were in the principal role at the time of the WASC accreditation visit.

Organization of the Study

Chapter II detailed the literature about growth and fixed mindsets, their relation to teacher professional development, the importance of professional development, how to

develop a growth mindset in others, and the gaps in the research. Chapter III presents the methodology used in the study, including the research design, population, sample, and data collection procedures. Chapter IV discussed the data and findings, and Chapter V summarizes the findings in addition to describing conclusions, implications for action, and recommendations for next steps. References and applicable appendices appear at the end of the document.

CHAPTER II: REVIEW OF THE LITERATURE

Studies showed that students in the United States (U.S.) underperformed compared to other countries in the world. In particular, Asian countries, especially Singapore, outperformed the others (Program for International Student Assessment [PISA] Tests, 2015). A gender gap also existed and students who were socioeconomically disadvantaged tended to score lower on the PISA (McPhillips, 2016).

Gulamhussein (2015) described the misalignment between how teachers taught and the 21st century skills required of students outlined in the common core state standards (CCSS). Darling-Hammond (1995) described professional development as the linchpin that helped bridge the gap between teacher practice and the desired student outcomes. Effective professional development had a strong impact on student success and the characteristics of the professional development could result in strong impacts on both teachers and students (Gulamhussein, 2015; Guskey, 2002; Joyce & Showers, 2003).

One characteristic that made professional development successful was teacher mindset. Teachers with a positive mindset and invested in their learning benefited more from professional development (Gero, 2013; Gulamhussein, 2015; Ostroff, 2016; Ugol, 2005). The literature also showed that principals had a strong influence on professional development and teacher mindset. They could facilitate better adult learning by carefully planning professional development and supporting a school culture of learning (Bredeson & Johansson, 2000; Gulamhussein, 2015; Youngs & King, 2002).

This literature review examines the role of professional development, what made it successful, and how teacher mindset impacted professional development and thus

student success. The literature review delves into the characteristics of a growth mindset, its relation to learning, and how teachers develop a growth mindset in students. Finally, the literature review explores the limited research on how principals can develop a growth mindset in teachers.

Professional Development

Impact of Professional Development on Teachers and Students

Every year school districts spend millions of dollars on professional development for teachers (Miles, Odden, Fermanich, & Archibald, 2004), but most of that professional development was deemed ineffective and did not impact teachers or student learning (Gulamhussein, 2015). For example, professional development that solely consisted of a teacher workshop had little impact on students and classrooms (Gulamhussein, 2015; Joyce & Showers, 2003). It was the follow-up and sustained support that resulted in more effective professional development and a shift in student outcomes (Darling-Hammond, 1995; Guskey & Yoon, 2009).

The typical goal of most professional development was to help teachers learn about a new skill and transfer it to the classroom to improve or increase student learning (Bredeson & Johansson, 2000; Garet, Porter, Desimone, Birman, & Yoon, 2001; Gulamhussein, 2015; Guskey, 1997, 2002; Joyce & Showers, 2003). Gulamhussein (2015) highlighted the misalignment between how teachers taught and the 21st century skills required of students outlined in the common core state standards (CCSS). Additionally, Darling-Hammond (2000) described professional development as the linchpin that helped bridge the gap between teacher practice and the desired student outcomes, and found teacher skill as the most impactful on student learning.

Effective Professional development had a high impact on student learning, but could be high maintenance (Gulamhussein, 2015; Guskey, 2002; Joyce & Showers, 2003). Vescio, Ross, and Adams (2008) examined professional learning communities (PLCs) as a structure of professional development. PLCs were teams of teachers who worked collaboratively to establish common learning outcomes and assessments, and to determine the most effective ways to help students master those outcomes (DuFour & Eaker, 2009). Vescio et al. (2002) found that high functioning PLCs had a positive impact on teachers and student outcomes.

To summarize, professional development had the potential to be significantly effective and impact student learning, but could not be haphazardly planned or implemented (Guskey & Yoon, 2009). Leaders who planned professional development effectively saw better results for students (Gulamhussein, 2015; Guskey, 2002; Guskey & Yoon, 2009).

Characteristics of Effective Professional Development

The literature showed some common trends about what made professional development effective (Gulamhussein, 2015; Guskey & Yoon, 2009; Joyce & Showers, 2003). First, it was noted that professional development should include time for teachers to increase their knowledge about a skill or strategy, have that skill modeled for them, and provide coaching to help teachers transfer that knowledge to their classroom (Garet et al., 2001; Joyce & Showers, 2003). Additionally, the content of the professional development should include both the content of the subject matter taught as well as the pedagogy (Garet et al., 2001; Gulamhussein, 2015; Guskey & Yoon, 2009).

Second, the literature indicated enough time needed to be devoted to professional development. Teachers often struggled when implementing a new skill and Gulamhussein (2015) called this the implementation problem. A teacher could take as many as 20 attempts and 50 hours of practice and coaching before mastering a skill and leaders should plan for this (Gulamhussein, 2015). Because effective professional development was time consuming, leaders needed to be thoughtful and careful about how they planned out the time (Guskey & Yoon, 2009).

Third, effectively facilitated professional development placed teachers in the role of active learners (Darling-Hammond, 1995; Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet et al., 2001) and engaged teachers so they could make sense of what they learned (Gulamhussein, 2015). Examples of this included watching experts implement skills, reviewing student work, and getting feedback from others (Martin et al., 2010).

Finally, effective professional development had substantial follow-up. It was not enough to facilitate a workshop with a group of teachers and then assume they could implement the learnings on their own without any additional support or follow-up (Guskey & Yoon, 2009). This support could be done through peer or instructional coaching (Kimsey-House, Kimsey-House, Whitworth, & Sandahl, et al., 2010; Knight, 2007; Lipton, Wellman, & Humbard, 2003; Wellman & Lipton, 2004) or through collaborative PLCs (DuFour & Eaker, 2009).

In PLCs, teachers worked together to establish common learning outcomes and determine how to best help students achieve those learning outcomes. They grappled with challenges, problem-solved, and regularly examined data to check their progress

over time. These were often facilitated by teacher leaders with the support of school administration or instructional coaches (DuFour & Eaker, 2009).

Another strategy used for follow-up was peer coaching. One person served as the instructional coach and checked-in with the other teacher to see how implementation was progressing. The coach asked probing questions and partnered with the teacher to model strategies and problem-solve when issues arose (Kimsey-House et al., 2010; Knight, 2007; Lipton et al., 2003; Wellman & Lipton, 2004). Peer coaching was important, but was often eliminated from the professional development model (Joyce & Showers, 2003).

Joyce and Showers (2003) also said that professional development was more effective when teachers were persistent in their learning. This idea of persistence and perseverance aligned to Duckworth's (2016) work on grit and Dweck's (2006) work on growth mindset.

Role of Principals in Professional Development

Research showed that school principals had a strong and indirect influence on student achievement and professional development (Bredeson & Johansson, 2000; Gulamhussein, 2015; Youngs & King, 2002). Although the characteristics described in the previous section led to effective professional development, it was up to the school principal to ensure they were implemented well (Bredeson & Johansson, 2000).

It was the principal's role to create and support structures that encouraged teacher learning (Youngs & King, 2002). Examples of this included establishing and supporting PLCs (DuFour & Eaker, 2009) and ensuring that ongoing instructional coaching happened (Kimsey-House et al., 2010; Knight, 2007; Lipton et al., 2003; Wellman & Lipton, 2004), which helped teachers work through implementation problems

(Gulamhussein, 2015). Effective principals also included time in the school day as part of these structures (Youngs & King, 2002).

A principal's role was also to ensure that professional development was coherent (Garet et al., 2001; Youngs & King, 2002). Coherent professional development was part of a larger teacher learning plan and not a series of random or unrelated activities. Ideally, activities built on each other and were part of a school, district, or state's larger work and goals (Garet et al., 2001). Coherence of professional development resulted in clarity for teachers and an increase in student learning (Bredeson & Johansson, 2000; Darling-Hammond, 1995; Newmann, Smith, Allensworth, & Bryk, 2001). Because coherence was important, principals needed to ensure they were intentional and careful about how professional learning time was planned and structured (Guskey & Yoon, 2009).

Lastly, it was the principal's role to ensure the school culture and environment were supportive of both teacher and student learning and that there was a culture of continuous improvement and learning (Bredeson & Johansson, 2000; Greenhouse Schools, 2012; Peterson & Deal, 1998). The adults in the school needed to feel trusted and supported so they could take instructional risks without fear of judgement if they made mistakes (Dweck, 2006; Fullan, 2012; Heggart, 2016).

Growth vs. Fixed Mindsets

Several studies examined mindset, but it was Carol Dweck (2006) who coined the terms *growth mindset* and *fixed mindset*. Individuals rarely fully exhibited one mindset or the other in all circumstances, but often maintained a moderate mindset somewhere in

between a fixed and growth mindset (Dweck, 2006; McWilliams, 2015). Regardless, clear characteristics emerged with each type of mindset.

Individuals with a growth mindset "believe you can always substantially change how intelligent you are" (Dweck, 2006, p. 12) and that it was perseverance, not necessarily talent, that determined your success (Duckworth, 2009). Individuals with a growth mindset saw obstacles as opportunities and valued feedback from others to help them improve (Dweck, 2006).

Conversely, individuals with a fixed mindset believed "intelligence is something very basic that you can't change much" (Dweck, 2006, p. 12). These individuals were more likely to feel hindered by obstacles and less likely to persevere through them (Duckworth, 2013). They ignored negative feedback, even when it could be helpful (Dweck, 2006). Figure 1 illustrates how individuals with either a fixed or a growth mindset perceive or respond to challenges, obstacles, effort, criticism, and the success of others.

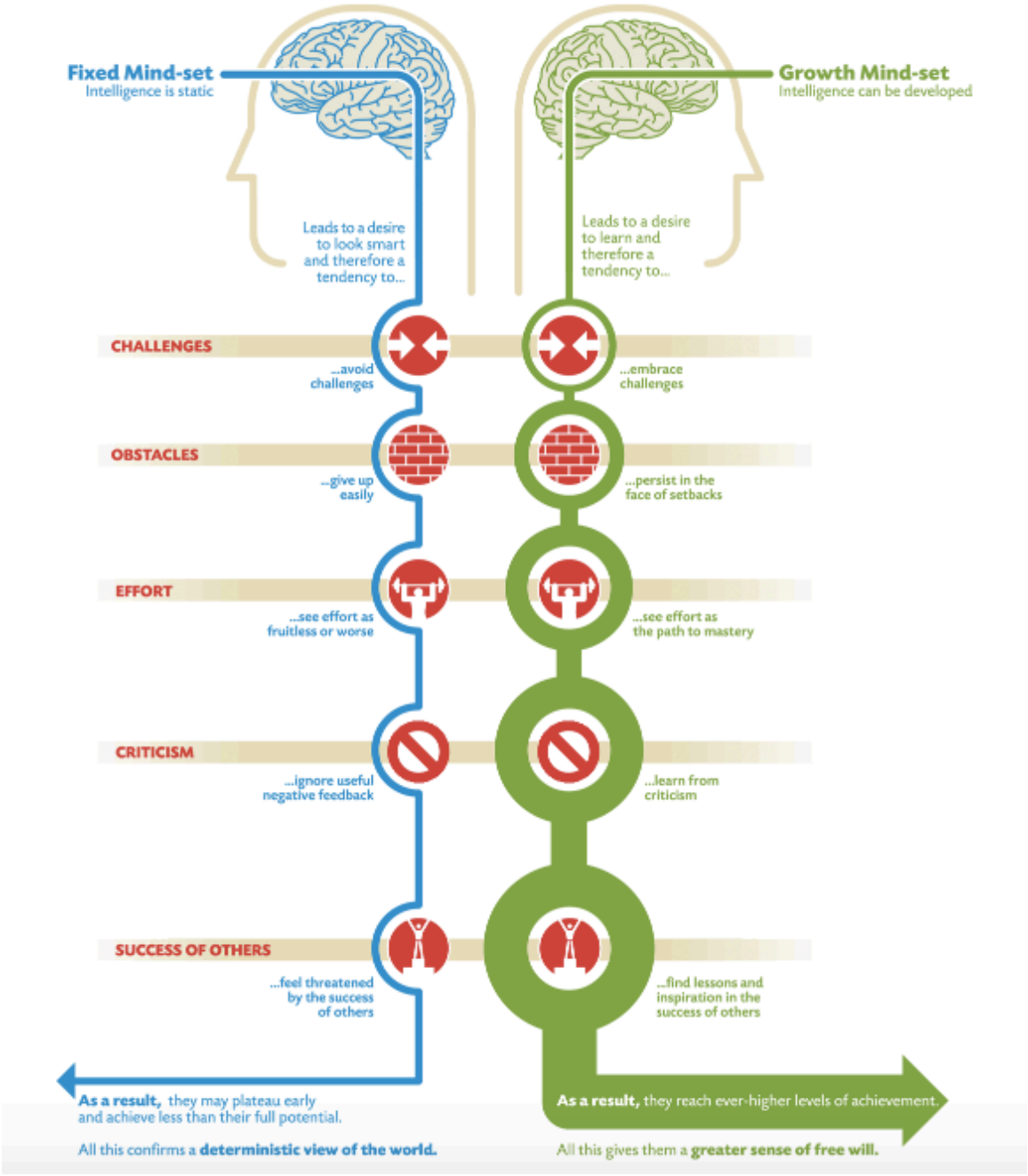

Figure 1. Two mindsets. Source: "Mindset: The new psychology of success," by C. S. Dweck, 2006.

Elements of Dweck's (2006) Growth Mindset Theoretical Framework

Challenges. Individuals differed in the way they approached challenges depending on their mindset. Those with a fixed mindset tended to avoid challenges

because they were afraid of failure and allowed failures to define them (Heggart, 2015). Those with a growth mindset were more likely to see failures or challenges as learning opportunities and embraced them in an effort to grow and improve (Oxendine, 2014).

Adopting a growth mindset when it came to challenges could be especially difficult since society tended to reinforce the fixed mindset mentality. An example of this was the intelligence quotient (IQ) test, which assumed that intelligence was fixed and did not view the score as a tool to help with individual growth and improvement (Oxendine, 2014).

Boaler (2009) discussed the fixed mindset mentality of society with regard to math, and how math students in the U.S. suffered from this and were put at a disadvantage. She described how there was a strong fixed mindset message that people were either good or bad at math and how girls in particular often heard messages that they were not expected to be good at math. Boaler (2009) went into detail of how mathematical puzzles and other strategies could be used by teachers to push back against the fixed mindset message and help students embrace the challenge of learning math. Similarly, Business Wire (2016) gave an example of an initiative to help students embrace the challenge of learning math and to change the language they used from fixed mindset statements such as "I'm not good at math" to statements like "I will learn from my mistakes" and "I will persevere through challenges in math."

How individuals perceived failure impacted whether they embraced challenges (Dweck, 2006; Heggart, 2015; New Mexico School for the Arts, 2016). People needed to see that it was acceptable to make mistakes and they could learn from them (New Mexico School for the Arts).

Obstacles. Those with a fixed mindset were likely to give up easily when presented with an obstacle or a setback in what they were doing, whereas those with a growth mindset were likely to persist even when confronted with challenges (Dweck, 2006). An example given by Carol Dweck (2006) was Jackson Pollack, a famous artist who did not have natural talent in the arts. Rather, it was Pollack's hard work and perseverance that resulted in him being so successful and famous.

Duckworth, Peterson, Matthews, and Kelly (2007) emphasized the importance of this perseverance and how it was so closely tied to success. A study they conducted looked at the level of grit with a sample of new West Point cadets. They found that cadets in the lowest quartile of grit were the most likely to drop out of the program. Only 89% of cadets in the lowest quartile remained in the program. For the first, second, and third quartiles, 95% to 96% of the cadets remained enrolled in the program (Duckworth et al., 2007).

Effort. The way that individuals perceived effort also varied depending on whether they exhibited a growth or fixed mindset. Those with a fixed mindset viewed effort as futile and did not believe that it would lead to growth or learning and thus, exerted less effort (Hochanadel & Finamore, 2015). Those with a growth mindset believed that effort was the "path to mastery" (Dweck, 2006, p. 245) and were more likely to invest hours of effort and practice. Gladwell (2008) reinforced this idea by asserting that it took 10,000 or more hours to truly master a particular skill and Duckworth (2009) described the 10-year rule, that those who were experts in their fields spent at least 10 years in those fields.

Duckworth (2016) more deeply examined the idea of effort and its relation to mastery. She described grit as the passion, stamina, and perseverance for long-term goals and asserted that talent did not play a part in how *gritty* an individual was, a term coined by Duckworth. Her studies showed that talent and grit tend to be inversely related to one another (Duckworth, 2013). Individuals with grit were more likely to practice and to stick to their commitments (Duckworth, 2016), a trait that was characteristic of a growth mindset (Dweck, 2006). Furthermore, Duckworth (2009) interviewed individuals who were at the top of their fields and discovered it was their grit and tenacity that led them to be so successful.

Criticism. Individuals with a growth mindset valued criticism and feedback, even when it was negative. They looked at feedback as an opportunity to learn and improve, so they embraced it rather than ignore it. On the other hand, those with a fixed mindset tended to ignore feedback, believing it would not lead to improved performance or increase learn (Clear, n.d.; Dweck, 2006; Ostroff, 2016). Rather, they engaged in defensive behavior that addressed "lost self-esteem without addressing the underlying cause of the negative feedback" (Nussbaum & Dweck, 2008, p. 599). Vandewalle (2012) saw this with a study in the workplace of employees who had experienced setbacks. He found that employees with a fixed mindset perceived feedback from their manager as a judgement of them whereas employees with a growth mindset saw it as formative in nature that they could use it to improve performance (Vandewalle, 2012).

Some argued it was important to set high expectations and then focus on meeting those expectations; however, it was more impactful to focus feedback on effort (Mercer & Ryan, 2009) and growth over time (Masters, 2013). "When [people]…change to a

growth mindset, they change from a judge-and-be-judged framework to a learn-and-help-learn framework" (Dweck, 2006, p. 244).

Although criticism and feedback could be powerful, it needed to be done skillfully. Feedback like "good job" could be encouraging, but was not specific enough to provide details on what was done well and how to improve (Gigante, Dell, & Sharkey, 2011; Morehead, 2012). Feedback that acknowledged effort and provided specific and targeted feedback to help others improve was the most effective (Dweck, 2006, 2007; Kamins & Dweck, 1999). Adding in a word like "yet" could make a statement even more powerful by setting the expectation that the individual would reach mastery at a later date (Thierolf, 2015). Those who could accept feedback and who recognized and appreciated that learning was a process with multiple iterations benefited the most from critical feedback (New Mexico School for the Arts, 2016). Table 3 gives examples from Duckworth (2016) of feedback that promoted or undermined growth mindset and grit.

Table 3

Examples of Feedback Promoting and Undermining Growth Mindset and Grit

Undermines Growth Mindset and Grit	Promotes Growth Mindset and Grit
• You're a natural! I love that. • Maybe this just isn't your strength. Don't worry-you have other things to contribute. • Great job! You're so talented! • Well, at least you tried! • This is hard. Don't feel bad if you can't do it.	• You're a *learner*! I love that. • That didn't work. Let's talk about how you approached it and what might work better. • Great job! What's one thing that could have been even better? • This is hard. Don't feel bad if you can't do it *yet*. • I have high standards. I'm holding you to them because I know we can reach them together.

Note. From "Grit: The power and passion of perseverance," by A. Duckworth, 2016, p. 182

Success of others. Individuals with a growth mindset were inspired by and celebrated the success of others, and examined what they did to be successful to learn from them (Clear, n.d.). Those with a fixed mindset felt threatened by others' success and tended to dismiss their accomplishments (Dweck, 2006). Nussbaum and Dweck (2008) found that people with a fixed mindset got defensive when others were successful. They also tended to compare themselves to those who performed more poorly instead of comparing themselves to those who were more successful, which would allow them to look critically at others' success and learn from it.

Learning and Mindset

The literature suggested a strong correlation between a growth mindset and learning (Blackwell et al., 2007; Duckworth, 2016; Dweck, 2006; McWilliams, 2015). Blackwell et al. (2007) conducted a study with hundreds of students who were entering junior high school. All these students had similar academic backgrounds and performed at a similar level leading up to junior high. The students' math abilities were evaluated for two years. Those with a growth mindset outperformed those with a fixed mindset and the gap between the two groups continued to grow over the course of the two years (Blackwell et al., 2007).

Another study examined undergraduate college students taking their first chemistry class, a prerequisite to the pre-med program. The researchers measured the students' mindsets and examined their study habits. Students with a fixed mindset did not rebound after failing a test, unlike those with a growth mindset. Students with a fixed mindset would reread their notes several times and try to memorize as much as possible whereas those with a growth mindset would look at their mistakes and maintain their

interest in the subject. Those who "think in terms of learning, people with a growth mindset, are clued in to all the different ways to create learning" (Dweck, 2006, p. 62).

McWilliams (2015) studied ninth grade students who typically saw a decline in achievement after entering high school. Students with a growth mindset persevered through the challenges of transitioning to high school whereas those with a fixed mindset struggled. Students who had more of a moderate mindset also struggled with some elements of achievement (McWilliams, 2015). Similarly, a national study of Chilean tenth graders showed that those with a growth mindset performed better on a national reading and math assessment than their peers who exhibited a fixed or a neutral mindset; those with a growth mindset were nearly five times as likely to score in the top quintile than the bottom quintile on the national assessment (Claro & Paunesku, 2014).

Although the literature reinforced the benefits of a growth mindset, some research disagreed with its importance or downplayed its benefits. Winner (1996) recognized the role that effort played in success, but emphasized that some children, especially gifted children, owed their skill level to their innate abilities. Hambrick, Macnamara, Campitelli, Ullén, and Mosing (2016) disagreed about the degree to which influence and effort impacted success, especially when it came to complex domains such as music and sports, and were critical of theories like Gladwell's (2008) 10,000-hour rule. In their meta-analysis study, they found that practice accounted for a good-sized proportion of the variance in performance, but a larger proportion remained unexplained and therefore attributable to other factors (Hambrick et al., 2016). Another similar study showed that practice only accounted for 26% of the variance in performance for games and even less for music, sports, education, and professions (Macnamara, Hambrick, & Oswald, 2014).

Meinz and Hambrick (2010) drew a similar conclusion when examining piano players of varying skill levels.

Relationship Between Grit and Mindset

Dweck's (2006) model of growth mindset and Duckworth's (2016) concept of grit were closely related. Mindset consisted of five areas, which included how individuals responded to obstacles and how they perceived effort. The other areas focused on how they responded to challenges, feedback/criticism, and the success of others. Those with a growth mindset persisted when confronted with obstacles and viewed effort as fruitful (Dweck, 2006). Likewise, Duckworth (2016) looked at gritty individuals as those who were passionate, put forth effort, and persevered despite challenges that got in the way. Gritty people showed "effort and interest over years despite failure, adversity, and plateaus in progress" (Duckworth et al., 2007, p. 1088).

Duckworth and Eskreis-Winkler (2013) described how people who worked hard would be successful and that their "research suggests that prodigious talent is no guarantee of grit" (Duckworth & Eskreis-Winkler, p. 1). In fact, those with more innate talent were less likely to be gritty (Duckworth, 2009).

Teacher Mindset and Professional Development

Substantial literature existed about the importance of teacher professional development (Gulamhussein, 2015; Joyce & Showers, 2003), its impact on teachers and students (Garet et al., 2001; Guskey, 1997; Joyce & Showers, 2003), and how to ensure it resulted in increased student learning (Gulamhussein, 2015; Guskey & Yoon, 2009; Joyce & Showers, 2003). Additionally, a fair amount of literature was found regarding how a teacher's mindset could impact the effectiveness of professional development

(Gero, 2013; Gulamhussein, 2015; Ostroff, 2016; Ugol, 2005). This portion of the literature review examines the importance of teacher mindset for the effectiveness of professional development and the relationship between teacher mindset and student success.

Impact of Teacher Mindset on Professional Development

Multiple factors determined the efficacy of professional development, including its design (Gulamhussein, 2015; Guskey & Yoon, 2009; Joyce & Showers, 2003) and how it was supported by principals (Bredeson & Johansson, 2000; Gulamhussein, 2015; Youngs & King, 2002). However, fewer studies examined how teacher mindset affected the effectiveness and impact of professional development (Gero, 2013; Stenzel, 2015; Ugol, 2015).

Those with a positive teacher mindset, or growth mindset, were more driven to improve, believed they could get better at their craft, and were likely to benefit from professional development (Gero, 2013). They were more goal oriented (Gero, 2013), took feedback positively (Dweck, 2006; Stenzel, 2015), put forth effort, showed higher levels of perseverance (Duckworth, 2016; Joyce & Showers, 2003), and learned more than their counterparts with a fixed mindset who did not embody these characteristics (Duckworth, 2016; Dweck, 2006). As such, those with a growth mindset were more impacted by the professional development, which led to increased student learning (Desimone et al., 2002; Guskey, 1997).

Ugol (2015) examined the role of teacher mindset in middle school literacy instruction. She found that teachers with a fixed mindset were more frustrated and apprehensive about changing to a new curriculum. This was true even when it was

believed that the curriculum was more student-centered and would result in increased student learning (Ugol, 2015). Changes in an organization, whether curriculum or otherwise, could be difficult for people (Heifetz & Linsky, 2009), but change was easier when individuals embraced a growth mindset.

Relationship Between Teacher Mindset and Student Success

Teacher mindset impacted the effectiveness of professional development (Gero, 2013; Stenzel, 2015; Ugol, 2015) which, when done well, impacted student learning (Desimone et al., 2002; Guskey, 1997); however, the literature also showed that teacher mindset had a direct impact on student achievement, independent of professional development (Dweck, 2006, 2007; Ostroff, 2016). When teachers believed and expected their students could be successful, the students rose to that expectation (Kamins & Dweck, 1999; Ostroff, 2016).

When teachers had a fixed mindset about learning, only students with high abilities in their class performed well (Dweck, 2014). Conversely, when teachers had a growth mindset, students of various levels performed well. It was the teachers' implicit beliefs about students and their learning that either hindered or propelled student achievement (Dweck, 2014).

One example of this was a teacher who maintained a growth mindset when working with advanced placement (AP) calculus students (Dweck, 2006). His school was considered low-performing and had low expectations for students to perform well on the exam. Regardless, the teacher persevered and embraced the challenge of helping his students pass the class the AP exam. At the end of the year, his class had one of the highest AP calculus exam pass rates in the country. Another example was a teacher who

had a class of second graders labeled low-performing who had reading levels below grade level. The teacher embraced her growth mindset and believed she could take on the challenge of helping the students learn. By the end of the school year, the students were at a fifth-grade reading level (Dweck, 2006).

A study that looked at teacher mindset at the start of the school reinforced how powerful teacher mindset was on student learning (Rheinberg, 2001, as cited in Dweck, 2006). Teachers who had a fixed mindset about their students at the start of the school year saw no change in student performance over the course of the school year. Students who tended to naturally achieve at high levels continued to do so whereas lower-performing students continued to perform at lower levels. Conversely, students who had a teacher with a growth mindset performed at high levels at the end of the school year, regardless of their performance at the beginning of the school year (Rheinberg, 2001, cited in Dweck, 2006). Multiple strategies were identified that helped develop a growth mindset in others, including being strategic about giving feedback, emphasizing the importance of effort, explicitly teaching about learning and the brain, and celebrating successes (Dweck, 2006; Gigante et al., 2011; Kamins & Dweck, 1999; Thierolf, 2015; Wilson, 2014; Wilson & Conyers, 2017).

Developing a Growth Mindset in Students

The literature identified several strategies that could be used to support a growth mindset in students. When used carefully and strategically, these strategies could push students to embrace challenges, persevere, and value and use feedback for growth (Dweck, 2006; Gigante et al., 2011; Kamins & Dweck, 1999; Wilson, 2014; Wilson & Conyers, 2017).

Giving Feedback

Providing thoughtful and specific feedback helped students grow. Feedback such as "good job" made a student feel good, but did not provide specific information as to what was done well or which areas could be done even better (Gigante et al., 2011). For example, telling students they did a good job on their paper was not as effective as telling them the tone of their writing was effective and that they could make their arguments stronger by adding in a few more examples (Kallick & Zmuda, 2017; Ostroff, 2016). Additionally, feedback should be factual, nonjudgmental, and timely (Wiggins, 2012).

Kohn (2001) added that praising students with "good job" manipulated children and turned them into "praise junkies" who craved more of that feedback, lost interest, and achieved at lower levels than expected. Strain and Joseph (2004) argued against Kohn (2001), stating that feedback like "good job" was developmentally appropriate for many children in many situations and that feedback given in the right frequency would not produce praise junkies. Additionally, feedback such as "you are so smart" reinforced a fixed mindset. This kind of feedback told students it was their innate ability that led to their success, which undermined the effort and energy put into being successful. It was more effective to provide feedback that recognized student effort and celebrated the progress and learning that students achieved. This encouraged them to put forth effort and persevere in future situations (Fensterwald, 2015; Kamins & Dweck, 1999). Feedback that encouraged the learning process was called process-oriented feedback, which helped students embrace mistakes (Kamins & Dweck, 1999; Ostroff, 2016). M. Anderson (2016) provided examples of feedback and phrases that teachers could use to reinforce a growth mindset.

Donald (2013) described the impact of process oriented feedback on children as young as one to three years old. Children in that age range who received a higher proportion of process-oriented feedback compared to person-oriented feedback were more likely to embrace challenges and persevere as they got older (Donald, 2013).

Emphasizing Effort and Learning

Another strategy that could be used to support a growth mindset was emphasizing and reinforcing effort and the learning process (Bissonette, 2017; Dweck, 2006; Fensterwald, 2015; Ostroff, 2016). Dweck (2006) discussed the value of effort and how it was important to recognize when students were trying hard. She warned, however, that simply pushing students to try harder when they had not yet succeeded was not enough to develop a growth mindset (Dweck, 2006). Students also needed to hear strategies for how to do better so that they did not get stuck (Bissonette, 2017; Fensterwald, 2015). One study found that individuals needed to receive external feedback to be aware of their mistakes (Mangels, Butterfield, Lamb, Good, & Dweck, 2006).

Teachers could also emphasize the learning process by recognizing when students were successful and allowing for multiple iterations of work until mastery was reached (Ostroff, 2013). Teachers "provide critical feedback and give students an opportunity to revise their work. They create a classroom where students are encouraged to take on challenges, try new strategies and acknowledge and explain their mistakes…" (Fensterwald, 2015, para 10). Other ways to emphasize effort and learning in the classroom included explicitly telling students about the relationship between effort and success, helping them track their achievement (Bissonette, 2017), and helping students set and work toward goals (Dweck, 2006).

Explicitly Teaching about Learning and the Brain

Explicitly teaching students about learning and the brain could also help develop a growth mindset (Dweck, 2006; Mangels et al., 2006; Moser, Schroder, Heeter, Moran, & Lee, 2011; Wilson, 2014). When students knew that putting forth effort and learning from their mistakes helped them learn and grow, they were more likely to see value in that effort and exert more of it (Dweck, 2006). Dweck (2006) suggested this could be accomplished through mindset lectures. They explicitly taught others about the brain and how to change the internal dialogue so it was more growth mindset-oriented than fixed mindset-oriented (Dweck, 2006). Teaching students about neuroplasticity, the concept that the brain could grow and change over time, was shown to help them understand their abilities were malleable (Wilson, 2014). This, coupled with explicit learning strategies, led to positive results in student learning (M. Anderson, 2016; Wilson, 2014).

Studies described how the brain changed when individuals learned new things and how there was a difference in brain energy depending on whether someone had more of a fixed or growth mindset. Mangels et al. (2006) conducted a study that showed participants with a growth mindset focused more neural energy on a task compared to those with a fixed mindset. Another study showed that the brain changed and produced new synapses when people learned new things; in particular, this was seen as individuals with a growth mindset learned from their mistakes (Moser et al., 2011).

A body of research also exists that disagrees with the notion that the brain was as malleable as some studies showed. This research suggested there were critical periods in an individual's life when the brain changed and grew while at other times, such as adulthood, the brain was less malleable (Chugani, 1998; Hensch, 2005). Chugani (1998)

suggested malleability declined at ages 16-18. These studies, however, were older and appeared less frequently in the literature than some of the more current seminal studies that emphasized the impact of effort, grit, and positive mindset (Bissonette, 2017; Blackwell et al., 2007; Dweck, 2006; Duckworth, 2016; Duckworth et al., 2007; Gladwell, 2008; Mangels et al., 2006; McWilliams, 2015; Wilson & Conyers, 2017).

Celebrating Success

Another strategy teachers could use to support a growth mindset in students was to share with them examples of success. The teacher could share a time when he/she was successful and what led to that success. Teachers could also ask students to think of a time when they were successful and then analyze what it took to get to that point (Bissonette, 2017; Wilson & Conyers, 2017). "By praising success, teachers endeavor to promote positive attitudes, build self-esteem and encourage all students in their learning" (Masters, 2013, p. 1). Wilson and Conyers (2017) gave a concrete example of how to celebrate successes. They encouraged asking students to maintain a folder where students kept artifacts of successful learning experiences. This folder became a way to anchor students in success and was something they could reference regularly. A search for strategies for celebrating success provided several potential strategies including writing celebratory notes to students, holding recognition assemblies, allowing peers to celebrate each other's successes, and awarding badges or other tokens (Fox, 2015; Lynch, 2015). Celebrating success was also an effective way of encouraging and supporting adults (D. Anderson & Ackerman Anderson, 2010).

Teachers could also shift the way they looked at assessments. Students were encouraged to look at their assessment data to help them celebrate what they learned;

determine what, specifically, they needed to do to achieve at a higher level (Wilson & Conyers, 2017); and to set goals for moving forward (Masters, 2013; Wiggins, 2012).

Mindset and Math

A survey of the literature showed a significant interest in developing a growth mindset in students focused on math instruction. Math tended to be a subject in which many students had a fixed mindset (Boaler, 2015). Students tended to believe they were either good or bad at math as evidenced by statements such as "He's really good at math" (Boaler, 2009). This fixed mindset mentality about math became more apparent as students got older and girls were especially susceptible to it (Preckel, Goetz, Pekrun, & Kleine, 2008). This was due to influences from society that did not support girls being skilled in math (Boaler, 2009). Preckel et al. (2008) studied sixth grade boys and girls and their math abilities; they found that girls were less interested and motivated in math. Stevenson and Newman (1986) found that boys had more positive attitudes toward math whereas girls had more positive attitudes toward reading. However, a handful of studies did not support the claim that boys outperformed girls in mathematics. Brandon, Newton, and Hammond (1987) examined a Hawaii Public School assessment in math for a gender gap and found that girls outperformed boys. Hyde and Linn (2006) found that the gender gap varied depending on the country.

A number of strategies were shown to successfully support students in embracing a growth mindset about math. Boaler (2013) discussed avoiding grouping students by ability. Rather, teachers should place students in heterogeneous groups when learning math. Teachers who worked with lower-level homogenous groups risked influencing student achievement by sending implicit fixed mindset messages to students. Teachers

needed to believe that all students could be successful. Students could sense if teachers believed otherwise (Boaler, 2013).

Similar to supporting students in embracing a growth mindset in other content areas, teachers could facilitate students' learning by having them analyze their errors and use them as learning opportunities (Boaler, 2009, 2013; Dweck, 2006; Mangels et al.; 2006). Boaler (2009) also discussed other strategies like encouraging children to do puzzles at a young age to encourage mathematical thinking.

Programs for Developing a Growth Mindset

Several programs claimed to influence and develop a growth mindset (AVID, 2016; Brainology Program, 2016; Dweck, 2006). One such program was Brainology, a series of online computer modules students work through with the guidance of a classroom teacher. The Brainology Program (2016) website described the program as "a blended learning curriculum designed to teach students the understanding that their intelligence and abilities are not fixed and can be developed through effort" (para. 1). The modules teach students about the brain (e.g., the transference of information from working memory to permanent memory) and how to best take care of it (Brainology Program, 2016). O'Rourke, Haimovitz, Ballweber, Dweck, and Popovic (2014) explored the concept of using gamification to support a growth mindset; they suggested using video game structures that calculated points in such a way that students were motivated to learn more about and embrace a growth mindset.

Although there were claims that Brainology helped develop a growth mindset, Antink (2010) disagreed. She conducted a study with high school geometry students and found no significant gains on the California standardized test for geometry for students

using the program. Wilkins (2014) also studied Brainology in five urban middle schools and found no statistically significant benefits of using the program.

Another program, Advancement via Individual Determination (AVID), is a teacher-facilitated program that uses a series of strategies to support student learning during school. AVID (2016) claimed to prepare students to be successful in high school and college, and was especially beneficial for students who would be the first in their family to attend college. Instructional strategies included teaching students to (1) take notes, (2) reflect on their learning, and (3) take ownership of their learning, especially when struggling, by asking questions of their peers and teachers. AVID (2016) also focused on creating positive classroom communities and building positive relationships between students and their teachers.

According to Becker (2012), AVID students completed activities in their classes that aligned more with a growth mindset; however, the quantitative data from the study were not indicative that AVID helped develop a growth mindset in students. The study examined a group of students enrolled in the AVID program for two years and another group of demographically similar students not enrolled in AVID. Both groups of students were asked to report their perceptions of intelligence on a survey to determine the extent to which they had a growth mindset. The difference in the data reported from the two groups was not statistically significant, leading the researcher to believe that AVID did not necessarily develop a growth mindset in students (Becker, 2012).

The Role of Principal in Supporting a Growth Mindset

Heggart (2015) provided an operational framework for how school principals could support a growth mindset in teachers and staff based on Dweck's (2006) theoretical

framework discussed in the previous section. These strategies fit under modeling, creating space for new ideas, building in time for self-reflection, and providing formative feedback (Heggart, 2015). Many of the strategies were similar to those that were effective at supporting a growth mindset in students (M. Anderson, 2016). This section of the literature review looks at each area presented by Heggart (2015).

Modeling

Many studies and leadership models emphasized the benefits and importance of modeling what was expected for subordinates (M. Anderson, 2016; D. Anderson & Ackerman Anderson, 2010b; Kouzes & Posner, 2006). Modeling was one of the most effective ways to help a teacher understand a new strategy or skill (Gulamhussein, 2015). Doing this supported and developed a school culture that principals could use to leverage nurturing learning environments for student learning (Stolp, 1994). The school culture was shaped by the principal and other school leaders and was critical for the implementation of any initiative or reform (D. Anderson & Ackerman Anderson, 2010; Peterson & Deal, 1998).

Effective leaders started by understanding their own values and beliefs, and behaving in a way that was aligned to them (Kouzes & Posner, 2006; McKee, Boyatzis, & Johnston, 2008). "Leaders must look first at themselves rather than automatically ask the workforce to make all of the changes. Leaders must model what they are asking of the organization to be able to compel the workforce to take on the challenge" (D. Anderson & Ackerman Anderson, 2010, p. 85). Setting an example for others built credibility in the followers; subordinates watched the leader closely and could identify when that leader was disingenuous (Kouzes & Posner, 2006). The norms and values of

the organization needed to be espoused by the leader (D. Anderson & Ackerman Anderson, 2010).

Heggart (2015) extended this framework further and said that school leaders should model the growth mindset they wanted to see in their teachers. Principals who modeled a growth mindset and took on the role of a learner influenced teachers to do the same, which then influenced students to adopt a growth mindset (Heggart, 2015). Furthermore, leaders with a growth mindset were perceived more positively by their subordinates and were more receptive to critical feedback (Vandewalle, 2012).

Wagner (2014) found that principals who exhibited growth mindset behaviors, even if they themselves did not report having a growth mindset, were able to influence the school culture accordingly. It could be argued that it was not necessary for principals to have a growth mindset, but simply be able to exhibit the characteristics of one (M. Anderson, 2016; Wagner, 2014).

Creating Space for New Ideas

Creating and maintaining a positive school culture that valued risk-taking and learning was critical for school leaders. Teachers only felt comfortable taking instructional risks when they were working in a school culture that encouraged them to learn and where they were not judged for making mistakes (Dweck, 2006; Fullan, 2012; Heggart, 2016). The principal was responsible for creating this culture (D. Anderson & Ackerman Anderson, 2010; Greenhouse Schools, 2012; Peterson & Deal, 1998).

Oftentimes the role of the principal was described as an instructional leader, but Fullan (2012) argued that was not enough; it was not sufficient for principals to only focus on instructional change. Effective principals also focused on culture by tending to

working conditions and morale. One of the areas of effective leadership described by Fullan (2012) was "knowledge creation and sharing," in which individuals in a school learned and made sense of learning together to support a growth mindset.

Heggart (2015) further discussed the need for principals to create a space where teachers were willing to try new things with a focus on the learning process and not the result. It was within this kind of culture that criticism was valued and used for improvement, a characteristic of a growth mindset, unlike a fixed mindset mentality where criticism was avoided and where individuals became defensive of feedback (Dweck, 2006).

Principals could nurture this culture and create a space for new ideas through multiple strategies. The first was to maintain a clear instructional vision; it was easier to push and support teachers toward meeting a goal when that goal was clear to them (Buffum & Mattos, 2011; DuFour & Eaker, 2011; Greenhouse Schools, 2012). Second, principals could build in structures for inquiry and learning (DuFour & Eaker, 2009). One example of this was the PLC cycle, which was discussed in detail by DuFour and Eaker (2011). The PLC cycle allowed teachers to work collaboratively to identify shared goals and outcomes, develop common lesson plans and assessments, and reflect on data from those assessments to adjust instruction accordingly. This structure, when employed carefully, allowed for a continuous cycle of feedback and learning for teachers that translated into student success. Buffum and Mattos (2011) took this structure even further by suggesting that schools build time into the school day for "response to intervention." It was during this time that teachers could work with students on enrichment or intervention activities based on the data from the PLC cycle.

One step of the PLC cycle was to allow teachers to celebrate their successes. When teachers' actions resulted in positive data, they were encouraged to take the time to celebrate with their colleagues in some way (DuFour & Eaker, 2009). Principals could support this celebration of learning in addition to finding other opportunities to celebrate wins with their teachers (D. Anderson & Ackerman Anderson, 2010).

Principals could also use growth mindset language when communicating with teachers in the same way that teachers could use growth mindset language with students (Thierolf, 2015). One example of this was to simply add the word "yet" at the end of a statement. Rather than stating that a teacher did not meet his goal, say the goal was not met "yet." This reinforced the belief that the person could progress further with time and effort (Thierolf, 2015).

Building Time for Self Reflection

Thoughtful reflection was identified as an important part of the learning process (Blase & Blase, 2000; Corcoran, McVay, & Riordin, 2003; DuFour & Eaker, 2009; Gulamhussein, 2015) and important for the development of a growth mindset (Heggart, 2015). Reflection as part of teacher professional development could be a slow process taking several hours before having an impact on teacher practice (Gulamhussein, 2015). One study found that it could take as many as 80 hours of professional development for a teacher to truly implement a new idea or a skill (Corcoran et al., 2003).

Effective professional development built in time for teachers to learn about the skill, practice it, gather feedback, and reflect (Blase & Blase, 2000; Corcoran et al., 2003; Gulamhussein, 2015). Implementing a new skill or teaching strategy could be challenging and leaders needed to be aware of and guide teachers through any

frustrations (Gulamhussein, 2015). Sometimes a fear of failure could be paralyzing (Kimsey-House et al., 2010). Helping teachers work through fears and frustrations to focus on learning so that failure was viewed in a more positive light encouraged a growth mindset (Dweck, 2006; Heggart, 2015). Low-risk, yet active, tasks like observing other teachers (Darling-Hammond, 1995) and critiquing demonstrations were good activities to start with, which lent themselves well to reflection (Corcoran et al., 2003).

Gulamhussein (2015) looked at two roles that teachers played when engaging in professional development. The first was that of a technician, where the teacher sought to learn more about a particular strategy and implemented it in his/her classroom. This was best done through workshops and instructional coaching. The second role was that of an intellectual. Teachers as intellectuals engaged in inquiry, reflection, and learning with colleagues. This was best done through the PLC cycle with ongoing coaching and support (DuFour & Eaker, 2009; Gulamhussein, 2015). Teachers discussed student responses, talked about challenges, and examined student work (Corcoran et al., 2003; DuFour & Eaker, 2009).

When teachers were in the role of intellectuals, principals needed to ensure there were supports in place to help guide reflection and learning. Without this, teachers could get frustrated and quit, which aligned to a fixed mindset (Dweck, 2006; Gulamhussein, 2015). Effective professional development supported teachers as both technicians and intellectuals (Gulamhussein, 2015).

One way to guide and support teachers through reflection was through instructional coaching (Kimsey-House et al., 2010; Knight, 2007; Lipton et al., 2003; Wellman & Lipton, 2004). Because of their supervision and evaluation responsibilities,

principals could find it difficult to place themselves in the role of an instructional coach who was truly trusted by the teacher (Knight, 2007). In this case, an option may be to assign a teacher leader or other qualified peer to work with that teacher. This allowed both the coach and coachee to maintain a trusting and positive relationship (Knight, 2007).

Instructional coaches could guide reflection by listening carefully to the coachee and paraphrasing (Kimsey-House et al., 2010; Knight, 2007; Wellman & Lipton, 2004), focusing conversations on data (Knight, 2007; Lipton et al., 2003; Wellman & Lipton, 2004), and asking carefully crafted questions (Kimsey-House et al., 2010; Lipton et al., 2003; Wellman & Lipton, 2004). Questions could push the coachee to clarify his or her thinking, share frustrations, look at possible next steps, think through possibilities, and make decisions about moving forward (Blase & Blase, 2000; Lipton et al., 2003).

Providing Formative Feedback

Feedback and evaluation that was summative in nature promoted a fixed mindset and could cause anxiety with whomever experienced the evaluation (Dweck, 2006). An example of this was the teacher evaluation process used in many school districts, which was often done out of compliance and rarely resulted in constructive and actionable feedback to the teacher (Frase & Streshly, 1994). However, feedback that was more formative in nature and part of the learning process promoted more of a growth mindset and was better received (Dweck, 2006; Heggart, 2015).

When principals provided feedback and data to teachers, it was important the information was accurate, nonevaluative, and specific (Lipton et al., 2003; Showers, 1985; Wellman & Lipton, 2004). This allowed the principal to engage in productive

discourse with the teacher and came from a place of support, care, and interest (Blase & Blase, 2000). The effects of feedback to teachers could include "increased teacher reflection, innovation/creativity, instructional variety, risk-taking, better planning for instruction, and improved teacher motivation, efficacy, sense of security, and self-esteem" (Blase & Blase, 2000, p. 134).

Much of the literature on providing feedback and instructional coaching placed less of an emphasize on the principal providing the feedback and encouraged peers to provide feedback to each other (Blase & Blase, 2000; Showers, 1985). It was less about the principal providing feedback to teachers and more about the principal creating an environment where the feedback was formative, valued, and an essential piece of the learning process (Dweck, 2006; Heggart, 2015; Knight, 2007).

Summary

Strong evidence was found supporting that a growth mindset resulted in increased student learning (Dweck, 2006, 2007; Kamins & Dweck, 2009) and adult learning (Dweck, 2007; Duckworth 2016). Furthermore, the literature strongly suggested that teachers had great influence over their students' mindsets (M. Anderson 2016; Auten, 2013; Bissonette, 2017; Heggart, 2015; Ostroff, 2016).

Some research suggested that adult mindset could be influenced by principals (Blase & Blase, 2000; Corcoran et al., 2003; Fullan 2012; Saphier, 2017; Ugol, 2015; Wagner, 2014). The literature also showed strong connections between teacher mindset and professional development; teachers with a positive, growth mindset were likely to benefit from professional development and implement the learning (Gero, 2013; Stenzel,

2015), and effective professional development resulted in increased student learning (Gulamhussein, 2015; Joyce & Showers, 2003).

The research on how principals developed a growth mindset in teachers was minimal and there was essentially no research specific to high school principals. As such, it was worth further researching the role of principals in supporting a growth mindset in classroom teachers given the role of mindset in successful professional development and the influence of the school principal at a school site. To fill this gap, this study examined high school principals, specifically northern California public high school principals, and studies which growth mindset strategies they employed in their work. If researchers could better understand how high school principals developed a growth mindset in classroom teachers so they were more receptive to professional development, they could see an increase in student achievement.

Synthesis Matrix

See Appendix A for the synthesis matrix summarizing the review of the literature for this study. The matrix lists the references along with major conclusions stemming from those references. The matrix shows the relationships between each of the sources.

CHAPTER III: METHODOLOGY

Overview

This chapter describes the methodology used for the research study. It reviews the purpose statement and research questions, and describes the research design and rationale for its use, the population, target population, and the study sample. The chapter also explains the processes and protocols for interviewing participants and how validity and reliability was achieved. It includes a description of how the qualitative data were processed and analyzed, and concludes with the study's limitations and a summary of the chapter.

Purpose Statement

The purpose of this qualitative case study was to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers.

Research Questions

Central Question

The central research question guiding this study was: What strategies do California public high school principals use to support a growth mindset in their classroom teachers?

Sub-questions

The additional sub-questions addressed through this study were:

1. How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?

2. What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?
3. What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?

Research Design

This study followed a qualitative case study design. In qualitative studies, researchers gather open ended data and analyze it for themes to better understand a phenomenon (Creswell, 2014; Patten, 2012). A qualitative study was appropriate given the purpose of this study was to identify the strategies that California high school principals utilized to support a growth mindset in classroom teachers.

Creswell (2014) said that in case studies, researchers were "interested in describing the activities of the group…" (p. 465). A case study could either fit a quantitative or a qualitative model (McMillan & Schumacher, 2010). For the purposes of this study, it followed a qualitative approach.

"A case study examines a bounded system, or a case, over time in depth, employing multiple sources of data found in the setting" (McMillan & Schumacher, 2010, p. 24). Although some looked at a case as an individual or group, cases could also be activities or phenomena (McMillan & Schumacher, 2010; Patton, 2015). Examples included individuals living with HIV or veterans of the Vietnam War (Patton, 2015). The bounded system, or phenomenon, and the sources of data were defined by the researcher (Patton, 2015; Yazan, 2015). In this study, the phenomenon was the support of a growth mindset.

This study explored the experiences of 12 northern California public high school principals. Data were collected by utilizing interviews with the principals.

Population

A population in a research study was defined as "the group in which researchers are ultimately interested" (Patten, 2012, p. 45). It was from this population that the researcher took a sample and generalized his/her findings (McMillan & Schumacher, 2010). For this study, the population was all California public high school principals. Principals were defined as the highest-level administrator at the school site. Public high schools were defined as schools that served grade 9 through 12 and were overseen by the California Department of Education (CDE; n.d.). In 2017, there were 1,312 public high schools in California, with one principal per school (CDE, n.d.).

High school principals in California, as well as all California public school administrators, must hold a California administrative services credential. This credential allowed them to supervise instruction; evaluate and discipline school personnel including teachers, counselors, and classified staff; address student discipline; manage budgets; and perform other activities related to managing the school (Administrative Services Credential for Individuals Prepared in California, n.d.).

Sample

A sample was defined as the group of people whom the researcher used to collect data (McMillan & Schumacher, 2010). This study utilized a nonprobability, purposive convenience sample.

In probability sampling, the researcher selects a sample from the larger population and knows the likelihood that each member would be selected from that population

(McMillan & Schumacher, 2010). The advantage of probability sampling was that the results from the sample could, to a high degree, be generalized to the larger population (McMillan & Schumacher, 2010; Patton, 2015). It was unreasonable for the researcher to randomly select high school principals throughout California who fit the study criteria and expect all of them to agree to participate. For that reason, a nonprobability sampling approach was used.

Purposive sampling referred to a strategy common to qualitative studies (Patten, 2012). In purposive sampling, the researcher selected "information rich cases which are likely to provide valuable data" (Patton, 2015, p. 264). These cases were ones in which the researcher believed would provide representative data (McMillan & Schumacher, 2010). Although purposive sampling did not allow for as high a degree of generalization, it allowed the researcher to gain a deeper insight into the phenomenon studied (Patton, 2015).

In convenience sampling, the researcher selected subjects that were readily available and accessible to the researcher. This made conducting the study easier, but limited the generalizability of the findings, unlike random sampling which allowed for more generalization (McMillan & Schumacher, 2010). Although McMillan and Schumacher (2010) simply cautioned about the limitations of convenience sampling, Patton (2015) asserted that it was "the most common sampling strategy-and the least desirable" (p. 309).

The sample frame for this study was conveniently selected to include public high school principals in Napa, Solano, Marin, Contra Costa, Alameda, and Sonoma counties, which were all within driving distance of the researcher. Five public high schools in

Napa County met the study criteria, along with 12 in Solano County, 18 in Sonoma County, 45 in Alameda County, 32 in Contra Costa County, and 8 in Marin County (CDE, n.d.), for a total of 120 schools.

A total of 12 schools were ultimately utilized for the study. For a qualitative sample to be large enough, the researcher needs to reach saturation, the "point where no new important information related to the theory is obtained" (McMillan & Schumacher, 2010, p. 347). According to Bunce, Guest, and Johnson (2006), a sample size of 12 was sufficient to reach saturation for a qualitative case study such as this one. The results of the study could be generalized to the target population of northern California public high school principals.

The researcher chose three conditions for selecting the 12 high school principals to use for the study. First, the principal's school had to have a Western Association of Schools and Colleges (WASC) accreditation of a six-year term with a one day visit or better. California high schools were required to maintain their accreditation with WASC and one criterion WASC used to assess school culture and climate was whether the school had "a culture that is characterized by trust, professionalism, high expectations for all students, and a focus on continuous school improvement" (WASC, 2017, p. 125). This characteristic of high expectations and continuous improvement aligned with Dweck's (2006) descriptions of what characterized a growth mindset. As discussed in Chapter II, the five elements of Dweck's (2006) growth mindset framework included individuals' responses to challenges, their responses to obstacles, their perception of the effectiveness of their effort, their value of criticism/feedback, and their perception of others' success.

Furthermore, the accreditation term of six years with a one-day visit was chosen by the researcher as the cutoff point because it was one of the highest accreditation terms that could be granted through WASC. The highest term was a "six-year accreditation with a mid-cycle report (no visit) followed by a six-year term with a one-day visit, a six-year term with a two-day visit, a two-year probationary accreditation, a one-year probationary accreditation, and no accreditation" (Focus on Student Learning Joint ACS WASC/CDE Process Guide, 2017, p. 163).

Second, the principal had to have been the principal at the school the same year that the WASC committee visited the site and granted accreditation status. Third, the principal needed to be in at least his/her third year at the school site as the principal. These last two conditions would increase the likelihood that the principal's leadership abilities contributed to the site earning such a high WASC accreditation status.

Instrumentation

Based on the literature, there were multiple ways a growth mindset could be supported (M. Anderson, 2016, Dweck, 2006; Heggart, 2015; Roussin & Zimmerman, 2014, Saphier, 2017). Among these were:

- Modeling a growth mindset (Dweck, 2006; Gerstein, 2014; Heggart, 2015; Saphier, 2017)
- Creating space for new ideas (M. Anderson, 2016; Dweck, 2006; Heggart, 2015; Roussin & Zimmerman, 2014)
- Building time for self-reflection (D. Anderson & Ackerman Anderson, 2010; Dweck, 2006; Heggart, 2015; Saphier, 2017)

- Providing formative feedback (Dweck, 2006; Heggart, 2015; Roussin & Zimmerman, 2014)

The instrument, or measure, in a research study referred to what was used to gather data (Patten, 2012). The instrument for this study was an interview protocol used with northern California public high school principals (Appendix B). The protocol was developed based on Dweck's five characteristics of a growth mindset and the findings from the literature review on the strategies currently used to develop and support a growth mindset in others.

The researcher interviewed 12 high school principals and asked them each a total of 10 questions within a 30- to 45-minute period. The review of the literature about growth mindset resulted in clear strategies that could be used to support a growth mindset in others as reviewed in Chapter II. The interview questions were developed based on the results of the thorough literature review. The questions were designed to be open-ended and to be used in a semi-structured interview model. In a semi-structured model, the researcher used his/her prepared questions to guide the conversation, but could ask various follow-up questions, as needed depending on what was shared during the interview (Patten, 2012; Rubin & Rubin, 2012). This allowed the researcher to dive deeper into what was shared by the interviewee, but kept the conversation on topic to maintain validity (McMillan & Schumacher, 2010).

The researcher also followed Patton's (2015) 10 interview principles and skills: asking open-ended questions, being clear, listening, probing as appropriate, observing the interviewee and adjusting the interview as appropriate, being empathetic and neutral,

making transitions to guide the process, asking descriptive questions, being prepared for interruptions, and being present throughout the interview.

Each interview was recorded and then transcribed by the researcher to allow for more time with the data. The transcript of each interview was sent to its respective interviewee to review and check for accuracy. During the interview, the researcher also took notes of the interviewees' reactions to questions, emotions, and mannerisms.

Validity

"Validity, in qualitative research, refers to the degree of congruence between the explanations of the phenomena and the realities of the world" (McMillan & Schumacher, 2010, p. 330). The interview questions were written based on the literature review of growth mindset and its development. The questions were later screened and validated by two experts in the field. These two experts both held doctoral degrees and were experienced in interviewing for qualitative research.

The researcher presented the two experts with the interview questions, the purpose statement, and the research questions, and explained the alignment between the interview questions and the research questions. The experts reviewed the questions and provided feedback to the researcher to allow him to revise the questions accordingly.

The validity of the results of the study was also done by comparing and triangulating the data across the 12 interviews. Triangulation was defined as "cross-validation among data sources, data collection strategies, time periods, and theoretical schemes…to see whether the same pattern keeps recurring (McMillan & Schumacher, 2010, p. 379).

Reliability

According to Patten (2012), "a test is said to be reliable if it yields consistent results" (p. 73). The researcher of this study conducted a field test of the interview protocol to increase reliability, as suggested by Jacob and Furgerson (2012). The researcher developed the interview questions and followed the protocol with a volunteer subject who met the conditions of the sample frame, but was not a subject in the actual study. The protocol started with open-ended questions, but allowed for follow-up questions and flexibility as needed.

An expert with a doctoral degree and experience interviewing in qualitative research was asked to observe the field test interview and provide feedback on both verbal and nonverbal communication. After the pilot interview, both the volunteer subject and observer were asked a series of questions designed to provide feedback to the researcher. The feedback was used to refine the interview protocol and improve reliability when the protocol was used with actual study participants.

Data Collection

No data were collected until the researcher gained approval from Brandman University's Institutional Review Board (BUIRB). This was done through a detailed online process. The BUIRB reviewed the purpose statements, research questions, methodology, instruments, and consent form to ensure the protection and safety of human subjects. They ensured that the study was ethical and complied with all laws.

After approval from the BUIRB, the researcher contacted each principal in the four counties of interest who fit the requirements of the sampling frame and provided them with the purpose of the study, research questions, informed consent form, and

BUIRB Bill of Rights (Appendix C). Principals who were interested in participating in the study were asked to sign and return the informed consent form.

After receiving consent and confirming each principal met the requirements of the sampling frame, the researcher scheduled a 45-minute block of time to meet with and interview the principal. The researcher made every effort to conduct the interview in-person, but occasionally conducted interviews over the telephone or video conferencing software such as Adobe Connect, Face Time, or Google Hang Out.

The researcher recorded the interview with each principal using two recording devices and took minimal handwritten notes during the interviews. The researcher later transcribed the full interview and then analyzed the data.

Data Analysis

It was important to carefully examine qualitative data for patterns and themes (Patton, 2015), which derived meaning of the data (Yazan, 2015). McMillan and Schumacher (2010) reinforced the idea that data analysis must be done carefully. Ultimately, the results of a qualitative study were presented as patterns and themes that helped answer the research question (Patten, 2012).

Transcripts of the interviews were shared with their respective interviewees to be reviewed for accuracy. Once reaffirmed by the interviewee, the transcripts were uploaded into NVivo, a software program that allows researchers to easily code and examine data for patterns to determine themes. The researcher reviewed the data and determined the most common themes based on the frequency that each code was mentioned by the interviewees.

Interrater reliability referred to "the extent to which two or more persons agree about what they have seen, heard, or rated" (McMillan & Schumacher, 2010, p. 182). The researcher asked an expert with coding experience and a doctoral degree to analyze samples of the data to ensure themes that emerged from the data were similar to those the researcher discovered. This helped minimize researcher bias and increase the reliability of the data and its interpretation. Interrater reliability allows "multiple analysts… [to] discuss what they see in the data, share insights, and consider what emerges from their different perspectives" (Patton, 2015, p. 667).

The expert was given sample transcripts and list of themes, and asked to determine the frequency at which each of the themes emerges. The expert's findings were compared to those generated by the researcher. An agreement of at least 60% in the coding between the two coders was considered satisfactory, whereas 80% or greater agreement was considered nearly perfect (Burla et al., 2008).

Limitations

A research limitation typically referred to something that could affect the outcome of the study, and often could not be controlled by the researcher (Simon & Goes, 2013). A limitation of this study was that it delimited to and could thus only be generalized to northern California high school principals. This was done out of convenience for the researcher since these counties were all within driving distance and because the researcher had connections to school districts within these counties. Although it would have allowed for greater generalizability, it was impractical and too time consuming for the researcher to include all counties across California; other counties would have been

more difficult to physically get to and the researcher did not have connections to principals in other counties.

Another limitation of the study was its small sample size and that participants volunteered to partake in the study. It is possible that a larger sample could have yielded more and a greater range of results. It is also possible that volunteers could hold different perspectives about developing a growth mindset in teachers than those who did not volunteer to participate.

Summary

In conclusion, this qualitative case study was designed to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers. The population was California public high school principals and the study utilized a nonprobability, purposive convenience sample bound to schools in Napa, Solano, Sonoma, Marin, Contra Costa, and Alameda counties. The researcher conducted interviews with the principals and took field notes during the interviews to gather data. The data were coded and analyzed for themes. The findings from the data analysis are presented in Chapter IV.

CHAPTER IV: RESEARCH, DATA COLLECTION, AND FINDINGS

This chapter reviews the purpose, research questions, and methodology of the study that was conducted. It then summarizes the data collected by the researcher on the strategies that California public high school principals utilize to develop a growth mindset in classroom teachers. First, it individually summarizes the data collected from each of the 12 principals who were interviewed, and then it summarizes the aggregate themes that emerged from the overall data analysis.

Purpose Statement

The purpose of this qualitative case study was to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers.

Research Questions

Central Question

The central research questions guiding this study was: What strategies do California public high school principals use to support a growth mindset in their classroom teachers?

Sub-questions

The additional sub-questions addressed through this study were:

1. How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?
2. What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?

3. What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?

Research Methods and Data Collection Procedures

This study was a qualitative case study used to determine the strategies that California public high school principals utilize to develop a growth mindset in their classroom teachers. The investigator interviewed a total of 12 northern California public high school principals in Napa, Solano, Marin, Sonoma, Contra Costa, and Alameda counties using an interview protocol based on Carol Dweck's framework on growth and fixed mindsets. Principals qualified for the study if they met all the following criteria:

1. Were currently principal at their school, which had a WASC accreditation term if "six years with a one-day visit" or better.
2. Were principal at their school at the time of the WASC accreditation visit that resulted in the term described above.
3. Were in at least their third year as principal at their school site

The investigator emailed all public high school principals in the six counties of interest to invite them to participate in the study. He provided them with the purpose of the study, described the time commitment required, and described the criteria that participants needed to meet. The investigator accepted 12 principals in the study who agreed to participate and confirmed they met the criteria.

The investigator then scheduled an interview with each principal (either in-person or over the phone) and followed the semi structured interview protocol (Appendix B) that consisted of six main questions with room for follow-up questions. Each of the six questions addressed characteristics of a growth mindset aligned to the elements in Carol

Dweck's research. Table 4 shows the alignment of each of the interview questions to the study's research questions. All participants were provided with the informed consent form and the Brandman Bill of Rights (Appendix C).

Table 4

Alignment of Interview Questions to Research Questions

Research Question	Corresponding interview questions
Central question: What are the strategies California public high school principals use to support a growth mindset in their classroom teachers?	Questions 3, 3a, 4, 4a, 5, 6
Sub-question 1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	Questions 1, 1a, 1b, 2, 2a, 2b, 2c
Sub-question 2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	Questions 3b, 4b, 5a, 6a
Sub-question 3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	Questions 3c, 4c, 5b, 6b

With permission from the participant, each interview was recorded using a cell phone and an external recording device. The recordings were later transcribed and then qualitatively analyzed using NVivo to look for themes that answered the research questions. The investigator asked a colleague with a doctoral degree to code a sample of the interview data to compare it to his own coding patterns. A high degree of similarity between the researcher's coding and his colleague's ensured interrater reliability with respect to the data analysis.

Population

A population in a research study was defined as "the group in which researchers are ultimately interested" (Patten, 2012, p. 45). The population for this study was all

California public high school principals. Principals were defined as the highest-level administrator at the school site. Public high schools were defined as those that served grades 9 through 12 and were overseen by the California Department of Education (CDE).

High school principals in California, as well as all California public school administrators, must hold a California administrative services credential. This credential allows them to supervise instruction; evaluate and discipline school personnel including teachers, counselors, and classified staff; address student discipline; manage budgets; and perform other activities related to managing the school (Administrative Services Credential for Individuals Prepared in California, n.d.).

Sample

A sample was defined as the group of people whom the researcher used to collect data (McMillan & Schumacher, 2010). This study utilized a nonprobability, purposeful convenience sample. The sample frame for this study was selected to include public high school principals in Napa, Solano, Marin, Contra Costa, Alameda, and Sonoma counties, which were all within driving distance of the researcher. A total of 120 public high schools were within the 6 counties and 12 principals were ultimately selected for the study, all of whom met the criteria study described.

Presentation and Analysis of Data

Data Analysis by Principal

Principal 1. Principal 1 spoke at length about the importance of teachers wanting to learn more and grow, whether it was through direct feedback received from the principal or a colleague, or through someone else's success. He stated that ideally, a

teacher should be "excited and motivated [to] seek more information and get feedback." He described an effective teacher as someone in "inquiry mode," asking for more information, examples, and data to learn more about whatever skill he/she was trying to improve upon.

Principal 1 also emphasized the importance of a clear schoolwide instructional focus or vision. Teachers with a growth mindset could become frustrated if they perceived the school lacked focus and they were asked to do what felt like "random" things. He stated it was hard for teachers "when initiatives are all over the place" and teachers responded more favorably when the "arrows are pointing in the same direction."

Finally, Principal 1 discussed the importance of a positive school culture that supported a growth mindset in classroom teachers. He specifically talked about creating a culture where teachers sought feedback and that feedback was delivered in a productive and supportive way so teachers would continue to ask for feedback. "You have to create those relationships so that they will want to come to you and ask for feedback." Principal 1 said there was a "real art" in how to deliver feedback that required a balance of positive and constructive feedback and the person asking the right questions. Table 5 shows the themes identified from the interview with Principal 1.

Table 5

Themes Identified from Interview with Principal 1

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should be inquisitive • Teachers should give their best effort • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more • Teachers should want to learn from feedback
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Explicitly give teachers permission to make mistakes • Approach each teacher differently • Have a clear schoolwide instructional focus • Have a positive attitude • Involve students in the learning process • Model a growth mindset when interacting with students
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Learn alongside teachers • Celebrate successes by acknowledging individuals privately and in front of the whole faculty • Create a culture where feedback is sought out by teachers and delivered productively • Build in time for reflection at meetings and throughout professional development

Principal 2. One of the most commonly discussed areas with Principal 2 was school culture. She noted it was important to build a culture where it was acceptable and encouraged to make mistakes and asking for and using feedback to improve was valued. Without that culture, teachers were more guarded and were "not open to learning." Teachers naturally sought people with whom they felt safe, so it was the "administrators' responsibility to make sure the conditions are safe, so that people can come forward."

Principal 2 described how she built this culture by learning alongside her teachers. She described how she participated in teacher trainings and was fully present (not

checking email or working on something else). She talked about how she did not claim to be the expert in any areas and made it clear she was learning alongside her colleagues. She tells teachers "Just because I'm released from the classroom doesn't make me an expert…I'm here to partner with you. I'm a learner too."

Principal 2 also talked about the importance of providing intentional feedback to teachers. In some cases, that happened informally via one-on-one conversations between the principal and the teacher. In other cases, "instructional learning partners" (ILPs) or instructional coaches partnered with teachers and gave them feedback on their practices.

Along with feedback, Principal 2 talked about reflection. She said it was important for principals to intentionally build in time for reflection as part of professional development. She admitted that sometimes it "feel weird," but it was important to "stay the course because that's where the real growth and learning happens." Table 6 summarizes the themes described by Principal 2.

Table 6

Themes Identified from Interview with Principal 2

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should be inquisitive • Teachers should be willing to ask for help • Teachers should give their best effort • Teachers should want to engage with other teachers who are successful • Teachers should want to learn from feedback • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Approach each teacher differently • Explicitly tell teachers when they are in the role of learner • Have a clear schoolwide instructional focus • Have a positive attitude • Learn alongside teachers
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Structure professional development so that the focus is on the learning process • Celebrate successes by acknowledging individuals privately • Celebrate successes in a weekly memo • Create a culture where feedback is sought out and delivered productively and intentionally • Build trust among teachers and administrators • Build in time for reflection at meetings and throughout professional learning • Create a culture where it is safe to make mistakes

Principal 3. Much of the discussion with Principal 3 focused on the school culture created at his school, which supports a growth mindset in classroom teachers. He shared how his office was normally a "revolving door" where teachers came in and out to get feedback and discuss topics related to teaching and learning. He shared he welcomed these conversations with teachers and approached his feedback in such a way that he presumed teachers were doing great things for students, but could support and coach

them in doing even better. He told teachers, "You're doing good. How can you make it better?"

Principal 3 also discussed both the formal and informal nature of giving feedback to teachers. He shared how he used the teacher evaluation process to formally reflect with teachers and how he casually and informally gave feedback as they came through his office and as he sought them out throughout the day. He also regularly visited classrooms and noted he visited 100 classrooms in the first six weeks of the school year.

Principal 3 spoke about the different strategies he used to ensure teachers had time to reflect on their learning. These structures included formally building in time at trainings and meetings, using time in professional learning communities (PLCs), and expecting teachers share their learnings with colleagues after they participate in trainings. Principal 3 modeled this learning process by explicitly telling teachers when he made mistakes and sharing his learnings from them. Table 7 lists the themes that emerged from the interview with Principal 3.

Table 7

Themes Identified from Interview with Principal 3

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should believe that they can be successful • Teachers should see barriers as something that can be overcome • Teachers should want to engage with other teachers who are successful • Teachers should want to learn from feedback
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Have a clear schoolwide instructional focus • Involve students in the learning process • Model a growth mindset when interacting with students
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Learn alongside teachers • Create a culture where feedback is delivered productively and intentionally • Create a culture where teachers seek feedback • Create a culture where it is safe to make mistakes • Use the evaluation process to facilitate teacher learning • Build in time for reflection as part of PLCs • Build in time for reflection at teacher trainings • Reflect with teachers on their learning

Principal 4. Principal 4 shared that when she took over as principal at her school, the school culture was not conducive to a growth mindset. She explained faculty meetings were informational and teachers dreaded going to the meetings. When Principal 4 became the school leader, she changed the focus of faculty meetings to be more instructional in nature so they supported teacher learning and growth. Each meeting was focused on clear schoolwide instructional strategies teachers learned about and had the option to implement in their own classrooms. She also applied protocols and processes in the meetings that made it safe to share mistakes and learnings.

Faculty meetings also included time for reflection followed by supports teachers could take advantage of to support them in implementing the schoolwide strategies. An example of this support was using instructional coaches to model the strategies and observe teachers as they attempted the strategies themselves. The coaches supported teachers as their peers in a way that the school site principal could not.

Another strategy revealed from the interview with Principal 4 was the use of school data to initiate learning and reflection among teachers. Data were shared with teachers and used to set goals. The focus of the data was on talking and reflecting in a "quiet way" as opposed to publishing it in a way where teachers could become defensive. Data were shared in small groups and used to launch reflective conversations, rather than making a big deal out of the data. Table 8 lists the themes that emerged from the interview with Principal 4.

Table 8

Themes Identified from Interview with Principal 4

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should see barriers as something that can be overcome • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Explicitly give teachers permission to make mistakes • Approach each teacher differently • Have a clear school wide instructional focus • Have a positive attitude • Involve students in the learning process • Model a growth mindset when interacting with students
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Structure professional development so the focus is on the learning • Celebrate success in front of the whole faculty • Create a culture where feedback is delivered productively and intentionally • Create a culture where it is safe to make mistakes • Build in time for reflection as part of PLCs • Build in time for reflection at teacher trainings • Use data to initiate reflection

Principal 5. Principal 5 shared several qualities he believed were important to having a growth mindset. He explained teachers should use feedback and criticism as "learning opportunities and opportunities to improve their practice." He said teachers should take the "inevitable quest for perfection, even if they never attain it." He emphasized the importance of continual improvement that ultimately led to greater success in the classroom and for student learning.

Another area Principal 5 focused on was building a trusting culture. He explained that oftentimes, hesitation to try new things came from a place of insecurity and a trusting and safe school culture was more encouraging. Teachers were more likely to try new things if they felt supported and trusted by their administrators. Another strategy he shared was being transparent about his own mistakes and being explicit when he was not the expert and was learning alongside the teachers.

Principal 5 had some unusual strategies regarding sharing success. In addition to traditional strategies like celebrating at a faculty meeting, Principal 5 celebrated teacher success in front of students. One example was when a teacher earned an award and Principal 5 went into her classroom with flowers and presented them to the teacher in front of her class. Principal 5 also celebrated teachers by recognizing their accomplishments in front of parents at Back to School Night and Open House. Principal 5 also called a teacher's parents and told them about how successful their child was on the job. Table 9 summarizes themes that emerged in the interview with Principal 5.

Table 9

Themes Identified from Interview with Principal 5

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should be inquisitive • Teachers should believe they can be successful • Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Explicitly give teachers permission to make mistakes • Approach each teacher differently • Explicitly discuss growth mindset with teachers • Explicitly tell teachers when they are in the role of learner • Involve students in the learning process
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Learn alongside teachers • Celebrate successes in front of parents • Celebrate successes in front of students • Celebrate successes in front of the whole faculty • Build trust among teachers and administrators • Create a culture where feedback is delivered productively and intentionally • Create a culture where it is safe to make mistakes • Build in time for reflection as part of PLCs • Build in time for reflection at teacher trainings • Reflect with teachers on their learning

Principal 6. Principal 6 described a clear profile of teachers with a growth mindset. He said teachers with a growth mindset were inquisitive and asked questions. They looked at what other teachers did and tried to emulate those strategies to obtain similar success. He said "teachers [should] respond to people in their profession being recognized with some curiosity, with a frame of mind of going to try and see that they're doing to share best practices and improve what they do." Principal 6 emphasized the

importance of trying new things, noting teachers should say "There's always something new I can learn. I'm a lifelong learner. I have not figured this out completely yet."

Principal 6 went deeply into how he models a growth mindset. He recognized he did not have all the answers and nor was he the most talented person on the campus, but he used the knowledge and skills of the entire faculty to move the school forward. He said, "you have to be open to using the collective wisdom and talent of your staff in almost everything you do."

Principal 6 also used structures to ensure teachers learned and received intentional and meaningful feedback. One strategy was leveraging the district instructional coaches. These coaches had a positive relationship with the teachers and the teachers felt comfortable calling on them for feedback and support. Principal 6 shared the key was developing and sustaining a culture that made teachers comfortable calling on instructional coaches, administrators, peers, and other colleagues to help them learn.

Finally, Principal 6 discussed strategies for recognizing teachers. His response largely aligned to the strategies shared by the other principals, but added how teachers recognize each other, something other principals did not discuss. The school keeps a candy dish full of treats that is passed from one teacher to another to recognize successes and accomplishments across the campus. At the start of the year, it is given to a teacher by the administrator, but the teachers pass it to each other every month during faculty meetings. See Table 10 for a summary of themes which emerged from the interview with Principal 6.

Table 10

Themes Identified from Interview with Principal 6

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should be inquisitive • Teachers should be willing to ask for help • Teachers should believe they can be successful • Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn from feedback • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Explicitly give teachers permission to make mistakes • Approach each teacher differently • Involve students in the learning process
3: What do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Learn alongside teachers • Celebrate successes by individually acknowledging teachers • Celebrate successes in front of the whole faculty • Create a culture where feedback is delivered productively and intentionally • Create a culture where it is safe to make mistakes • Use the evaluation process to facilitate teacher learning • Build in time for reflection at teacher trainings • Reflect with teachers on their learning • Use data to initiate reflection

Principal 7. Principal 7 discussed the qualities of teachers with a growth mindset similarly to other principals, but pointed out that it often took time for teachers to truly reflect on feedback or professional learning, buy-in, and then implement it in their classrooms. He said teachers sometimes "recoiled" from feedback and took it negatively. Teachers with a growth mindset were eventually able to process it, internalize it, and then learn and grow to improve their practice.

Principal 7 gave a specific example related to 1:1 computing in the classroom. Teachers were initially skeptical, but embraced it with time. He said:

> I think…time between initially introducing some form of professional learning…to a time when they embrace it, feel ownership of it, and display some of those trademarks of being willing to learn that we would associate with a growth mindset…does take a little bit of time to…come to fruition.

Principal 7 shared processing time was important to ensure the implementation was done well and not something quickly tried once and then ignored. Principal 7 also described the importance of being intentional and strategic when giving feedback, and offering feedback on strategies for which the school is committed. "If [teachers] start to feel like I am nitpicking, even the most obvious growth area…will get lost in the number of things I'm saying." Thus, the feedback should be focused on the schoolwide work that will yield the greatest outcomes for students. He said that meant "there are going to probably be a lot of things that I just kind of let go or have to be at peace with."

Finally, Principal 7 discussed the importance of learning alongside teachers. He took district initiatives and worked with teachers to figure out how to best implement them without presuming what the outcomes would be or if the initiative would be successful. See Table 11 for a summary of themes identified from Principal 7.

Table 11

Themes Identified from Interview with Principal 7

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers? 2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers? 3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Teachers should be inquisitive • Teachers should try new things • Teachers should engage with other teachers who are successful • Teachers should want to learn from feedback • Teachers should want to learn more • Be transparent about their own mistakes • Approach each teacher differently • Explicitly tell teachers when they are in the role of learner • Have a clear schoolwide instructional focus • Have a positive attitude • Learn alongside teachers • Celebrate successes in front of the whole faculty • Build trust among teachers and administrators • Create a culture where feedback is delivered productively and intentionally • Creating a culture where it's safe to make mistakes • Using the evaluation process to facilitate teacher learning • Reflect with teachers on their learning

Principal 8. Principal 8 described teachers with a growth mindset as those who used the critiques from others to improve their practices and who "glean from others' successes." She explained, however, it was important for all teachers to be recognized for their successes, noting "I would expect somebody…to recognize what strength [the other teachers] are bringing to the table." Generally, Principal 8 did not identify individual teachers, or even departments, for their successes. She sustained a culture at her school where the celebrations were around the collective successes of the school and not an individual person or department. She commented:

> My style is not to pick out the star of the week with the staff. In fact, our mental model is to create a sense of unity because we are all in this together…I make sure that what we've done well collectively is highlighted.

Feedback and reflection were two other areas Principal 8 mentioned. She said it was important to have structures in place that allowed teachers to get together and reflect on their learning. One example of this structure was common prep periods. Teachers also came together on Wednesdays during their professional learning time and shared with colleagues across departments and with whom they did not normally work. It was during these times the teachers engaged in reflective discourse.

Principal 8 was intentional about how she provides feedback to teachers for reflection during the evaluation process. She avoids using judgmental language in her observation notes. Rather, she makes objective notes of what she sees in the classrooms and timestamps her notes. Principal 8 described this strategy using the analogy of "creating a mirror" for the teacher to look through. The teacher had a substantial understanding of what happened in the classroom and then could reflect on it with a little guidance from the principal. Principal 8 said "there's not a lot of judgement, but there is a lot of reflection and internal growth." See Table 12 for a summary of themes that emerged from the interview with Principal 8.

Table 12

Themes Identified from Interview with Principal 8

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should try new things • Teachers should want to learn from feedback • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Explicitly discuss growth mindset with teachers • Explicitly tell teachers when they are in the role of learner
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Build trust among teachers and administrators • Create a culture where feedback is delivered productively and intentionally • Use the evaluation process to facilitate teacher learning • Build in time for reflection at teacher trainings

Principal 9. Principal 9 described a teacher with a growth mindset as one who "emulates what other teachers are doing" to get the same kinds of success. He emphasized teachers used the PLC structure to collaborate and learn from each other, but stressed that getting to that point with PLCs took time. It took a few years for his school to get into the routine of intentionally collaborating and working together. Prior to the PLC structure, reflection, learning, and collaboration only happened for teachers who took the initiative and made time for it on their own.

With regard to celebrating teachers, Principal 9 shared he celebrated successful teachers and those who had a breakthrough at faculty meetings, but also asked successful teachers to share their learning at faculty meetings. This celebrated the successes and created a space for others to learn from them.

Finally, Principal 9, likes some of the other principals interviewed, emphasized the importance of clear schoolwide goals and foci. These goals were regularly visited at faculty meetings to ensure everyone understood the clear school foci. See Table 13 for a general summary of all themes from the interview with Principal 9.

Table 13

Themes Identified from Interview with Principal 9

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should see barriers as something that can be overcome • Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Have a clear school wide instructional focus
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Being vulnerable as a leader • Celebrate successes in front of the whole faculty • Use the evaluation process to facilitate teacher learning • Build in time for reflection as part of professional learning communities (PLCs)

Principal 10. The conversation with Principal 10 deeply focused on the opportunities and structures at his school that allowed for feedback and reflection. The school had several opportunities for teachers to get feedback, look at data, and reflect on how their classes went. In one example, teachers periodically received course evaluation data from their students. Teachers looked at the data with the support of the principal or another administrator and engaged in reflective conversations to determine how to improve the course. According to Principal 10, a culture of reflection rather than

judgement led to productive, reflective conversations. "At the end of each course, there's a fairly thorough student evaluation. A teacher has a conversation with our Education Director about the results of those evaluations. It's not about judgment, it's about being more successful in the future." In another example, teachers were frequently observed in their classrooms by administrators. These observations led to more reflective conversations and goal setting with goals reviewed throughout the year.

Principal 10 also emphasized the importance of learning. Teachers were constantly looking at data, reflecting, being observed, and meeting with colleagues. Teachers were expected to learn from conferences or readings and share their learning back to their colleagues. The principal and other school leaders also made a point to perform research and bring it back to the teachers. This was one way in which a growth mindset was modeled. See Table 14 for a summary of themes that emerged from the interview.

Table 14

Themes Identified from Interview with Principal 10

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers? 2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Teachers should be inquisitive • Teachers should be willing to ask for help • Teachers should see barriers as something that can be overcome • Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more • Involve students in the learning process • Explicitly tell teachers when they are in the role of learner
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Learn alongside teachers • Create a culture where feedback is delivered productively and intentionally • Create a culture where teachers seek feedback • Create a culture where it is safe to make mistakes • Use the evaluation process to facilitate teacher learning • Build in time for reflection at teacher trainings • Reflect with teachers on their learning • Use data to initiate reflection

Principal 11. Principal 11 described an effective teacher with a growth mindset as someone who "manages challenges and criticisms in a way that makes them reflective…and actually informs their instruction, making better teachers." He was intentional about the culture he created at his school and the structures he used to facilitate learning and reflection.

Principal 11 explained teacher retention was a challenge at his school, so he was strategic about how he supported his newer teachers. New teachers spent five days of

professional learning before the school year started and were explicitly taught about growth mindset, a strategy shown to be effective in supporting a growth mindset in adults (Dweck, 2006). He was also careful to develop and support a positive and trusting culture among faculty and administrators and started this work in the five days of onboarding new teachers.

Principal 11 also leveraged the PLC structure to support teacher learning. Teachers regularly met, learned about each other's successes, and attempted to replicate those successes in their own classrooms. According to Principal 11, "We have explicitly told teachers, 'We expect you to learn from each other. The best professional development that can be provided is not by me or anybody else, but it's by your peers.'" Principal 11 modeled this concept of continuous learning by taking on a major project every year and learning from that project. For example, this past year he helped open a new school. His ability and openness to take on this project helped model his own growth mindset for his teachers.

Finally, Principal 11 was intentional about providing positive feedback as part of the formal evaluation process and through individual interactions. He said, "I have a philosophy that evaluation should be a way to improve, empower, and validate teacher success." See Table 15 for a summary of themes which emerged from Principal 11.

Table 15

Themes Identified from Interview with Principal 11

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Approach each teacher differently • Explicitly discuss growth mindset with teachers • Explicitly tell teachers when they are in the role of learner
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Structure professional development so that the focus is on the learning process • Celebrate successes in front of parents • Celebrate successes in front of the whole faculty • Build trust among teachers and administrators • Create a culture where feedback is delivered productively and intentionally • Use the evaluation process to facilitate teacher learning • Use data to initiate reflection

Principal 12. Principal 12 described effective teachers as ones who were "receptive to feedback and make personal adjustments" based on that feedback. She explained that teachers expected students be receptive of feedback, but forgot to do that themselves. Feedback should be seen "as an opportunity for growth."

Principal 12 said that leaders did not need to be "flawless" or "invincible" and that trying to be the perfect leader was the wrong approach. She said:

> I think you need to be a learner and you need to show your staff first, it's okay to maybe not get it right the first time, but reflect and regroup and get

it right the second time. I think when a leader does that… it has tremendous power within the entire organization.

Modeling being a learner helped Principal 12 develop a trusting and positive culture of learning. She also took her faculty to a ropes course where the stakes were low to individuals could learn about each other and participate in teambuilding. This culture encouraged teachers to take instructional risks. When teachers were successful, they were celebrated through school newsletters and on social media. She utilized the local community newspaper when there was an "innovative project or something really special" the school was working toward. See Table 16 for a summary of themes which emerged from Principal 12.

Table 16

Themes Identified from Interview with Principal 12

Research Sub-question	Themes Identified
1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	• Teachers should try new things • Teachers should want to engage with other teachers who are successful • Teachers should want to learn from feedback • Teachers should want to learn more
2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	• Be transparent about their own mistakes • Approach each teacher differently
3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	• Be vulnerable as a leader • Celebrate successes in front of parents • Build trust among teachers and administrators • Create a culture where feedback is delivered productively and intentionally • Use the evaluation process to facilitate teacher learning • Build time in for reflection at teacher trainings • Use data to initiate reflection

Data Analysis by Sub-Question

This section of Chapter 4 summarizes the most common themes that emerged from the 12 interviews with northern California principals. The themes are organized by the three sub-questions of the study.

Sub-question 1. Sub-question one was: *How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers*? This section summarizes principals' perceptions of a growth mindset in classroom teachers and its importance.

Common Theme 1: Teachers should want to learn more. All but one principal said something about the importance of teachers wanting to learn more and grow. Principals praised teachers who had an intrinsic desire to improve their teaching practices to ultimately support students in learning and succeeding. One principal said he "would hope that [teachers] would be excited to continue to grow and be challenged." Another principal said, "part of being a successful teacher is to manage…challenges and criticisms in a way that makes them be reflective…making them better teachers." Multiple principals used the words "opportunity for growth" to describe how teachers should respond to criticism from others.

Some principals spoke to the importance of asking questions to better understand criticism and to seeking help when struggling. It was important to embrace the attitude of being a lifelong learner and to stay open-minded.

Common Theme 2: Teachers should try new things. Two-thirds of the principals valued teachers' openness and desire to try new things. They explained that teachers should look at what other successful teachers did and attempt to emulate their

successes to reach more students. One principal explicitly told his faculty that he expected them to learn collaboratively from each other, saying he tells teachers "they very best staff development [comes from] your peers" as opposed to from administrators or outside consultants.

Furthermore, two principals pointed out that it was normal for teachers to be skeptical, at first, of new ideas or initiatives. They said it was healthy for teachers to ask questions before blindly agreeing to embrace a new initiative and anticipated teachers would need time to "buy-in" and feel safe and comfortable before trying something new. Principals developed this buy-in in multiple ways, including acknowledging and celebrating successful teachers as well as those who took instructional risks.

Common Theme 3: Teachers should want to engage with other teachers who are successful. Eleven out of the 12 principals believed teachers should want to engage with other teachers who known to be successful. For example, one principal suggested the teacher should "have a thoughtful conversation with that person, instead of just closing off" when they learn about another successful teacher.

Multiple principals mentioned the PLC structure as a structure for teachers to learn together. Teachers in the same content area regularly meet together, develop and implement common assessments, and then meet as a team to review data and determine which instructional strategies are most effective. "Embedded within that process is a requirement that teachers learn from one another, and that they encourage one another as well to improve their instructional strategies."

Three of the principals described a structure where teachers observe other teachers. One example was a teacher who needed help with a particular instructional

strategy and called a colleague to her classroom to help while she was giving the lesson. Another example was when other teachers and administrators formally visited classrooms on "learning walks" to provide feedback and learn from their colleagues.

Common Theme 4: Teachers should want to learn from feedback. Seven of the 12 principals described an effective teacher as someone who learns from feedback, whether provided by an administrator, an instructional coach, or a fellow classroom teacher. Effective teachers were described as those who got "excited and motivated" from feedback and saw it as an "opportunity for growth." One principal explained teachers who were open to feedback would ultimately guide students to be open to feedback. He said, "You want a child to be open to feedback. Then you also want a teacher to be open to feedback. Then that ripple just continues." He also recognized that administrators needed to model openness to feedback as well.

When the interviewees were discussing the importance of feedback, they also touched on the importance of a positive school culture. Teachers only sought feedback from administrators or instructional coaches with whom they felt safe. Table 17 presents common themes that emerged related to sub-question 1.

Table 17

Common Themes for Sub-question 1

Themes Identified	Number of Respondents	Frequency of Responses
1. Teachers should want to learn more	11	22
2. Teachers should try new things	8	18
3. Teachers should want to engage with other teachers who are successful	11	18
4. Teachers should want to learn from feedback	7	14

Sub-question 2. Sub-question two was: *What strategies do California public high school principals use to develop a growth mindset in their classroom teachers*? This section summarizes the most common strategies which emerged from the interviews.

Common Theme 1: Have a clear schoolwide instructional focus. Half of the principals described the importance of a schoolwide focus that teachers understood. Teachers who perceived the school's work as sporadic or unfocused were less likely to commit to new initiatives or ideas. One principal said, "I think if the initiatives are all over the place, it's hard for teachers." Conversely, teachers responded well when "the arrows were pointing in the same direction." Principals who provided clear vision statements remembered to "stay the course" by filtering out distractions, which kept their school focused and encouraged a growth mindset in teachers when asked to implement a new initiative or strategy. Another principal said "Teachers need to know where they're going, where the school's going, and there's chaos when that is not clear. By having a clear focus, there's predictability for the teachers."

Similarly, two principals shared the importance of giving intentional feedback to teachers based on the school's goals as opposed to random growth areas. "There are going to be hills you die on and hills you don't die on." Another principal said, "I think

if I'm going to give a teacher any kind of criticism, feedback, or identify areas for growth, I'm going to really weigh that ahead of time. Am I really committed to this?"

Common Theme 2: Approach each teacher differently. Over half the principals (8 out of the 12) explained how they differentiated their approach to teachers. The most common group of teachers described by principals were new teachers. Examples included providing additional days of training at the start of the school year, targeting training on growth mindset, providing new teachers with additional supports, and establishing new teacher cohorts where they met with colleagues and administrators monthly to ask questions and problem-solve challenges.

Principals described how teachers bought into initiatives or strategies at different speeds. Some were more likely to commit early whereas others needed more convincing. How principals convinced teachers varied depending on the teacher and his or her personality. "You need to know your teachers."

Common Theme 3: Involve students in the learning process. Half of the principals stressed the importance of getting feedback from students to influence teachers. Three principals shared how they invited students to faculty meetings to share with teachers instructional strategies that worked for them and to describe their learning experiences at the school. Principals stated that teachers took the student feedback more seriously and responded more favorably than if an administrator delivered it. Feedback from students was both about instruction as well as school culture.

One principal described how his school built a strong culture of collecting course feedback from students. Students regularly completed evaluation surveys that were analyzed and the data were used to facilitate reflective conversations with teachers.

Teachers used the data to improve their course content and delivery to students. One principal summarized this common theme by saying, "I think it's critical to be comfortable with being learners…in fact, some of our best teaching occurs when we're learning with students."

Common Theme 4: Being transparent about their own mistakes. Seven of the 12 principals emphasized that teachers needed to see their leaders make mistakes and learn from them. It was the wrong approach to try to be a flawless, invincible, and perfect leader. One principal said "I think you need to be human. I think you need to be a learner and you need to show your staff first that it's OK to maybe not get it right the first time." Many of the principals who were interviewed shared that they did things like openly and publicly acknowledge their failures and how they learned from them. Doing this helped create and support a school culture that encouraged trying new things. Table 18 summarizes the common themes from sub-question 2.

Table 18

Common Themes for Sub-question 2

Themes Identified	Number of Respondents	Frequency of Responses
1. Have a clear school wide instructional focus	6	17
2. Approach each teacher differently	8	12
3. Involve students in the learning process	6	12
4. Be transparent about their own mistakes	7	10

Sub-question 3. Sub-question three was: *What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers*? This section summarizes the most common strategies that emerged from the interviews.

Common Theme 1: Create a culture where feedback is delivered productively and intentionally. Every principal but one spoke to the power of providing clear, intentional feedback to support teachers in improving their practices. Examples of strategies included:

1. Provide formal feedback after classroom observations or as part of the evaluation process through one-on-one conversations
2. Provide informal feedback to teachers
3. Provide feedback to teachers on areas they asked about rather than feedback at the discretion of the principal
4. Provide positive feedback and praises the teacher in addition to corrective or constructive feedback
5. Focus feedback on what students did or learned in class rather than on what the teacher did
6. Utilize other professionals to provide feedback such as fellow teachers (including those from different content areas), instructional coaches, or external consultants
7. Gather feedback from students through surveys and course evaluations
8. Use non-evaluative language in observation notes to avoid judgement and then asking teachers to reflect on those observation notes

Common Theme 2: Create a culture where it is safe to make mistakes. Seven out of the 12 principals made comments about creating a school culture where it was safe to make mistakes. Reflective conversations were focused on improving classroom practices and learning, with one principal commenting, “It’s not about judgement, it’s

about being more successful in the future." The principals perceived that teachers who felt unsafe making mistakes or "felt like administrators were out to get them" were more guarded and less open to learning.

One strategy the principals used was explicitly encouraging teachers to take risks while being careful to not react negatively if the outcomes were less than expected. Multiple principals said they themselves took risks, which helped teachers feel comfortable taking risks. Furthermore, principals publicly owned any mistakes they made or failures they experienced because "that sort of humility in front of a staff speaks to cultivating that culture of risk-taking."

One principal described how she carefully planned meetings and trainings with a clear agenda and protocols that guided the meeting. This prevented individuals from derailing the meetings or making comments that caused others to feel unsafe. The safe structure of the meetings encouraged vulnerability and learning.

Common Theme 3: Learning alongside teachers. Seven principals discussed the importance of learning alongside teachers. Principals that they were rarely experts in a particular area and made sure teachers saw them as "learning partners" or "coaches." Strategies for taking on the role of learner included participating in trainings with teachers, letting teachers or consultants facilitate learning (as opposed to principals), and participating in PLC meetings alongside teachers.

Principals used the word "vulnerable" to describe how they presented themselves in front of faculty. One principal share, "You have to show that you don't have all the answers all the time. You have to be open to using the collective wisdom and talent of your staff in almost everything you do."

Common Theme 4: Building in time for reflection at teacher trainings. The principals recognized the importance of reflection at teacher trainings "because it's where the real growth and learning happens." They described multiple strategies to ensure reflection time was built into meetings. These included:

1. Ending trainings by giving people five minutes to silently reflect on their learning
2. Providing various ways for teachers to reflect as opposed to forcing teachers to do it one particular way.
3. Asking teachers to share their major learnings with fellow department members or the faculty
4. Utilizing the PLC cycle, which included phases/times where teachers looked at student data and reflected on what they learned about their own teaching practices

Furthermore, principals emphasized teachers rarely reflected unless the time was set aside for that purpose, with one principal sharing, "People are too busy. Things are too crazy."

Common Theme 5: Using the evaluation process to facilitate teacher learning. Eight of the 12 principals specifically mentioned the evaluation process as a structure strategically leveraged to facilitate teacher learning. They described the basic evaluation process as a time when teachers and the principal (or other evaluator) met to set goals and where the principal observed the teacher multiple times followed by debrief meetings. This process generally culminated with a summative assessment of the teacher's skills.

Principals who supported teachers in developing a growth mindset encouraged them to set stretch goals and supported their professional growth. In the evaluation debrief meetings, teachers were asked to think about progress toward their goals with the principal and, in some cases, give themselves the evaluation score. According to one of the principals, this process "becomes more of a conversation versus a magical score" provided by the principal.

Common Theme 6: Celebrating success in front of the whole faculty. Principals generally agreed celebrating teacher success was an important part of leadership and of developing a growth mindset. Principals described several strategies for celebrating successes, including personally recognizing teachers one-on-one, recognizing teachers in front of students, and recognizing teachers with parents and the larger community through the school newsletter or social media. The majority of principals, however, celebrated successful teachers in front of the whole faculty. Specifically, these strategies included:

1. Acknowledging teachers in front of the faculty (orally or with a certificate or other token), whether the teachers experienced major successes or took a risk that resulted in a minor success
2. Celebrating the collective successes of the faculty (i.e., when the school earns an award or the school meets a standardized assessment goal)
3. Having teachers recognize other teachers during faculty meetings with certificates or other tokens

Common Theme 7: Building trust among teachers and administrators. Half the principals interviewed explained the importance of trust among teachers and

administrators to support a growth mindset. These principals intentionally spent time building trust with their teachers, whether it was through basic teambuilding activities, scheduling off campus retreats, following through on commitments, or setting norms that expect everyone to be respectful of each other.

Principals who had a strong trusting culture found their feedback was better received by teachers than when trust was absent. One principal shared, "We start in a place of trust. We all know that we can't give feedback until there's trust." Another principal said, "It all begins with feeling safe in the relationship with your administrator and safe in the relationship with your colleagues." Table 19 presents the common themes identified in response to research sub-question 3.

Table 19

Common Themes for Sub-question 3

Themes Identified	Number of Respondents	Frequency of Responses
1. Creating a culture where feedback is delivered productively and intentionally	11	41
2. Creating a culture where it's safe to make mistakes	7	22
3. Learning alongside teachers	7	20
4. Building time in for reflection at teacher trainings	9	17
5. Using the evaluation process to facilitate teacher learning	8	16
6. Celebrating successes in front of the whole faculty	7	12
7. Building trust among teachers and administrators	6	12

Summary

This chapter summarized the qualitative data collected from the 12 principals interviewed by the researcher. All 12 principals were employed at public high schools in

the northern California counties of Napa, Sonoma, Solano, Marin, Contra Costa, or Alameda.

The chapter began by summarizing the interview from each of the 12 principals via a narrative summary of the information shared and the themes that emerged from each interviews. The themes with the highest frequencies were then summarized in the last section of Chapter 4. The themes were clustered by each research sub-question and included a narrative detailing the theme.

Sub-question 1 was: *How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers*? The most common themes were that teachers should want to learn more, teachers should try new things, teachers should want to engage with other teachers who are successful, and teachers should want to learn from feedback.

Sub-question 2 was: *What strategies do California public high school principals use to develop a growth mindset in their classroom teachers*? The most common themes were having a clear schoolwide instructional focus, approaching each teacher differently, involving students in the learning process, and being transparent about their own mistakes.

Sub-question 3 was: *What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers*? The most common themes were creating a culture where feedback was delivered productively and intentionally, creating a culture where it was safe to make mistakes, learning alongside teachers, building in time for reflection at teacher trainings, using the evaluation process to

facilitate teacher learning, celebrating successes in front of the whole faculty, and building trust among teachers and administrators.

Each research sub-question stemmed from the central question so the aggregate data for all three sub-questions ultimately answered the central question of: *What strategies do California public high school principals use to support a growth mindset in their classroom teachers*?

CHAPTER V: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter reviews the purpose of the study, the research questions, and the methodology of the study. The chapter then summarizes the major findings based on the results presented in Chapter IV and the review of the literature, as well as unexpected findings. The chapter then outlines conclusions drawn by the researcher from the major findings. The chapter concludes with implications for action and recommendations for further research.

Study Overview

Purpose Statement

The purpose of this qualitative case study was to identify and describe the strategies that California public high school principals utilized to develop a growth mindset in classroom teachers.

Research Questions

The central research questions guiding this study was: What strategies do California public high school principals use to support a growth mindset in their classroom teachers? The additional sub-questions addressed through this study were:

1. How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?
2. What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?
3. What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?

Research Methodology

This study was a qualitative case study, which was used to determine the strategies California public high school principals utilized to develop a growth mindset in their classroom teachers. The investigator interviewed a total of 12 northern California public high school principals from Napa, Solano, Marin, Sonoma, Contra Costa, and Alameda counties using an interview protocol based on Carol Dweck's framework on growth and fixed mindsets.

Principals qualified for the study if they met all the following criteria:

- Were currently principal at their school, which had a WASC accreditation term of "six years with a one-day visit" or better
- Were principal at their school at the time of the WASC accreditation visit that resulted in the term described above
- Were in at least their third year as principal at their school site

The investigator emailed all public high school principals in the six counties of interest inviting them to participate in the study and accepted only those who agreed to participate and met the criteria above. The interviews followed the semi-structured interview protocol (Appendix B).

Population

The population for this study was all California public high school principals. Principals were defined as the highest-level administrator at the school site. Public high schools were defined as schools that served grades 9 through 12 and were overseen by the California Department of Education.

Sample

This study utilized a nonprobability, purposive convenience sample. The sample frame for this study was selected to include public high school principals in Napa, Solano, Marin, Contra Costa, Alameda, and Sonoma counties, which were all within driving distance of the researcher. A total of 120 public high schools were within the six counties, and 12 principals were ultimately interview for the study, all of whom met the criteria established by the researcher.

Major Findings

Below is a summary of the major findings identified by the researcher. Findings were organized by research question and stemmed from the common themes described in Chapter IV.

Major Findings from Research Sub-question 1

Major finding 1. The first major finding was that 11 out of 12 principals believed effective teachers should want to learn more and grow. Principals expected teachers to take advantage of growth opportunities. Principals believed teachers should accept feedback and grow from it, whether it came from a site administrator, colleague, or instructional coach. Teachers who wanted to learn and were open to feedback became more effective teachers and were better able to support students in learning (Dweck, 2006; Gero, 2013; Stenzel, 2015).

Major finding 2. The second major finding was that two-thirds of principals believed teachers should try new things in their classrooms. These could be instructional strategies, new approaches to an existing strategy, or new technology tools. Principals valued teachers who were open to new ideas and took appropriate instructional risks.

This openness had an impact on student achievement (Dweck, 2006, 2007; Ostroff, 2016).

Major finding 3. The third major finding was that 92% of principals believed teachers should want to engage with other successful teachers in some way after learning about their successes. In some cases, this was described as the teacher having a conversation with the successful teacher. In other cases, the teacher participated in a "learning walk" where they observed the successful teacher in action. Many principals in the interview discussed the importance of the professional learning community (PLC) cycle (Corcoran et al., 2003; DuFour & Eaker, 2009), where teachers were required to examine and reflect upon data and learn which instructional strategies were most effective. The PLC cycle served as a commonly used structure to create a space for collaborative teacher learning.

Major Findings from Research Sub-question 2

Major finding 4. The fourth major finding was that 6 out of 12 principals identified the importance of a schoolwide instructional focus when developing a growth mindset in teachers. This focus provided clarity and focus for the teachers' own work. Furthermore, principals with a schoolwide focus were more easily able to provide focused and meaningful feedback to teachers to help them improve their practices (Bredeson & Johansson, 2000; Darling-Hammond, 1995; Newmann, Smith, Allensworth, & Bryk, 2001).

Major finding 5. The fifth major finding was that two-thirds of principals interviewed described the importance of differentiating how they approached teachers at their school based on personality and skill level. Newer teachers, for example, were

provided with additional training, coaches, mentors, and more frequent check-ins. Additionally, some teachers needed more time to process and make sense of new initiatives before fully committing to them and participating (Youngs & King, 2002). Principals who developed a growth mindset in classroom teachers were aware of various needs and personalities of teachers and adjusted their approaches accordingly.

Major finding 6. The sixth major finding was that principals developed a growth mindset in classroom teachers by involving students in the adult learning process. Principals used strategies like inviting students to faculty meetings to share their perspectives on classroom practices or school culture and by gathering feedback from students (e.g., course evaluations). Teachers were more receptive to feedback from students and it was found to be more impactful than directives from administrators. This receptiveness to feedback was important for teacher learning and growth (Duckworth, 2016; Dweck, 2006, 2007)

Major finding 7. The seventh major finding was that 7 out of 12 principals cited sharing their own mistakes with teachers as a strategy for developing a growth mindset in teachers. Principals who shared their mistakes were seen as "human" and showed teachers it was acceptable and encouraged to make mistakes and learn. This created a positive school culture that encouraged teachers to try new things in their classrooms (D. Anderson & Ackerman Anderson, 2010; Fullan, 2012; Kouzes & Posner, 2006) Conversely, principals who attempted to present themselves as "invincible" or "perfect leaders" did not achieve the same results.

Major Findings from Research Sub-question 3

Major finding 8. The eighth major finding was that principals who sustained a growth mindset in classroom teachers were strategic about how they delivered feedback to teachers. Eleven out of the 12 principals spoke about strategies for providing feedback to teachers. Strategies included providing formal feedback to teachers as part of the evaluation process, providing informal feedback (e.g., hallway conversations), and gathering student survey data. Additionally, principals spoke about using non-evaluative language in conversations with teachers and carefully providing both positive and constructive feedback in a coaching conversation (Kimsey-House et al., 2010; Knight, 2007; Lipton et al., 2003; Wellman & Lipton, 2004).

Eight out of the 12 principals spoke extensively about using the evaluation process as a structure for providing feedback to teachers. Principals who supported teachers with their growth mindset encouraged them to set stretch goals and supported their professional growth. In the evaluation debrief meetings, teachers were asked to think about their progress toward their goals (Knight, 2007; Wellman & Lipton, 2004).

Major finding 9. The ninth major finding was that principals needed to create a safe and trusting work environment to sustain a growth mindset among classroom teachers. Seven out of the 12 principals talked about having reflective conversations with teachers that focused on learning and improving skills as opposed to making judgements. Teachers who believed it was not safe to make mistakes or "felt like administrators were out to get them" were more guarded and less open to learning.

Another key factor to creating this positive work environment was to build trust among teachers and administrators. Principals cited strategies for building trust such as

following through on commitments and engaging in teambuilding activities or retreats. Principals with a strong, trusting culture (D. Anderson & Ackerman Anderson, 2010; Fullan, 2012; Kouzes & Posner, 2006) found their feedback was better received by teachers than when trust was absent.

Major finding 10. The tenth major finding is that 7 out of 12 principals believed learning alongside teachers was a strategy for sustaining a growth mindset in classroom teachers. Principals found success by avoiding claiming to be experts in particular areas and instead taking on the role of learner along with teachers (Dweck, 2006; Stolp, 2014). They created a community of learners who were working together for the success of students. Principals participated in trainings with teachers, participated in PLC conversations, and engaged in their own personal professional learning.

Major finding 11. The eleventh major finding was that principals who sustained a growth mindset in classroom teachers build in time for reflection as part of teacher trainings. Time for reflection was noted as important because that was when the growth happened (Blase & Blase, 2000; Corcoran, McVay, & Riordin, 2003; DuFour & Eaker, 2009; Gulamhussein, 2015). Principals used multiple strategies for engaging teachers in reflection, whether it was taking a few minutes at the end of trainings to silently reflect, using other protocols, or leveraging the PLC cycle as a structure for reflection.

Major finding 12. The twelfth major finding was that principals who celebrated teacher success in front of the whole faculty could sustain a growth mindset in classroom teachers. Principals were strategic in who they recognized and for what, being careful to recognize teachers who may not normally receive recognition and to highlight those taking instructional risks in the classrooms. Recognition strategies included presenting

teachers with certificates or tokens at faculty meetings, recognizing the collective successes of the school or faculty, and creating a space for teachers to recognize other teachers for their excellence. Recognition of success was an effective way of encouraging and supporting adults (D. Anderson & Ackerman Anderson, 2010).

Unexpected Findings

All the major findings from this study were to be expected and aligned closely with the literature review on growth mindset. Principals described many strategies that were discussed in seminal works.

An unexpected finding was how often principals discussed students in their conversations about teachers and growth mindset. It is the role of the principal to lead a school so that it has the greatest impact on students, so it should not be usual for a principal to regularly think about and discuss students; however, the questions in the interview protocol were largely focused on teachers and the role the principal played in supporting a growth mindset within them. Nearly all the principals found opportunities in the interview to discuss how students would be more successful if teachers embraced a growth mindset or how student feedback and involvement would support teacher learning. This unexpected finding was a good reminder that the work of supporting a growth mindset in classroom teachers should ultimately lead to student success.

Conclusions

Listed below are a series of conclusions drawn by the researcher based on the study's major findings.

Conclusion 1

Principals who want to support a growth mindset among their classroom teachers should focus thought, time, and energy into building a positive school culture. It was clear from the major findings that principals who created a trusting culture where it was safe to make mistakes and where teachers felt supported and were encouraged to take risks had teachers who embraced a growth mindset, which aligned with the literature (Dweck, 2006; Fullan, 2012; Heggart, 2016). This positive culture was the foundation for the instructional work that followed.

Conclusion 2

Principals who want to support a growth mindset in their classroom teachers should have a clear schoolwide vision. Principals should know what they want their school to accomplish, what data points they want to monitor, and what instructional strategies they want their teachers and school to focus upon (Darling-Hammond, 1995). Principals who had this focus could articulate their vision to faculty and had a focus they could use when giving feedback to teachers, when using the evaluation process, and when planning whole group faculty time.

Conclusion 3

Principals who want to support a growth mindset in classroom teachers should regularly acknowledge teachers for their successes, which aligned with the work of D. Anderson and Ackerman Anderson (2010). In some cases, principals recognized teachers for major accomplishments. In other cases, the principals acknowledged teachers for "small wins" or taking instructional risks. One principal said she and her administrative team have a spreadsheet where they track how often they recognized each teacher. This

allowed her and her team to see who had not been recognized for an extended period of time so they could find an opportunity to celebrate that person.

Conclusion 4

Principals who want to support a growth mindset in classroom teachers should invest in structuring and implementing PLCs, which was also recommended by DuFour and Eaker (2009). The PLC structure was cited multiple times by many principals as a structure allowing for teacher learning and reflection. Principals with teams of teachers serving as high-functioning PLCs were better able to facilitate teacher learning. Investing time and energy into developing PLCs could provide a strong vehicle for teacher learning.

Implications for Action

The researcher established a list of implications for action based on the literature review, major findings, and conclusions. These implications are listed below.

Implication 1

School districts must provide ongoing training and support to principals and other site administrators in instructional coaching. Principals clearly need to facilitate reflective conversations, ask guiding questions, and provide productive feedback to help teachers grow and to support a growth mindset. Principals need these skills if they are to be instructional leaders.

Implication 2

Principals must explore creative and innovative ways to acknowledge teachers for their successes. This study found principals generally celebrated teacher successes in a simplistic way such as distributing a certificate or token at a faculty meeting. Principals

need multiple strategies for celebrating teachers because celebrating successes is such an important part of effective leadership.

Implication 3

All principals, if they have not already done so, must establish PLCs. They should work with teacher leaders who can serve as leaders of these PLCs and support them in the process of establishing goals, examining data, and reflecting on successful instructional strategies. Schools not utilizing the PLC process may find it more challenging to facilitate teacher learning.

Implication 4

School districts must reflect on the effectiveness of their teacher evaluation process and revise it if it is not conducive to goal setting, reflection, and instructional coaching. The evaluation process is the most common, and sometimes the only, structure used by principals to facilitate teacher growth. School districts that do not ensure this structure is conducive to teacher growth are missing an opportunity for supporting a growth mindset in teachers.

Implication 5

Principals must find ways to include the student point of view in the teacher learning process. This can include inviting students to share their perspective at faculty meetings or asking them to fill out surveys about courses or the school that can be used to improve programs. This study found that student feedback was especially impactful to teachers.

Implication 6

District office administrators must ensure that growth mindset is developed across all levels of a school district's organization from superintendent down to students to ensure that it becomes a deep rooted part of the culture. The organization, as a whole, must model a growth mindset and learn about the concept together. The research shows that simply learning about the concept of growth mindset helps develop it within people (Dweck, 2006).

Recommendations for Further Research

The following recommendations for further research are based on the results and conclusions of this study.

1. Replicate the study with elementary school principals to determine how the strategies used to support a growth mindset compare to those of high school principals.
2. Replicate the study with middle school principals to determine how the strategies used to support a growth mindset compare to those of high school principals.
3. Replicate the study with private high school principals to determine how the strategies used to support a growth mindset compare to those of public high school principals.
4. Replicate the study in other regions of California or in other states to see if the findings still hold true in those areas.

5. Conduct a study that examines the strategies district-level administrators utilize to support a growth mindset in their colleagues. For example, examine how school superintendents support a growth mindset in principals.
6. Conduct a study that examines strategies for recognizing and celebrating teacher success. The results of this study did not yield a variety of unique strategies despite the literature's emphasis on its importance for supporting a growth mindset.
7. Conduct a study that examines the most effective way to structure and facilitate the teacher evaluation process. This was a strategy principals emphasized as something that helps facilitate teacher reflection and learning.
8. Conduct a study that identifies, develops, and determines the effectiveness of curriculum designed to develop a growth mindset in students.

Concluding Remarks and Reflections

I have been passionate about Carol Dweck's work on growth mindset ever since I was a classroom teacher. Learning about Dweck's work changed the way I gave feedback, the language I used when talking to and about students, and shifted my beliefs on what students could accomplish at school and in their lives.

After I became an administrator, I became interested in how to use the concept of growth mindset to encourage and support adults in their own learning. This was the reason I chose this topic for my dissertation. The literature review I conducted grew my knowledge base of the content and introduced me to similar topics such as Angela Duckworth's work on grit, a concept closely related to Dweck's work on mindset. Mindset proved to be a huge concept that greatly expanded over the last 10 years.

The results of my qualitative study validated a lot of what I already knew from the literature review and my own background knowledge, including the importance of going into new things with an open mind, using growth mindset language (like using the word "yet") with others, providing others with specific feedback, and celebrating successes.

I was surprised by how the principals discussed few creative or innovative ways to celebrate the success of teachers. The most common strategy was a certificate or token presented to a teacher in front of the whole faculty. I am going to make it my personal goal to recognize teachers for their accomplishments and to find creative ways to celebrate them.

This study also served as a great reminder that everything I do as an administrator should be focused on students and their success. Because of my research question, I focused on growth mindset among teachers and forgot that it should ultimately have positive results for students. Many of the principals continued to bring the growth mindset conversation to students, even though the interview questions were designed to gather information about teacher mindset.

I enjoyed conducting this study and learning more about growth mindset, a topic that I am very passionate about, and I hope to continue learning about the topic!

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APPENDICES

APPENDIX A – SYNTHESIS MATRIX

	Outcomes of effective PD	Characteristics of effective PD	Fixed and/or growth mindset	Mindset and school culture related to PD	Grit/perseverance	Strategies that support growth mindset	Process vs. person feedback	School culture and learning	Importance of a clear instructional vision	Innate ability and success	The brain is not as malleable as mindset studies suggest
Anderson, M. (2016)						X					
Anderson, D., & Ackerman Anderson, L. (2010).						X		X			
Antink, S. B. L. (2010)											
AVID. (2016)						X					
Becker, J. D. (2012)											
Bissonette, T. (2017)						X					
Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007)			X								
Blase, J., & Blase, J. (2000)						X					
Boaler, J. (2009)			X								
Boaler, J. (2015)			X								
Brainology Program. (2016)						X					
Brandon, P. R., Newton, B. J., & Hammond, O. W. (1987)											
Bredeson, P. V., & Johansson, O. (2000)	X	X		X							
Buffum, A., & Mattos, M. (2011)									X		
Business Wire. (2016)			X								
Chugani, H. T. (1998)											X
Claro, S., & Paunesku, D. (2014)			X								
Clear, J. (n.d.)			X								
Corcoran, T. B., McVay, S., & Riordan, K. (2003)						X					
Darling-Hammond (1995)	X	x									
Darling-Hammond (2000)	X										
Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002)	X	x									
Donald, B. (2013)						X					
Duckworth, A. (2009)			X		X						
Duckworth, A. (2016)			X		X		X				
Duckworth, A. L., & Eskreis-Winkler, L. (2013)					X						

Duckworth, A., Peterson, C., Matthews, M. D., & Kelly, D. (2007)			X		X						
DuFour, R., & Eaker, R. (2009)		x				X			X		
Dweck, C. S. (2006)			X	X	X	X	X				
Dweck, C. S. (2007)				X			X				
Dweck, C. S. (2014)				X							
Fensterwald, J. (2015)						X					
Fox, L. (2015)						X					
Frase, L. E., & Streshly, W. (1994)						X					
Fullan, M. (2002)				X							
Fullan, M. (2012)						X					
Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001)	X	x									
Gero, G. P. (2013)				X							
Gigante, J., Dell, M., & Sharkey, A. (2011)						X	X				
Gladwell, M. (2008)			x								
Greenhouse schools. (2012).				X		X		X	X		
Gulamhussein, A. (2015)	X	X		X		X					
Guskey, T. R. (1997)	X										
Guskey, T. R. (2002)	X	X									
Guskey, T. R., & Yoon, K. S. (2009)		X									
Hambrick, D. Z., Macnamara, B. N., Campitelli, G., Ullén, F., & Mosing, M. A. (2016)										X	
Heggart, K. (2015)			X	X		X					
Heifetz, R. A., & Linsky, M. (2009)				X							
Hensch, T. K. (2005)											X
Hochanadel, A., & Finamore, D. (2015)			x								
Hyde, J. S., & Linn, M. C. (2006)											
Joyce, B., & Showers, B. (2003)	X	X									
Kallick, B., & Zmuda, A. (2017)						X					
Kamins, M. L., & Dweck, C. S. (1999)						X	X				
Kimsey-House, H., Kimsey-House, K., Whitworth, L., & Sandahl, P. (2010)		X									
Knight, J. (2007)		X									
Kohn, A. (2001)						X					

Kouzes, J. M., & Posner, B. Z. (2006)						X					
Lipton, L., Wellman, B. M., & Humbard, C. (2003)		X				X					
Lynch, E. (2015)						X					
Macnamara, B. N., Hambrick, D. Z., & Oswald, F. L. (2014)										X	
Mangels, J. A., Butterfield, B., Lamb, J., Good, C., & Dweck, C. S. (2006)						X					
Martin, W., Strother, S., Beglau, M., Bates, L., Reitzes, T., & McMillan Culp, K. (2010)		x									
Masters, G. N. (2013)						X	X				
McKee, A., Boyatzis, R. E., & Johnston, F. (2008).						X					
McPhillips, D. (2016)											
McWilliams, E. C. (2015)			X								
Meinz, E. J., & Hambrick, D. Z. (2010)										X	
Mercer, S., & Ryan, S. (2009)							X				
Miles, K. H., Odden, A., Fermanich, M., & Archibald, S. (2004)											
Morehead, J. (2012)							X				
Moser, J. S., Schroder, H. S., Heeter, C., Moran, T. P., & Lee, Y.-H. (2011)						X					
New Mexico School for the Arts (2016)			x								
Newmann, F. M., Smith, B., Allensworth, E., & Bryk, A. S. (2001)											
Nussbaum, A. D., & Dweck, C. S. (2008)			X								
O'Rourke, E., Haimovitz, K., Ballweber, C., Dweck, C., & Popović, Z. (2014)						X					
Ostroff, W. L. (2016)			X	X		X					
Oxendine, J. (2014)			x								
Peterson, K. D., & Deal, T. E. (1998)				X		X		X			
PISA tests. (2015)											
Preckel, F., Goetz, T., Pekrun, R., & Kleine, M. (2008)											
Showers, B. (1985)						X					
Stenzel, B. K. (2015)				X							
Stevenson, H. W., & Newman, R. S. (1986)											

Stolp, S. W. (1994)						X					
Thierolf, M. (2015)							X				
Ugol, S. P. (2015)				X							
Vandewalle, D. (2012)			X			X					
Vescio, V., Ross, D., & Adams, A. (2008)		X									
Wagner, S. L. (2014)						X					
Wellman, B., & Lipton, L. (2004)		X				X					
Wiggins, G. (2012)						X					
Wilkins, P. B. B. (2014)											
Wilson, D. (2014)						X					
Wilson, D., & Conyers, M. (2017)						X					
Wilson, M. B. (2011)						X					
Winner, E. (1996)										X	
Youngs, P., & King, M. B. (2002)		X		X							

APPENDIX B – INTERVIEW PROTOCOL

Introduction and brief description of purpose/study

Good Morning/Afternoon/Evening,
Thank you for agreeing to participate in this interview. As part of my dissertation research for the doctorate degree in Organizational Leadership at Brandman University in Irvine, California, I am interviewing high school principals. The purpose of the interview is to help identify and describe the strategies that California public high school principals utilize to develop a growth mindset in classroom teachers. I will be looking to learn about your perception of growth mindset and how you develop and sustain it in teachers. The interview will take 30 to 45 minutes and will include 6 main questions with some follow up questions, as needed.

Informed Consent

I would like to remind you any information that is obtained in connection to this study will remain confidential. All of the data will be reported without reference to any individual(s) or any institution(s). If needed, pseudonyms will be used. After I record and transcribe the data, I will send it to you via email so that you can check to make sure that I have accurately captured your thoughts and ideas.

If Interview is in Person:
Did you receive the Informed Consent and Brandman Bill of Rights I sent you via email? Do you have any questions or need clarification about either document? [Present the interviewee with a hard copy and ask for their signature]

If Interview is over the Phone:
Did you received the Informed Consent and Brandman Bill of Rights I sent you via email? Do you have any questions or need clarification about either of these documents? Given the information in those documents, do you agree to participate in this study? [Later ask for an emailed signed copy of the Informed Consent form for your records]

At any point during the interview you may ask that I skip a particular question or stop the interview altogether. With your permission, I would like to tape record this interview so that I ensure accurate recording of your responses.

Do you have any questions before we begin?

Interview Questions

Before we begin, I'd like to give some context for what this study is referring to when it comes to "mindset." For the purposes of this study, we will be using the definitions set forth by the research done by Carol Dweck. Dweck has determined that there are two types of mindset called "growth mindset" and "fixed mindset." Individuals rarely exhibit one type of mindset all the time, but tend to behave differently in different situations. Oftentimes, individuals have some form of a moderate mindset. Individuals with a fixed mindset believe that people's abilities are fixed and cannot be changed much. Those with a growth mindset believe that abilities can be changed over time with effort.

Interview question 1: The research shows that people with different mindsets respond differently to challenges, obstacles, and criticism from others. In your opinion, as a high school principal, how do you think effective teachers should respond to challenges, obstacles, and criticism?

Probe 1a: This study is specific to how teacher mindset impacts professional learning. Can you share more about how you believe effective teachers should respond to challenges, obstacles, and criticism when it comes to their own professional learning?

Probe 1b: Why do you believe that the characteristics that you just described are important?

Interview question 2: People with different mindsets also respond differently when they learn about the successes of others. What do you think is the healthiest way for a teacher to respond when he/she learns about the successes of other teachers?

Probe 2a: Can you share more about how you believe a teacher should respond to the success of others when it comes to professional learning? For example, the faculty is working to improve on a particular strategy and one teacher in particular has a break through. How should others respond?

Probe 2b: What role do you think effort plays in success?

Probe 2c: Why do you believe that the characteristics that you just described are important?

Interview question 3: The research tells us that people who embrace challenges, persevere through obstacles, use feedback to improve, and learn from others' success have what is called a "growth mindset" that leads to success in the future. We also know that principals who model this mindset support a growth mindset in classroom teachers. Can you share some of the things you do to model a growth mindset as a school leader?

Probe 3a: What are some situations where you have modeled being a learner for your teachers?

Probe 3b: How have you seen that these strategies *develop* a growth mindset in teachers?

Probe 3c: How have you seen these strategies *sustain* a growth mindset in teachers?

Interview question 4: Another thing that principals do to support a growth mindset is to create a school culture of learning where it's safe to take risks and where there is no judgement when things don't go as planned. What are some things that you do to create this positive learning culture? How do you encourage instructional risk taking?

Probe 4a: How do you celebrate teachers' successes at your school?

Probe 4b: How have you seen that these strategies *develop* a growth mindset in teachers?

Probe 4c: How have you seen these strategies *sustain* a growth mindset in teachers?

Interview question 5: The research shows that adult learning happens when teachers engage in reflection. How do you build in opportunities for teachers to reflect on their learning?

Probe 5a: How have you seen that these strategies *develop* a growth mindset in teachers?

Probe 5b: How have you seen these strategies *sustain* a growth mindset in teachers?

Interview question 6: We know that effective feedback helps people learn and contributes to a growth mindset. How do you ensure that teachers receive quality feedback when they are implementing new ideas or strategies?

Probe 6a: How have you seen that these strategies *develop* a growth mindset in teachers?

Probe 6b: How have you seen these strategies *sustain* a growth mindset in teachers?

Alignment of Interview Questions to Research Questions

Research question	Corresponding interview questions
Central question: What are the strategies California public high school principals use to support a growth mindset in their classroom teachers?	Questions 3, 3a, 4, 4a, 5, 6

Sub-question 1: How do California public high school principals perceive the importance of developing a growth mindset in classroom teachers?	Questions 1, 1a, 1b, 2, 2a, 2b, 2c
Sub-question 2: What strategies do California public high school principals use to develop a growth mindset in their classroom teachers?	Questions 3b, 4b, 5a, 6a
Sub-question 3: What strategies do California public high school principals use to sustain a growth mindset in their classroom teachers?	Questions 3c, 4c, 5b, 6b

End of the Interview

This concludes our interview. Do you have any other information that you would like to add or share regarding your experiences with supporting a growth mindset in classroom teachers?

Within the next week I will send the transcription of our interview through email. If you have any corrections or additions, feel free to send them to me within one week. Thank you very much for your time and support in completing my research!

APPENDIX C – INFORMED CONSENT AND BILL OF RIGHTS

INFORMATION ABOUT: Supporting a Growth Mindset in High School Classroom Teachers: A qualitative case study examining the strategies California high school principals utilize to support a growth mindset in teachers.

RESPONSIBLE INVESTIGATOR: Peter Abboud

PURPOSE OF STUDY: You are being asked to participate in a research study conducted by Peter Abboud, M.A., a doctoral student in the organizational leadership program at Brandman University. The purpose of this research study is to identify and describe the strategies that California public high school principals utilize to develop a growth mindset in classroom teachers. The study will attempt to determine principals' perceptions of the importance of a growth mindset, strategies for developing a growth mindset, and strategies for sustaining a growth mindset in classroom teachers. There is already a lot of research on developing a growth mindset in students, but not with classroom teachers and by principals. This study will fill that gap. The results of this study will add to the body of knowledge on how principals can better support teachers in their learning and ultimately design and facilitate more effective professional development.

By participating in this study, I agree to participate in a 30 to 45-minute one-on-one interview with the responsible investigator. The interview will be conducted in person, over the phone, or through video conferencing software such as Adobe Connect, Face Time, or Google Hang Out. Interviews will occur September through November 2017.

I understand that:

a) There are minimal risks associated with participating in this research. I understand that the investigator will protect my confidentiality be keeping any identifying information on a password protected computer, online using password protected applications (i.e. Google Drive), or in a locked filing cabinet only available to the researcher.
b) The possible benefit of this study to me is that my input will add to the research on how to best support classroom teachers in their learning. The findings will be available to me at the conclusion of the study. I understand that I will not be compensated for my participation.
c) If you have any questions or concerns about the research, feel free to contact Peter Abboud at pabboud@mail.brandman.edu; or Dr. Doug DeVore (chair) at ddevore@brandman.edu
d) My participation in this research study is voluntary. I may decide to not participate in the study and I can withdraw at any time. I can also decide not to answer particular questions during the interview if I so choose. I understand that I may refuse to participate or may withdraw from this study at any time without any negative consequences. Also, the investigator may stop the study at any time. I also know that I may ask questions about the study before, during, or after the

interview.

e) No information that identifies me will be released without my separate consent and that all identifiable information will be protected to the limits allowed by law. If the study design or the use of the data is to be changed, I will be so informed and my consent re-obtained. I understand that if I have any questions, comments, or concerns about the study or the informed consent process, I may write or call the Office of the Vice Chancellor of Academic Affairs, Brandman University, at 16355 Laguna Canyon Road, Irvine, CA 92618, (949) 341-7641. I acknowledge that I have received a copy of this form and the "Research Participant's Bill of Rights." I have read the above and understand it and hereby consent to the procedure(s) set forth.

_____ _____

Signature of Participant Date

_____ _____

Signature of Principal Investigator Date

BRANDMAN University Chapman University System

BRANDMAN UNIVERSITY INSTITUTIONAL REVIEW BOARD

Research Participant's Bill of Rights

Any person who is requested to consent to participate as a subject in an experiment, or who is requested to consent on behalf of another, has the following rights:

1. To be told what the study is attempting to discover.
2. To be told what will happen in the study and whether any of the procedures, drugs or devices are different from what would be used in standard practice.
3. To be told about the risks, side effects or discomforts of the things that may happen to him/her.
4. To be told if he/she can expect any benefit from participating and, if so, what the benefits might be.
5. To be told what other choices he/she has and how they may be better or worse than being in the study.
6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the study.
7. To be told what sort of medical treatment is available if any complications arise.
8. To refuse to participate at all before or after the study is started without any adverse effects.
9. To receive a copy of the signed and dated consent form.
10. To be free of pressures when considering whether he/she wishes to agree to be in the study.

If at any time you have questions regarding a research study, you should ask the researchers to answer them. You also may contact the Brandman University Institutional Review Board, which is concerned with the protection of volunteers in research projects. The Brandman University Institutional Review Board may be contacted either by telephoning the Office of Academic Affairs at (949) 341-9937 or by writing to the Vice Chancellor of Academic Affairs, Brandman University, 16355 Laguna Canyon Road, Irvine, CA, 92618.