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Dr. Tom Cavanagh, Committee Chairperson, Education Faculty

Dr. Pauline Mercado, Committee Member, Education Faculty

Dr. Mary Howe, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2013

Abstract

Helping Educators Foster a Growth Mindset
in Community College Classrooms

by

Marianne Adams Auten

MC, Arizona State University, 1990

BS, Northern Arizona University, 1980

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Higher Education and Adult Learning

Walden University

August 2013

Abstract

Current research shows that students with a growth mindset are more motivated to learn, want to work harder, are less discouraged by difficulty, use more effective strategies for learning, and have higher academic performance in comparison to students without this mindset. Despite these promising findings a growth mindset is sometimes not reinforced or is even refuted by classroom conditions. The purpose of this intrinsic case study was to explore how community college educators create classroom environments that foster a growth mindset. The conceptual framework for this study was a social constructivist approach where the interviewer and the participants co-constructed the interpretation of how to influence a growth mindset in the community college classroom. Data were collected through 14 in-depth interviews with community college educators who completed a workshop on influencing a growth mindset. Data were analyzed through categorizing, coding, and identifying themes that answered the research question. The findings of this study indicated that the mindset of the student and the teacher play an important role in academic success at the community college and that faculty desire training in tools and strategies to create classroom environments that foster a growth mindset. Recommendations include an in-depth, experiential professional development program based on research where community college educators from a variety of disciplines can collaborate to gain new knowledge and skills. Training community college educators using the most effective ways of fostering a growth mindset to increase students' motivation, effort, and persistence will lead to greater academic success and degree completion.

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Dedication

I dedicate this doctoral study to my parents, Carlyle and Frances Adams, who instilled in me a lifelong love of learning and a belief that I could accomplish whatever I put my mind to, and then helped me in whatever way they could to further my education. Your example, support, and sacrifice enabled me to achieve the degrees that were the stepping stones for a doctorate. Even though you have long since passed away, your influence has made all the difference in starting and finishing this challenging endeavor.

I also dedicate this doctoral study to my husband, Brad Auten; I could never have done this without your support, patience, and love. For 30+ years you have been the best partner anyone could hope for, and I love you with all my heart and soul.

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Last, but certainly not least, I thank my Lord and Savior Jesus Christ who has given me meaning and purpose in life, and my wonderful husband Brad Auten, grown children Bethany and Andrew, and so many friends and family who continually offered encouraging words and even showed interest in my research. I am certain it does “take a village” to get a doctorate, and I was blessed to have the best village anyone could possibly hope for.

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Section 1: The Problem

Introduction

This study focused on the central phenomenon of how community college educators can influence a growth mindset in their classrooms. A growth mindset is the belief that intelligence or talent can be developed through effort and instruction (Dweck, 1999). Students with a growth mindset are more motivated to learn, want to work harder, are less discouraged by difficulty, use more effective strategies for learning, and have higher academic performance (Cury, Elliott, Da Fonseca, & Moller, 2006; Dweck & Leggett, 1988). In comparison, people with a fixed mindset believe that intelligence is a static trait; some students are smart and some are not. In this line of thinking, the genetic predisposition to be good at math or not, to be a good writer or not, is so strong that it is what determines whether an individual will do well or not in a given pursuit. Often, students who hold such beliefs surrender in the face of difficulty because they believe they do not have the ability to do the work (Sousa & Tomlinson, 2011). In general, students who believe that intelligence and abilities can be developed (growth mindset) have a significant advantage over students who believe that their traits are fixed (fixed mindset).

Research has shown that teaching students about a growth mindset raised test scores and grades as well as students' investment in and enjoyment of learning (Aronson, Fried, & Good, 2002; Good, Aronson, & Irzlicht, 2003). In addition, studies showed that not only does student mindset matter in the level of their motivation and achievement, but it also matters which mindset the teacher has (Dweck, 2010). When teachers believe in

fixed abilities, the students they identify as *smart* are the only ones who tend to do well, but when teachers believe that all students can grow, learn and, achieve, a much broader range of students do well. Clearly, developing a growth mindset is important to both teacher and student success, yet very few studies have examined how to do this in the community college setting.

In this qualitative study, I sought to further the understanding of the role of community college educators in influencing a growth mindset. In this section, I examine the local problem of low persistence and completion rates and the rationale for studying a growth mindset as a key factor in solving this problem; I also define special terms and discuss current research on the relationship of mindset to academic performance. Finally, I demonstrate how classroom context shapes mindset and the relationship of mindset to achievement gaps.

Definition of the Problem

Increasing the percentage of Americans who attain postsecondary credentials has become one of the primary educational objectives of this current decade (Gates & Gates, 2009; Lumina Foundation for Education, 2011; Obama, 2011). Approximately 60% of first-time, full-time, degree-seeking students at 4-year colleges earn a degree within 6 years, and only about 30% of first-time, full-time students at 2-year colleges earn a certificate or associate's degree within 3 years (ACT, 2011). Rates are even lower for nontraditional, minority, and economically disadvantaged students (ACT, 2011). By 2018, the United States is currently projected to be at least 3 million college-educated workers short of meeting projected demand (Carnevale, Smith, & Strohl, 2010). At the

very time that global competitiveness depends on a well-educated citizenry, the United States finds itself losing ground in relative educational attainment, falling from first to sixteenth in the world for degree completion (American Association of Community Colleges, 2012).

In the large, urban community college system in the southwestern United States that served as the study site for this project, the success rate (grade of C or better) in any given course is 75.6%, the next semester persistence rate is 63.1%, and fall-to-fall persistence is 42.67% (National Higher Education Benchmarking Institute, 2011). The graduation rate of first-time, full-time, degree-seeking students within 3 years is 24.28%, and the percentage of students who transfer to the university is 14.3% (NCES, 2011). These numbers are below the national average for community colleges and below what is necessary to achieve the national completion agenda goal of increasing the number of bachelor's degrees 50% by 2020. To meet the national completion agenda goals, this community college district has set ambitious goals to increase by 6% annually the number of students completing occupational certificates and associate's degrees (Southwestern Community College (pseudonym), 2012). Clearly, new strategies are necessary if these lofty goals are to be met.

The community college district in this study has focused primarily on cognitive factors to increase the number of students who graduate, especially emphasizing programs to increase the academic success of students in developmental courses (P. Dale, personal communication, August 28, 2012). These initiatives have included smaller class size, mandatory tutoring, learning communities (two or more classes put together),

increasing class time, and offering brief refresher courses before taking the placement test. These efforts seem to suggest that if students can master content knowledge and academic skills, they will graduate; yet the evidence does not show this to be the case (Arum & Roksa, 2011). It is also important to note that a significant number of students who are academically prepared also drop out of college (Farrington et al., 2012).

New, compelling evidence has shown that simple social-psychological interventions can make a dramatic difference in grades and course completion, even several years after the intervention (Yeager & Walton, 2011). In particular, growth mindset interventions demonstrated surprisingly lasting effects on student achievement and have sharply reduced racial/ethnic and gender achievement gaps (Aronson et al., 2002; Blackwell, Trzesniewski & Dweck, 2007; Miyake et al., 2010; Walton & Cohen, 2007, 2011). These studies indicated that showing students that they can improve their intelligence through effort and that they belong in college can be as important as teaching academic content and skills. Unfortunately, knowing that noncognitive factors matter for success in college is not the same as knowing how to foster a growth mindset in students. Few resources are currently available to help community college educators in this district understand the potential payoffs of addressing noncognitive factors and to provide educators with practical knowledge in instructional practices that promote a growth mindset in order to increase academic persistence.

Rationale

There is a gap in practice in this community college district: Current efforts to increase persistence and completion have ignored noncognitive factors such as mindset

(P. Dale, personal communication, August 31, 2012). If indeed mindsets are malleable and critical to academic performance, it makes sense to examine how community college educators can intentionally develop a growth mindset that leads to increased persistence and completion of academic goals.

This study sought to understand the experiences of community college educators who had completed professional development training on mindset. The purpose of the training workshop was to educate faculty about the latest research on how mindsets impact student success and to learn strategies to influence more of a growth mindset in students. The objectives of the workshop included: (a) a review of the research findings that demonstrate the connection of growth mindset to student success, (b) practice with a four-step model to develop a growth mindset, (c) identifying the words that promote a growth mindset or that reinforce fixed mindset thinking, (d) applying basic principles from neuroscience to design instructional strategies that promote learning goals rather than performance goals, and (e) developing personal goals to transfer this learning to their own professional practices.

I used a case study approach in this study to explore educators' understanding and use of mindset research and to gain insights into bridging the gap between current practice and intentionally influencing a growth mindset in the classroom. The results of the study provided data that can be used to improve and expand professional development programs for community college educators on the research and application of a growth mindset.

Special Terms

Cognitive factors: A student's grasp of content knowledge and academic skills such as solving math problems and writing (Farrington et al., 2012).

Fixed mindset or entity theorist: The belief that intelligence and abilities are fixed traits; people are born with a certain amount, and that is that. Those in a fixed mindset tend to believe that effort is a bad thing. If they have what it takes to be smart, gifted, or talented by nature, then they should not need much effort. This type of belief decreases the motivation to work towards long term goals (Dweck, 1999).

Growth mindset or incremental theorist: The belief that intelligence and abilities can be cultivated through effort, guidance, and education. Students with a growth mindset believe that academic ability can be developed; they attribute their performance in school to the amount of effort they put in rather than to innate intelligence, luck, or other factors out of their control (Dweck, 1999).

Noncognitive factors: Factors that make a difference in student success that are not measured by academic examinations. Some examples are motivation, attitude toward learning, and the willingness to seek help (Farrington et al., 2012).

Retention: A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. At 2-year colleges, this is the percentage of first-time degree or certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall (NCES, n.d.)

Significance of the Problem

A generation ago, only one quarter of U.S. jobs required a postsecondary credential or degree, but by 2018 that number is expected to include about two thirds of all jobs (Mullin, 2011). Unless the United States can significantly produce more workers with degrees, approximately 60 million Americans are at risk of being locked into predominantly low-wage jobs that cannot support a family (American Association of Community Colleges, 2012). Beginning in 2010, for the first time in the United States, people who are retired have achieved higher levels of education than young adults entering the workforce (American Association of Community Colleges, 2012). It is no longer enough to just increase access to a college education; community colleges must significantly increase the number of students who complete certificate and degree programs, not only to meet the demands of the U.S. economy but to help students reach their full potential.

Considering that degree completion rates have remained relatively unchanged for the past 4 decades (Bowen, Chingos & McPherson, 2009), it is important to consider what will make the difference in increasing the number of college graduates. The national discussion around low college retention has generally focused on weak academic preparation, particularly among minority students, and rising financial costs as well as the declining value of financial aid (Roderick, Nagaoka, & Coca, 2009). While it is clear that past academic achievement and financial limitations affect college retention, new research strongly suggests that noncognitive factors, such as mindset, play a critical role in students' success (Farrington et al., 2012).

At present, educators give very little attention to the noncognitive factors known to affect academic performance, even though specific interventions, particularly in changing mindsets, have shown to be cost-effective and to make a significant difference in student achievement (Yeager & Walton, 2011). If indeed mindsets can be changed and are directly linked to academic performance, then it makes sense that community college educators learn about the importance of mindset and how to create classroom environments that foster a growth mindset. In order to meet the needs of 21st century students and the needs of the 21st century economy, it is imperative to understand all factors that lead to student success and to give educators the knowledge and tools necessary to create contexts where students will persist to achieve their academic goals.

Guiding and Research Questions

This study sought to address the local problem of high numbers of students dropping out of community college and not meeting their goals of completing a degree. Cognitive ability only accounts for about half of a student's success in school; the other half comes from noncognitive factors such as motivation, attitudes toward learning, and willingness to seek help. There was a gap in practice in the community college district in this study in that educators have ignored noncognitive factors influencing student success. Past research has shown that teaching students about growth mindset improves effort, persistence, and grades, but what was not known is how community college educators can do this.

In alignment with the research problem and purpose of this study, I posed the following research question: What are the experiences of community college educators

regarding influencing a growth mindset in their classroom? The answer to this question provided important data in the quest to increase the number of students who overcome obstacles and complete their degrees. This qualitative study posed just one broad, open-ended research question in order to focus the study, and at the same time, remained open to what emerged from the data (Bogdan & Biklen, 2007).

To answer this research question, I used a case study approach. The participants, who completed a growth mindset workshop, came from several different colleges in a district in the southwestern United States. This approach allowed me to collect data in the participant's setting, to analyze data inductively, and to make interpretations of the meaning of the data (Creswell, 2009). Specifically, I used an intrinsic case study design to gain a better understanding of how educators in this community college district have gained knowledge about a growth mindset and were able to use the information in the classroom to help students persevere and achieve their goals.

I chose 14 participants by purposeful sampling from the group of educators who completed a workshop on growth mindset. Participants represented a cross-section of nine different disciplines and a variety of teaching experience (less than 5 years, 5 to 15 years, or over 15 years) to allow maximum variation in the sample. I chose participants purposefully to provide "information-rich cases." (Creswell, 2012, p. 206). I studied these cases in depth in order to learn how community college educators were experiencing the growth mindset training in the classroom.

Review of the Literature

This literature review is divided into four parts: (a) the conceptual framework for this study, (b) how mindset impacts academic performance, (c) how classroom context shapes students' mindsets, and (d) the relationship of mindset to racial, ethnic, or gender achievement gaps. This literature review provides insight and support for teaching mindset theory and strategies to community college educators as a missing piece in the efforts to increase the number of students who persist to degree completion. I examined many resources for this literature review, including peer-reviewed journals, books, and professional resources. I used the following databases: ERIC, PsycINFO, PsycArticles, Education from Sage, and Educational Research Complete. Search terms included *growth mindset*, *incremental theories*, *academic performance*, and *stereotype threat*.

Conceptual Framework

This qualitative study was based on the constructivist paradigm where learning is viewed as a process of constructing meaning; it is how people make sense of their experience (Merriam et al., 2007). In the social constructivist view, knowledge is constructed when individuals engage in dialogue and activity about shared problems or tasks (Creswell, 2012). According to Merriam et al. (2007), "one learns through engaging, incorporating, and critically exploring the views of others, and new possibilities of interpretation are opened through the interaction" (p. 292). The social constructivist paradigm views participants as co-constructors of the interpretation (Creswell, 2012). It was the intended outcome of the study that perspectives will be transformed through personal reflection and dialogue, and that this will result in new

beliefs and strategies that have an impact on community college educators' view of their role in influencing a growth mindset.

Mindset and Academic Performance

Dweck's (1999) theory of fixed and growth mindset comes from a social cognitive perspective. This perspective posits that thought processes play a key role in human motivation, affect, and action, and much of human thought and action originates by interaction with, and observation of, others in a social context (Merriam, Caffarella, & Baumgartner, 2007). Learners build up theories about life in order to make sense of their world. From these theories, learners create a meaning framework that leads them to interpret events that happen in particular ways. These meaning frameworks dictate the extent to which learners will persist (or not) in the face of setbacks and challenges. From an early age, learners start to evaluate their own abilities and create a personal theory relating to intelligence. The evidence for their theory comes from comparison to others, feedback from significant others, and interactions within their own particular contexts (Bandura, 1986; Mischel & Shoda, 1995; Sutherland, Smith, & McLean, 2004). For example, students who have difficulty with reading compared to their peers may decide that they are not very smart; this belief in turn affects their motivation and action with any academic task.

According to Dweck (2006), there are two very different, basic beliefs related to intellect: entity and incremental. Entity theorists see the self as a compilation of fixed characteristics that can be evaluated and that do not change (fixed mindset); whereas, incremental theorists believe that traits or qualities evolve in accordance with effort and

experiences (growth mindset). Entity theorists tend to adopt *performance* goals, focusing on proving their (fixed) ability level by gaining approval and avoiding failure. In contrast, incremental theorists tend to adopt *learning* goals, focusing on developing and improving their (malleable) ability level by mastering challenging tasks. In the face of challenge or failure, incremental theorists exhibit a mastery-oriented response pattern, believing they can improve their ability through effort. Entity theorists, in contrast, are vulnerable to the helpless response pattern, often disengaging from the task to avoid revealing a lack of ability.

Students who believe they can grow in their academic ability by working hard are more likely to be self-motivated, more likely to have learning goals (rather than just performance goals), more likely to persist to completion, and more likely to work at building competence (Dweck & Leggett, 1988; Haimovitz, Wormington, & Corpus, 2011). In contrast, students who believe that academic ability is a fixed trait are more likely to be concerned with academic ability labels from other people, more likely to drop out, and have lower self-motivation and lower overall grades (Cury et al., 2006; Kornilova, Kornilova, & Chumakova, 2009). It is interesting to note that what students believe about intelligence has been shown to be more strongly associated with academic performance than actual measured intelligence scores (Sternberg, 2005). For more students to persist to degree completion, it is imperative that educators understand their role in creating an environment where students are motivated to seek challenges, value effort, and persist in the face of obstacles.

Numerous studies in the literature establish that the belief students have about intelligence and ability (fixed or growth) has profound effects on their motivation, learning, and school achievement (Dweck, 2007; Kornilova et al., 2009; Spinath, Freudenthaler, & Neubauer, 2010; Steinmayr & Spinath, 2009). Nussbaum and Dweck (2008) found that when students with a growth mindset made mistakes or exhibited a deficiency, they corrected it, whereas students with a fixed mindset tried to hide their mistakes and deficiencies. When students were followed over challenging school transitions or courses, those with growth mindsets outperformed their classmates with fixed mindsets (Blackwell et al., 2007; Mangels, Butterfield, Lamb, Good, & Dweck, 2006). In a longitudinal study on the growth mindset, seventh graders participated in short weekly sessions where they learned that the brain is like a muscle; therefore, it gets stronger (smarter) when challenged. Blackwell et al. (2007) found that students' mindset had a direct influence on their grades and that teaching students to have a growth mindset raised their grades and achievement test scores, even a full year later. An important aspect of this study was that the training was only 2 hours total and yet had a significant impact on student behavior and achievement.

Theories of the self have shown that students with a fixed mindset are more likely to exhibit a helpless response to substantial challenges and to experience decreases in self-esteem during college (Murphy & Thomas, 2008). Those with a growth mindset maintain self-esteem, primarily because they attribute failure to a lack of effort (something I can change) rather than a lack of intellectual ability (something I cannot change). Findings suggest that learners with a fixed mindset are motivated by

performance goals and maintain their self-esteem by appearing smart (Sungur & Senler, 2010). Some students even go so far as to withhold effort in the face of a difficult task to preserve the belief that they could have done well had they chosen to participate.

An important consideration when conducting research on students' mindsets is the influence of teachers' mindsets on academic performance. When teachers decide that certain students are not capable, they may not take steps to help them reach their potential. Rheinberg, Vollmeyer, and Rollett (2000) found that middle school math teachers with a growth mindset had a significant number of students move from low to moderate or even high achievement scores in one academic year, whereas students with fixed mindset teachers did not improve. This study was significant because the researchers did not even consider the mindset of the students; the difference in student achievement was based only on the mindset of the teacher.

Studies from the field of educational neuroscience support the connection of mindset and academic performance. These studies include the discovery that the brain has more plasticity over time than people previously imagined (Doidge, 2007), fundamental aspects of intelligence can be enhanced through learning (Nisbett et al., 2012; Sternberg, 2005), and dedication and persistence in the face of obstacles are key ingredients in outstanding achievement (Ericsson, Charness, Feltovich, & Hoffman, 2006). In a very recent study, Yeager and Dweck (2012) found that teaching community college developmental math students about mindset reduced the withdrawal rate from 25% to 13%. All of these studies offer support that having a growth mindset does indeed make a significant difference in academic performance.

Classroom Context and Mindset

Newer research has also shown that the teacher's mindset plays a significant role in determining his or her expectation of students, teaching practices, and relationships with students (Brooks & Goldstein, 2008). A common belief among educators is that praising students' intelligence builds their confidence and motivation to learn. Yet, studies of this kind of praise found that it put students into a fixed mindset and actually lowered self-confidence and resiliency in school (Cimpian, Arce, Markman, & Dweck, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998). In contrast, praise for effort, perseverance, strategies, or improvement led students to seek more challenge and to persist even with difficulty. Praise about process rather than praise about the person tells students what they have done to be successful and what they need to do again to be successful in the future.

In one study, Good, Rattan, and Dweck (2007) had teachers read a scientific article about math intelligence. Half of the teachers had an article that stated math intelligence is fixed and the other half had an article stating that math intelligence is acquirable. Teachers were then asked to give feedback to middle school students who had received 65% on the first math test of the school year. Teachers who were given the article that math intelligence is acquirable were found to give more concrete strategies for improvement and encourage students that they could learn math and do well. In contrast, those given the article that math intelligence is genetic were more likely to try to comfort the student by saying things such as, "It's okay, not everyone can be good at math." In addition, learning that math intelligence was fixed led teachers to give significantly more

concrete suggestions for improvement to the boys than to the girls. In a follow-up study, Rattan, Good, and Dweck (2011) found that teachers holding a more entity (fixed) theory of math intelligence were significantly more likely to diagnose a student as having low ability based upon a single, initial poor performance. Students responding to comfort-oriented feedback reported lower motivation and lower expectations for their own performance.

In a study on student achievement, excellence in teaching was the most powerful influence, and specifically teachers' feedback made the most difference (Hattie, 2009). Accomplished teachers embrace an effort-based conception of intelligence rather than one that presumes predetermined and fixed capacities of learning (King & Watson, 2010). These teachers believe in the potential of each student and that belief was framed by a deep understanding of how students learn. Accomplished teachers are skillfully able to affirm students' prior knowledge, daily progress, and effort so that students are motivated to keep trying, to set short-term and long-term goals, and to envision successful learning outcomes. Dweck (2008) found that when teachers overemphasize performance goals, students are unlikely to risk moving beyond their zones of competence and are more likely to assume they lack innate ability if things go wrong.

These and other studies demonstrate how educators' beliefs about intelligence and feedback practices have the power to influence students to think about their abilities in different ways. It is also interesting to note how culture shapes beliefs about intelligence. For example, Rattan, Savani, Naidu, and Dweck (2012) found that in U.S. contexts, people tend to believe that only some people have the potential to become highly

intelligent. In contrast, people in Asian cultures tend to believe that most people have the potential to become highly intelligent. These culturally shaped beliefs influence U.S. educators and parents to emphasize inherent ability as the primary determinant of academic outcomes whereas their Asian counterparts emphasize effort.

In another study, Mercer and Ryan (2010) compared English language learners from Japan and Austria about their beliefs of the role of natural talent in learning languages (Mercer & Ryan, 2010). In contrast to the Austrians, the Japanese group showed a strong expression of a belief in effort, but it was interesting to consider whether the Japanese responses reflected the participants' actual mindsets or possibly a socialized script about the relationship between talent, hard work, and achievement. These studies indicate that teachers have an important role in encouraging greater internal reflection about how culture potentially influences mindset formation and the extent to which cultural scripts may influence self-reports of learners' mindsets and the challenge of adopting a new mindset.

Lindquist and Lindquist (2008) argued that today's educational institutions operate predominately out of a fixed mindset belief system. Teaching methods, the school year, curricula, emphasis on grades, even the physical look of many classrooms are locked into old traditions that result in practices that do not facilitate student learning. A key to equipping students to become lifelong learners is to build teachers' capacity (not just students' capacity) by an ongoing professional development program that influences a growth mindset and a shift of emphasis from the delivery of instruction to the impact of instruction (Lindquist & Lindquist, 2008). Teachers must be taught to address each

student's learning needs in order to affect academic growth that will take the student to the intended level of achievement. In the transition to college, it is especially imperative that teachers help students adopt the growth mindset that ability and competence grow with effort.

Classrooms that emphasize a belief that everyone can learn and achieve, and that both teachers and students can help each other to be successful, have much higher levels of persistence and higher overall grades than classrooms that emphasize competition and a belief that only a limited number of students would earn a good grade (Walton, Cohen, Cwir, & Spenser, 2012). In their review on academic persistence, Dweck, Walton, and Cohen (2011) found evidence that a number of classroom practices promoted a growth mindset and increased academic success. These practices included purposefully instilling a sense of belonging, expecting that all students could be successful, and scaffolding the curriculum so that students are continually building competence.

Mindsets and Achievement Gaps

A number of interventions targeting mindsets have shown to decrease or even close achievement gaps. In one study, Dar-Nimrod and Heine (2006), divided college females into two groups before taking a challenging math test. One group was told that math ability genetically favored males (fixed mindset manipulation), whereas the other group was told that any gender difference in math came from the different experiences of males and females (more of a growth mindset manipulation). Females given the fixed mindset explanation performed significantly worse than those given the growth mindset manipulation. In another study, Good, Rattan, and Dweck (2012) asked several hundred

females taking calculus at an elite university how mindset influenced their sense of belonging in math, desire to pursue math in the future, and grades. Females with a growth mindset had grades and test scores more similar to their male classmates and were less susceptible to the negative effects of stereotypes.

A negative stereotype is a fixed mindset belief that certain abilities are inherent, and these abilities are not possessed by a specific group (Aronson et al., 2002). The more the members of a negatively stereotyped group already hold a fixed mindset, the more susceptible they may be to such a message. The more they hold a growth mindset, the more they may be able to withstand negative messages about their ability. Good, Aronson, and Harder (2008) have demonstrated that mindsets can cause underperformance on standardized tests by racial minority students. In one test, Good et al. administered two different sets of directions to Black and Latino students taking the MCAT for admission to medical school. Half of the students were given instructions that this test measured fixed ability, while the other half were told that the test measured skills that could be improved with practice. Those who received the growth mindset instructions scored significantly higher. In another recent experiment, Alter, Aronson, Darley, Rodriguez, and Ruble (2010) found that performance-inhibiting consequences of stereotype threat were eliminated when the threat was subtly reframed as a challenge.

Implications

The benefits to this study are a deeper understanding of how community college educators can practically influence a growth mindset in their classrooms. Research has shown that growth mindset thinking leads to greater student motivation, effort,

perseverance, and achievement. Thus, if educators are taught how to influence a growth mindset, more students will achieve their goal of completing a college degree. The project for this study was an in-depth professional development program to teach community college educators the theory of growth mindset and how to influence it in the classroom.

Summary

There is much at stake with the current emphasis on significantly increasing the number of students who persist to complete certificates and degrees. Ample evidence suggests that faculty can play a key role in student success by influencing a growth mindset. This study sought to understand the experiences of community college educators trying to do this. The following section describes the design of this qualitative study, including the selection of participants, data collection methods, data analysis procedures and outcomes. In subsequent sections, the project that resulted from the study is described in Section 3, and I reflect on the study and make recommendations in Section 4.

Section 2: Methodology

Introduction

Most of the studies on the impact of growth versus fixed mindset have been quantitative; typically, they have included an intervention designed to foster a growth mindset and then compared the grades and test scores of students who experienced the mindset intervention to a control group. These studies are valuable, making a case that mindsets are malleable and impact academic achievement. Yet what is missing is the voice of educators describing their experiences in influencing a growth mindset. This qualitative study explored community college educators' experiences and perceptions in depth and provided valuable data that can be used to design more effective training programs on growth mindset.

Research Design and Approach

The purpose of this study was to explore how community college educators can influence a growth mindset. The research design was an intrinsic case study since this study was problem-based, designed to resolve the issue of a lack of understanding of the participants' perceptions regarding the phenomenon of interest, and the case itself was of primary importance (Ellis & Levy, 2008). The participants were a bounded group of community college educators who had completed a workshop on growth mindset and ways to apply it in the classroom. In this study the research question was answered by the participants' experiences, data were collected in the participants' settings, inductive data analysis was conducted to develop general themes, and I made interpretations of the

findings of the data. The data collection and analysis strategies best fit a case study approach (Creswell, 2009).

I chose a case study design because I was interested in a particular group: educators who had completed a workshop on the growth mindset. The research question also informed the selection of a case study design because the study sought to resolve the issue of a lack of understanding of how community college educators can help students adopt a growth mindset in order to increase their motivation, effort, and persistence. This study could have potentially fit a grounded theory or phenomenological approach, but these approaches were excluded because I was not looking to generate a new theory, and I was not interested in just one phenomenon. Hatch (2002) stated that the defining characteristic of a case study was an investigation of a contextualized, contemporary phenomenon within specified boundaries, which is what this study did. A constructivist approach framed the study, as I assumed that multiple realities exist and that the meanings individuals give to their experiences are important to understand the topic of interest.

Participants

I chose participants by purposeful criterion sampling from the educators who had completed the workshop. Fourteen participants, who represent the two criteria of (a) a cross-section of disciplines and (b) amount of teaching experience, allowed for maximum variation. Formal interviews with 14 participants were a reasonable number to reach saturation of themes and redundancy of ideas. I gained access to potential participants by requesting the list of attendees from the community college office that sponsored the

growth mindset workshop. I received permission from the Vice Chancellor of Academic Affairs in the community college district office to access the list of workshop attendees and to interview faculty on any of the campuses in the district for this study.

I obtained Institutional Review Board (IRB) approval from both Walden University (#12-10-12-0191730) and the community college district in this study (#2012-10-237) before collecting any data. Once both institutions granted IRB approval, I emailed potential participants a cover letter and consent form. The cover letter contained my introduction, a description of the purpose of the study, the proposed time commitment, and a request to consider participating in the study if he or she voluntarily agreed to do so. The consent form described procedures of the study, issues of confidentiality, guarantees of privacy, the option to quit the study at any time, and that there was no compensation for participating. Those who chose to participate either returned the signed consent form via intercampus mail or handed it to me before the interview began. The form also included questions about the participant's teaching discipline and number of years of teaching experience. From those who agreed to participate, I chose 14 who represented different disciplines and a variety of teaching experience based on the three categories (less than 5 years, 5 to 15 years, and more than 15 years). I informed those persons not chosen for the study of their exclusion by phone.

Table 1

Participant by Discipline and Teaching Experience

Participant #	Campus #	Discipline	Teaching Experience
A	2	Counseling	5 – 15 years
B	4	Counseling	5 – 15 years
C	5	Counseling	Less than 5 years
D	2	Math	5 – 15 years
E	1	Math	More than 15 years
F	1	ESL	Less than 5 years
G	1	Communication	Less than 5 years
H	3	Math	5 – 15 years
I	5	Computers	More than 15 years
J	1	English	5 – 15 years
K	1	Education	More than 15 years
L	1	Reading	5 – 15 years
M	3	Tutor Training	Less than 5 years
N	1	English	5 – 15 years

Data Collection

How and When Data Were Collected

In this qualitative case study, I conducted individual, in-depth interviews with 14 participants to answer the research question. The purpose of the interviews was to collect data from community college faculty who had completed a workshop on growth mindset for the purpose of exploring their process of learning about growth mindset and applying it in the classroom. Several community college educators and the members of my doctoral study committee reviewed my interview protocol to ensure the questions were appropriate and relevant. The Interview Protocol is included in Appendix B.

Process for Collecting Data

The participants in this study worked at a variety of campus locations; therefore, I held interviews at different locations but all on campuses of the community college district in this study or in a private location chosen by the participant. I called participants on the phone to determine a convenient time for the interview and their choice of location. The interviews lasted approximately 45 minutes but no more than 1 hour. I audio recorded interviews with the participants' permission. I transcribed all of the audio tapes myself and, as a means of member checking through transcript verification, I sent a transcript of the interview to each participant. I asked participants to provide feedback as to whether the transcript was accurate and if any information needed to be added or deleted. The Interview Protocol form with my notes, audio tapes, and the transcribed notes are kept in a secure cabinet in my home office or on my personal, password-protected computer.

Role of the Researcher

For the purpose of this study, I performed two roles, of which the first was that of a researcher, and the second was as a faculty member in the counseling division at one of the community colleges in the district in this study. As a full-time faculty member, and having participated in the growth mindset workshop, I had a certain level of trust with the potential participants. I knew some of the participants in the study since we worked in the same district, and a few even worked at the same college that I do. However, I did not have any supervisory role over any of the participants, and none of them worked directly with me in any capacity. I am known as an advocate for professional development training on growth mindset but did not allow my background or biases to interfere with the participants' voices.

Data Analysis

Preliminary analysis occurred after each interview, and further analysis was ongoing throughout the process. All of the data were deconstructed and then reconstructed to establish patterns, relationships, and meaning. I used a reflective journal to keep track of my impressions, reactions, and tentative interpretations as the study unfolded.

Analysis began with dividing the data into categories based on predetermined typologies. According to Hatch (2002), typologies are generated from theory, common sense, or research objectives. The predetermined typologies for this study were *student fixed mindset*, *student growth mindset*, *teacher fixed mindset*, *teacher growth mindset*, *educator practices*, *challenges*, and *opportunities*. I read through the data with one

typology in mind and collected the data that fit that typology into one file. Some data excerpts were related to multiple typologies, so it was imperative that the whole transcript was left intact (Hatch, 2002). I then examined each typology determine patterns, relationships, and themes. I gave the identified patterns a code and recorded entries that matched that code. Having coded all of the data, I made judgments about whether the patterns were supported by the data and decided if data that were not coded fit a new category. The last step was to look for connections among the patterns identified, write them as generalizations, and select data excerpts that supported the generalizations.

Findings

This study sought to answer one open-ended research question: What are the experiences of community college educators regarding influencing a growth mindset in the classroom? A growth mindset leads to greater student motivation, effort, persistence, and achievement; thus, finding out how educators can foster such a mindset could lead to important information in addressing the problem of low college completion rates. I categorized the interviews by questions, and each question related to the predetermined typologies, which constituted the themes underlying these findings. The results of the analysis are explained for each of the typologies.

Student Fixed Mindset

I asked participants, after learning about mindset, to describe the language, attitudes, and behaviors in students that seemed to come from fixed mindset beliefs. Participants from all of the disciplines responded with many examples of fixed mindset words and actions in students. Some of the examples were student statements such as:

- “When you pass a certain age, you can’t learn a new language.”
- “I’m not good at writing; that’s you and not me.”
- “It takes someone special to teach someone with special needs, and I don’t have it.”
- “This is what I can do in computers, and I can’t do more than this.”
- “I am frustrated in learning because it is hard and that maybe means I am not smart.”
- “I don’t have the math gene, so I am doomed to never get math.”
- “I don’t care about learning this; I only want to do what I have to do to pass.”

Student Growth Mindset

I also asked participants to describe growth mindset language, attitudes, and behaviors in students. Some of the attitudes and behaviors noted were: “They have an awareness that they are not strong in reading, but they are looking to improve, engaged in the learning, asking questions, and approaching problems positively.” One participant said, “No matter if the grade is good or bad, they (students) are still with me, still focused, looking for direction from the teacher and from fellow students.” Another instructor said, “They see the class (computers) as a challenge, more like a puzzle to solve, much more willing to try different things and see if they can accomplish this.”

Instructor Fixed Mindset

The next interview question asked participants to describe their own mindset and if it had changed since learning about this theory. A common example was “I’m good in _____, but can’t do _____.” Other examples were:

- “I really did believe that you either had it or you didn’t.”
- “I was anxiety-ridden about being judged so I would only do the things I was good at.”
- “I have thought of myself as a nonmath person since high school due to a disturbing experience with a teacher.”
- “If it was something I did not know very well, I wouldn’t do it because I didn’t want to look bad or stupid; that was a big thing for me.”

Instructor Growth Mindset

All of the participants now believe they operate more out of a growth mindset and that learning about mindset made a difference. One participant said, “I have come to have more of a growth mindset as I’ve gotten older because I am not paralyzed by failing or looking silly or being embarrassed. I don’t know if it is from reading the Mindset book or my age, but the time has come to get out of my comfort zone.” Another said, “Technology is hard for me, but I work at it. I refuse to give up.” Another said, “I am okay with whatever time it takes to learn something new, like Spanish. I accept challenges and seek out resources to overcome the challenges.” Several of the participants said their growth mindset was a result of the way they had been raised. Another attributed her growth mindset to learning about brain plasticity; her comment was, “when I learned that, I realized I can learn anything.”

Educational Practices

The participants described a number of educational practices. Some of the instructors now teach students about fixed and growth mindset and use those terms.

Others do not use those terms but emphasize that hard work is what makes the difference in academic success. One participant said, “I teach them that growth requires working hard. Reading is simple but not easy. I use a practical approach where we keep building by looping back.” Another said, “I focus my feedback on effort and the process instead of praising intelligence,” and “I help students identify in themselves that they are lifelong learners and that mistakes teach them.” One of the math instructors said, “I tell them there is not a math gene, it’s your perception. Good students are not the ones who learn it quickly, they are the ones that learn it and understand it.”

Challenges

Participants were asked what challenges or limitations they faced in trying to put what they know about influencing mindset into practice. One instructor said, “I wish I had more expert knowledge so I could do more and integrate even more and be more specific. The more I know, the more I can do.” Another felt the key was time with individual students and said, “I wish there would be another co-teacher at times, where we can both rally them while they are working on their papers in class and really address their problem areas in writing.” Many thought the biggest challenge was that most faculty don’t know about mindset and the challenge is just to get more people on board. One participant cautioned that “it (the mindset training) can’t be a fly-by where it’s just one day and that’s it” and another said “there needs to be support with infusing it throughout the semester.”

Opportunities

A final question asked, “What would be the best way to teach community college educators about mindset?” Multiple ideas surfaced. Some example statements were:

- “Present examples of students who have made that shift and what it meant to that student and to their success in that class.”
- “Come to our division meeting for 5 – 10 minutes to pique their interest and get them to start thinking about it (the workshop).”
- “The adjunct faculty conference every fall and spring would be a great place to do this.”
- “I think it’s really important to have administrator buy-in.”
- “Doing some sessions on mindset at the new faculty orientation.”
- “It would be nice if counselors at the different colleges had workshops and it could be open to the community, to faculty, to students, and to staff.”

Patterns and Relationships

The first pattern that emerged was the evidence of fixed mindset beliefs in both students and instructors and was coded as *fixed*. A common pattern was being focused on the grade (performance), rather than learning. Another pattern was the propensity to categorize being good at something or not good at it, often with very little experience or evidence. A number of the participants talked about beliefs that mistakes and failure should be avoided at all cost, causing the person to “play it safe” by choosing only activities and situations where success was assured. In the area of computers and foreign languages, the common fixed mindset statement was related to age; for example, “I’m too

old to learn this.” Other common subject areas of believing you either have the talent or you do not have it (i.e. genetics), was in math, athletics, writing, and singing.

Evidence of growth mindset beliefs in students and instructors was coded *growth*. The growth mindset was described as a real love of learning, making mistakes, requesting help, and risk taking were acceptable. The pattern focused on the improvement process rather than having attained a level of excellence. Growth mindset students were observed by the participants as engaged in the classroom, curious, inquisitive, and accepting that hard work was necessary to develop skill and expertise. Another pattern of growth mindset was people that overcome obstacles and are tenacious in completing tasks.

Several patterns were evident in the educational practices (coded as *EP*) of instructors purposefully trying to influence a growth mindset in the classroom. Since learning about mindset, many instructors emphasized to students that success comes from hard work, lots of practice, a willingness to seek help, and that time is required to master any skill. A number of the instructors described using deliberate language and practices to help students realize that they are capable and can learn, and that success comes through incremental improvement. Some of the instructors taught students directly about the fixed and growth mindsets and about brain plasticity to help students see that physical changes occur in the brain when learning new things. Giving feedback that was very specific and emphasized effort (as opposed to praising the person) was mentioned by most of the participants. Another pattern was describing mistakes, failures, challenges, and frustrations as the path to mastery and something to be embraced rather than avoided. Many of the participants reported using videos and personal stories in their teaching of

people who succeeded by sustained deliberate practice, learning from failures and setbacks, and welcoming (rather than avoiding) challenge.

Challenges were divided into several sub-patterns. First, there were the instructor challenges that related to insufficient time to focus on mindset in the classroom and not enough time to work with students individually. Another instructor challenge was the need for more knowledge on this topic and to learn more specific strategies to use throughout the semester. It was mentioned by several participants that it would be very helpful to have a person skilled in mindset to mentor them by analyzing their syllabi, course content, and teaching style so they could see “fixed mindset red flags.”

Participants overwhelmingly thought that mindset should be taught to all faculty, staff, and administrators; however, the challenge is to involve employees to participate in workshops. Participants indicated that sometimes the challenge is because community college educators do not even know they need this training, and sometimes it is because the workshops are not offered at a convenient time and place.

Another sub-pattern was challenges for students in adopting a growth mindset because of the cultural phenomenon in this country (United States) that says you have certain abilities or you do not, particularly with math. It was mentioned that students have a challenge when they are away from campus and important people in their life do not support the idea that effort is the real key to success. Participants also stated that a big limitation is the habit of fixed mindset thinking; therefore it is not enough for students (or educators) to just hear about this one time and make significant changes.

Several sub-patterns emerged from analysis of the data related to how community college educators might influence the inclusion of ideas related to a growth mindset in their pedagogy. Several participants stated that it was also important for administrators and staff to learn about mindset, and many included that the training should be mandatory for all employees in order to build a growth mindset campus culture. Participants favored a four hour workshop training as the preferred delivery method. Ideas were offered to motivate these educators to attend the growth mindset professional development training workshops. These ideas included student and faculty testimonials given at division meetings or through email. Several participants stated that workshops needed to be very interactive and resources should be provided for later use. For example, a chart showing examples of appropriate and inappropriate language to influence a growth mindset was a resource participants thought would be very valuable.

Another subpattern emerged from analysis of the data related to places to connect with these educators about the importance of participating in a growth mindset professional development training. Some of the suggestions were to offer an introductory workshop at (a) the annual all-faculty convocation, (b) the new faculty year-long orientation, or (c) the biannual adjunct faculty conference. Another idea to promote the workshop was to create a faculty book club focused on reading and discussing books about growth mindset and to make growth mindset a major component of the required course about teaching in the community college that all faculty must take within two years of getting hired. Several participants mentioned the importance of getting buy-in

for the workshop from administrators as they could encourage or even require faculty and staff to attend.

Many of the participants suggested a mindset website to easily access articles and videos, a recommended reading list, quick techniques, classroom activities that relate to different disciplines, and handouts to accompany the activities. The website could be an interactive source that includes a blog for ongoing discussion regarding the faculty's positive and negative experiences and testimonials from educators and students. One participant suggested that online training modules could be located on the website for those who were not able to attend the workshop.

Discrepant Cases

Data that did not fit with one or more of the typologies or codes were analyzed as to whether these data were different or contradictory to the themes and patterns identified. One of the participants inaccurately described the fixed and growth mindset and gave examples that did not fit the definitions. It was noted that this participant only went to one workshop and did not read the mindset book; whereas, the majority of the other participants attended multiple workshops, and most had read the book. No other data were different or contradictory to the themes and patterns identified.

Evidence of Quality

The sources for evidence of quality used in this study were transcript review, member checking, and peer debriefing. The peer debriefer was a colleague who teaches the workshop on growth mindset. Transcript verification to check the accuracy and completeness of the interview transcript was completed after each interview by emailing

each participant the interview transcript and asking for feedback if it was accurate and complete. Participants were asked to review the transcript and return any corrections, additions or deletions, and to verify its accuracy. All transcripts were verified before data analysis began. This process was completed to ensure that the responses were indeed the participants' thoughts and feelings. After the findings were determined, the participants and the peer debriefer were sent the draft report and asked to validate the findings by providing feedback on the accuracy, clarity, and meaningfulness of the findings (Creswell, 2012).

Outcomes

The data gathered from 14 in-depth interviews with community college educators who had attended at least one mindset workshop established several themes that may increase practical knowledge on how to influence a growth mindset in the community college classroom. The first theme showed how the fixed and growth mindsets are portrayed in language, attitudes, and behaviors of students and faculty in a variety of disciplines. The educational practices theme showed numerous specific ways that an instructor can influence a growth mindset in any community college classroom. Another theme showed the challenges in encouraging community college educators to understand and incorporate mindset strategies in their instruction. The final theme about opportunities showed numerous ways to overcome the challenges of reaching more educators to increase student effort, motivation, and persistence.

The data collected from the interviews confirmed that community college educators who participated in the growth mindset training saw the experience as

extremely important for increasing student success. As a result of the findings, the current training on growth mindset should be expanded to include more discipline-specific examples, in-depth content, practical strategies, and downloadable resources that can be used in a variety of academic settings.

The next section outlines the project that was created from the results of this study. The project is a professional development training program for community college educators on how to influence a growth mindset in the classroom. It consists of 12 modules, 90 minutes each, that can be adapted to fit the timeframe and needs of the participants. All 12 modules can be taught as 3 full days of training or, highly recommended is a 6 week class that meets one afternoon a week (2 modules at a time) to give ample time to review the resources and to practice the strategies and receive feedback.

Section 3: The Project

Introduction

The purpose of this qualitative study was to explore community college educators' perspectives on the importance of a growth mindset to student success and perspectives on the teaching-learning process that can influence mindset. Analysis of the interviews of 14 faculty members from a large urban community college district in the southwest revealed seven themes: students' fixed mindset, students' growth mindset, teachers' fixed mindset, teachers' growth mindset, educational practices, challenges, and opportunities. I analyzed the themes further for patterns and relationships. The findings revealed that faculty wanted the opportunity for all community college educators to have professional development training in growth mindset and for the training to offer more depth of knowledge and ample time to practice specific strategies. I developed a project (Appendix A) based on the findings of this study as the first step in promoting positive social change by having community college educators directly apply the current research and best practices about growth mindset that have shown to increase student motivation, effort, and persistence.

Project Description and Goals

Educators bring assumptions about student behavior into all of their interactions with students. The more aware they are of these assumptions, the more they can change those beliefs that may work against the creation of a positive education experience for students. It is essential for educators to identify and modify those features of their mindset that work against student motivation and engagement and that serve as barriers

to student success in college. It is also important for community college educators to become aware of the mindset of engaged, motivated students and consider how to nurture a growth mindset in the classroom. The professional development training described in this project (Appendix A) addresses the impact of the educators' mindset as well as how educators can influence a growth mindset in students.

Based on the findings in this study, community college educators from a variety of disciplines and possessing a variety of years of teaching experience were interested in increasing their knowledge about mindset and in learning effective strategies to influence more growth mindset attitudes and behaviors in the classroom. In addition, participants in this study also expressed the belief that all community college educators should learn about mindset, its impact on academic achievement, and how educators can contribute to creating a growth mindset culture on community college campuses. To accomplish this objective, I developed a comprehensive, hands-on training with specific application to the community college setting. The development of this project was supported by a review of the literature related to effective professional development, a constructivist framework of adult learning, and the current research related to the more specific topics to be covered in the 12 training modules.

As discussed in Section 1, current completion rates at the community college are unacceptable if educators are to meet future job demands for college-educated workers and the moral imperative to help all students reach their full potential (American Association of Community Colleges, 2012). Most of the current efforts in the community college district in this study have only related to improving cognitive skills in students;

yet, research showed that noncognitive factors play a significant role in why students leave college before graduating (Karp, 2011). Based on the findings in this study, community college educators who have learned about growth mindset believe it is a very important factor in student success and believe specific, in-depth training about the growth mindset is important for all educators to understand the underlying research and to be able to apply growth mindset strategies effectively with students. According to the participants in this study, a professional development training, with plenty of time for hands-on activities and mentoring, was the best way to learn and practice the information and skills related to growth mindset.

This professional development training for community college educators is divided into 12 modules, each lasting for 90 minutes. The modules can be taught in order over the course of 3 full days of training, or they can be taught in different combinations depending on the needs and timeframe of participants. To maximize learning and application, it is recommended to teach two modules per week for a 6-week class. It is quite possible to adapt the modules to be taught online in order to increase access. The goals for this professional development training are: (a) to increase the number of faculty and staff from all disciplines who understand the role of growth mindset in student success, both in relation to their own mindset and that of students, and (b) to develop faculty competency in research-based mindset strategies that lead to students' deeper learning, increased academic persistence, and higher rates of community college completion.

Rationale

The former goal for community colleges was to increase access to college, but the new national goal is for students to complete a degree or certificate or acquire specific skills (Obama, 2011). The typical dropout rate of 50% at the target community college for first year students is not acceptable if these goals are to be met. Current efforts to increase students' academic skills, especially for students at the developmental level, are not enough to meet the nationwide goal of doubling the number of students who complete degrees by 2020 (Arum & Roksa, 2011). Research has shown that noncognitive factors such as a growth mindset have a major impact on how students view effort, learning challenges, and their willingness to seek assistance with questions and concerns (Dweck et al., 2011; Kornilova et al., 2009), yet these noncognitive factors are not part of the current efforts to raise graduation rates.

Research has shown that a growth mindset can be taught, and it improves academic performance (Blackwell, Trzesniewski, & Dweck, 2007; Murphy & Thomas, 2008; Valentiner, Mounts, Durik, & Gier-Lonsway, 2011). Studies have also shown that the mindset of the teacher is a key factor in student outcomes (Brooks & Goldstein, 2008; Rheinberg, Vollmeyer, & Rollett, 2000). A number of mindset interventions and tools have positive results in increasing student engagement, persistence, and academic success (Snipes, Fancsali, & Stoker, 2012). An in-depth professional development program that informs community college educators on the current research for growth mindsets and implements growth mindset interventions and tools may solve the problem of low community college completion rates.

Based on the findings in this study, professional development workshops, with content that directly applies to teaching and learning in the community college, were the preferred way to learn how to foster a growth mindset in the classroom. The first four modules of this professional development training set the stage of the bigger picture of what fixed and growth mindsets are, how mindset is developed, how mindset relates to academic performance, and how deep learning occurs. Modules 5 through 9 deal with influencing a growth mindset in the classroom and include topics such as the impact of the teacher's mindset and expectations, how to give effective feedback, building a culture where mistakes and failure are embraced rather than avoided, techniques to foster perseverance, and the latest research on mindset and goal achievement and how it applies to students. Modules 10, 11, and 12 focus on practicing the specific strategies shown to make the biggest impact on mindset, as well as having each participant create a personalized action plan.

Review of Literature

Research from a variety of disciplines has shed light on how educators can facilitate a growth mindset that is central to students' ownership of learning. This review outlines the core concepts and theory of action related to influencing the mindsets of community college educators and students to improve academic achievement. I explored evidence from some promising practices and strategies to foster a growth mindset as well as implementation considerations of these practices and strategies. Since this project is a professional development training program, I also explored the current research on the effectiveness of professional development. The following databases were used: ERIC,

Educational Research Complete, Sage, and PsycArticles. Search terms included *growth mindset interventions, student engagement, grit, teacher expectations, and faculty professional development.*

Fostering Student Ownership of Learning

The logic behind a focus on academic mindsets is that students' attitudes and beliefs affect the quality and duration of student engagement. Students engaging in critical academic behaviors and employing effective learning strategies have embraced ownership of their learning. Exit interviews with community college students revealed that many students quit college because they believe (a) they are not smart enough, (b) the required classes have little relevance to their personal or academic goals, and/or (c) they do not really belong in college (Silva & White, 2013). Focusing on changing students' mindsets is a logical consideration, because these beliefs affect the quality and duration of critical academic behaviors, such as attendance, participation, and homework completion, as well as believing that inevitable hurdles can be overcome. These beliefs can influence learning strategies (e.g., study skills, help-seeking behaviors, and goal-setting) which, in turn, can affect the quality and quantity of learning and persistence to graduation.

Building positive academic mindsets is central to student ownership of learning. Snipes, Fancsali, and Stoker (2012) created a model to describe academic mindsets with three interrelated components: grit and growth, identity and community, and passion and purpose. Grit is defined as having the drive and determination to stay focused on one's goals and persist in the face of adversity (Duckworth & Quinn, 2009). Grit and growth

originate with the notion that intelligence can be developed and aligns with the growth mindset. Growth mindset involves a paradigm shift from the belief that intelligence is a fixed trait to the belief that cognitive ability increases by struggling through challenging learning experiences. Research has shown that students with a growth mindset are more likely to have the “grit” necessary to work through challenges and complete long-term goals (Duckworth et al., 2011).

The growth mindset also relates to building a positive identity and mutually supportive relationships by actively engaging in the learning, both as a student and as a teacher. Students who considered themselves a legitimate member of the classroom or college (belongingness) were much less likely to drop out of school (Cox, 2009b; Elffers, Oort, & Karsten, 2012). Research findings also showed that a lack of confidence undermined success, and that students expended less effort on tasks when they felt they were likely to fail (Yeager, Muhich, Asera, & Torres, 2011). In addition, Cox (2009b) argued that “certain students require a specific kind of validating environment to overcome their fear of failure and complete their coursework” (p. 78). Unfortunately, the research is lacking regarding how this environment is exhibited in community colleges.

For students to have sustained success in college, they must have confidence that they can learn new things. Bickerstaff, Barragan, and Rucks-Ahidiana (2012) found that student confidence was tied to students’ understandings of their own abilities (fixed or malleable) and to their expectations and understandings of college. Based on the results of their study, it was concluded that students experienced a loss of confidence after receiving negative feedback about coursework or poor grades. If students interpreted

those “failures” to mean a lack of ability (fixed mindset beliefs), the result caused students to question their ability to succeed and resulted in a higher likelihood of dropping out of school (Bickerstaff et al., 2012; Skipper & Douglas, 2012).

Community college educators have the potential to impact student confidence. O’Gara, Karp, and Hughes (2008) found that confidence was positively reinforced most often through *experiences of earned success*: that is, experiences that provided students with evidence of success from their actions and were related to an identified area of concern or weakness. In this study, experiences of performing well on challenging tasks bolstered students’ perceptions of themselves as competent learners and, in turn, provided positive reinforcement to increase productive academic habits and behaviors. It is essential for all educators to create opportunities for students to experience earned success by providing guided practice to accomplish challenging tasks and offer regular and timely feedback along the way (Hattie, 2012). This process gives students valuable opportunities to see how their effort connects to performance.

Despite community college faculty knowledge of the importance of providing effective feedback, they have not been taught how to do that (Hattie, 2012). Teaching students how to adjust their academic behaviors based on faculty feedback is a valuable skill that has shown to yield positive academic results for students (Karp & Bork, 2012). Likewise, when apprehensive students were taught to associate positive results with working hard, rather than with innate talent or “smarts,” they were more likely to persist (Jang, 2008). Since most community college faculty have little training in how to support students’ non-academic needs (Cox, 2009a), it is important for colleges to offer training

in how to provide effective feedback to increase students' ownership of learning and help them realize that success is earned by their efforts towards continuous improvement.

The third component of academic mindsets, passion and purpose, occurs when students believe schoolwork and learning have their own rewards, especially if coursework is relevant to them. Students who have passion and purpose strive to learn. In this instance, growth mindset is associated with a goal to learn, whereas the fixed mindset is associated with a focus on performance. Students focused on learning seek to develop and improve ability, whereas the motive for a performance goal orientation is either to demonstrate ability (performance-approach) or hide a lack of ability (performance-avoidance). Results of a study on college students found that self-efficacy and mastery (learning) goals were positively related to academic success, whereas performance-avoidance goals were related to low grades or dropping out (Hsieh, Sullivan, & Guerra, 2007; Lee, McInerney, Liem, & Ortega, 2010). Helping students create learning goals (rather than performance goals) in their areas of interest is an intervention that has been shown to influence more ownership of learning and a shift to more of a growth mindset (Grant-Halvorson, 2010).

Positive academic mindsets are essential for long-term success in college but students must also put into practice effective learning strategies. The learning strategies that are most related to the growth mindset are setting learning goals, making plans to accomplish those goals, seeking help, monitoring progress, and changing action when necessary (Farrington, et al., 2012). Students with a fixed mindset do not relate effort to success and, therefore, lack the motivation to develop effective learning strategies.

Creating classroom environments that facilitate a growth mindset may influence students to choose academic behaviors and learning strategies that lead to increased motivation, persistence, and success. When students embrace a growth mindset, this leads to adopting academic behaviors and learning strategies that reinforce their grit and growth, helps to build a positive academic identity and sense of belonging in college, and increases passion and purpose for learning, which then leads to more positive academic outcomes.

Interventions to Promote a Growth Mindset

In recent years, a number of interventions have been developed and implemented for the purpose of changing students' mindsets to improve academic behaviors and, ultimately, academic outcomes. Several studies have shown that purposefully teaching students that intelligence and talent can be developed and the brain "grows like a muscle" when it is challenged led to higher grades and test scores (Aronson et al., 2002, Blackwell et al., 2007; Paunesku, Goldman, & Dweck, n.d.; Good et al., 2003). The interventions involved middle school and college students and varied in length from 3 to 12.5 hours over the course of a semester. Some of the interventions were workshops with the students and some involved mentoring and a pen pal activity between college students and middle school students. In particular, college students who learned about brain plasticity and the growth mindset and then were involved in teaching these concepts to economically disadvantaged seventh graders as a pen pal experienced a college grade point average (GPA) increase with effect sizes of 0.52 and 0.71 (Good, Aronson, & Inzlicht, 2003).

Another category of interventions involved instructing college students to shift their explanations of why they were struggling academically to temporary external factors rather than to their own lack of ability (Cohen, Steele, & Ross, 1999; Jamieson, Mendes, Blackstock, & Schmader, 2010; Ramirez & Beilock, 2011; Walton & Cohen, 2007, 2010). The goal of these interventions was to increase grit and growth as well as to increase identity and belonging. Interventions were as short as 10 minutes to as long as two hour-long sessions. It is worthy to note that an intervention lasting as little as 10 minutes where upperclassmen discussed how they struggled initially in college but then grades improved with better strategies, resulted in higher GPAs and an 80% reduction in dropping out of college (Wilson & Linville, 1985).

Several interventions made a difference with minority students but did not impact white students. Students of color entering into challenging academic settings may be vulnerable to stereotype threat, defined as a fear of confirming a negative stereotype about one's group (Aronson, Fried, & Good, 2002). Teaching students of color that having challenges in school is a normal adjustment process rather than something that is related to their racial group resulted in improved test scores (Aronson, Cohen, & McColskey, 2009).

A third category of interventions involved affirmation and visualization exercises that focused on the positive results of effort and perseverance as well as increasing the feelings of belonging. In one intervention students chose values that were most important to them from a list and wrote an essay about those values resulting in higher grades for African American students and a 40% reduction in the gap between the GPAs of White

and African American students (Cohen, Garcia, Apfel, & Master, 2006). Another intervention that created a sense of connection to others in math resulted in a marked increase in “achievement motivation” measured by a 70% increase in the length of time students persisted with an unsolvable puzzle (Cohen & Garcia, 2008). The “Best Possible Selves” intervention focused on helping minority students believe they could achieve future academic success through a series of workshops teaching students strategies to persist through obstacles using visualizations. Two years after the intervention, students who had participated in the “Best Possible Selves” workshop had higher GPAs and fewer depressive symptoms than students in the control group (Oyserman, Bybee, & Terry, 2006).

Interventions that give students opportunities to develop more passion and purpose in academic learning have shown to foster a positive academic mindset but, at present, not many tools have been developed to do this (Snipes, Fancsali, & Stoker, 2012). One intervention with high school science students was an exercise where students wrote about the connection of what they were learning in class to their own lives (Hulleman & Harackiewicz, 2009). The purpose was to increase engagement in the class by making the material more personally relevant and interesting. Results showed that students’ grades increased by almost two-thirds of a letter grade compared to a control group of students who simply wrote about the topics covered in class. Simply providing students with choices about the classes they take, the content they study, and how they complete assignments increased academic motivation to work hard and to learn new information (Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013).

Students can have mindsets that reinforce positive academic behaviors but still perform below their potential if they do not master effective learning strategies (Dweck et al., 2011). Studies show that students can be taught effective learning strategies that lead to academic success, and this process reinforces the growth mindset that ability can be developed and that effort is rewarded (Farrington et al., 2012). Interventions that teach students strategies that clarify goals, deal with challenges and setbacks, improve metacognition (thinking about one's own thinking), and regulate their own learning, comprise a set of strategies that improve academic performance.

Learning strategy interventions often include components directly aimed at developing a growth mindset such as the SOAR (select, organize, associate, relate) study skills program, the Mental Contrasting/Implementation Intentions (MCII) writing exercise, and an online goal-setting program (Shechtman et al, 2013). The SOAR program for college students features small groups utilizing learning study skills strategies in their class assignments. A recent study showed that undergraduates using SOAR had significantly higher test scores than did students using traditional study strategies (Jairam & Kiewra, 2009). The MCII intervention used writing exercises for students who identified desired outcomes as well as possible obstacles of a particular academic goal, and then created a plan to overcome the obstacles (Duckworth, Grant, Lowe, Oettigen, & Gollwitzer, 2011). While this intervention was only 30 minutes long, students completed 60% more of their goal compared to those who did not have the intervention. Another study using an online goal-setting intervention for struggling college students lasted 2.5 hours total time and resulted in higher grade point averages

(GPAs), higher number of credits completed, and a reduction in self-reported negative emotions (Morisano, Hirsh, Peterson, Pihl, & Shore, 2010).

Self-regulation is another important aspect of successful learners. Another intervention involved the idea of integrating content-specific instruction with mindset development. Developmental and introductory college math instructors were trained to use self-regulated learning (SRL) components to teach students that mistakes are important for learning and to view grades as learning tools rather than indicators of lacking math ability. Students in the SRL groups in both the developmental and introductory college math courses performed better on exams throughout the semester than students who did not have SRL. Sixty-eight percent of the SRL group passed the developmental course compared to 49% of the control group, and 76% of the treatment group passed the introductory college math course compared to 62% of the control group (Zimmerman, Moylan, Hudesman, White, & Flugman, 2011). The authors concluded that effective self-monitoring by students and performance-specific, process-related feedback by the teacher made the difference in student outcomes.

Educational Approaches That Support A Growth Mindset

In addition to specific tools and strategies that focus on teaching students that intelligence can be developed, a number of research studies have demonstrated that educational approaches (teachers' explanations, messages, and praise, and context creation) also influence a growth mindset. Marzano (2000) cited studies showing that students are more apt to believe that success is possible when teachers explain their grading practices and when students set their own learning goals and receive regular

feedback about where they are in achieving those goals. Yeager, Walton, and Cohen (2013) demonstrated the impact on student success when instructors created a context that all students can be successful, not just a select group. Messages that students receive about their academic performance clearly influences whether they adopt more of a fixed or growth mindset. Studies show that praising students for their effort, focus, strategies, and/or persistence reinforces a growth mindset, while praising students for their abilities tends to encourage them to withdraw from effort and quit when they face obstacles (Dweck, 2007). Students who were given comfort messages, reassuring students that performance varies, reported lower motivation, expected lower grades, and viewed the instructor as having less involvement in their learning (Rattan, Good, & Dweck, 2011).

Research has also identified multiple approaches (varying difficulty of assignments, make learning relevant, student choice, and providing locus of control) that teachers can use to increase engagement and promote a growth mindset. Teachers can influence belief in capability by assigning tasks that are difficult but achievable and setting clear and high expectations has shown to promote feelings of competence but also enjoyment of learning (National Research Council, 2004). Another way to increase engagement is to make the learning relevant by requiring students to apply concepts to real-world settings and to give students choices in the material they study and how they complete tasks. Research has shown that giving students more cognitive choices, such as choosing which problem-solving strategies to use, increases engagement and motivation and may even have long-lasting effects (National Research Council, 2004). Students will

not be motivated to put in effort and participate in class unless they believe they are capable of doing the work and that achieving the outcome is within their control.

Effectiveness of Professional Development Training

The findings in this study confirmed that community college educators benefit from professional growth training that teaches specific strategies to foster a growth mindset in the classroom. Professional development training on mindset could be delivered through a workshop, digital resources, or a mentoring program. The results of this study showed that participants favored an in-person workshop as the most effective way for community college educators to learn and apply new knowledge and strategies on this topic. In addition, several participants suggested using digital resources and mentoring as a follow-up to the workshop.

The results of this study culminated in designing a professional development program to teach community college educators how to foster a growth mindset in the classroom; therefore, the current literature on the effectiveness of professional development in education was examined. In one of the largest research syntheses on effective professional development for educators, findings showed that workshops were an effective format if the content comes out of research-based instructional practices, participants were involved in active-learning experiences, and educators were provided with opportunities to adapt the practices to their unique classroom situations (Guskey & Yoon, 2009). In another analysis of numerous studies on the effectiveness of teachers' professional development, Desimone (2009) identified 5 core features: a focus on

content, opportunities to engage in active learning, coherence with teachers' knowledge and beliefs, sufficient duration, and collaborative.

The literature on professional development points to several important considerations when planning a training program for educators. No set of best practices was found to be the "right" way to do professional development; rather, the chosen activities were determined by the specific content, process, and context elements involved. Research showed it was more effective to utilize outside experts who focused on evidence of results in a similar context, rather than in-house staff members that had a tendency to focus on ideas that were popular but unproven (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Adapting new content or new pedagogy to unique classroom contexts takes time; thus follow-up after the main professional development activities (such as digital resources, mentoring, or additional workshops) was crucial to long-term change (Guskie & Yoon, 2009). Studies did not show a set amount of time spent in professional development to be related to improvements in student outcomes, but initiatives that showed the most positive effects included 20 or more contact hours and were spread over a semester (Desimone, 2009).

Effective professional development programs tend to be designed around overarching principles of adult learning. After examining the most effective professional development programs, Hirsh and Killion (2009) identified several principles that successful programs had in common. The first principle is to create an environment where participants feel free to experiment and take risks, share what is not working as well as what is working, and the focus is on becoming the best teacher one can be for

student learning. Another principle is that diversity enriches the experience of participants. Educators learn more when collaborating with others whose perspectives, beliefs, and practices may differ. The last principle focused on designing professional development to create leaders who make good decisions and take initiative to make lasting positive change. Other overarching principles of effective professional development are that ambitious goals are set and accountability for achieving those goals is laid out along with specific plans of action.

Research is just now focusing on how to effectively evaluate professional development programs to determine if the training changes educator knowledge, attitudes, skills, aspirations, and behaviors, and how the learning was applied in classrooms to produce student learning. Desimone (2009) has created a conceptual framework for studying the impact of professional development. This framework suggests that all professional development programs be evaluated by 1) the learning activities in the training, 2) changes in knowledge, beliefs, and attitudes of the teacher, 3) changes in practice of the teacher, and 4) improvements in student achievement. Data for evaluation can be collected through observation, interviews, or surveys, each with its own strengths and limitations. The choice of data collection tool should be based on the appropriateness to the study's particular research question.

Relating Professional Literature to the Study Results

The results of this project study are in alignment with other studies. First, there is strong evidence that a growth mindset can be influenced in community college students and that it is connected to college retention. If the Obama mandate (Obama, 2011) to

significantly raise the number of college graduates by 2020 is to be realized, community college educators need to understand the best methods for helping students to grow as learners and to persist to achieve their goals. The evidence shows that the best way to increase academic achievement is to intentionally create classroom environments that foster a growth mindset and teach students effective learning strategies (Farrington et al., 2012; Snipes et al., 2012). In the absence of understanding the importance of a growth mindset and the variety of strategies that support its development, teachers often misinterpret poor academic behaviors as an indication that students are not motivated or they lack the fortitude to persevere.

Classroom environments play a critical role in shaping the non-cognitive factors necessary for academic success. Interactions with the instructor and classmates affect students' sense of belonging, academic confidence, and interest in learning as well as their beliefs about their ability and their understanding of the relevance of the work they are assigned (Cox, 2009b; Walton et al., 2012). Student motivation and effort are strongly influenced by the language that teachers use and how learning opportunities are structured and work is assessed (Dweck, 2010; Yeager & Dweck, 2012). Creating classroom contexts that better support students' learning may require teachers to learn new strategies to foster a growth mindset in themselves and in students.

Discussion of the Project

A twelve module comprehensive workshop that is research-based, collaborative, and hands-on is a practical, efficient way to train community college educators in how they can create a classroom context that fosters a growth mindset. Teachers need specific

skills and strategies, proven to increase long-term academic success that are easy to learn and easy to practice in the classroom, and this is what the 12 module workshop proposes to teach. Ultimately students will benefit from learning in a growth mindset environment because it will motivate them to persist in their studies to successful completion of their community college course of studies.

Consideration was given to the format that would best meet the stated goals of the professional development training on growth mindset. The chosen format for the modules in this project were based on core principles of andragogy. These principles are that adults need to know why they need to learn something, want their skills and knowledge acknowledged, need to be self-directed and experientially involved in their learning, and want learning to be life-centered and applicable (Knowles, Holton, & Swanson, 2005). Each module in this professional development program includes an opportunity to connect the topic to participants' prior experiences, demonstrates the link to current research findings, allows participants to practice new knowledge and skills, and provides opportunities for direct application to the community college classroom.

Needed Resources, Existing Supports, and Potential Barriers

Administrators of the community college district in this study need to be supportive of this type of faculty training so that funds and resources will be allocated for the project. Needed resources include a skilled facilitator, a comfortable room equipped with the necessary technology, materials for the various activities in the modules, and a notebook of handouts and readings for each participant. An existing support is the Center for Teaching and Learning (CTL), which is equipped to fund, reserve rooms for training,

advertise events, register participants, and compile evaluations for workshops and classes offered for employee learning. This office also provides the materials for the workshops and classes. Potential barriers are a reduced budget of the CTL in recent years requiring that office to be selective in which professional development workshops receive the limited resources. Another potential barrier is finding a time and location for the 6 week class that fits instructors' schedules.

Proposal for Implementation and Timetable

The project should begin in the first semester after the project study is approved. To maximize learning and application time, the professional development program will be offered one afternoon per week for six consecutive weeks. Each session will be capped at 25 participants to allow for more relationship building among participants and to provide adequate time for mentoring. Each session will consist of two 90 minute modules with a 15 minute break between each module. The format for the modules is based on Senge's (1994) pedagogical model. To adapt this model to the current project, steps include introducing the learning objectives, creating interest and relating to prior learning with an icebreaker or activity, bringing in current research on the topic, practice applying the concepts, and closing with reflection on what was learned and how it will be used. After each session, readings about mindset topics will be assigned by the facilitator to add additional perspectives and reinforce key points. Participants will select one or two strategies to implement that week. Assigned reflective writing about the readings and the strategies employed each week will provide the topic of discussion in the following session.

Once the professional development training is completed, and the weekly brief evaluations and overall final evaluation analyzed, the modules will be revised based on participant feedback and demonstrated learning. The course will be taught in subsequent semesters at different campus locations in the district to maximize access. Specific modules may also be offered for various employee groups throughout the district, particularly adjunct faculty and new full-time faculty as part of their year-long orientation. Within one year of beginning the project, a website will be developed to provide easy access to the materials and also an online option of the class.

Roles and Responsibilities

For this project to come to fruition, it is necessary to have a workshop developer and facilitator, administrative support, and technology support. Initially, I will serve as the workshop developer and facilitator. My first responsibility is to apply to the CTL to sponsor the class and acquire approval for faculty professional growth. I will develop the detailed lesson plans and the materials for the class and work with the CTL staff to create the notebook that each participant will receive. As facilitator of the workshop, I will prepare the power point slides and determine the supplies needed for activities in the workshop.

The CTL staff will be responsible for securing the location of the workshop, developing promotional materials, marketing the workshop, and handling registration. The CTL will also obtain materials requested by the facilitator. It will be my role as developer and facilitator of the workshop to analyze the weekly brief evaluations and continually adjust or revise the content, timing, and facilitation as appropriate. I, along

with the CTL Instructional Designer and Research Analyst, will analyze the final in-depth evaluation to determine the extent learning outcomes were met and recommend revisions to the workshop. It will be my responsibility to prepare a final report that will be shared with all stakeholders. I will work with the Research Analyst to measure changes in instruction and improved student learning as a result of educators attending the workshop.

Within a year of implementing the professional development training on mindset, I will work with the technology support center on my campus to develop a website and online course about creating classroom environments that foster a growth mindset. Once the website and online course are available, I will be in charge of updating the materials and answering questions. I may be the instructor of the online course or another qualified facilitator will be hired.

Project Evaluation

An effective evaluation of the professional development program will inform the facilitators and other stakeholders of what participants are actually learning and what needs improvement. The evaluation will help answer questions such as, Is this program achieving its intended results? Is it better than other competing endeavors to increase student success? Is it worth the cost? Guskey (2002) describes 5 levels of professional development evaluation that include: 1) participants' satisfaction with the experience, 2) new knowledge and skills of participants, 3) the organization's support and change, 4) participants' use of new knowledge and skills, and 5) the impact on student learning.

Level 1 measures the participants' reaction to the experience. It addresses questions such as whether the participants felt their time was well spent, if the material made sense and was useful, and if the facilitator was knowledgeable and helpful and the room comfortable. Level 2 focuses on measuring the skills and knowledge that participants gained as outlined in the pre-determined learning goals. In this workshop, both the weekly brief evaluations and the in-depth final evaluation will be reflective pencil-and-paper assessments; but these assessments could also be a demonstration, oral personal reflection, or a portfolio.

Brief formative evaluations, administered throughout the training, are important to understand the participants' experience (level 1) and to know if participants are learning the intended knowledge and skills (level 2). Results of these evaluations will be used to improve program design and delivery if warranted. A brief evaluation will be administered at the end of each class session (after every two modules). This brief formative evaluation is called the "One Minute Assessment" (see Appendix A). The brief evaluations will be summarized after each session and presented at the beginning of the next session; questions, comments, or concerns will be addressed. Level 3 of professional development evaluation is about the organization's support and change and does not fit this particular training. Level 4 measures participants' use of new knowledge and skills and will be evaluated by a final small group presentation where participants demonstrate interventions that they have adapted to their classroom. Level 4 can also be evaluated with the final reflective summative evaluation and possible follow-up activities such as

observations of teaching and analysis of syllabi and lesson plans. The final summative evaluation is also included in Appendix A.

Level 5 seeks to measure the impact on student learning. Student learning outcomes will be measured by comparing the percentage of the overall semester grades and retention rate of students in the classes of participating faculty to previous semesters in the same course with the same faculty member. These will also be measured for several subsequent semesters to analyze if there are long-term trends in student retention, persistence, and academic achievement. Overall evaluation results for this project will be compiled in a report and shared with administrators, the CTL Director, faculty, and other interested parties.

Implications

The findings from this study support existing research that adopting a growth mindset is a key factor in academic persistence and long-term achievement. Additionally, it is possible (and necessary) for educators to create learning environments that foster a growth mindset. The question this study sought to answer was how community college educators could do that. The project that resulted from this study was a 12 module professional development program designed to teach community college educators the in-depth knowledge and skills necessary to create a classroom environment that fosters a growth mindset that may lead to increased academic persistence and completion rates.

Local Impact

The ultimate goal of this project is to transform the way community college educators in this district approach teaching and learning. Even in the two to four hour

workshops on mindset that presently exist, it is common for educators to say that the information changed the way they taught and evaluated their students. A six week professional development program (18 hours in class plus 12 hours reading and reflection) has the potential to change both teaching and learning as educators realize the importance of non-cognitive factors in student success, and as they put into practice specific strategies to influence a growth mindset. Since one faculty member with a full load teaches an average of 125 students in a semester, 25 faculty members who adopt and implement growth mindset strategies have the potential to impact over 3000 students in only one semester. The more aware educators are of their own mindset, the more capable they will be in implementing strategies to help students develop the mindset that leads to increased motivation, engagement, and resilience.

Far Reaching Impact

Teaching faculty (and students) about growth mindset could change how they approach all aspects of their lives, not just academics. People with a growth mindset achieve goals at a much higher rate, have less anxiety and depression, are more persistent and creative, have more supportive relationships and higher self-esteem, show more interest and enjoyment in life, and have a greater sense of well-being overall (Grant-Halvorson, 2010). As more and more students complete their goal of a college degree, the nation benefits as well as the individual with higher financial, mental, and physical well-being.

This professional development training is only the beginning of what is possible to influence the mindset that leads to more success in academics and beyond. It is quite

possible to teach the modules in other colleges and universities, thus impacting many more educators and students. More facilitators can be developed as community college educators grow in understanding of the material and share a passion to teach it. Through the workshop evaluations and other feedback, the content and delivery may be improved, and can be expanded to additional related topics and to new audiences.

Conclusion

Faculty play a critical role in student success by purposefully creating a classroom environment that fosters the development of attitudes, behaviors, and strategies that lead to a desire to learn, a willingness to work hard, and a commitment to do what is necessary to overcome obstacles and persist to complete goals. The purpose of this study was to explore how community college educators can influence a growth mindset that has shown to lead to greater success in college. The result of the findings in this study was the creation of an in-depth professional development training, specifically for community college educators, to understand the current research underlying the relationship of mindset to academic performance, and to learn specific tools and strategies to create a classroom environment where a growth mindset prevails.

In Section 4, I will reflect on the strengths, limitations, and directions for future research of this study. I will also include my reflection on the importance of the study and what I have learned about being a scholar, a practitioner, and a project developer.

Section 4: Reflections and Conclusion

Introduction

For this qualitative case study, I gathered data from in-depth interviews with 14 community college educators. The purpose was to explore how community college educators can create classroom environments that foster a growth mindset. The theoretical lens of this study came from Dweck's (1999) work on theories of intelligence, particularly people's beliefs about learning. Dweck (2006) found that individuals develop either a fixed or a growth mindset about the origins of intelligence and talents. Those who develop a fixed mindset believe it is mostly a genetic predisposition that determines if an individual is successful in any given domain. In contrast, those who develop a growth mindset believe that, while genetics may be the starting point in individuals' development, it is one's own effort, persistence, focus, and strategies that really predict success.

Dweck's work is profoundly important for educators because it reminds everyone that beliefs shape actions, both for teachers and for students, and those actions determine whether people are successful or not. The most compelling part of the research on mindset is that one's mindset can be changed, and it does not have to take very long (Blackwell et al., 2007). Understanding mindset research and how to apply it in the context of community college education is the first step for faculty to create environments that foster the growth mindset, which is the goal of the project developed from this study. Section 4 provides an analysis of the strengths and limitations of the project as well as suggestions for future research. It also includes reflections on the

research process and project development, as well as the implications of educational leadership and positive social change.

Project Strengths and Limitations

The project was guided by the research question and based on the findings from the analysis of data obtained through in-depth interviews with 14 community college educators. This project was based on the idea that the mindset that educators have affects student motivation and engagement, determines their expectations and teaching practices, and affects student outcomes. When educators become aware of the mindset of students, they are in a better position to create classroom environments that foster the mindset that may increase student motivation, effort, and persistence.

The strength of this project was to address the problem of low community college completion rates by creating an in-depth, research-based, experiential professional development training that teaches faculty how to create classroom environments that have the potential to make a significant impact on student success. Currently very little emphasis has been placed on addressing noncognitive factors in student success even though the research is clear that these factors can dramatically affect teaching and learning (Farrington, et al., 2012). Mindset has been taught in short workshops, but this is the first attempt to offer an in-depth, comprehensive training with specific application to teaching and learning in the community college. Another strength of the project was that discipline-specific examples of fixed and growth mindset were included in the modules based on data collected from educators representing a variety of disciplines.

One limitation of this project is that a 6-week professional development workshop may not be practical or desirable for some faculty. Some faculty may have schedule conflicts or too many obligations, and others may not want to learn in a social setting. Faculty may be interested in learning about the topic but afraid to commit to six sessions.

Another limitation of the project is that mindset can be difficult to measure since an individual can have different mindsets in different areas. An example is having a growth mindset in areas such as writing and art but a fixed mindset about math ability. It may be an oversimplification to use frameworks that seem to indicate that people are either all fixed mindset or all growth mindset when, in fact, they are both. In addition, the data that formed the basis of this project came only from educators; it could be a limitation that students' perspectives on mindset were not included. It would be useful to understand the students' perspectives on mindset and its role in completing educational goals.

Recommendations for Remediation of Limitations

There are several recommendations to remediate the potential limitations of this project. One recommendation is to offer the training online so that it is more accessible and also to meet the needs of those who may prefer more individualized learning. Considering that mindset can be difficult to measure and can manifest differently in different areas, a more comprehensive assessment tool could be developed and used in the workshop (and online) to get a more accurate picture of participants' mindsets both prior to the workshop and after. Collecting data from students about their mindset and why they are not completing college could enhance the scenarios and case studies used in

the workshop. Data could also be gathered from other community college districts so that what is covered in the professional development training is more applicable to all types of community college educators and students. These recommendations have the potential to increase the impact of the workshop and thus increase student success rates.

Scholarship

I have been a counselor at a community college for the past 23 years. In this role, I do both individual counseling and teach courses such as Strategies for College Success, Career Exploration, and Leadership Development. I first read Dweck's book, *Mindset: The New Psychology of Success* (2006), in 2008 and immediately saw the profound relationship of mindset to succeeding in college. The book opened my eyes to my own fixed mindset and how it had affected which goals I pursued, my reactions to mistakes and failure, and how I perceived opportunities. It also gave me a new awareness of the mindsets of my students and how the mindset they adopt makes a big difference in their view of learning, amount of effort expended, and willingness to seek help. Examining the evidence that a growth mindset can be taught, and that it is the key to long-term success, led me to decide that I was capable of achieving a doctorate, something I had wanted to pursue for more than 20 years but did not think I was smart enough to accomplish nor had the talent for scholarly writing. Dweck's book was instrumental in my own paradigm shift regarding my capabilities, I realized I did not have to know how to write scholarly papers before I began the doctorate. Scholarly writing is a skill I would improve with good instruction, practice, and feedback.

Walden University's Ed.D. program that emphasizes being both a scholar and a practitioner, and also focuses on research that creates positive social change, was a perfect fit to my values and goals. Intensive study on the topic of mindset and then creating a project to put these ideas into practice in my local setting for the purpose of positively impacting student success was an important goal worthy of pursuing. In the beginning stages of formulating my research question, my focus was on the mindset of students, but later I realized the importance of faculty mindset and believed the opportunity for positive social change was even greater if I focused on faculty as a larger number of students would ultimately be impacted.

This doctoral program and subsequent project have changed the way I look at education. I have developed a strong interest in scholarly research that can answer the most compelling (practical) questions about what makes students successful. I now have a critical eye towards examining sources and analyzing the validity of results. As a practitioner, I want to know current, research-based evidence so I can keep improving my teaching and counseling. This program has spawned many great dialogues with colleagues about what works and what does not in the educational practices on my campus and what can be done to increase effectiveness.

When I began this program, I was concerned about the online learning experience as I had never taken an online course. To my great satisfaction, I discovered the online discussions to be a rich source of learning by the depth of content and the new perspectives contributed by people from many different backgrounds and from all over the world. The Walden online library was another source of deep learning, as I became

skilled in using the vast online sources. Learning to write as a scholar is a skill that developed with each paper I wrote. I appreciated the collaborative effort of creating quality work as my professors, committee chair, university research reviewer, and fellow students all helped me improve my writing with each draft. I will use this skill for the rest of my career and can say that I now have a new level of confidence in writing.

Professional Development and Evaluation

I have designed and presented numerous workshops of varying lengths in the past, but it was a new challenge to design 3 full days of professional development. At first I wondered if I would have enough material, but as I sorted through my findings and my literature reviews, I realized I easily had 3 full days of material and possibly more. There are now hundreds of research studies on mindset and many applications besides just academic achievement so the topic has many potential future directions, and my participants clearly indicated that they wanted in-depth information with plenty of time for hands-on application in the training.

I learned a great deal in my endeavor to create a professional development experience that would be engaging and interesting for participants. It was important to make every module focused on student learning and to do that I had to use a variety of active learning techniques. It helped to reflect on my many years of teaching and my own experiences related to changing mindset; this added many personal stories that I believe make the training more memorable and more relevant for participants. Developing this project has impacted my teaching as I want to be a role model for creating a classroom environment that fosters a growth mindset. In particular, I have significantly changed the

messages I portray on the first day of class, the content of my syllabus, how I give and seek feedback, and scaffolding each of my courses so that students build on their knowledge and skills.

Educational Leadership and Change

It is a challenging task for students and educators to shift to a growth mindset considering the American culture (and higher education culture) reinforces fixed mindset beliefs by constantly emphasizing innate talent as the source of success (Dweck, 2010; Rattan et al., 2012). A professional development plan to teach community college faculty about the power of mindset and its effect on student success and persistence is a step in the right direction. The ultimate goal, however, is to change the entire culture of the community college where all faculty and staff understand the importance of non-cognitive factors in student success and work together to create an environment for students that emphasizes hard work, overcoming obstacles, collaboration, risk-taking, and learning through mistakes as the real keys to success.

A growth mindset is a crucial first step in attaining the skills necessary to succeed in the 21st century. Learning this important information has changed me as a person and as an educator. I find that I am more patient with students, listen more, and work harder at connecting with each student. I remind myself not to judge so quickly and to believe that every student has the potential for success. I emphasize the hard work necessary to achieve any worthy goal, that students are capable of achieving in college regardless of their past, and I purposefully want every student to know that they belong. Since

beginning this project study I have become known as “the mindset lady” and I consider that a great honor.

Analysis of Self as Scholar

Along this journey I have learned a great deal about how to be a scholar. I learned how to search online databases, how to read scholarly articles, how to evaluate sources, how to form my ideas and put them on paper for others to understand. I learned how to formulate a problem statement and research questions and how to choose the methodology that fits the research question. While it is important to understand both quantitative and qualitative methodology, as a counselor I favor qualitative research because I am always interested in the story. In the future, I hope to do some mixed method research because I find it valuable to have both the quantitative data and the “story” behind the numbers. One of the most important skills I learned in my research was conducting a literature review. This is a skill that will serve me in the remainder of my career and perhaps beyond as I strive always to be a lifelong learner. I learned how to take large amounts of evidence and synthesize it to tell a story about what has already been discovered and where my unique contributions fit to fill a missing gap and expand knowledge on important topics.

Analysis of Self as Practitioner

I did not undertake this doctoral journey with plans to join the ranks of administration or research. I really enjoy being a practitioner and that I have the privilege of working directly with students in teaching and counseling. I love working with students at a community college because it is a place where I have the opportunity to

positively impact students' lives each and every day. Because of this journey, I want the focus of the rest of my career to be centered on the non-cognitive factors of student success. Administrators and faculty and student affairs personnel need to know the importance of these factors and need to know what they can do to address the affective side of learning. If they can learn to create a school environment where students are highly motivated to learn and overcome obstacles, I believe there will be a significant positive impact on student achievement, and possibly on other areas of life outside of academics as well. Thankfully, important research is now being conducted in this area and I would like to be on the cutting edge of putting new recommendations, based on research findings, into practice and sharing the results with my colleagues. I also expect to continue teaching students and faculty about mindset and how and why to shift to growth mindset.

Analysis of Self as Project Developer

It was an exciting challenge to create a large project based on current research that would be interesting to my colleagues and effective in teaching strategies that could be easily understood and implemented. I learned to handle large amounts of information and organize it in a way that makes sense and is useful. I learned new active learning strategies that make learning more effective and enjoyable. I learned to set key learning objectives and then plan all activities to meet those objectives. I learned much about how to assess learning and use the feedback to improve teaching practices. In the future I expect to include more formative assessment in my work with students and in faculty workshops.

Overall Reflection

As I reflect on my journey of studying how to create classroom environments in the community college that foster a growth mindset, I am even more convinced of the absolute importance of this topic. Far too many students are missing the life-enhancing benefits of completing their educational goals, and I believe that fixed mindset thinking is a major reason. A fixed mindset often results in students resigning when difficulties arise; whereas, students who has a growth mindset values learning and improving and will persevere through challenges. Just like me pursuing a doctorate because of my own shift to a growth mindset, many positive outcomes can result for students making that shift. With very small interventions, a faculty member can influence students to persist in college and graduate, which can have profound effects on their financial future, the quality of their relationships, and even their mental and physical health (American Association for Community Colleges, 2012; Mullin, 2011;).

My journey towards a doctorate has been transformational both as a scholar-practitioner and in my personal life. I have a calling to share what I have learned about the topic of mindset to positively impact students, educators, my campus, and other scholar-practitioners. I have given myself a charge to keep growing in my knowledge and to continue developing new strategies that will foster the mindset that leads to academic and life success. The project has already led to numerous invitations to conduct workshops for a variety of audiences including faculty, staff, students, and outside groups such as parents. With so much interest and demand, I may look to writing a more in-depth manual, journal articles, and a train-the-trainer program. None of this is something

I could have predicted even a few years ago but has stemmed from the development of my own growth mindset.

Implications, Applications and Directions for Future Research

This project has great potential for positive social change. One interesting implication is that when educators learn about mindset, one of the first things they say is it has affected their parenting and not just their work with students. For example, understanding that “person praise” (i.e. “you are so smart”) actually lowers motivation (Cimpian et al., 2007, Mueller & Dweck, 1998) is profoundly relevant to both parents and teachers. Learning how to give feedback that motivates people to work hard, embrace challenges, and persist in the face of obstacles may increase the number of people who feel empowered and supported to do whatever is necessary to achieve their goals. It also has the potential to improve relationships at home and at work as people shift to the growth mindset belief that a person’s intelligence, talents, and personal characteristics can be developed. This paradigm shift is a very empowering, positive message that has the potential to transform schools.

More research is needed to support this paradigm. Many potential areas exist for future research in the area of academic mindsets. Very few mindset studies have focused on the community college setting, even though mindset is especially important for students transitioning into new levels of education (Farrington, et al., 2012). It would be very useful to conduct a quantitative study to examine the mindsets of community college faculty by a pre/post assessment with a treatment group that experiences an intervention of mindset professional development and a control group that does not. The results could

also be examined to compare mindset by age, race, gender, number of years teaching experience, and academic discipline to see if there are any differences within these groups. It would then be useful to compare the overall GPAs and completion rates of students in the classes of treatment group faculty versus the students of control group faculty prior to and after the intervention. The purpose of this study would be to determine whether teaching mindset to community college faculty improves student outcomes. An additional quantitative study could be conducted that investigates the teaching of community college students about mindset (instead of teaching faculty) as an intervention and comparing the academic performance of this experimental group to a control group of students who were not taught about growth mindset.

Conclusion

This study examined the experiences of community college educators who had been to a growth mindset workshop with the goal of understanding the educational practices, challenges, and opportunities in creating classroom environments that foster a growth mindset. The purpose was to understand how community college educators can put into practice mindset research that holds promise for increasing student motivation, persistence, and completion. In section 4, I reviewed strengths and limitations of the project, and reflected on my learning as a scholar, a practitioner, and a project developer. I commented on the potential for positive social change through the project and made recommendations for future research. Appendix A describes the details of the project.

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Appendix A: The Project

Professional Development

In

Influencing A Growth Mindset
To Increase Student Motivation, Effort, and Persistence

A 12 Module Training Program for
Community College Educators

Developed by:
Marianne Auten

“If you want to learn something, read about it. If you want to understand something, write about it. If you want to master something, teach it.” - Yogi Bhajan

“The greatest effects on student learning occur when the teachers become learners of their own teaching and when the students become their own teachers.” – John Hattie

The Project

The purpose of this project is to train community college educators in the knowledge, skills, and strategies to foster a growth mindset in the classroom. The goal of the project is to make a significant impact in student persistence and retention rates by creating environments that help students realize that success comes through effort and effective strategies rather than innate intelligence or talent. The intended audience is faculty from all disciplines, administrators and student affairs professionals. The learning outcomes, materials, outline of components and timeline, and evaluation plan are included below.

Week 1

1:15 – 2:45 pm	Module 1: Setting the Stage: What is Mindset?
2:45 – 3:00 pm	Break
3:00 – 4:30 pm	Module 2: Where Do Mindsets Come From?

Week 2

1:15 – 2:45 pm	Module 3: Mindset and Academic Performance
2:45 – 3:00 pm	Break
3:00 – 4:30 pm	Module 4: Brain Plasticity, Practice, and Learning

Week 3

1:15 – 2:45 pm	Module 5: The Effective Teacher's Mindset
2:45 – 3:00 pm	Break
3:00 – 4:30 pm	Module 6: Effective Feedback for Learning

Week 4

1:15 – 2:45 pm	Module 7: Failure Isn't Fatal
2:45 – 3:00 pm	Break
3:00 – 4:30 pm	Module 8: Developing Grit, Tenacity, and Perseverance

Week 5

1:15 – 2:45 pm

Module 9: Mindset and Goal Achievement

2:45 – 3:00 pm

Break

3:00 – 4:30 pm

Module 10: Classroom Contexts That Foster A
Growth MindsetWeek 6

1:15 – 2:45 pm

Module 11: Academic Mindset Interventions – The
Theory of Action, Part I

2:45 – 3:00 pm

Break

3:00 – 4:30 pm

Module 12: Academic Mindset Interventions – The
Theory of Action, Part II

PROFESSIONAL DEVELOPMENT ON MINDSET

Module 1: Setting the Stage: What is Mindset?

90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> • Understand Dweck’s (2006) mindset theory and the distinction between growth and fixed mindsets. • Determine if their own mindset is more fixed or more growth. • Apply the theory to behaviors they have witnessed in college students. 	
Materials	PowerPoint Slides, Pre-assessment, Mindset Cards, Handout for self-reflection.	
Activities	<ul style="list-style-type: none"> • Pre-assessment • Introduction/Goals for Today’s Learning • Icebreaker: What is something you’d love to learn or accomplish that you’re NOT currently doing? Share with 2 or 3 and tell why you aren’t doing it (yet). Share with large group a few examples. Common reasons: money, time, age, lacking talent, etc. But could be mindset... • Video of famous people who failed. Discussion: What do these people have in common? What might have been their “mindset”? • Carol Dweck (2006) studying achievement and people’s reaction to failure for 30+ years. • Score your pre-assessment – which mindset do you tend to operate out of? • Card Sort Activity of Fixed/Growth statements by Table groups. Large group discussion on cards you couldn’t agree on. • Table Share: Where have you seen these mindsets in your students? In yourself? 	5 minutes 5 minutes 15 minutes 5 minutes 15 minutes 5 minutes 15 minutes 10 minutes
Debrief	Reflective Writing: Why do these beliefs matter to motivation and academic success? How could I use/adapt anything I learned today? Table Share: One thing I will do as a result of what I learned today..... Overview of next module. Questions, comments?	5 minutes 5 minutes 5 minutes
Resources	Dweck, C. (2006). <i>Mindset: The new psychology of success</i> . New York, NY: Ballantine Books.	

Module 2: Where Do Mindsets Come From?

90 minutes

Learning Objectives	<p>Participants will:</p> <ul style="list-style-type: none"> • Identify where mindsets come from • Become aware of the power and peril of different types of praise that can put people into a fixed or growth mindset • Practice giving process praise rather than person or outcome praise 	
Materials	Power Point Slides, Slips of paper with the student scenarios on them, One Minute Assessment	
Activities	<ul style="list-style-type: none"> • Goals for Today's Learning • Icebreaker: Reflect on an aspect of your life where you use a growth mindset (could be playing video games or a hobby or some aspect of your work). What is your self-talk when you are doing something that you enjoy practicing? What are some phrases that have stopped you from wanting to try harder? Share out. • Where do mindsets come from? Culture, self-esteem generation, praise/feedback, comparison, evaluation. What examples do you see in our culture that reinforce fixed or growth mindsets? • The power and peril of praise. How students might interpret well-intentioned praise. • Puzzle study – the impact of praising intelligence versus praising effort. Prediction Time: Which group will do the best job solving the puzzle? (Answer: those praised for effort.) • Praising the process rather than the person or outcome. Practice <i>process</i> praise with a partner. • Table Activity: Different Student Scenarios. Shift the person to more of a growth mindset internal monologue. 	<p>5 minutes 10 minutes</p> <p>10 minutes</p> <p>5 minutes</p> <p>10 minutes</p> <p>15 minutes</p> <p>15 minutes</p>
Debrief	<p>Reflective Writing: What type of praise do you tend to give students? Your children/grandchildren? How might you change how you praise based on what you learned today? Describe some specific praise statements that relate more to the <i>process</i> and not the <i>person</i> or the <i>outcome</i>. Share at the table: Share what you will do differently in praising students. Give examples of growth mindset praise in your classroom.</p>	<p>10 minutes</p> <p>5 minutes</p>
Evaluation	One Minute Assessment.	5 minutes
Resources	Skipper, Y., & Douglas, K. (2012). Is no praise good praise? Effects of positive feedback on children's and university students' responses to subsequent failures. <i>British Journal of Educational Psychology</i> , 82(2), 327-339.	

Module 3: Mindset and Academic Performance

90 minutes

Learning Objectives	<p>Participants will:</p> <ul style="list-style-type: none"> • Experience their own self-talk as it relates to mindset • Examine the research related to mindset theory and its application to college students • Apply the mindset theory to a case study about a first-semester community college student 	
Materials	<p>Slide of the results of the One Minute Assessment. Toothpicks, Cards, Knot Picture, word puzzle on each table. Flip chart. Handout of Mindset chart.</p>	
Activities	<ul style="list-style-type: none"> • Results of the One Minute Assessment. [Sit with people of similar teaching discipline.] Share one idea you will use in your classroom based on what you learned so far. Goals for Today's Learning. • Activity: Do a challenging puzzle to feel & experience your own mindset. (Toothpick Puzzle or Card Tower or Knot Tying or Word Puzzle.) Written reflection on feelings and self-talk before, during, and after the activity. • Large group: categorize the comments above into growth and fixed mindset columns. Compare to the Mindset Chart. • Scenario: fixed/growth student in PSY101 after the first test. ½ tables are fixed; ½ tables are growth. Table Discussion on how you would respond to the day's events as fixed or growth. Report out. • Dweck (2006) Research: Can we change mindset to change academic performance? (Yes!) Additional research on changing mindset to change academic performance. 	<p>10 minutes</p> <p>20 minutes</p> <p>15 minutes</p> <p>15 minutes</p> <p>15 minutes</p>
Debrief	<p>Table Discussion by Discipline: What are the attitudes, behaviors, language of your students that seem to be operating out of a fixed mindset? A growth mindset? What could we do to shift students to more growth mindset thinking?</p> <p>Reflective Writing: How could I use/adapt anything I learned today?</p> <p>Overview of next modules. Questions, comments?</p>	<p>10 minutes</p> <p>5 minutes</p>
Resources	<p>Blackwell, L., Trzesniewski, K., & Dweck, C. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. <i>Child development</i>, 78(1), 246-263.</p>	

Module 4: Brain Plasticity, Practice, and Learning

90 minutes

Learning Objectives	<p>Participants will:</p> <ul style="list-style-type: none"> • Examine the latest research about brain plasticity. • Understand how talent is actually developed. • Apply the concept of “deliberate practice” to their own life and to students. • Develop some scaffolding learning activities. 	
Materials	Power Point slides. Brief Assessment.	
Activities	<ul style="list-style-type: none"> • Intro/Goals. [Sit with people you haven’t worked with yet.] • Icebreaker: Identify something you learned simply because you enjoyed learning it. What did you do to learn this information or skill? How does your learning relate to the video? What feedback did you use to determine how well you had learned this? • Brain Plasticity – studies showing we get smarter by challenging our brain. The brain is like a muscle. What does this mean for learning in your subject? • Table Discussion: What stood out for you in that video? • Deliberate Practice and the 10,000 hour rule. Example: Boston Conservatory violin students. • Partner Share: Describe something you would be willing to do “deliberate practice” in your own life. <i>How</i> would you practice? Who could be your <i>coach</i>? How can you build more <i>practice</i> into your curriculum? Report out. • Activity: Scaffolding Your Curriculum 	<p>5 minutes</p> <p>5 minutes</p> <p>15 minutes</p> <p>15 minutes</p> <p>10 minutes</p> <p>15 minutes</p> <p>10 minutes</p>
Debrief	<p>Reflective Writing: What were the most important things you learned today? How could you get the message to your students about brain plasticity, the brain is like a muscle, the benefits of deliberate practice and specific feedback? How might you “coach” students to improve their performance in your course?</p> <p>Share one idea you learned today that you can use/adapt.</p>	<p>5 minutes</p> <p>5 minutes</p>
Evaluation	Recap Modules 1 - 4. One Minute Assessment.	5 minutes
Resources	Nisbett, R., Aronson, J., Blair, C., Dickens, W., Flynn, J., Halpern, D., & Turkheimer, E. (2012). Intelligence: New findings and theoretical developments. <i>American Psychologist</i> , 67(2), 130-159.	

Module 5: The Effective Teacher's Mindset

90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> Learn how the teacher's expectations and mindset can affect student outcomes Understand the basic needs required for learning and strategies to be sure those needs are met 	
Materials	Results of the Brief Assessment, Power Point slides, blank paper, flip chart paper/markers	
Activities	<ul style="list-style-type: none"> Welcome/Intro. Go over One Minute Assessment results. Goals for today. Icebreaker: Do you believe that all students can be successful? Why or why not? My story about being completely wrong about a student. Table Share: Have you ever been wrong about a student? What could you do to ensure that you have high expectations for all of your students? Silent Socratic Dialogue: What are YOUR expectations of your students? Do you have different expectations for different students? Have you been operating out of fixed or growth mindset about your student's capabilities? <i>How</i> have you communicating your expectations? How might you improve in this area? Poster Carousel. Small group at poster for each of the above needs (4 posters). Brainstorm strategies at each poster to meet that need in the community college. Groups will rotate and add to each poster. Report out. The original group at each poster will report out a summary of the ideas. 	10 minutes 15 minutes 20 minutes 20 minutes 15 minutes
DeBrief	Reflective Writing: What were the most important things you learned today? How could you use/adapt anything you learned today? Overview of next modules. Questions, comments, concerns?	5 minutes 5 minutes
Resources	Brooks, R., & Goldstein, S. (2008). The mindset of teachers capable of fostering resilience in students, <i>Canadian Journal of School Psychology</i> , 23(1), 114-126.	

Module 6: Effective Feedback for Learning

90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> • Become aware of specific feedback techniques that promote a growth mindset and deeper learning • Practice giving effective feedback versus ineffective feedback • Learn to tie all feedback to learning goals 	
Materials	Power Point Slides. Flip chart paper & markers. Cards with feedback and advice statements. Scenarios for feedback activity. Brief Assessment.	
Activities	<ul style="list-style-type: none"> • Intro/Goals. Icebreaker: What is feedback, anyway? Give an example of some feedback that really helped you learn. • Review of Process Praise (puts student into growth mindset) <i>versus</i> Person/Outcome Praise (puts student into a fixed mindset). Table activity: create a 2 column chart of process praise statements and person/outcome praise statements. Combine to create one big chart. [Copy this chart to give to each participant later.] • Feedback versus Advice. Table Activity: Sort the feedback statements as feedback or advice. Large group discussion on what you learned. • 7 Keys to Effective Feedback. Feedback versus Evaluation and Grades. • Small group Activity: Brief scenario to practice giving effective feedback. Report out so that all scenarios are covered. • Groups by discipline: Create learning goals and success criteria for a topic in your subject area. What are some effective feedback statements you might use to facilitate learning? How will you get feedback from the students? Report out. 	10 minutes 15 minutes 15 minutes 10 minutes 10 minutes 20 minutes
DeBrief	Reflective Writing: What is something important or interesting you learned today that you want to remember? How could you use/adapt what you learned today with your students?	5 minutes
Evaluation	One Minute Assessment. Give feedback!	5 minutes
Resources	Dweck, C. (2007). Boosting achievement with messages that motivate. <i>Education Canada</i> , 47(2), 6-10.	

Module 7: Failure Isn't Fatal

90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> • Examine the relationship of mistakes and failure to achievement and excellence. • Consider one's own self-talk about mistakes and failures and how to change that self-talk • Understand the role of mindset in fear of failure and how to stop that fear • Create instructional strategies that allow for making mistakes and fixing them as a process of learning 	
Materials	Results of One Minute Assessment. Power Point Slides. Crossword puzzle; ½ have easy clues & ½ have difficult clues.	
Activities	<ul style="list-style-type: none"> • Go over One Minute Assessment results. Intro/Goals. Quote: "We are failures – at least all the best of us are." - J.M. Barrie • Table Share: Think about a mistake or failure you experienced. What was the learning that came from that experience? • Large Group Discussion: Do we learn more from our successes or our failures? Famous Failures poster. How do you feel about mistakes and failure – avoid or embrace? Go around the room and fill in the blank: "When I make a mistake I feel _____." Even thinking about failing makes me _____. What can we do about this? If we feel this way, what about our students? Heidi Grant Halvorson in her book <i>Succeed</i>: Give yourself permission to screw up. How would that feel if you did that? • Puzzle Time: Complete the puzzle as quickly as you can (you will have 3 minutes) and when you finish stand up. Notice your self-talk as you complete the puzzle. Stop. How did the people standing feel? What self-talk? How did the people still working feel? What self-talk? Now how do you feel when I tell you there were two different sets of directions? What is the equivalent in your classroom of hard/easy clues? • Stopping the Fear of Failure – 3 steps. Table Exercise: Brainstorm the benefits of making mistakes. Round robin sharing of benefits. • Sit by discipline: Examples of instructional strategies that encourage students to learn through their mistakes. Choose one strategy and adapt it 	5 minutes 15 minutes 10 minutes 15 minutes 20 minutes 20 minutes

	to your subject. Write ideas on the flipchart and be ready to report out.	
DeBrief	<p>Reflective Writing: What was the most interesting or important thing you learned from this lesson? How could you use or adapt what you learned today in your classroom?</p> <p>Questions, comments, concerns?</p>	5 minutes
Resources	<p>Cox, R. (2009). "It was just that I was afraid": Promoting success by addressing students' fear of failure. <i>Community College Review</i>, 37(1), 52-80.</p>	

Module 8: Developing Grit, Tenacity, and Perseverance

90 minutes

Learning Objectives	<p>Participants will:</p> <ul style="list-style-type: none"> • Understand the importance of persistence and grit for success and the difference between good and bad grit. • Practice strategies to increase grit. 	
Materials	Handout of Grit Questionnaire and <i>The Truth About Grit</i> article. Power Point slides. Mindset chart (again).	
Activities	<ul style="list-style-type: none"> • Intro/goals. What is grit? The ability to hang in there and get past setbacks when things don't go the way you hope – you don't let other things distract you from your goal. What examples have you seen of “grit”? • Take the Grit questionnaire and score it. Duckworth & Quinn, 2009). • Popcorn read “The Truth About Grit” article (Duckworth & Quinn, 2009). Underline the significant statements that speak to you. Share one of those statements as we go around the room – creates a group poem. • Duckworth's (2009) interesting studies that show grit is a much better predictor of success than IQ or actually any other factor. Grit = growth mindset. Good grit versus bad grit. • Go over the Mindset chart. Share examples from your own lives that reflect different parts of the growth and fixed mindset. • The power of <i>Yet</i>. Practice with a partner. • Create a Challenge Chart: 2 columns with the left side labeled “Challenges” and the right side labeled “How to Overcome Them.” List a few challenges to get the group started with ideas on how to overcome, then partners to list more challenges and more strategies to overcome. Come together to create a master chart. How could this work with students? • Recap: How to develop grit. 	<p>10 minutes</p> <p>5 minutes</p> <p>15 minutes</p> <p>10 minutes</p> <p>10 minutes</p> <p>5 minutes</p> <p>15 minutes</p> <p>5 minutes</p>
DeBrief	<p>Reflective Writing: What is the most important or interesting thing you learned in this lesson? How can you use/adapt what you learned today in your classroom? How is YOUR grit?</p> <p>Table: Share one thing you can do in your classroom to promote more grit, tenacity, and perseverance.</p>	10 minutes
Evaluation	Recap Modules 1 - 8. One Minute Assessment.	5 minutes
Resources	<p>Duckworth, A., & Quinn, P. (2009). Development and validation of the short grit scale. <i>Journal of Personality Assessment</i>, 91(2),166-174. doi: 10.1080/00223890802634290</p> <p>Dweck, C., Walton, G., & Cohen, G. (2011). <i>Academic tenacity: Mindsets and skills that promote long-term learning</i>. Paper</p>	

	presented at the Gates Foundation, Seattle, WA.	
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Module 9: Mindset and Goal Achievement

90 minutes

Learning Objectives	<p>Participants will:</p> <ul style="list-style-type: none"> • Learn the latest research on who achieves goals and why (Hint: the growth mindset!) • Develop goals for themselves based on their vision of Best Possible Future Self in 5 years. • Practice a goal setting process that can be used with students 	
Materials	Handout on Best Possible Future Self and Goal Worksheet. Power Point slides. Big rubber band. Assessment of Be Good versus Get Better and Abstract versus Concrete. Results of Brief Assessment.	
Activities	<ul style="list-style-type: none"> • Results of One Minute Assessment. Intro/goals. 5 minutes • Icebreaker: Why do you think so many people fail to achieve their goals? 5 minutes • Writing Activity: Roles & Best Possible Future Self – 5 years from now. Partner Share: Describe what your best self looks like and a few specific goals that are in alignment with your Best Possible Future Self. [Give some examples.] 15 minutes • Prediction Time: Which types of goals do people achieve the most? Answer: difficult, challenging goals are achieved at the highest rate (not moderately difficult or easy or “try your best” goals). Which achieved more: intrinsic or extrinsic goals? 5 minutes • From your list of goals, choose one <i>s-t-r-e-t-c-h</i> goal to get to your best possible future self. Partner check: Is it specific? Is it measurable? Is it challenging but realistic? Extrinsic or intrinsic? What timeframe? 10 minutes • Cultivating Willpower – Surprising research studies on self-control. Worksheet: Examine your goal – commitment, plan for when and where, how you will build your willpower. 10 minutes • The real key to achieving goals – the growth mindset. Contrasting fixed & growth in achieving goals. Worksheet: Rewrite your goal to be about improving, making progress, compare to myself and not others. 10 minutes • Research on Mental Contrasting. Partner Exercise: Take turns of contrasting positive outcomes with obstacles. 7 minutes • Research on visualizing steps NOT outcomes. When to think <i>Why</i> and when to think <i>What</i>. Partner Share: Would it be more beneficial to focus on the Why (value) or the What (specific steps) for your #1 goal? 8 minutes • A final word on who achieves goals and why. 5 minutes 	
DeBrief	Table Share: What is your #1 goal? Based on what you	10 minutes

	learned today, what will you do to achieve your goal? How could you use/adapt what you learned in this lesson with your students? Questions/comments/concerns?	
Resources	Hsieh, P., Sullivan, J., & Guerra, N. (2007). A closer look at college students: Self-efficacy and goal orientation. <i>Journal of Advanced Academics</i> , 18(3), 454-476.	

Module 10: Classroom Contexts That Foster A Growth Mindset
90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> Analyze several syllabi for influencers of fixed or growth mindset Understand the importance of the first day Develop strategies, policies, and assignments that create a growth mindset environment 	
Materials	Cartoon on Mindset. Sample syllabi for each table. Power Point slides. Flip Chart paper & markers. Brief Assessment.	
Activities	<ul style="list-style-type: none"> Intro/goals. Cartoon on mindset in the classroom. Syllabus Scavenger Hunt – in a group of 3 or 4, find all the “fixed mindset” and “growth mindset” influencers in the sample syllabi. Report out to the larger group. The importance of the first day. Current research about the first day. What students care about on Day 1: Who is on this journey with me (relationships)? How does any of this relate to my goals (rigor and relevance)? Do I belong here? Will I be safe? Can I succeed (with sufficient effort)? Groups of 4 – design a first day class with the above questions in mind. (Group individuals together who teach the same course as best as possible.) Report out to the large group. Analyze your syllabus from one of the courses you teach. Are you creating a culture of <u>improvement</u>? How could you do that? What do you do to encourage risk taking? Is it possible for students to recover from a failure and still pass your course? If not, what could you change so that it is more about learning and improvement, rather than a grade? Share with a partner what you will do to improve your syllabi to influence more of a growth mindset. Trade suggestions. 	5 minutes 15 minutes 10 minutes 15 minutes 10 minutes 15 minutes 10 minutes
DeBrief	Reflective Writing: What is the most important or interesting thing I learned from this lesson? How can I use or adapt what I learned today?	5 minutes
Evaluation	One Minute Assessment. Overview of next modules.	5 minutes
Resources	Hattie, J. (2012). Know thy impact. <i>Educational Leadership</i> . 70(1), 18-23.	

Module 11: Academic Mindset Interventions – Theory of Action, Part I
90 minutes

Learning Objectives	Participants will: <ul style="list-style-type: none"> • Understand the contextual factors in schools that encourage the ownership of learning • Be able to explain the Theory of Action that describes the relationship between mindset and learning strategies, and student learning outcomes 	
Materials	Pieces for the Circle Game at each table, Power Point slides, Handout for Trend #1, Results of Brief Assessment	
Activities	<ul style="list-style-type: none"> • Intro/Goals. Results of One Minute Assessment. • Circle Game: Table will organize the key components of academic mindsets and learning strategies (organize the pieces to make a model) • Demonstration of 1 of the 7 important trends in targeting academic mindsets. Handout with short experiential presentation of one intervention. • Group Activity: Each group given 1 of the 6 remaining important trends in targeting academic mindsets. The group will study the trend and prepare a one page handout and a short experiential presentation (in next session) 	5 minutes 15 minutes 10 minutes 40 minutes
DeBrief	Reflective Writing: What are the most important things you learned today? How can you use or adapt what you learned in your classroom?	10 minutes
Resources	Snipes, J., Fancsali, C., & Stoker, G. (2012). <i>Student academic mindset interventions: A review of the current landscape</i> . Report released by the Stupski Foundation.	

Module 12: Academic Mindset Interventions – Theory of Action, Part II**90 minutes**

Learning Objectives	Participants will: <ul style="list-style-type: none"> • Discover tools, practices, and strategies to promote a growth mindset and learning strategies • Summarize their learning over these 3 days 	
Materials	Evaluations for each presentation; Final Evaluation	
Activities	<ul style="list-style-type: none"> • Intro/joke/guidelines for the presentations • Presentations by each group. 10 minutes each. 	10 minutes 60 minutes
DeBrief	Summary Activity	10 minutes
Evaluation	Final Summative Evaluation	10 minutes

One Minute Assessment

Session Topic and Date: _____

1. What new learning (concepts, skills, insights, etc) did you gain today?
2. How might you apply the new learning in the coming weeks or semester?
3. What I liked best about the session.....
4. Ways I think the session might be improved.....
5. What questions, concerns, or comments do you have at this time?

FINAL EVALUATION

1. How has your own mindset shifted with this training?
2. What tools/knowledge/strategies are you planning on using with your students?
3. How can we help you get the most of what you learned here and put it into practice?
(follow-up mentoring, workshops, observations, book club, website, etc)
4. Please rate the workshop on a scale of 1 – 10 and explain what worked well for you and what could be improved.

Appendix B: Individual Interview Protocol

Date:

Name of Educator:

Teaching Discipline:

Number of years teaching experience:

Questions:

1. Describe community college students (anonymously) who seem to operate out of a fixed mindset – the belief that intellectual abilities are basically fixed, that people have different levels of abilities and nothing can change that. How might they think, feel, or act in your course?
2. In contrast, how do students with more of a growth mindset – a belief that intellectual abilities can be developed through effort and instruction - think, feel, or act in your course?
3. Contrast the two different student mindsets with their view of effort, interest in learning, reaction to criticism or mistakes, persistence through obstacles, and willingness to get help.
4. Describe your own mindset as more fixed or growth and why. Has your mindset changed since learning about this theory? If so, how?
5. What are your experiences related to influencing a growth mindset in your classroom?

6. How could more community college educators learn about the impact of mindset and how to influence growth mindset thinking? What should be included in the training?
7. What are the most significant challenges and limitations you face when trying to put this information into practice?
8. Is there anything else you would like to add?

As the interviewee responds to the open-ended questions that are posed, I will listen carefully for the opportunity to ask one or more of the following probes (Bogdan & Biklen, 2007, p. 104):

What do you mean?

I'm not sure that I am following you.

Would you please explain that?

What did you say then?

What were you thinking at that time?

Give me an example.

Tell me about it.

Take me through the experience.

Curriculum Vitae

Marianne Adams AutenEducation

Ed.D in Higher Education and Adult Learning, Walden University. Anticipated 2013. Doctoral Study: Helping Educators Foster a Growth Mindset in Community College Classrooms

Master of Counseling (M.C.), Arizona State University, Tempe, AZ. 1990. 60 credit hour program including a practicum and two internships. Internship #1 was with a corporate outplacement firm and internship #2 was with a community college.

Bachelor of Science in Recreation Resource Management, Geology Department, Northern Arizona University, Flagstaff, AZ. 1980. Phi Kappa Phi Honor Society.

Associate of Arts in Pre-Forestry, Yavapai College, Prescott, AZ. 1977. High Honors.

Professional Experience

1990 – present Counseling Faculty, XYZ Community College

Teaching Experience

Courses taught: Strategies for College Success, Career Exploration, Honors Forum, Emerging Leaders, The Science of Happiness, Resume' Writing, Creative Job Hunting, Eliminating Self-Defeating Behavior

Collaboratively developed the new mandatory college success course. Created a manual with outlines for new instructors. Provide on-going training for instructors, both new and seasoned, on a variety of topics covered in the course such as learning styles, self-motivation, emotional intelligence, choosing a career, etc.

Collaboratively developed and taught three different learning communities. The First Year Experience was a 12 credit block of 4 integrated courses for the first semester student. "The Science of Happiness" combined PSY101 with the College Success course.

“Leadership That Makes A Difference” combined the Honors Forum with Emerging Leaders.

Program Coordination

Co-Coordinator of the Honors Program. Created the first-ever “Amazing Race” Honors Retreat that has become an annual highlight of the Honors Program. Coordinated Parent-Senior nights and the celebration luncheon for honors graduates. Co-coordinated the student-led Honors Council. Co-Advisor for the Phi Theta Kappa National Honor Society. Took groups of students to national honors conferences. Coordinated a team of honor students to raise funds for Relay for Life to benefit the American Cancer Society.

Coordinated the annual Career Fair five times bringing 60+ employers to campus each year. Coordinated twelve different career panels bringing in professionals in a particular field such as finance or criminal justice or the environment to offer career advice to students. Wrote the strategic plan to develop a brand new career services department at the college.

Coordinated a large scholarship fundraising event for the Lost Boys of Sudan with a group of honor students. The event included African music, dance, food, games, and presentations by the Lost Boys, and resulted in \$2500+ in scholarship money.

Presentations

Present workshops for employees and students on topics such as motivation, goal setting, mindset, learning styles, emotional intelligence, student engagement, strengthsquest, career planning. (1995 to present)

Present workshops at national conferences on overcoming procrastination, creating student success teams, increasing student motivation, and fostering a growth mindset. (2006 to present)

Plenary Speaker at the District Advising Conference (200 participants) on the topic of mindset. (2013)

Present half day to full day workshops at out-of-state colleges on the topic of mindset. (2011 to present)

Committees

Served on the Learning Communities committee, the Underprepared Student Initiative, iStartSmart Steering Committee, Emerging Leaders facilitators, Faculty Senate

Achievement and Recognition

2013	On Course Ambassador of the Year
2010 – 2011	Learning Grant: Changing Academic Motivation by Changing Mindset
2007, 2008	Women’s Leadership Award Nominee
2006 – 2007	Learning Grant: Strengths-based Learning to Increase Student Success
2002, 2003	Retreat Director, Chayah Ministries, Adobe Mountain Juvenile Prison
2000	Black Belt in Tae Kwon Do
1995	CTM designation from Toastmasters for 10 speeches; won the Club, Area, and District competition in Public Speaking

Special Training

- Summer Institute on “The Power of Mindsets”, Learning and the Brain Society
- On Course level I and level II; served as Assistant to Skip Downing for Level 1
- Completed two graduate courses in On Course
- Completed a four week Summer Institute on Developmental Education
- Graduate of The Chair Academy, League for Innovation
- Grief Recovery Certification
- Active Learning Certification
- StrengthsQuest Educator Training Program
- World Congress of Positive Psychology
- Personal Storytelling
- 15 day career facilitation workshop with Dick Bolles, author of “What Color Is Your Parachute?”