

THE ROLE OF THE LINKED LEARNING APPROACH IN STUDENT
SELF-EFFICACY (PERSONAL AGENCY) AND MOTIVATION
IN LOW, MID-LOW, MID-HIGH, AND HIGH POVERTY
SCHOOL SETTINGS

by

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Abstract

This study explored personal agency and motivation of students enrolled in Linked Learning Pathways across low, mid-low, mid-high, and high poverty school settings. Specifically, the study examined student personal agency beliefs, goal setting practices, and student emotional connectedness. The researcher aimed to examine student perceptions of Linked Learning pathway experiences. A convergent parallel and transformative mixed method approach (Creswell, 2014) was used to better understand student experiences across poverty levels. The study extended to explore reasons why differences in experiences did or did not exist. Data were collected from four high school districts and seven school sites in Central California. A total of 293 students participated in a 35-question online survey which measured patterns of adaptive learning. A representative sample of 14 survey participants engaged in semi-structured focus group interviews consisting of a total of eight questions regarding pathway experiences.

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CHAPTER 1: INTRODUCTION

Immediate educational and employment expectations require shifts in high school instructional practices and student learning experiences with communication, collaboration, creativity and innovation, and critical thinking in the 21st Century (McDonald & Farrell, 2012). Research on continued exploration of best teaching methods to motivate diverse 21st-century students is needed (McDonald & Farrell, 2012; Saavedra & Opfer, 2012). Researchers have explained that educational organizations are holding on to antiquated teaching and learning practices that will not move students towards the college and career readiness demanded in postsecondary settings in the 21st Century (McDonald & Farrell, 2012; Saavedra & Opfer, 2012). Educational reformers have reported that it is imperative for schools to move from an antiquated model of instruction to a contextualized model of instruction to promote postsecondary success for 21st-century learners (Kazid & Leibowitz, 2003; McDonald & Farrell, 2012; Perin, 2011; Pleasants & Clagett, 2010; Saavedra & Opfer, 2012; Stephens, 2009). Therefore, amplified rigor and ensuring exemplary college and career readiness programs for high school students are supported through policy codification of propositions (Hooker & Brand, 2010).

Statement of the Problem

Graduation Problem

Children living in poverty are more likely to leave school before successful completion of high school (Darling-Hammond, 2007; Murnane, 2007). According to the United States Census Bureau, during the 2010 Census, 16.4% of the people living in the state of California were living in poverty. The Census reported that

76.8% of individuals in the state of California age 25 or older were high school graduates, while only 29.9% of individuals age 25 or older had earned a Bachelor of Arts degree or higher.

Equitable Access

Concerted efforts have been mobilized in educational organizations, yet there are many children who remain in need of combined support to attain equitable and accessible educational experiences (Darling-Hammond, 2007). The National Center for Education Statistics (NCES) 2016 report indicated that 20.3% of children aged 5 to 17 were from families living in poverty. In 2014, approximately 10.7 million school-aged children were reportedly living in poverty, and of those, 4.6 million were under the age of 5 (NCES, 2016).

Achievement

Research has indicated that a child's academic achievement from kindergarten through high school is impacted by a variety of factors such as motivation, engagement, and a sense of belonging (Cooper & Mulvey, 2015; NCES, 2016; Rabren, Carpenter, Dunn, & Carney, 2014; Reddy, Kettler, & Kurz, 2015). Additionally, living in poverty affects a person's access to employment opportunities (Cooper & Mulvey, 2015; NCES, 2016; Rabren et al., 2014) and level of independence (Coleman-Jenson, Rabbitt, Gregory, & Singh, 2015; Murnane, 2007; Rabren et al., 2014). Ullucci and Howard (2015) reported that poverty impacts are pivotal factors in academic achievement inequalities.

Poverty

Throughout the literature, it has been documented that children living in poverty do not receive high quality educational experiences, and therefore, trail behind their non-poor peers academically (Borman & Rachuba, 1999; Darling-

Hammond, 1990, 1996; Kozol, 1991; Murnane, 2007; Oakes, 1990; Ullucci & Howard, 2015). Murnane stated that children who come from poverty tend to be enrolled in underperforming schools with underprepared teachers and limited resources. In order to provide equitable access for students in poverty to gain mastery of learning, it is incumbent upon educational organizations to provide highly effective teachers in all classrooms (Darling-Hammond & Sykes, 2003). Unfortunately, it has been found that teachers in high poverty schools not only lack necessary skills and knowledge but are oftentimes not provided with opportunities to obtain these skills through professional development (Kozol, 1991; Murnane, 2007). Darling-Hammond and Sykes stated that teacher qualifications and opportunity differences exist across educational settings and impact student achievement.

Background

Teacher Quality

A number of studies (e.g., Bohn, Roehrig, & Pressley, 2004; Foorman et al., 2006; Taylor et al., 2000) have provided general insight on what makes teachers effective. In particular, researchers have indicated that effective teachers are excellent classroom managers who balance teaching of skills, scaffold and differentiate instruction, and motivate students to self-regulate (Cunningham & Allington, 1999; Foorman et al., 2006; Taylor, Pearson, Clark, & Walpole, 2000). In general, high quality teachers are not readily serving in high poverty settings; research has found that students in high poverty schools have experienced underprepared teachers more heavily than those in mid and low poverty schools (Borman & Dowling, 2008; Cochran-Smith, 2004). Rice (2010) reported socio-economically disadvantaged students' achievement increased and equity was

improved when students were in learning environments with effective teachers. However, students in high poverty schools did not receive equal access to high quality teachers or effective instructional strategies (Rice, 2010).

Impact of the Teacher

Research in 2003, 2004, and 2005 disclosed the impact of the individual teacher on student learning and outcomes (Darling-Hammond 2004; Rivkin, Hanushek, & Kain, 2005). If a teacher utilized instructional strategies to support individual learning needs, students had better outcomes. Research conducted by Marzano (2003) confirmed these findings and noted a 54-percentile point discrepancy in student achievement between students with the most effective teachers versus those with limited instructional practices that served the various needs of students. The Linked Learning approach does not rely on traditional teaching models as the approach calls for facilitation on the part of the teacher (Saunders, Hamilton, Fanelli, Moya, & Cain, 2013). Saunders et al. (2013) noted a project based learning model is matched to timely and relevant content. Project-based learning is described as interdisciplinary learning through research of a problem and facilitated by a teacher (Saunders et al., 2013).

The National Assessment of Educational Progress (NAEP) confirmed inequalities in educational attainment (NAEP, 2015). In 2013, fourth-grade students living in poverty earned math scores that were 24 points lower than students not living in poverty, while eighth-grade students living in poverty scored 28 points lower compared to students not living in poverty. Similarly, 2015 reading scores were 28 and 24 points below for fourth and eighth grades, respectively (NAEP, 2015).

Schools' Response to Disparities

In the U.S., high schools are responding to disparities in levels of socio-economic status by adopting curricula to better prepare all students for a variety of postsecondary opportunities (LeGuillou, 2011). LeGuillou indicated, as of 2007, that although progress has been made over the past century, educators, policy makers, and the private sector question whether or not the progress has been enough. Levy and Murnane (2004) conducted a study in which they found that 78% of employers believed that public schools were failing to properly prepare students for the workplace. Symonds, Schwartz, and Ferguson (2011) explained that there is a disconnection between classroom instruction and application of acquired skills to prospective employment opportunities for students after high school. In response to the disconnection for students, Symonds et al. concluded that programs that apply classroom learning to a tangible life experience effectively have increased student engagement, developed more skills for students, supported degree attainment, and eventually led to postsecondary job success.

Contrarily, other countries have taken a more holistic approach to education by integrating classroom and business environments into the educational experience for high school students (Symonds et al., 2011). In response, American high school leaders have sought to bring academic and career experiences together within an education pathway in hopes of mirroring the progress that is being made in other countries (Symonds et al., 2011). One approach is that of “Linked Learning,” which focuses on strategies to integrate technical and real-world activities with core academic instruction to help improve career and college readiness (ConnectEd, 2014; Linked Learning Alliance, n.d.).

With the goal to connect academics and real world application, then-Governor Schwarzenegger’s Initiative on Improving and Strengthening Career

Technical Education (CTE) was successfully carried through Senate Bill (SB) 70 in 2005. SB 70 allocated \$20 million from the community college reversion account to be specifically used for the improving of CTE at both the community college and secondary level (ConnectEd, 2014; Linked Learning Alliance, n.d.). The bill allowed for the California Department of Education (CDE) to be an active partner in the development of the plan to carry out the Career Technical Education Pathways Program, §70, 2005, (CDE, n.d.).

Codification of Linked Learning

In California, policymakers committed to the Career Technical Education Pathways or the Linked Learning approach when state Senate Bill 1070 was enacted in 2012 (Linked Learning Alliance, n.d.; CDE, n.d.). The bill included provisions for interconnectedness of student engagement, increased graduation rates, innovative technical learning and application, relevancy, and academic teaching focused on both career and college preparation for sustainable postsecondary success. This bill was instrumental in shifting the education pendulum in California. It has been estimated that between 2012 through 2022, more than 6.3 million job openings will be generated in California (Employment Development Department, 2014).

SB 1070 will support sustainability of targeted systemic initiatives and strong collaborations when SB 70-related funds eventually expire. SB 1070 is tailored towards initiatives that embody the Linked Learning approach and philosophy (Linked Learning Alliance, n.d.). With over \$100 million in funds remaining from SB 1070, the bill ensures significant financial support for quality and scaled Linked Learning efforts. SB 1070 targets the California Partnership Academies, the Linked Learning Pilot Program, the UC Curriculum Integration

Institute, and the Linked Learning Recognition of Study as potential priority recipients.

In 2013, California passed AB 790, identified as the Linked Learning Pilot Program. California policy makers' intent was to provide codification to dramatically change instructional teaching practices and 21st Century student learning at the high school level. This codification occurred simultaneously with the adoption of new California Common Core State Standards. Consequently, the expansion of the Linked Learning approach was implemented in additional schools and districts through the AB 790 initiative. According to Guha et al. (2014), this policy supported 55 new districts in the development and implementation of the Linked Learning approach during the 2013-2014 school year. ConnectEd, the California Center for College and Career (2013) reported that AB 790 (Linked Learning Pilot Program) will provide college and career readiness experiences for more than one-third of the students in California high schools over the next few years. Furthermore, AB 790 authorizes a school district that maintains any of grades 9 to 12 (inclusive) to apply to the Superintendent to operate a pilot program (ConnectEd, 2013).

Student Motivation and Achievement

Dickhäuser, Dinger, Janke, Spinath, and Steinmayr (2016) conducted a study of 228 high school students over the course of a year and found that students' motivation impacted student achievement based on grade point average. The study measured students' performance goal-avoidance, performance approach goals, perceived competence, intrinsic motivation and academic achievement. Dickhäuser et al. found that the interrelationship of the variables was statistically significant among intrinsic motivation, one's belief in their own intelligence, hope of success, fear of failure, and perceived competence of academic achievement

through achievement goals. The findings of this study strongly suggested that a comprehensive analysis of factors that impact achievement is necessary to understand complex reasons for student academic success or failure. Multiple research studies have indicated motivational components and measurement of academic achievement are related (Diseth & Kobbeltvedt, 2010; Elliot & Church, 2010; Ford, 1992; Pintrich, 2000).

Student Achievement and Graduation

School faculty and staff, family support, and communities working in conjunction to support students can positively impact student achievement and close the graduation gap for all students (Connect Ed, 2014; Epstein & Sanders, 2006). Students from areas of pervasive poverty have continued to demonstrate lower graduation rates (8%, on average) compared to the national average (U.S. Department of Education, 2015). Students whose goals are directly related to high school completion, no matter the setting, are more likely to realize graduation (Locke & Latham, 1990; Wigfield & Tonks, 2004).

Theoretical Perspective

This study will apply the *self-efficacy theory* (Bandura, 1977) and *motivational systems theory* (Ford, 1992). Self-efficacy theory is derived from Bandura's *social cognitive theory* and has served as a foundational lens through which to consider the implications of the research on the greater society. In tandem, motivational systems theory has served as a lens to view Linked Learning students' personal agency beliefs, personal goals, and emotions in regards to pathway experiences. Motivational systems theory takes Bandura's self-efficacy theory to a deeper level of consideration (Ford, 1992). Self-efficacy theory explores the overarching role that a person's attitudes, abilities, and cognitive

skills play in the larger self-system (Bandura, 1977, 2012; Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Lively, 1994). Bandura's self-efficacy theory states that individuals affect action in their lives based on their belief in their ability to achieve certain results. Self-efficacy is a cognitive process that is shaped by experience, rewards and accomplishment, encouragement, and negative thoughts (Briones, Taberner, & Arenas, 2010; Davenport & Lane, 2006). As such, self-efficacy is not fixed; it is a changeable process. Bandura et al. (2001) noted that self-efficacy plays a nuclear role in the components of social cognitive theory and as a result, self-efficacy has an ability to impact change on not only personal agency but also on other self-elements.

The second theoretical lens was motivational systems theory (MST). MST was developed out of a perceived public need to address motivation with a more integrated approach than previously considered (Ford, 1992). MST is a descendant of Ford's *living systems theory*, which combines both scientific and professional knowledge as a lens to view human motivation (Ford, 1992). Living systems theory represents three phenomena:

1. The unitary functioning of the whole person-in-context;
2. The functioning of the component parts of the person; and
3. Stability and changing in the functioning of the component parts of the person and the person-as-a-whole.

Thus, living systems theory provides a way of thinking about specific elements of personal goals, emotions, perceptions, and actions. The framework also describes how the component processes work together in an organized pattern and how these patterns can be developed over time and across environments to produce an individual, self-built personality and evolving history (Ford, 1992).

Motivational systems theory supports a comprehensive view of how human motivation is the process of interaction among biological, environmental, and non-motivational psychological and behavioral processes (Ford, 1992). This theory is portrayed in Figure 1. MST is designed to represent all three phenomena that have traditionally been discussed in the field of human motivation: the selective direction of behavior patterns, (i.e., what people want to do in life and how they plan to get there), the selective behavior patterns (i.e., how people are excited about an activity or event or disengaged with an activity or event), and the selective regulation of behavior patterns (i.e., the process for perseverance) (Ford, 1992).

Achievement ÷ Competence = Motivation x Skill ÷ Biology x Responsive Environment.

Motivation = Goals x Emotions x Personal Agency Beliefs.

Figure 1. Motivational systems theory heuristic formula for effective functioning.

The MST framework is anchored in 17 significant principles: unitary functioning, motivational triumvirate, responsive environment, goal activation, goal salience, multiple goals, goal alignments, feedback, flexible standards, optimal challenge, direct evidence, reality, emotional activation, “do it,” incremental versus transformational change, equifinality, and human respect. The foci of this study will include personal agency/self-efficacy, goal-setting practices, and emotion.

Significance of the Study

Even though research has shown promising career and college readiness for students who have engaged in the Linked Learning approach, there is still a need for more research on student self-efficacy and motivation across contexts. This

study will contribute to that body of literature by providing additional data on student experiences in college and career technical education pathways in high-, mid-, and low- socioeconomic settings. This study intended to expand upon student perceptions and motivation while engaged in the Linked Learning approach. The study also intended to contribute to the body of existing literature on capability self-efficacy, context self-efficacy, mastery goal orientation, performance-avoid goal orientation, and student perceptions of Linked Learning experiences.

In general, the findings of this study could lead to deeper understanding of differences in student personal agency/self-efficacy, goals, emotions, and perceptions across socio-economic levels. The findings of this study may also be used by educational leaders to examine the use of resources as they pertain to pathways and student support in Linked Learning high schools. Likewise, this research may provide educational leaders with insight into underserved populations (i.e., low- and/or mid- socioeconomic status). Finally, with a deeper understanding in differences or lack thereof, educators could use the findings to adjust instructional practices to better serve the needs of pathway students.

Purpose of the Study

The purpose of this study was to explore the differences, if any, of the role of the Linked Learning approach in CTE programs on student motivation, including personal agency beliefs, goal-setting, and emotions in low-, mid-, and high-poverty school settings. Additionally, the study aimed to investigate the effect of the Linked Learning approach on student perceptions of pathway experiences and motivation in those settings.

Definition of Key Terms

21st Century Skills – The skills necessary for success in the 21st century are different from those needed previously. As our nation transitions from an “information age” to a “conceptual age,” students must have critical-thinking, problem-solving, communication, and teamwork skills, along with creativity and awareness of the global economy, to compete in today’s work force (California Department of Education, n.d.; Saunders et al., 2013).

Career Technical Education (CTE) Teachers – CTE credentialed teachers can teach career technical courses in 1 of 15 California industry sectors for grades 12 and below. In order to be credentialed, teachers need to have proof of 3 years of industry experience.

Free and Reduced Lunch – Students whose families are at 130-185% of the poverty level are eligible for reduced price meals, while those students whose families are at or below 130% of the poverty level are eligible for free meals provided by the school (NCES, 2016).

Goals – Goals are intended or desired outcomes. Goals can be oriented towards either achieving something or avoiding something (Ford, 1992).

High level poverty – A high-poverty school is defined as a public school where more than 75% of the students are eligible for free or reduced-price lunch (NCES, 2016).

Integrated curriculum – Integrated curriculum is a series of conscious and informed strategies used to connect the content of one or more academic and CTE courses so that what is learned in one discipline is combined with and reinforced in other disciplines over an extended period of time.

Linked Learning – An educational approach that aims to prepare students for both career and college readiness through integrated curricula that

complements a specific career theme. The core features of the Linked Learning approach are rigorous academics, career-technical education courses, work-based learning experiences, and comprehensive support services from teachers and counselors (ConnectEd, 2014; Saunders et al., 2013).

Low level poverty – Schools defined as low-poverty schools are those in which 25% or less of students qualify for free and reduced price lunch (NCES, 2016).

Mid-high level poverty – Schools identified as mid-high level poverty schools are those public schools in which 50.1%-75% of students qualify for free and reduced price lunch (NCES, 2016).

Mid-low level poverty – Schools identified as mid-low level poverty schools are those public schools in which 25.1%-50% of students qualify for free and reduced price lunch (NCES, 2016).

Motivation – Motivation encompasses psychological functions that guide, galvanize, and regulate goal-oriented activity over time. Those psychological functions are personal goals, emotions, and personal agency beliefs (Ford, 1992).

Open access – All students, without regard to their past educational success, special education designation, socio-economic status, English Language Learner designation, and race/ethnicity, etc., are provided equal access to educational opportunities, including honors courses, advanced placements, and/or programs such as small learning communities, academies, or pathways. Open access supports increased participation of students in high-quality, rigorous education by eliminating barriers and/or other restrictions (Connect Ed, 2014).

Pathway – Pathways connect strong academics with CTE and real-world experiences in a wide range of career fields, using various program models, and prepare students for careers and postsecondary education (Connect Ed, 2014).

Self-efficacy – Self-efficacy is a person’s belief in his or her ability to produce a desired outcome (Bandura, 1977, 1986, 1989, 2001).

Summary

Educational reformers call for progress towards constructing a meaningful model of instruction based on student experiences and moving away from traditional teaching strategies to support postsecondary student success (Kazid & Leibowitz, 2003; McDonald & Farrell, 2012; Perin, 2011; Pleasants & Clagett, 2010; Saavedra & Opfer, 2012; Stephens, 2009). Research has reported that students living in poverty continue to receive low-quality educational experiences (Borman & Rachuba, 1999; Darling-Hammond, 1990, 1996; Kozol, 1991, Murnane, 2007; Oakes, 1990; Ullucci & Howard, 2015). Senate Bill 1070 specified Linked Learning implications for California Partnership Academies, the Linked Learning Pilot Program, the UC Curriculum Integration Institute, and the Linked Learning Recognition of Study as recipients of resources earmarked to address student disparities and teaching and learning that meets the needs of the 21st-century student (CDE, n.d.). In 2013, California passed AB 790, which is identified as the Linked Learning Pilot Program. California policy makers intend to move from antiquated models of teaching and learning to the Linked Learning approach at the high school level. According to the CDE (2013), this policy supported 55 new districts in the development and implementation of the Linked Learning approach during the 2013-2014 school year. The California Center for College and Career (2013) reported that AB 790, the Linked Learning Pilot Program, would provide college and career readiness experiences for more than one-third of the students in California high schools over the course of the years following 2013. Additional research is needed to explore the influence, if any, of the Linked Learning teaching and learning approach in CTE programs on student

motivation, personal agency beliefs, goal-setting, and emotions in low-, mid-, and high-poverty school settings.

Chapter 2, the literature review, will build background understanding of college and career readiness in U.S. high schools, give a synopsis of poverty and its impact on students, and identify the theoretical framework for this study. The literature review will explain what the Linked Learning approach is, how it is designed to close the achievement gap, and how the approach makes college and career readiness accessible for all students. The literature review will also detail both Albert Bandura's *self-efficacy theory* and Martin Ford's *motivational systems theory* as the theoretical framework in which to view students' self-beliefs and motivations within college and career readiness pathways.

CHAPTER 2: REVIEW OF THE LITERATURE

College and Career Readiness

There exists, in public media, an idea that public schools are failing (LeGuillou, 2011). LeGuillou indicated, as of 2007, although there has been progress in improving schools over the past century, educators, policy makers, and the private sector question whether or not the progress has been enough. In 2004, Levy and Murnane found that employers felt public schools were not adequately equipping students for 21st-century careers. Symonds et al. (2011) further argued that there has been a disconnect between teaching and learning practices and application of understanding in 21st-century postsecondary contexts. In response to this, Symonds et al. found that programs that apply classroom learning to a tangible life experience effectively have increased student engagement, developed more skills for students, supported degree attainment, and eventually led to postsecondary job success.

Contrarily, other countries have taken a more holistic approach to education by integrating classroom and business environments into high school settings (Symonds et al., 2011). Symonds et al. showed that high school administrators in the U.S. are making strides and planning systemic structures that mirror those in other countries. One such strategy is Linked Learning, which focuses on integrating technical and real-world activities into core academic instruction to help improve career and college readiness skills.

Policies to Connect Academics and Relevant Application

With the goal to connect academics and real world application, the Initiative on Improving and Strengthening Career Technical Education (CTE) was

successfully passed through Senate Bill (SB) 70 in 2005 (CDE, n.d.). SB 70 allocated \$20 million from the community college reversion account to be specifically used for improving CTE at both the community college and secondary levels. The bill allowed for the California Department of Education (CDE) to be an active partner in the development of the plan to carry out this initiative, also called the Career Technical Education Pathways Program, §70 (CDE, n.d.).

In California, policymakers showed their commitment to the Career Technical Education Pathways, or the Linked Learning approach, when state Senate Bill 1070 was enacted in 2012 (ConnectEd, 2014). The bill promotes interdisciplinary programs with rigorous coursework, challenging technological components, and timely application in themed contexts that lead to engaged students, produces more high school graduates, and prepares students for successful postsecondary endeavors (ConnectEd, 2014). This bill was instrumental in shifting the education pendulum in California by providing educational leaders with resources to integrate CTE into the core curriculum (ConnectEd, 2014). This is necessary because the State of California Employment Development Department (EDD, 2014) projected that, from 2012 through 2022, there will be more than 8.2 million job openings generated in California.

Senate Bill 1070 targets systemic initiatives and strong collaborations which can be better sustained when SB 70-related funds eventually expire. This bill is tailored towards initiatives that embody the Linked Learning approach and ethos. With over \$100 million in funds remaining from SB 70, SB 1070 ensures significant financial support for quality and scaled Linked Learning efforts. SB 1070 specifies Linked Learning implications for California Partnership Academies, the Linked Learning Pilot Program, the UC Curriculum Integration

Institute, and the Linked Learning Recognition of Study as potential priority recipients.

In 2013, California passed AB 790, identified as the “Linked Learning Pilot Program.” California policy makers’ intent was to provide codification to dramatically change instructional teaching practices and 21st-century student learning at the high school level (ConnectEd, 2014). This codification occurred simultaneously with the adoption of new California Common Core State Standards. Consequently, the expansion of the Linked Learning approach was implemented in additional schools and districts through the AB 790 initiative. According to the California State Board of Education (2014), this policy supported 55 new districts in the development and implementation of the Linked Learning approach during the 2013-2014 school year. Concurrently, ConnectEd, the California Center for College and Career (2013), reported that AB 790 would provide college and career readiness experiences for more than one-third of the students in California high schools over the course of the years following 2013. AB 790 authorizes a school district that maintains any of grades 9 to 12, inclusive, to apply to the State Superintendent to operate a pilot program.

Teaching and Learning in the 21st Century

During the last three decades, high school graduates have faced different challenges than those who graduated earlier than the 1980s. Society in the 21st century demands that young adults entering college and the workforce be innovative, technologically savvy, creative, and collaborative (McDonald & Farrell, 2012; Saavedra & Opfer, 2012). However, schools are using old-fashioned teaching models for 21st-century students (McDonald & Farrell, 2012) and have not prepared students to succeed in the 21st century. Increased college

and career readiness for all students is supported by policies at the local, state, and national levels (Hooker & Brand, 2010, p. 75).

Emerging research in the area of contextualized instructional approaches has found explicit connections between the teaching of basic skills (reading, writing, or math) and occupational skills (Kazid & Leibowitz, 2003; Pleasants & Clagett, 2010; Stephens, 2009). Basic skills (e.g., problem-solving, teamwork, basic computing) may be taught in the context of job-related tasks (Perin, 2011). Contextual instruction develops students' skills directly related to real world practices, in addition to soliciting employer input on the curricula (Perin, 2011). The career pathways literature consistently recommends that programs include a remedial education component that uses contextualized curricula to integrate occupational material and work readiness skills (Kazid & Leibowitz, 2003; Pleasants & Clagett, 2010; Stephens, 2009).

Bridge Programs

Much of the career pathways literature advocates for contextualized instruction of basic skills through formal bridge programs (Kazid & Leibowitz, 2003; Pleasants & Clagett, 2010; Stephens, 2009). Bridge programs provide individuals with the targeted academic proficiency pathway students will need to be successful in postsecondary training in their chosen careers (Estrada, 2010). Another component to these programs includes training in critical thinking, analytical skills, problem-solving, teamwork, communication, time management, study habits, research tools, and basic computer operations (Alssid et al., 2002; Estrada, 2010; Perin, 2011). Linked Learning is one approach that is showing some success in its early stages of implementation (Linked Learning Alliance, n.d.).

Linked Learning Approach

The Linked Learning approach is the current initiative for the career academies or multiple pathways concept in a number of districts in the state of California (Schwartz, 2014). This Linked Learning Initiative is led by ConnectEd. ConnectEd is an organization committed to enhancing teaching and learning through support of policy and research related to college and career preparation through Linked Learning (Schwartz, 2014). In 2014, ConnectEd literature maintained that the Linked Learning approach creates pathways intended to increase student engagement, reduce high school dropout rates, raise student achievement, increase high school completion and postsecondary transition rates, and boost students' earning power after high school (Schwartz, 2014). The foundational belief of Linked Learning is that when students love what they are learning, they work harder because their mindset and self-efficacy are positive, they dream bigger with goal-setting, and they attain an increased number of skills for both college and career (Schwartz, 2014). The objective of this initiative is to transform the current learning outcomes of high schools and successfully prepare students for college and career by providing the skills necessary for both, not just one or the other (Bee, & Darling-Hammond, 2014).

As reported by the Linked Learning Alliance (n.d.), Linked Learning has four core components:

1. *Rigorous academics*: Core subjects that prepare all students for college, including the A-G coursework required by California's public universities and aligned to the Common Core State Standards.
2. *Career-based learning in the classroom*: Professional skills and industry-related knowledge woven into lessons and projects to give students context for what they're learning.

3. *Work-based learning in professional settings*: A range of real-world experiences, from mentoring and job shadowing to internships, which expose students to possible career paths.
4. *Integrated student support*: Dedicated support services tailored to the needs of students, such as counseling and supplemental instruction, that help ensure students are successful in school and life (Linked Learning Alliance, n.d.).

ConnectEd (2013) reported that the Linked Learning approach is currently the most comprehensive initiative being instituted in order to advance and transform the education system. Linked Learning activities are student-centered approaches that integrate different components of an education system into related activities. Linked Learning systems were originally developed to link assignments to real life, and, over time, the focus of Linked Learning changed, becoming more comprehensive (Saunders et al., 2013). Linked Learning approaches focus on encouraging interaction and dialogue among academia and various industry groups in order to strengthen academic, career, and citizenry skills of today's high school students (Saunders et al., 2013). This approach also aims to address issues of working in a multicultural and global society by creating opportunities for multiple agencies to collaborate (Linked Learning Alliance, n.d.). In the education setting, Linked Learning activities aim to create an environment of collegiality (Schwartz, 2014).

21st-Century Skills and Linked Learning

ConnectEd (2013) stresses that in the current work environment, employers value the ability to communicate effectively as well as to collaborate in a productive manner. There is a strong and steady demand for communication, problem solving, and collaboration in the United States (ConnectEd, 2014). The

demand is largely because of the shift in the workforce from jobs that used to require only repetitive tasks to jobs that now require more innovative tasks. As a result of shifting job requirements, the requirements of potential employers are also changing (Bee & Darling-Hammond, 2014). Given this climate, Linked Learning is an ideal approach as it is designed to ignite high school students' motivation by creating meaningful learning experiences through career-oriented pathways in fields such as engineering, health care, performing arts, and law. Although Linked Learning emphasizes a strong student focus and connections among students, educational institutions, and surrounding communities, the long-term sustainability of the initiative is not yet known, and therefore, requires further research (Linked Learning Alliance, n.d.). Additionally, there is no research available on student motivation in Linked Learning contexts.

ConnectEd (2014) reported that members of the Linked Learning Alliance include state agencies, businesses, industry and trade organizations, education organizations and agencies, local educational agencies, research and policy organizations, and individual stakeholders. In 2008, the James Irvine Foundation provided \$7 million for pilot implementation. In 2013-2014, the state budget also included \$250 million for the California Career Pathways Trust, a grant program incentivizing collaboration between schools and employers to support Linked Learning Pathways and provide work-based learning opportunities for students. During 2015, additional grants were offered through the California Career Pathways Trust and provided an additional \$250 million to district and community college partnerships across the state (ConnectEd, 2014). Wirt and Kirst (2005) recommended that it is not enough to provide resources for implementation; an authentic approach to analysis of what is working and areas for improvement in policy are required when the desired outcome is optimal performance of a

program. Wirt and Kirst cautioned that intentional planning and systematic reflection on data collection need to be considered as the Linked Learning approach moved forward toward implementation. The concern is that sustainability may be jeopardized without the review of effectiveness of the approach on student achievement and success.

Graduation Rates for Minority Students and Dropout Rates for Students of Poverty

According to data from the Profile of the California Partnership Academies, in 2011 the state's graduation rate was 78.5% (CDE, 2011); the graduation rate for Latino students was 73.2% and for African American students 65.7%. Post-secondary opportunities for students of poverty can be measured by looking at the dropout rate. According to the NCES (2016), the 2014 dropout rate of students from poverty was 11.6% as compared to middle income families at 7.6%, and for high income families at 2.8%. There still remain differences in the dropout rates between students from low-income, mid-income, and high income families over time (NCES, 2016). According to the California Department of Education (n.d.), Linked Learning aims to improve these results for these populations. Additional data from ConnectEd (2013) showed that in California, students in career academies, the most common delivery method for Linked Learning, have better attendance, higher rates of graduation, and substantially higher college eligibility rates than non-academy students. Further data from the Profile of the California Partnership Academies indicated that these results are even better for Latino and African American students, helping to narrow the achievement gap (CDE, 2011). Furthermore, ConnectEd (2013) indicated that this initiative's underlying focus is to prepare students for a post-secondary education, and to anchor this program in schools by aligning it to the California Common Core State Standards, thus

allowing students to see the practicality in these programs. As reported by the California Department of Education (2007), California policy is striving to prepare all post-secondary students for college and career readiness. In order to make educational experiences and opportunities relevant, school districts must do an exemplary job of implementing the Linked Learning programs at their sites so that they attract diverse students, especially Latinos and African Americans (Guha et al., 2014).

Linked Learning Implementation Shows Promise

The Linked Learning approach is still in the preliminary stages of implementation in some districts, but emerging data indicate that it can more effectively engage high school students compared to traditional educational methods. This program is reported to reduce high school dropout rates, raise student achievement, increase rates of high school completion and transition to postsecondary education, as well as boost students' learning ability following high school (ConnectEd, 2013). Linked Learning appears to be an exciting new method to bridge P-12 educational systems with community colleges, universities, and local workforces to provide students a more connected and meaningful career or college path (Saunders et al., 2013). According to Polk (2015), a quantitative study at Millikan High School in Long Beach, California, using 561 male students and 269 female students with disabilities in Linked Learning Pathways ($M = 3.49$, $SD = 34.70$) from 2009-2013 showed higher scores on the California High School Exit Exam (CAHSEE) English Language Arts when compared to students with disabilities not in Linked Learning Pathways ($M = 340.08$, $SD = 30.97$), $t(443) = 3.25$, $p = 0.001$). A southern California qualitative study (Adams, 2010) of 76 students indicated through a student survey and in-depth interviews that students in Linked Learning Pathways felt engaged and supported because the pathway

experience created a family atmosphere where layers of support were in place, including student teamwork. Josten's (2015) mixed-method study indicated 88.9% of former students who experienced a CTE pathway had a high perception of engagement and that it correlated to time spent doing school work, attendance, class participation, and perceived beliefs of relevance of pathways to future goals.

Theoretical Framework

This study will apply the self-efficacy theory (Bandura, 1977) and motivational systems theory (Ford, 1992). Self-efficacy theory is derived from Bandura's social cognitive theory and will serve as a foundational lens through which to consider the implications of the research on the greater society. Motivational systems theory will serve as a conduit for measuring Linked Learning students' personal agency beliefs, emotions, and personal goals.

Self-Efficacy Theory

Bandura's social-cognitive theory assigns a fundamental role to cognitive, relayed, self-reflective, and self-regulatory systemic processes in human development and functioning. Grown from this theory is self-efficacy theory, which is a person's belief in his or her ability to succeed in a specific circumstance or context, with an overarching role that a person's attitudes, abilities, and cognitive skills play on the larger self-system. Thus, self-efficacy is a crucial component to the self-system.

Self-efficacy theory is part of Bandura's (1994) larger social cognitive theory, which assumes that observational learning, social experiences, and reciprocal determinism are crucial factors in personality development. In contrast to social cognitive theory, which reported that a person's self-system influences how a person perceives, responds, and thrives in life (Bandura, 1992, 1995), self-

efficacy theory specifies four main sources of a person's sense of self-efficacy, in order of their strength:

1. *Performance accomplishments*: personal assessment information that is based on an individual's personal accomplishments. Previous successes raise mastery expectations, while repeated failures lower them.
2. *Vicarious experience*: gained by observing others perform activities successfully. This is often referred to as modeling, and it can generate expectations in observers that they can improve their own performance by learning from what they have observed.
3. *Social persuasion*: activities where people are led, through suggestion, into believing that they can cope successfully with specific tasks. Coaching and giving evaluative feedback on performance are common types of social persuasion.
4. *Physiological and emotional states*: The individual's physiological or emotional states influence self-efficacy judgments with respect to specific tasks. Emotional reactions to such tasks (e.g., anxiety) can lead to negative judgments of one's ability to complete the tasks (Staples et al., 1998).

Bandura's self-efficacy theory states that individuals affect action in their lives according to their belief in their ability to achieve particular results. Some use the term "self-confidence" interchangeably with self-efficacy, but confidence is not a precise construct that would carry the degree of focus in which to represent Bandura's concept. Self-efficacy is a cognitive process that is shaped by experience, rewards and accomplishment, encouragement, and regulation of negative thoughts and feelings (Briones et al., 2010; Davenport & Lane, 2006).

As such, self-efficacy is not fixed; it is a capricious process. Perception is the fortification of self-efficacy; as Bandura et al. (2001) noted, perception of self-efficacy has key influence in social cognitive theory because self-efficacy perceptions affect change and change themselves while they impact causes. However, it is not enough to simply believe in one's ability to attain a goal in order to experience success and fortify self-efficacy belief; one must also have the necessary expertise to achieve that goal (Bandura, 1992). Therefore, if an individual does not possess the knowledge of and believe in his or her ability to achieve the goal, they will typically avoid the struggle so that they will not have to endure failure (Burgoyne, 2007). Similarly unpredictability in self-esteem levels may lead people to inaccurately measure their strengths or weaknesses; as such, self-efficacy may be powerfully shaped by mistaken discernments of one's ability to be competent in fulfilling specific outcomes, regardless of the reality of the situation (Burgoyne, 2007).

Motivational Systems Theory

Motivational systems theory (MST) is a framework developed from a perceived public need to address motivation with a more integrated approach than previously considered (Ford, 1992). Ford (1992) described mental functions of motivation as personal goals, emotional reactions, and personal agency beliefs or self-efficacy. The MST framework is a theoretical descendant of Ford's living systems theory, which combines both scientific and professional knowledge as a lens through which to view human motivation. Living systems theory represents three phenomena:

1. The unitary functioning of the whole person-in-context;
2. The functioning of the component parts of the person; and

3. Stability and changing in the functioning of the component parts of the person and the person-as-a-whole (Ford, 1992).

It is important to note that this framework is anchored through the lens of 17 significant principles and core ideas:

1. The *unitary functioning principle* is a subject goal that encompasses a person's perceived connectedness to others, the environment, the activity, spirituality, and the perceived disconnect with others, organizations, environment, or activity.
2. In order to motivate humans, the *triumvirate principle* incorporates all three of the mental function components of motivation.
3. As human beings try to motivate one another and people become part of each other's environments, trusting relationships and strategies are equally important to the success; this is described in Ford's *responsive environment principle*.
4. The *principle of goal activation* states that without a goal, all else is irrelevant to motivation as thoughts and feelings are not attached to a tangible desired outcome.
5. The *principle of goal salience* is the concise and comprehensive construct in which a person's wants are formed based on the promise of working towards intended outcomes.
6. Strong motivation is activated when a person has *multiple goals* in mind as a person moves forward to achieve the goals with a variety of behaviors organized to optimize the chances of meeting the goals.
7. Short-term and long-term goals must be *aligned* in order for human beings to focus on success that progress towards the overall, personally relevant and long-term goals.

8. To maintain progress towards goals, a systemic feedback that includes realistic goals setting, personal belief in attainment, emotional responses, and goal revision is included in the *feedback principle*.
9. As people experience hurdles and setbacks in regards to actualizing goals, motivation may lessen or as goals become closer to fruition motivation may increase, people must exercise *flexible standards* and be willing to believe that they can overcome or excel.
10. The *optimal challenge principle* considers the person's reality in current understanding and when it is limited, the person continues to persevere and feels a greater reward and a higher sense of self-efficacy when he or she is able to accomplish the goal.
11. When problems are relevant people are motivated to work towards goals, but if the person has low self-agency, direct evidence can build the belief in one's ability. The aforementioned concept is the *principle of direct evidence*.
12. The *reality principle* dictates that feelings directly impact motivation in positive and negative ways and can sabotage productivity towards goals.
13. The *emotional activation principle* is described as the person's connection to the relevance of the intended outcome.
14. When a person is not motivated but has the skills necessary to achieve a goal, to reignite their emotions and give them a clearer picture of reality, systematic feedback is one way to overcome low self-agency beliefs, build an optimal responsive environment and reactivate motivation; the "*do it*" *principle* reengages motivation.

15. The *principle of incremental versus transformational change* as qualitative variances in motivational patterns. The principle contends that it is best to make change in increments over time even if the sense of urgency might exist towards the desired outcome.
16. There are multiple ways to reach goals within a system; people who are motivating others should take a problem-solving approach to supporting perseverance towards meeting desired expectations, which Ford identified as the *equifinality principle*.
17. The *principle of human respect* values the complexity in humans as thoughtful, knowledgeable, emotional, self-directed beings with multiple goals, emotions, and self-agency beliefs to be given respect and concern when facilitating motivation on a pathway toward goal fruition.

Ford's Motivational Systems Theory principles and core ideas can be viewed in Table 1.

Ford (1992) reported that adolescents are interested and care about working towards a variety of personal goals, that motivational patterns are attached to goals, social responsibility, and caring behavior. He found that adolescents' goals are linked to serving others, learning, task completion, and task mastery and indicated that youth are highly interested in creative experiences, experiences of connectedness with people, nature, or a greater power, and experiences that make them feel like they are unique and special.

Further, to achieve effective action in a situational context, Ford (1992) indicated that

a person must have the motivation needed to initiate and maintain activity until the goal directing the episode is attained; a person must have the skill needed to construct and execute a pattern of activity that will produce the

Table 1

Motivational Systems Theory Principles

| Principles | Core Idea Ford (1992) |
|---|--|
| The principle of unitary functioning | One always deals with a whole person-in context |
| The motivational triumvirate principle | Goals, emotions, and personal agency beliefs must all be influences to facilitate motivation |
| The responsive environment principle | Relationships are as important as techniques |
| The principle of goal activation | Little else matters if there is no relevant goal in place |
| The principle of goal salience | Goals must be clear and compelling to transform concerns into intentions |
| The multiple goals principle | Multiple goals can strengthen motivation substantially |
| The principle of goal alignment | Multiple goals must be aligned rather than in conflict to enhance motivation |
| The feedback principle | Goals lose their potency in the absence of clear and informative feedback |
| The flexible standards principle | Flexible, standards protect against demotivation and facilitate self-improvement |
| The optimal challenge principle | Challenging but attainable standards enhance motivation |
| The principle of direct evidence | Clear, specific evidence is needed to influence capability and context beliefs |
| The reality principle | Personal agency beliefs ultimately require real skills and a truly responsive environment |
| The principle of emotional activation | Strong emotions indicate and facilitate strong motivational patterns |
| The “do it” principle | If a person is capable, just try to get them started |
| The principle of incremental versus transformational change | Incremental change is easier and safer transform and only with care and as a last resort |
| The equifinality principle | There are many ways to motivate humans- If progress is slow, keep trying! |
| The principle of human respect | People must be treated with respect to produce enduring motivational effects |

Note: Adapted from *Motivating humans: Goals, emotions, and personal agency beliefs*, M. E. Ford, 1992, pp. 37-42. Copyright by Sage, Newbury Park, CA.

desired result; a person's biological structure and functioning must be able to support the operation of the motivation and skill components; and a person must have the cooperation of a responsive environment that will facilitate, or at least not excessively impede, progress toward the goal. (Ford, 1992, p. 69)

History of Poverty in the United States

In 1964 President Linden B. Johnson expressed the seriousness of the impact of poverty on people. After his *War on Poverty, 1964 State of the Union Address*, a number of support policies were developed (Kilty, 2014). Johnson acknowledged that poverty caused societal inequities and could be eradicated. America responded with programs such as the Economic Opportunity Act (1964), the Food Stamp Act (1964), the Civil Rights Act (1964), Social Security amendments creating Medicare and Medicaid (1965), the Immigration and Naturalization Act (1965), and the Elementary and Secondary Education Act (1965). Notably, the Economic Opportunity Act gave the poor opportunities to participate in decision-making process for education through community action committees (Kilty, 2014).

The Equality of Education Opportunity Study (EEOS), also known as the "Coleman Study," was commissioned by the United States Department of Health, Education, and Welfare in 1966 to assess equal education opportunities for children of different races, color, religions, and national origins. The data were collected from schools across the United States. Demographic collection included student age, gender, race, ethnic identity, socioeconomic background, education goals, career goals, racial attitudes, and learning attitudes. Additionally, measures of achievement in verbal skills, nonverbal associations, reading comprehension, and mathematics were gathered from standardized academic assessments. Data from teachers and principals included assessment of verbal facility, salary, education experiences, teaching experience, and attitude towards race and

academic discipline. The EEOS study was a social survey instrument conducted in response to provisions of the Civil Rights Act of 1964. Gamoran and Long (2006) found that while the factors cited in the Coleman Study were valid, they were not exclusive. School factors dismissed as not significant are now found to be significant. Longitudinal studies of these types are necessary in individual schools and districts as they consider multiple factors that review equality of resources provided and equality of results over time.

The Elementary and Secondary Education Act (ESEA) mandated that funds be authorized for teacher professional development; more personnel, instructional materials, and resources to support educational programs; and for promoting parenteral involvement (Bryan & Chalfant, 1965). Bryan and Chalfant explained that Title 1, a provision of ESEA, addressed low-income or disadvantaged children by providing opportunities for talented students to participate in classes and enrichment programs and for teachers to be trained in special skills. In 2001 the ESEA was reauthorized. The reauthorization, or No Child Left Behind Act (NCLB), was signed into law with its intended outcome to have all students on grade-level in math and reading by 2014 (Byrd-Blake et al., 2010). In an effort to raise accountability for student academic achievement, the NCLB was signed into law in January of 2002 (Byrd-Blake et al., 2010). NCLB was dedicated to raising the achievement of frequently underserved groups including those living in poverty (Darling-Hammond, 2006; Ladson-Billings, 2009; Murnane, 2007).

Poverty and Educational Inequality

The Stanford Center on Poverty and Inequality, in conjunction with the Public Policy Institute of California, formulated a more accurate poverty threshold for California (the California Poverty Measure) as compared to nationwide data (Bohn, Danielson, Leven, Mattingly, & Wimer, 2013). The national poverty rate

is based on the Official Poverty Measure (OPM) at 16.5%; however, it does not account for California's high cost of living (Bohn et al., 2013). The California Poverty Measure (CPM) compares a family's annual cash income to a basic standard of living that includes spending levels on food, housing, clothing, and utilities. In 2013, over 25% of all California children were living in poverty (Bohn et al., 2013). It is important to note that when comparing cash income to standard of living, CPM accounts for differences in housing rates, such as lower housing rates in rural areas, out-of-pocket medical expenses paid by the elderly, and California's 30% immigration population (Bohn et al., 2013).

Poverty Problem in Schools

Poverty stereotypes in school impact education practice and policy and are applied from childhood through adulthood (Gorski, 2012). Four prominent stereotypes include (1) poor people do not value education, (2) poor people are lazy, (3) poor people are substance abusers, and (4) poor people are linguistically deficient. Gorski (2012) contended that repression is a condition caused by negative stereotypes. Lott (2002) argued that negative attitudes, prejudice, and stereotypical mindsets of *not poor* towards *poor* leads to distancing, separation, and exclusion of the poor. The difference in resources for schools funded by lower property taxes and higher property taxes adds to the inequities in public education (Lott, 2002; Smith, 2005). Public schools in affluent neighborhoods have maintained well-kept facilities while their lower property tax counterparts deal with deteriorating learning environments (Lott, 2002). Disparities among students living in high poverty and low poverty are evident in the lower academic achievement for poorer students (Ansalone, 2004). Ansalone reported that the consequence of students living in high poverty regions is underrepresentation of these students in higher education and less time spent in schools.

Lewis (1966) proposed that the middle class views the culture of poverty as threatening and characterized by delinquency and violence. Lewis defined the culture of poverty in a spectrum of positive and negative connotations. He explained that Western society views poor people as those who live in the moment and do not consider the future or other people in society; there exists repeated unemployment, low wages, and lack of food and other resources that perpetuates a “vicious cycle of poverty” (p. 21).

Confluence between Theoretical Perspectives

Motivation and Engagement

Student motivation and engagement decrease as students move from elementary school to middle school and on to high school (Martin, 2009). Personal agency decreases as students move into post-secondary educational settings (Wigfield & Tonks, 2004). Students’ increased motivation positively impacts their desire to commit to working towards goals (Locke & Latham, 1994). Graduation attainment is higher for students whose goals are directly related to high school completion for the purpose of having personal influence securing better jobs and positive experiences in higher education (Ford, 1992; Locke & Latham, 1990; Wigfield & Tonks, 2004). Personal agency and self-efficacy are interconnected to students’ emotional state of being, which negatively or positively impacts one’s self-system and decision-making (Bandura, 2001, 2002; Bandura et al., 2001; Ford, 1992; Wigfield & Tonks, 1994). Sperling, Howard, Staley, and DuBois (2004) and Moos (2014) reported that there is an interrelated phenomenon between learning, motivation, goal-setting, emotions, and personal agency.

Goal Setting

The process of setting a goal begins with the motivation to attain an intended outcome (Ford, 1992). Ford added, to maintain motivation, it is critical for individuals to receive feedback (both physiological and verbal) during experiences in progress towards goals. Research showed, even if the goal is challenging, if one has the capabilities and is placed in an environment that is responsive, then motivation remains and goals are attained (Ford, 1992). However, Locke and Latham (1990) contended that goals are required by authority for a particular purpose that does not always align with the individual's desired achievement and negatively impacts emotions.

Emotions

Emotions impact motivation and are complex (Ford, 1992). The motivational systems theory explains that the combination of brain function, biological responses, and interpersonal communication make up emotional responses that directly impact motivation and personal agency beliefs; one's perceptions and experiences are unique and have great influence on the belief in one's capabilities (Ford, 1992).

Personal Agency

The personal agency construct consists of the relationship between motivation and goals (Ford, 1992). Ford explained the ideas of *capability beliefs* and *context beliefs*. First, one must believe that he or she possesses the skills relevant to the goal. Second, one must believe that he or she has enough mastery of the skills to attain a desired outcome. Ford expanded on Bandura's self-efficacy theory (1977) that self-efficacy determines one's ability to complete actions to produce a desired result. The combination of capability belief (the

belief in perceived verbal, motor, cognitive processing, stress management, attention, and memory skills) and context belief (the belief that the environment is conducive to goal attainment because it builds on one's physical and cognitive abilities) together form personal agency (Ford, 1992). Ford indicated there are four prerequisites for conducive context: the individual must have the motivation to begin and persist, the individual must possess the skill necessary, the individual's biological makeup must be conducive to the motivation and skill elements, and finally, the individual must be in a responsive environment in order to sustain motivation (Ford, 1992). Figure 2 shows a conceptual model depicting the relationship between Bandura's self-efficacy theory, Ford's motivational systems theory, the Linked Learning approach, and student outcomes.

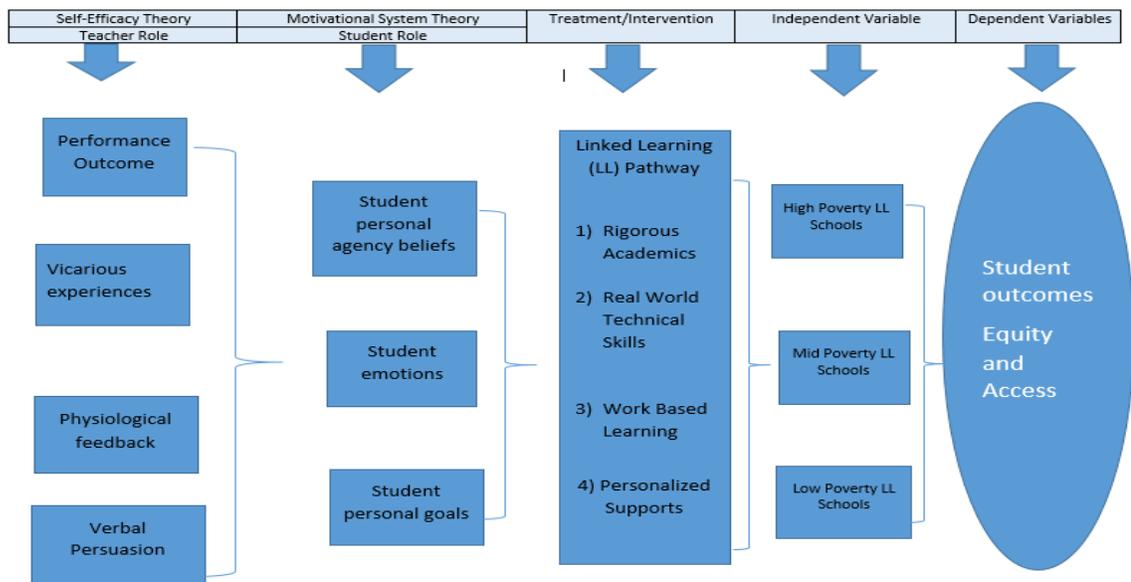


Figure 2. Conceptual model of relational interactivity

Adapted from "Self-efficacy: Toward a unifying theory of change" (1977) by A. Bandura, *Psychological Review*, 84, 191-215. Adapted from *Motivating humans: Goals, emotions, and personal agency beliefs* (1992), by M.E. Ford, Newbury Park, CA: Sage.

Research Questions

Research has shown the interdependence of the personal agency, goal setting, and emotions on goal attainment. Therefore, the following research questions regarding the role of the Linked Learning approach in low-, mid-, and high-level poverty schools will be investigated:

1. What role does Linked Learning play in student motivation across low, mid-low, mid-high, and high poverty programs?
2. How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?
3. How do Linked Learning student goal setting practices compare across low, mid-low, mid-high, and high poverty programs?
4. How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?
5. How do student perceptions of their CTE Linked Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?

Summary

Although there seems to be a public perception that public schools are not preparing students for college and careers, progress has been made (LeGuillou, 2011). LeGuillou indicated, as of 2007, although there has been progress of improving school made over the past century, educators, policy makers, and the private sector question whether or not the progress has been enough. Symonds et al. (2011) suggested a seeming polarization between current teaching and learning practices and application of understanding in 21st-century postsecondary contexts. In response to the disconnection for students, Symonds et al. determined that programs applying classroom learning to a tangible life experiences effectively

increase student engagement, develop more skills for students, support degree attainment, and eventually lead to postsecondary job success.

In California, policymakers showed their commitment to the Career Technical Education Pathways, or the Linked Learning approach, when state Senate Bill 1070 was enacted in 2012. The bill provides policy to support programs that are interdisciplinary with rigorous course work, challenging technological components, and timely application in themed contexts that better engage students, produce high school graduates, and prepare students for successful postsecondary endeavors. This bill was instrumental in shifting the education pendulum in California by providing educational leaders with resources to prioritize the integration of CTE within the core curriculum.

According to data from the Profile of the California Partnership Academies (CDE, 2011), the state's graduation rate was 78.5% in 2011; the graduation rate for Latino students was 73.2% and 65.7% for African American students. Post-secondary opportunities for students of poverty can be measured by looking at the dropout rate. According to the NCES (2016), the 2014 dropout rate of students living in poverty was 11.6% as compared to middle income families at 7.6% and high income families at 2.8%. There remain differences in the dropout rate between students from low-income, mid-income, and high-income families over time (NCES, 2016).

Research has shown that the Linked Learning approach to high school reform can more effectively engage students as compared to traditional educational methods. This program was reported to reduce high school dropout rates, raise student achievement, increase rates of high school completion and transition to postsecondary education, as well as boost students' learning ability following high school, as reported by ConnectEd (2014). Linked Learning

appears to be an exciting new method to bridge P-12 educational systems with community colleges, universities, and local workforces by providing students a more connected and meaningful career or college path (Saunders et al., 2013).

Public schools located in affluent neighborhoods have maintained well-kept facilities while their lower property tax counterparts' deal with deteriorating learning environments (Lott, 2002). Disparities among students living in high poverty and low poverty are evident in the lower academic achievement for poorer students (Ansalone, 2004). Ansalone reported a consequence of students living in high poverty is underrepresentation of these students in higher education and less time spent in schools. Lewis (1966) proposed the middle class views the culture of poverty as threatening, characterized by delinquency and violence.

In considering students of poverty, self-efficacy is one's thoughts as influenced by past experiences, life successes, positive feedback to move forward, and minimal regard for negative thoughts (Briones et al., 2010; Davenport & Lane, 2006). Self-efficacy is directly impacted by self-perception; as Bandura et al. (2001) noted, if people perceive themselves as capable of making change, then change is possible. It is not enough to simply believe in one's ability to attain a goal in order to experience success, one must also have the skills to achieve that goal (Bandura, 1992).

Ford (1992) reported that adolescents are interested in and care about working towards a variety of personal goals, suggesting that motivational patterns are attached to goals, social responsibility, and caring behavior. He found that adolescents' goals are linked to serving others, learning, task completion, and task mastery. Ford indicated that youth are highly interested in creative experiences, experiences of connectedness with people, nature, or a greater power, and experiences that make them feel like they are unique and special.

Students' increased motivation positively impacts their desire to commit to working towards goals (Locke & Latham, 1994). Graduation attainment is higher in students whose goals are directly related to high school completion as it is linked to securing better jobs and positive experiences in higher education (Ford, 1992; Locke & Latham, 1990, Wigfield & Tonks, 2004). Personal agency/self-efficacy are interconnected to students' emotional state of being, which negatively or positively impact one's self-system and decision-making (Bandura, 2001, 2002; Ford, 1992; Moos, 2014). Sperling et al. (2004) reported that there is an interrelated phenomenon between learning, motivation, goal-setting, emotions, and personal agency. The literature has indicated that currently there are limited studies in the area of the Linked Learning approach. There are no studies of the differences, if any, in students' perceptions of the Linked Learning experience across low-, mid-, and high-poverty level schools. Research across poverty levels on student personal agency, goal attainment, and emotions for those participating in Linked Learning Pathways programs is missing.

Chapter 3 describes the methodology. The purpose of the study is explained. Research questions are noted, followed by rationale for the research design, and description of the quantitative and qualitative data to be collected. The chapter concludes with a discussion of the delimitations and potential limitations of the study.

CHAPTER 3: METHODOLOGY

Purpose of the Study

The purpose of this study was to explore the role of the Linked Learning approach in Career Technical Education programs on student motivation, including personal agency beliefs, goal-setting, and emotions in low-, mid-, and high-poverty school settings. A convergent, parallel, and transformative mixed-methods approach (Creswell, 2014) was used to illuminate the similarities and differences in student perceptions of pathway experiences and motivation of students in various settings. The study was extended to explore reasons why differences existed or did not exist. The convergent parallel design of the study allowed for data from one methodology to confirm the other methodology (Creswell, 2014). Transformative mixed methodology complements both Bandura's self-efficacy theory and Ford's motivational systems theory, respectively, which served as the study's theoretical framework.

The researcher conducted the study through a pragmatism paradigm or pragmatism worldview. Creswell (2014) described a worldview as the researcher's overall determination of how the world functions. The researcher aimed to examine human behaviors within poverty level contexts. The researcher used a mixed-methods approach, which allowed for a deep understanding of student experiences and how the Linked Learning approach shaped those experiences.

The researcher investigated low-, mid-low, and mid-high poverty school settings. Low poverty settings for both quantitative and qualitative investigation were not available because they did not exist in the participant districts. The researcher used the National Center for Educational Statistics (NCES, 2016)

definition of the quartile system for poverty levels: 0-25% as low poverty, 25.1%-50% as mid-low poverty, 50.1% -75% as mid-high poverty, and 75.1%-100% as high poverty. The independent variables were school poverty levels: mid-low, mid-high, and high poverty. The dependent variables measured were *performance approach goal orientation*, *performance avoidance goal orientation*, *mastery goal orientation*, *academic efficacy*, *skepticism about school relevance for future success*, and *emotions*. A self-report survey was distributed to Career Technical Education students from four school districts spanning various poverty levels in Central California. Focus group interviews were analyzed from a smaller sample of participants attending the same Central California school districts. Both quantitative and qualitative data were comprehensively examined to help understand the role of the Linked Learning approach in Career Technical Education programs in different contexts. Student perceptions were considered and analyzed for thematic responses to deepen awareness of how students perceive the Linked Learning approach in Career Technical Education programs across poverty levels.

Research Questions

The following research questions were investigated:

1. What role does Linked Learning play in student motivation across low, mid-low, mid-high, and high poverty programs?
2. How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?
3. How do Linked Learning student goal setting practices compare across low, mid-low, mid-high, and high poverty programs?
4. How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?

5. How do student perceptions of their CTE Linked Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?

Research Design

This study combined a convergent parallel and transformative mixed-methods design. Convergent parallel methodology is characterized by a collection and analysis of quantitative data and qualitative data separately (Creswell, 2014). Transformative methodology is characterized by a collection and analysis of both quantitative and qualitative data, with results utilized to confirm or disconfirm the interpretation of the research results (Creswell, 2014). The quantitative approach is effective when a research study identifies factors that influence an outcome, the application of an intervention, or understanding of predictors of outcomes (Creswell, 2014). Qualitative research is exploratory and allows for the researcher to examine unknown variables as they are revealed (Creswell, 2014). Mixed-methods design mixes both quantitative and qualitative research approaches and involves the use of both approaches in tandem so that the overall strength of a study is greater than using one singular approach (Creswell, 2014).

During the study, participants completed an online survey adapted from the *Patterns of Adaptive Learning Scales – Student Survey* (Midgley et al., 2000). The independent variable was poverty with three levels: mid-low, mid-high, and high poverty levels in school contexts. The dependent variables measured were *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions* (see Appendix A).

Semi-structured focus groups included participants derived from the same schools the student attended. A focus group interview protocol consisted of semi-

structured, open ended questions (see Appendix B). The data gathered in response to questions helped deepen the level of understanding of the survey responses and allowed participants to offer any insight they found pertinent to the study.

Participants/Sample

A convenience sample of students was selected from four diverse school districts across Central California. The districts spanned 60 miles from east to west in Central California. The schools chosen were in the beginning stages of implementation of the Linked Learning approach, while others were in later stages of refining the approach. District participants and participant demographics are depicted in Tables 2 and 3.

Table 2

District Participants

| District | Number of Schools Participants | Number of Survey | |
|------------|-----------------------------------|---------------------------|---------------------------------|
| | | Interview Participants | Number of Survey Respondents |
| District A | 1 | 8 | 37 |
| District B | 2 | 2 | 123 |
| District C | 3 | 4 | 118 |
| District D | 1 | 0 | 15 |

Sampling Rationale

The sampling procedures were selected based on guidelines set forth by Curtis et al. (as cited in Tashakkori & Teddlie, 2003): (1) the strategy logically stems from the conceptual framework, (2) the sampling strategy is adequate to answer the research questions set forth by the study, (3) the sample will allow clear inferences and credible explanations to be made, (4) the sampling strategy is ethical, (5) the sampling plan is feasible, (6) the sampling plan intends to allow

Table 3

Participant Demographics

| Demographic | High Poverty Sample Size | Mid -High Poverty Sample Size | Mid - Low Poverty Sample Size |
|----------------------|-----------------------------|-------------------------------------|-------------------------------------|
| Gender | | | |
| Male | 18 | 12 | 12 |
| Female | 19 | 121 | 3 |
| Other | 0 | 2 | 0 |
| Refuse to State | 0 | 4 | 0 |
| Age in years | | | |
| 14 | 0 | 78 | 7 |
| 15 | 0 | 97 | 7 |
| 16 | 10 | 48 | 1 |
| 17 | 23 | 16 | 0 |
| 18 | 4 | 1 | 0 |
| Grade Level | | | |
| 9 th | 0 | 124 | 15 |
| 10 th | 0 | 85 | 0 |
| 11 th | 26 | 30 | 0 |
| 12 th | 11 | 1 | 0 |
| Ethnicity | | | |
| Hispanic | 9 | 29 | 4 |
| Caucasian | 1 | 47 | 4 |
| Portuguese | 0 | 4 | 7 |
| African | 0 | 4 | 0 |
| American | | | |
| Mixed | 27 | 155 | 0 |
| Home Language | | | |
| Spanish | 26 | 62 | 1 |
| Portuguese | 0 | 2 | 0 |
| Tagalog | 0 | 2 | 0 |
| ASL | 0 | 4 | 0 |
| Hmong | 1 | 1 | 0 |
| English | 10 | 169 | 9 |

the results and conclusions to be generalizable, and (7) the sampling strategy is feasible. According to Teddlie and Yu (2007), researchers use mixed methods to explore likelihood of a phenomenon and generalizability to causal inferences. Convenience and purposeful sampling was used in this study to gather qualitative data through a semi-structured interview, focus group protocol. Convenience, non-random sampling interview participants also completed surveys for this study. Purposeful typical case sampling was collected in order to maximize the potential for gathering input from a similar numerical representation of male and female students from mid-low, mid-high, and high poverty schools. Convenience and purposeful sampling were both designed to address research questions around which the study was centered. Both types of sampling are concerned with issues of generalizability to an external context or population (Teddlie & Yu, 2007). As suggested by Teddlie and Yu, the researcher chose procedures that focused on generating representative samples. Teddlie and Yu argued that quantitative representative samples combined with qualitative information for in-depth understanding of behavior will bring a collection of data that yields comprehensive insight to the phenomena.

Data Collection and Instrumentation

The researcher adhered to university policies and procedures and received approval from the California State University, Fresno Committee on the Protection of Human Subjects, Institutional Review Board. Instrumentation was reviewed and approved by the IRB Committee in addition to the researcher's dissertation committee members. Next, the researcher sought approval from participating district administrators, school site administrators, and parents. The researcher followed through with additional IRB processes when requested by districts. A detailed description of instrumentation used for the study follows.

Manual for the Patterns of Adaptive Learning

Scales

The *Manual for the Patterns of Adaptive Learning Scales – PALS* (Midgley et al., 2000), was developed in the 1990s and has since gone through a number of revisions. The PALS instrument was created by individuals from the University of Michigan using the *goal orientation theoretical framework*, which aligns very closely to Ford's motivational systems theory. The PALS survey assesses the relationship between the learning environment and students' motivation, affect, and behavior. In addition, the instrument was designed to investigate student perceptions of goal-setting practices in the school, student goal orientation, and personal student efficacy. For purposes of investigating student motivation for this study, only the Student Scale was utilized. The PALS student survey is a self-report measure. The measure includes Likert-type items with response choices ranging on a scale from 1 to 5, with 1 representing *strongly disagree*, 3 representing *neutral*, and 5 representing *strongly agree*.

Psychometric information was provided in the manual and was separated by construct (see Figure 3). For *performance-approach goal orientation* (original), there were a total of five items, with a mean score of 2.67, a standard deviation of 1.15, skewness of 0.20, and an alpha of .86. For purposes of this study, three items were omitted. These three items were related to being the only one who could answer teacher questions and student desire to be perceived as smarter than any other student, which were not related to the research questions of this study. This study used two examples of items within the *performance-approach goal orientation* construct: "I would feel successful in my pathway classes if I did better than the other students in my pathway classes" and "Doing better than other students in my pathway classes is important to me." Survey items

included in the current study for the performance-goal approach construct can be found in Figure 3.

| | |
|----|--|
| 1. | I would feel successful in my pathway classes if I did better than most of the other students. |
| 2. | Doing better than other students in my pathway classes is important to me. |

Figure 3. PALS survey selected items for *performance-goal orientation* variable
Adapted from “Manual for PALS (patterns of adaptive learning scales),” 2000, by C. Midgley, M. L. Maehr, L. Hruda, E.M. Anderman, L. Anderman, K.E. Freeman, & T.A. Urdan, 7, published by Ann Arbor, MI: University of Michigan.

For *performance-avoidance goal orientation* (original), there were a total of six items. For purposes of this study, four items were omitted. These four items were related to the degree of importance of the student not wanting to look stupid, teacher perception of student as less than others, other students thinking a student is dumb, or avoiding looking stupid, which were not necessary for the constructs of this study. Examples of items used from the original *performance-avoidance goal orientation* construct are: “An important reason I do my pathway classwork is so I don’t embarrass myself” and “One of my main goals is to avoid looking like I can’t do my work in my pathway courses.”

For *performance-avoidance goal orientation* (revised), there were a total of four items. For purposes of this study, three items were omitted. These items were related to the importance of degree in which the student did not want to be perceived as stupid, students keeping others from thinking they were not smart, and the teacher thinking of one student as less than another student, which were not relevant to the research questions of this study. The item to be used from this construct read: “One of my goals in my pathway classes is to avoid looking like I

have trouble doing the work.” Survey items included in the current study for the *performance-avoidance goal orientation* construct can be found in Figure 4.

| | |
|----|---|
| 1. | An important reason I do my pathway class work is so that I don't embarrass myself. |
| 2. | One of my main goals is to avoid looking like I can't do my work in my pathway courses. |
| 3. | One of my goals in my pathway classes is to avoid looking like I have trouble doing the work. |

Figure 4. PALS survey items selected for *performance-avoid goal orientation* variable (original & revised).

Adapted from “Manual for PALS (patterns of adaptive learning scales),” 2000, by C. Midgley, M. L. Maehr, L. Hruda, E.M. Anderman, L. Anderman, K.E. Freeman, & T.A. Urda, 8, published by Ann Arbor, MI: University of Michigan.

For *mastery goal orientation* (original), there were a total of six items. For purposes of this study, two items were omitted. These two items were related to making a lot of mistakes and the degree to which students liked classwork that made him or her think, which were not related to the research questions. Examples of items used from this construct are: “An important reason why I do my pathways class work is because I like to learn new things” and “An important reason I do my work in my pathway classes is because I want to get better at it.” Survey items included in the current study for the *mastery goal* construct can be found in Figure 5.

For *academic efficacy*, there were a total of five items. For purposes of this study, all five items were included. Some examples of items within this construct are: “I am certain I can master the skills taught in my pathway classes this year,” and, “Even if the work is hard in my pathway classes, I can learn it.” Survey items included in the survey for the *academic efficacy* construct in the current study can be found in Figure 6.

| | |
|----|---|
| 1. | An important reason why I do my pathway class work is because I like to learn new things. |
| 2. | An important reason I do my pathway class work is because I enjoy it. |
| 3. | An important reason why I do my work in my pathway class is because I want to get better at it. |
| 4. | I do my pathway class work because I'm interested in it. |

Figure 5. PALS survey items selected for the *mastery goal orientation* (original) variable.

Adapted from "Manual for PALS (patterns of adaptive learning scales)," 2000, by C. Midgley, M. L. Maehr, L. Huda, E.M. Anderman, L. Anderman, K.E. Freeman, & T.A. Urdan, 10, published by Ann Arbor, MI: University of Michigan.

| | |
|----|--|
| 1. | I am certain I can master the skills taught in my pathway classes this year. |
| 2. | I'm certain I can out how to do the most difficult class work. |
| 3. | I can do almost all of the work in my pathway classes if I don't give up. |
| 4. | Even if the work is hard, I can learn it. |
| 5. | I can do even the hardest work in my pathway classes if I try. |

Figure 6. PALS survey items selected for the *academic efficacy* (original) variable.

Adapted from "Manual for PALS (patterns of adaptive learning scales)," 2000, by C. Midgley, M. L. Maehr, L. Huda, E.M. Anderman, L. Anderman, K.E. Freeman, & T.A. Urdan, 19, published by Ann Arbor, MI: University of Michigan.

For *skepticism about school relevance for future success*, there were a total of six items. For purposes of this study, all items were used. Some examples of the items included within this construct are: "My chances of succeeding later in life don't depend on doing well in school" and, "Even if I do well in school it won't help me fulfill my dreams. The survey items included for the *skepticism*

about school relevance for future success in the current study can be found in Figure 7.

| | |
|----|--|
| 1. | Even if I do well in school, it will not help me have the kind of life I want when I finish high school. |
| 2. | My chances of succeeding later in life don't depend on doing well in school. |
| 3. | Doing well in school doesn't improve my chances of having a good life after high school. |
| 4. | Getting good grades in school won't guarantee that I will get a good job when I finish high school. |
| 5. | Doing well in school won't help me have a satisfying career after high school. |

Figure 7. PALS survey items selected for the *skepticism about school relevance for future success* (revised) variable.

Adapted from "Manual for PALS (patterns of adaptive learning scales)," 2000, by C. Midgley, M. L. Maehr, L. Hrudá, E.M. Anderman, L. Anderman, K.E. Freeman, & T.A. Urdan, 27, published by Ann Arbor, MI: University of Michigan.

The PALS instrument was adapted by the researcher to specify items to student pathway experiences. Remaining PALS items were not selected due to a lack of connection to the researcher's theoretical framework or lens through which this study was analyzed. In addition to the items from the PALS survey, eight separate questions were added to the instrument to investigate the emotions construct. The additional items added value to the study as they looked through the lens of motivational systems theory (Ford, 1992). The added items addressed research question 4, *How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?* The survey items included the following:

- 1) In my pathway classes, I often feel annoyed.
- 2) In my pathway classes, I often feel apathetic.
- 3) In my pathway classes, I often feel engaged.
- 4) In my pathway classes, I often feel bored.
- 5) In my pathway classes, I often feel excited.
- 6) In my pathway classes, I often feel discouraged.
- 7) In my pathway classes, I often feel satisfied.
- 8) In my pathway classes, I often feel proud.

Data Collection

Schools within each district were identified and classified based on poverty level. School poverty levels were based on definitions set forth by the United States Department of Education's National Center for Education Statistics (NCES) 2016 report. The researcher printed and delivered parent assent forms to each school site administrator (see Appendix C). Students who acquired parent assent and gave personal consent were provided an online link to participate in the survey.

Interviews

Qualitative data were obtained through semi-structured interviews and focus group protocol with a small number of students representing high and mid-high poverty schools from three of the districts. The number of participants in the focus group interviews did not to exceed eight, as suggested by Creswell (2014). The researcher worked to build rapport utilizing semi-structured interview protocol adopted from the clinical psychology field. Successful interviews occur when researchers take steps to build rapport with participants (Sommers-Flanagan

& Sommers-Flanagan, 2012). The researcher proceeded by asking semi-structured, open ended questions:

1. What goals have you set for yourself as they relate to your pathway experience? (Goal Construct)
2. What are the most important skills you will gain in your pathway experience? (Goal Construct)
3. How successful do you feel about your classwork/internship in your pathway program? (Personal Agency Belief/Self-Efficacy Construct)
4. How are your chances at succeeding in life impacted by your pathway experience? (Personal Agency Belief/Self-Efficacy Construct)
5. In general, how do you feel about the opportunity to participate in the pathway program? (Emotion Construct)
6. What has been your personal experience in your Linked Learning Pathway in the context of race, as either a member of the racial minority or majority? (Personal Agency/Self-Efficacy Construct)
7. What has your experience been in establishing and building relationships in your pathway classes and with the community? (Social Emotional Construct)
8. Is there anything else we haven't discussed yet that you think is important for me to know as we consider ways to better help high school students prepare for college and career?

The researcher audio-recorded the interviews for the sake of transcribing to help with the analysis portion of the study. Notes were taken during the interviews in case of technical difficulties.

Basis of Comparison

Pathway programs utilizing the Linked Learning approach from mid-low, mid-high, and high poverty levels served as the basis for comparison. School poverty levels were based on definitions set forth by the United States Department of Education's National Center for Education Statistics (NCES) 2016 report. Schools defined as low-poverty schools are those in which 25% or less of students qualify for free and reduced price lunch (NCES, 2016). Schools identified as mid-low poverty schools are those in which 25.1% to 50% of students qualify for free and reduced-price lunch, and mid-high poverty schools have 50.1%-75% of students who qualify for free and reduced-price lunch (NCES, 2016). A high-poverty school is defined as a public school where more than 75% of the students are eligible for free or reduced-price lunch (NCES, 2016).

Pilot Study

All instruments were piloted prior to the study being conducted. The researcher made necessary revisions to instrument items as needed. Recent graduates from pathway programs using the Linked Learning approach participated in the pilot study. The participants provided the researcher with feedback which led to adaptations of the instrument such as spelling corrections and adding "pathway" in front of the word *class* in the questions to help clarify the intent to focus on pathway courses alone.

Data Analysis

Quantitative Data

The researcher used SPSS to conduct descriptive and inferential statistical analyses of the survey data collected. Prior to analysis, data were coded, then input into SPSS, cleaned and reviewed to ensure accuracy. Analysis of variances

(ANOVAs) were used to compare the differences in means between high-, mid-high, and mid-low poverty level schools in the areas of goals (mastery goals and performance goals), and self-efficacy/personal agency beliefs (capability beliefs and context beliefs), and emotions. Correlation coefficients were analyzed to examine the relationship between the goals, personal agency beliefs/self-efficacy, and emotions at each of the school income levels.

Qualitative Data

Focus group data were manually transcribed which gave the researcher an opportunity to become familiar with the source material. Data were open coded, then axial coding occurred, and finally selective coding occurred. During the coding process, the researcher was cognizant of themes that emerged. These themes were identified and analyzed. Data from both surveys and interviews were examined to determine confirmation or disconfirmation. Review of the data was used to determine if results of the study sufficiently addressed each of the research questions.

Limitations

There were several limitations in this study. First, the researcher was dependent on counselors and lead pathway teachers for access to participants. Some students asked to participate in the study did not participate, or parents did not consent for their student to participate. The implementation stages of the Linked Learning approach varied among district and school sites. Pathway programs implementing the Linked Learning approach functioned under varying models of fidelity.

Another limitation was the lack of a low poverty school representation in the data. After numerous attempts to identify low-poverty schools using the

Linked Learning approach, no sites were found. All four school districts were located in Central California; therefore, the schools were not geographically diverse. Although the researcher was able to collect quantitative data from high, mid-high, and mid-low groups, all districts were located in the Central California region. After several attempts to communicate via email and by phone, the researcher was not able to gather qualitative focus group data for the mid-low poverty group.

Summary

This study initially set out to explore the role of the Linked Learning approach in low-, mid-, and high-poverty Linked Learning school settings. The researcher ultimately was able to access participants in mid-low, mid-high, and high-poverty school settings. It is important to note that no low-poverty schools in any of the participating school districts existed. School poverty levels were based on definitions set forth by the United States Department of Education's National Center for Education Statistics (NCES) 2016 report. A convergent parallel and transformative mixed-methods approach (Creswell, 2014) was used to examine the differences in student perceptions of pathway experiences and motivation of students in various settings. The study was extended to deepen the understanding of the reasons for differences. Convergent parallel methodology was used for analyzing the results of quantitative data followed by analysis of qualitative data to confirm or disconfirm a layered analysis (Creswell, 2014). Transformative mixed methodology complements both Bandura's self-efficacy theory and Ford's motivational systems theory, respectively, which represent the study's theoretical framework (Creswell, 2014).

SPSS analytics were used to conduct descriptive and inferential statistical analyses of the survey data collected. Prior to analysis, initially data were coded,

then input into SPSS, cleaned and reviewed to ensure accuracy. Analysis of variances (ANOVAs) were used to compare the differences in means between mid-low, mid-high, and high-poverty level schools in the areas of *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions*. Correlation coefficients were analyzed to examine the relationship between *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions*.

Focus group data were then manually transcribed by the researcher. Transcriptions went through three phases of coding. First, transcriptions were open coded. After open coding was conducted, axial and selective coding were employed. During the coding process, the researcher was cognizant of themes that emerged. Themes were identified and analyzed to confirm or disconfirm quantitative findings.

CHAPTER 4: RESULTS/OUTCOMES

In this chapter, data analysis is used to present information regarding the research study. This chapter will give the statement of the problem, research questions, findings and analysis, and summary. Quantitative results are presented first, followed by qualitative results.

Demographic information is used to describe the sample. The quantitative section provides a description of the participants. Inferential statistical analyses were used to address the research questions. The qualitative section provides insight into student experiences while in high, mid-high, or mid-low schools using the Linked Learning approach. Because no low poverty schools existed in the districts studied, the role of the Linked Learning approach could not be examined at that poverty level. A convergent parallel and transformative mixed-methods design was used to examine differences and similarities across poverty levels. Student representations of pathway experiences were collected in order to deepen the understanding of differences in student *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions* across socio-economic levels.

Statement of the Problem

Educational reformers have called for an innovative shift in teaching practices that move to prepare high school students for post-secondary education and career readiness (Kazid & Leibowitz, 2003; McDonald & Farrell, 2012; Saavedra & Opfer, 2012; Perin, 2011; Pleasants & Clagett, 2010; Stephens, 2009). A continued concern is that children living in poverty are less likely to complete high school requirements for graduation and will not be prepared to enter the

workforce upon leaving high school (Darling-Hammond, 2007; Murnane, 2007; Sass, Hannaway, Xu, Figlio, & Feng, 2012). According to the United States 2010 Census Bureau, 16.4% of the people living in the state of California were living in poverty. The Census reported that 76.8% of individuals in the state of California aged 25 or older were high school graduates, while only 29.9% of individuals aged 25 or older had earned a Bachelor of Arts degree or higher. In 2013, California responded to the need for higher graduation rates and increased college degree completion by passing Assembly Bill 790, identified as the Linked Learning Pilot Program (CDE, n.d.). According to the California State Board of Education (2014), this policy supported the implementation of the Linked Learning approach. The policy aimed to codify the innovative approach to college and career readiness experiences for students across California high schools.

Research Questions

This study explored the differences in student perceptions and experiences in pathways utilizing the Linked Learning approach in school settings across high poverty, mid-high poverty, and mid-low poverty schools. The PALS instrument (Midgley et al., 2000) was adapted by the researcher to include items that measured emotion. For this study, the adapted PALS instrument was used to collect data on personal achievement goals, performance avoidance goal approach, goal mastery, student skepticism of experiential relevance, and emotions felt during the Linked Learning experience. The researcher used Bandura's (1977) self-efficacy theory and Ford's (1992) motivational systems theory as foundational lenses through which to consider the findings. The researcher examined the following research questions:

1. What role does Linked Learning play in student motivation across low, mid-low, mid-high, and high poverty programs?

2. How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?
3. How do Linked Learning student goal setting practices compare across low, mid-low, mid-high, and high poverty programs?
4. How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?
5. How do student perceptions of their CTE Linked Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?

Transformative, convergent, and parallel mixed methodology was used (Creswell, 2014), which included a 35-item questionnaire. The web-based questionnaire was used to collect quantitative data to compare student experiences in high schools using the Linked Learning approach. Qualitative data were collected via focus group interviews. The focus group interviews included the following questions:

1. What goals have you set for yourself as they relate to your pathway experience?
2. What are the most important skills you will gain in your pathway experience?
3. How successful do you feel about your classwork/internship in your pathway program?
4. How are your chances at succeeding in life impacted by your pathway experience?
5. In general, how do you feel about the opportunity to participate in the pathway program?

6. What has been your personal experience in your Linked Learning pathway in the context of race, as either a member of the racial minority or majority?
7. What has your experience been in establishing and building relationships in your pathway classes and with the community?
8. Is there anything else we haven't discussed yet that you think is important for me to know as we consider ways to better help high school students prepare for college or career?

Findings and Analysis

The web-based adapted PALS (Midgley et al., 2000) instrument was used to survey participants. The researcher collaborated with school counselors and pathway lead teachers from four districts and seven high schools in distributing the surveys to students. An exact count of the total number of students invited to take the survey could not be determined by the researcher because survey links were distributed by school site personnel. Based on pathway lead teacher reports to the researcher, there was a sample total of 562 possible participants. A total of 293 valid surveys were collected. Semi-structured focus group interviews included six participants in two, mid-high level poverty schools from two different school districts in Central California and eight participants from one, high-level poverty school from one school district (see Table 4).

Table 4

Method Used by Sample Size per Poverty Level

| Methods | High Poverty Sample Size | Mid-High Poverty Sample Size | Mid - Low Poverty Sample Size |
|-----------|-----------------------------|------------------------------------|-------------------------------------|
| Survey | 37 | 240 | 15 |
| Interview | 8 | 6 | 0 |

Participants in the study represented a diverse group of students from ages 14-18 enrolled in 9th through 12th grades. A variety of ethnicities were represented in the study, and students reported coming from homes where multiple languages, in addition to English, were spoken. For demographic information, see Table 5. The schools represented included one high poverty school, two mid-high poverty schools, and one mid-low poverty school. High poverty schools are described as schools with more than 75% of students receiving free and reduced lunch, 50.1% to 75% of students in mid-high poverty schools receive free and reduced lunch, and 25.1% to 50% of students in mid-low poverty schools receive free and reduced lunch. Low poverty schools were described as schools where 0-25% of students are receiving free and reduced price lunch (NCES, 2016). No low poverty schools existed in any of the districts participating in the study. Student gender, age in years, grade level, ethnicity, and languages other than English spoken in the student's home are represented by school poverty level.

In the 35-item Web-based survey questionnaire: item 1 indicated student consent. Items 29, 30, 31, 32, 33, 34, and 35 are used to collect demographic data. Items 2 through 10, 12 through 16, and 18 through 28 were close-ended response items presented on a sliding scale from 1 through 5. The survey was piloted with six recent high school graduates of a medical pathway program implementing the Linked Learning approach.

Pilot participants were each currently enrolled in University of California campuses. Pilot participant feedback provided information that resulted in a few revisions (e.g., spelling corrections and added clarity to items that pertained to pathway classes). The revised survey was sent to pathway students in high poverty, mid-high poverty, and mid-low poverty schools using the Linked Learning approach in their academic pathways.

Table 5

Student Demographic Data by Poverty Level

| Demographic | High Poverty Sample Size | Mid -High Poverty Sample Size | Mid - Low Poverty Sample Size |
|----------------------|-----------------------------|-------------------------------------|-------------------------------------|
| Gender | | | |
| Male | 18 | 12 | 12 |
| Female | 19 | 121 | 3 |
| Other | 0 | 2 | 0 |
| Refuse to State | 0 | 4 | 0 |
| Age in years | | | |
| 14 | 0 | 78 | 7 |
| 15 | 0 | 97 | 7 |
| 16 | 10 | 48 | 1 |
| 17 | 23 | 16 | 0 |
| 18 | 4 | 1 | 0 |
| Grade Level | | | |
| 9 th | 0 | 124 | 15 |
| 10 th | 0 | 85 | 0 |
| 11 th | 26 | 30 | 0 |
| 12 th | 11 | 1 | 0 |
| Ethnicity | | | |
| Hispanic | 9 | 29 | 4 |
| Caucasian | 1 | 47 | 4 |
| Portuguese | 0 | 4 | 7 |
| African | 0 | 4 | 0 |
| American | | | |
| Mixed | 27 | 155 | 0 |
| Home Language | | | |
| Spanish | 26 | 62 | 1 |
| Portuguese | 0 | 2 | 0 |
| Tagalog | 0 | 2 | 0 |
| ASL | 0 | 4 | 0 |
| Hmong | 1 | 1 | 0 |
| English | 10 | 169 | 9 |

Quantitative data were analyzed with descriptive analyses. A simple frequency distribution was used to count occurrences among high poverty, mid-high poverty, and mid-low poverty groups. Univariate analysis of variance (ANOVA) tests were used to determine differences in the means of *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions* by school poverty level. Pearson's Correlation Coefficients were utilized to examine the relationship between *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions*.

Quantitative Findings

An Analysis of Variance Model was calculated for the survey participant *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions*. The analysis compared means of survey participants in high, mid-high, and mid-low poverty groups. All groups have similar degrees of agreement to survey questions in the construct of emotions. Descriptive statistics among variables by poverty level can be found in Table 6.

The researcher utilized an ANOVA to analyze data from the adapted PALS survey. *Performance approach goal orientation* was the dependent variable. The independent variable was *poverty*. Descriptive statistics can be found in Table 7.

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that they felt successful in classes if they did better than most other students and doing better than other

Table 6

Descriptive Statistics of Adapted PALS Variables by Poverty Level

| Dependent Variable | Poverty Level | Mean | Standard Deviation | N= Sample Size |
|--|------------------|------|--------------------|----------------|
| Performance Approach Goal Orientation | High Poverty | 3.61 | 0.61 | 16 |
| | Mid-high Poverty | 3.54 | 0.82 | 97 |
| | Mid-low Poverty | 4.20 | 0.80 | 5 |
| Performance Avoidance Goal Orientation | High Poverty | 2.86 | 0.86 | 16 |
| | Mid-high Poverty | 2.53 | 0.95 | 97 |
| | Mid-low Poverty | 2.82 | 1.94 | 5 |
| Mastery Goal Orientation | High Poverty | 4.11 | 0.73 | 16 |
| | Mid-high Poverty | 3.94 | 0.81 | 97 |
| | Mid-low Poverty | 3.99 | 0.31 | 5 |
| Academic Efficacy | High Poverty | 4.17 | 0.52 | 16 |
| | Mid-high Poverty | 4.22 | 0.58 | 97 |
| | Mid-low Poverty | 4.80 | 0.31 | 5 |
| Skepticism about school relevance for future success | High Poverty | 2.61 | 0.97 | 16 |
| | Mid-high Poverty | 2.31 | 0.83 | 97 |
| | Mid-low Poverty | 1.84 | 0.51 | 5 |
| Emotions | High Poverty | 2.45 | 0.96 | 16 |
| | Mid-high Poverty | 2.62 | 0.64 | 97 |
| | Mid-low Poverty | 2.68 | 0.71 | 5 |

Table 7

Descriptive Statistics for PALS by Poverty Level

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 3.71 | 0.82 | 35 |
| Mid-High | 3.52 | 0.86 | 204 |
| Mid-Low | 3.48 | 0.97 | 14 |
| Total | 3.55 | 0.86 | 253 |

students in their pathway is important to them. There was no significant difference in students' performance approach goal orientation ($F(2, 250) = 0.67, p = .51$) among high poverty ($M = 3.71$), mid-high poverty ($M = 3.52$), and mid-low poverty ($M = 3.48$). All groups across poverty levels had similar performance goal approach orientation. ANOVA results for the performance approach goal orientation by poverty level can be found in Table 8.

Table 8

ANOVA Results for the Performance Approach Goal Orientation by Poverty Level

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|-----|-----|
| Poverty | 1.01 | 2 | .51 | .67 | .51 |
| Error | 187.98 | 250 | .75 | | |
| Total | 3378.89 | 253 | | | |

Note. R squared = .005 (Adjusted R Squared = -.003)

In the next analysis, performance avoidance goal orientation was the dependent variable and the independent variable was poverty. Descriptive statistics can be found in Table 9.

Table 9

Descriptive Statistics for Performance Avoidance Goal Orientation by Poverty Level

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 2.94 | 1.04 | 34 |
| Mid-High | 2.53 | 0.98 | 207 |
| Mid-Low | 2.67 | 1.28 | 13 |
| Total | 2.59 | 1.01 | 254 |

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that an important reason they do their class work was so that they did not embarrass themselves, to avoid looking like they could not do the work in their pathway courses, and to avoid looking like they had trouble doing the work. There was no significant difference in students' performance approach goal orientation ($F(2, 251) = 2.39, p = .09$) among high poverty ($M = 2.94$), mid-high poverty ($M = 2.53$), and mid-low poverty ($M = 2.67$). All groups across poverty levels had similar performance avoidance goal orientation. Results from the ANOVA for performance avoidance goal orientation can be found in Table 10.

Table 10

ANOVA Results for Performance Avoidance Goal Orientation by Poverty Level

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|------|-----|
| Poverty | 4.91 | 2 | 2.45 | 2.39 | .09 |
| Error | 257.94 | 251 | 1.02 | | |
| Total | 1978.05 | 254 | | | |

Note. R squared = .019 (Adjusted R Squared = .011)

Mastery goal orientation was the next dependent variable examined. The independent variable in this analysis was poverty. Descriptive statistics can be found in Table 11.

Table 11

Descriptive Statistics for Mastery Goal Orientation by Poverty Level

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 4.23 | .70 | 34 |
| Mid-High | 3.91 | .77 | 214 |
| Mid-Low | 4.60 | .46 | 15 |
| Total | 3.99 | .77 | 263 |

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that an important reason they do their class work was because they liked to learn new things, they wanted to get better at it, and they enjoyed the class work. There was a significant difference in students' mastery goal orientation ($F(2, 260) = 7.88, p < 0.01$) among high poverty ($M = 4.23$), mid-high poverty ($M = 3.91$), and mid-low poverty ($M = 4.60$). The results from the ANOVA for mastery goal orientation can be found in Table 12.

Table 12

ANOVA Results for Mastery Goal Orientation by Poverty Level

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|------|-----|
| Poverty | 8.90 | 2 | 4.45 | 7.88 | .00 |
| Error | 146.87 | 260 | .56 | | |
| Total | 4349.01 | 263 | | | |

Note. R squared = .057 (Adjusted R Squared = .050)

The fourth analysis completed was of academic efficacy, the dependent variable, and the independent variable was poverty. Descriptive statistics can be found in Table 13.

Table 13

Descriptive Statistics for Academic Efficacy for by Poverty Level

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 4.20 | .55 | 28 |
| Mid-High | 4.17 | .57 | 160 |
| Mid-Low | 4.55 | .48 | 8 |
| Total | 4.19 | .57 | 196 |

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that they were certain they could figure out how to do the most difficult class work, even if the work was hard they could learn it, they could do even the hardest work, and they could do almost all of the work if they did not give up. Means, standard deviations, and sample sizes were compared for academic efficacy by high-poverty level, mid-high poverty, and mid-low poverty. There was no significant difference in students' academic efficacy ($F(2, 193) = 1.77, p = .17$) among high poverty ($M = 4.20$), mid-high poverty ($M = 4.17$), and mid-low poverty ($M = 4.55$). All groups across poverty levels had similar academic efficacy. Academic efficacy ANOVA results can be found in Table 14.

Table 14

ANOVA Results for Academic Efficacy by Poverty Level

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|------|-----|
| Poverty | 1.12 | 2 | .56 | 1.77 | .17 |
| Error | 61.25 | 193 | .32 | | |
| Total | 3506.47 | 196 | | | |

Note. R squared = .018 (Adjusted R Squared = .008)

The fifth analysis completed was for *skepticism about school relevance for future success*, was the dependent variable. The independent variable was *poverty*. Descriptive statistics can be found in Table 15.

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that if they did well in school it would not help them have the life they wanted when they finished high

Table 15

Descriptive Statistics for Skepticism about School Relevance for Future Success by Poverty

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 2.70 | .98 | 31 |
| Mid-High | 2.38 | .88 | 215 |
| Mid-Low | 1.99 | .64 | 13 |
| Total | 2.40 | .89 | 259 |

school, their chances of succeeding later in life did not depend on doing well in school, doing well in school did not improve chances of having a good life, and getting good grades in school would not guarantee a good job after high school. There was a significant difference in students' *skepticism about school relevance for future success* by group high poverty ($F(2, 2.56) = 3.13, p = .03$) among high poverty ($M = 2.70$), mid-high poverty ($M = 2.38$), and mid-low poverty ($M = 1.99$). ANOVA results for *skepticism about school relevance for future success* by poverty level can be found in Table 16.

Table 16

ANOVA Results for Skepticism about School Relevance for Future Success by Poverty

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|------|-----|
| Poverty | 5.14 | 2 | 2.57 | 3.13 | .03 |
| Error | 198.68 | 256 | .77 | | |
| Total | 1691.16 | 259 | | | |

Note. R squared = .025 (Adjusted R Squared = .018)

The sixth data set was collected from the adapted PALS survey. Student emotions during their pathway classes was the dependent variable. The independent variable was poverty. Descriptive statistics can be found in Table 17.

Table 17

Descriptive Statistics for Student Emotions during their Pathway Classes by Poverty Level

| Poverty Level | Mean | Standard Deviation | Sample Size |
|---------------|------|--------------------|-------------|
| High | 2.63 | .88 | 29 |
| Mid-High | 2.65 | .66 | 154 |
| Mid-Low | 2.95 | .69 | 13 |
| Total | 2.67 | .70 | 196 |

This was a self-report measure based on a sliding scale from 1-5, with 1 representing *strongly disagree* and 5 representing *strongly agree*. These items represented the degree to which pathway students agreed that if they did well in school it would not help them have the life they wanted when they finished high school, their chances of succeeding later in life did not depend on doing well in school, doing well in school did not improve chances of having a good life, and getting good grades in school would not guarantee a good job after high school. There was no significant difference in student performance emotions ($F(2, 193) = 1.12, p = .32$) among high poverty ($M = 2.63$), mid-high poverty ($M = 2.65$), and mid-low poverty ($M = 2.95$). All groups across poverty levels had similar degrees of agreement in positive and negative emotions felt during Linked Learning Pathway participation. ANOVA results for student emotion by poverty level can be found in Table 18.

Table 18

ANOVA Results for Student Emotions during Pathway Classes by Poverty Level

| Source | Sum of Squares | DF | Mean Square | F | p |
|---------|----------------|-----|-------------|------|-----|
| Poverty | 1.11 | 2 | .55 | 1.12 | .32 |
| Error | 95.95 | 193 | .49 | | |
| Total | 1501.33 | 196 | | | |

Note. R squared = .012 (Adjusted R Squared = .001)

Post Hoc Analysis Results

Post hoc analyses were conducted to determine pairs of variables with statistically significant differences in the areas of *goal mastery approach orientation* and *skepticism about school relevance for future success*. *Goal mastery approach orientation* showed a statistically significant difference in one of the pairs. The Tukey Honest Significant Difference analysis was conducted on all variable pairs: group 1 (high poverty), $M = .32$, $SD = .14$, group 2 (mid-high poverty) $M = -.21$, $SD = .14$, group 3 (mid-low poverty) $M = .37$, $SD = .23$.

The following pairs of groups were found to be significantly different ($p < .05$): The difference between group 2 (mid-high poverty) and group 3 (mid-low poverty) is significant $M = -.69$, $SD = .20$, meaning students in mid-low poverty schools have higher goal mastery orientation than students in mid-high poverty schools. The difference between group 1 (mid-low poverty) and group 2 (mid-high poverty) was not significant $M = .32$, $SD = .44$. The difference between group 1 (high poverty) and group 3 (mid-low poverty) is not significant $M = -.37$, $SD = .23$.

Post hoc analyses were conducted. *Skepticism about school relevance for future success* showed a statistically significant difference in one of the pairs. A Tukey Honest Significant Difference, was conducted on all variable pairs: group 1 (high poverty) $M = 2.70$, $SD = .99$, group 2 (mid-high poverty) $M = 2.37$, $SD = .88$, group 3 (mid-low poverty) $M = 1.99$, $SD = .64$. The following pairs of groups were found to be significantly different ($p < .05$): The difference between group 1 (high poverty) and group 3 (mid-low poverty) was significant $M = .71$, $SD = .29$ and $p = .2704$, meaning students in mid-low poverty schools have higher goal mastery orientation than students in mid-high poverty schools. The difference between group 2 (mid-high poverty) and group 3 (mid-low poverty) was not

significant $M = .38$, $SD = .25$ and. The difference between group 1 (high poverty) and group 2 (mid-high poverty) was not significant $M = .33$, $SD = .17$.

Correlation Results

Descriptive statistics of *performance approach goal orientation*, *performance avoidance goal orientation*, *mastery goal orientation*, *academic efficacy*, and *skepticism about school relevance for future success*, and *emotions* were analyzed. The mean, the standard deviation and the sample size are reported in Table 19. Correlational analyses were computed among six patterns of the adaptive learning scale variables. The researcher used correlations to examine the relationship among data from 253 students on *performance approach goal orientation*, 254 students on *performance avoidance goal orientation*, 263 students on *mastery goal orientation*, 196 students on *academic efficacy*, 259 students on *skepticism about school relevance for future success*, and 196 students on *emotions* during pathway experiences.

Table 19

Descriptive Statistics for PALS Dependent Variable Correlations

| Variable | Mean | Standard Deviation | Sample Size |
|--|------|--------------------|-------------|
| Performance approach goal orientation | 3.55 | .86 | 253 |
| Performance avoidance goal orientation | 2.59 | 1.01 | 254 |
| Mastery goal orientation | 4.55 | .77 | 263 |
| Academic efficacy | 4.19 | .56 | 196 |
| Skepticism about school relevance for future success | 2.39 | .88 | 259 |
| Emotions | 2.67 | .70 | 196 |

The significance of correlation coefficients for the variables of the adaptive learning scales was determined using an alpha of .05. There were 13 statistically

significant results for the Pearson's Correlation Coefficients for each of the variables (Table 20). The positive, low, significant correlation coefficient ($r = .16$, $p = .02$) between *performance avoidance goal orientation* and *performance approach orientation* indicated that higher *performance avoidance goal orientation* was weakly related to *performance approaches*. The positive, low, significant correlation coefficient ($r = .17$, $p < .01$) between *mastery goal orientation* and *performance approach orientation* indicated that higher academic efficacy was weakly related to *performance approaches*. The positive, moderate, significant correlation coefficient ($r = .31$, $p < .01$) between *academic efficacy* and *performance approaches* indicated that higher *academic efficacy* was moderately related to higher *performance approaches*.

Table 20

Correlation Coefficient and Probability among PALS Dependent Variables

| Dependent Variable | | 1 | 2 | 3 | 4 | 5 | 6 |
|--|----------------|---|---------------|----------------|------------------|------------------|------------------|
| Performance approach goal orientation | r (p) | 1 | .16* (.02) | .17** (.01) | .31** (.000) | -.20** (.003) | .20** (.007) |
| Performance avoidance goal orientation | r (p) | | 1 | .02 (.79) | -.25** (.001) | .08 (.22) | -.16* (.04) |
| Mastery goal orientation | r (p) | | | 1 | .45** (.000) | -.25** (.000) | .66** (.000) |
| Academic efficacy | r (p) | | | | 1 | -.25** (.001) | .38** (.000) |
| Skepticism about school relevance for future success | r (p) | | | | | 1 | -.30** (.000) |
| Emotions | r (p) | | | | | | 1 |

*Correlation is significant at the 0.05 level (2-tailed).

** Correlations is significant at the 0.01 level (2-tailed).

The negative, low, significant correlation coefficient ($r = -.25, p < .01$) between *academic efficacy* and *performance avoidance* indicated that higher *academic efficacy* was weakly related to lower *performance avoidance approaches*. The positive, moderate, significant correlation coefficient ($r = .45, p < .01$) between *academic efficacy* and *mastery goal orientation* indicated that higher *academic efficacy* was strongly related to higher *goal mastery orientation*. The negative, low, significant correlation coefficient ($r = -.20, p < .01$) between *skepticism about school relevance for future success* and *performance approach goal orientation* indicated that higher *skepticism about school relevance for future success* was weakly related to lower *performance approaches*. The negative, low, significant correlation coefficient ($r = -.25, p < .01$) between *skepticism about school relevance for future success* and *mastery goal orientation* indicated that higher *skepticism about school relevance for future success* was weakly related to lower *mastery goal orientation*. The negative, low, significant correlation coefficient ($r = -.25, p < .01$) between *skepticism about school relevance for future success* and *academic efficacy* indicated that higher *skepticism about school relevance for future success* was weakly related to lower *academic efficacy*.

The positive, low, significant correlation coefficient ($r = .20, p < .01$) between *emotions* and *performance approach orientation* indicated that higher *emotions* was weakly related to *performance approaches*. The positive, high, significant correlation coefficient ($r = .66, p < .01$) between *emotions* and *mastery goal orientation* indicated that *emotions* were strongly related to higher *goal mastery orientation*. The positive, moderate, significant correlation coefficient ($r = .38, p < .01$) between *emotions* and *academic efficacy* indicated that higher *emotions* was moderately related to *academic efficacy*. The negative, moderate, significant correlation coefficient ($r = -.30, p < .01$) between *emotions* and

skepticism about school relevance for future success indicates that higher *emotions* were weakly related to *skepticism about school relevance for future success*. The negative, low, significant correlation coefficient ($r = -.16, p = .04$) between *performance avoidance goal orientation* and *emotions* indicates performance avoidance goal was weakly correlated with *performance avoidance goal orientation* and *emotions*.

Qualitative Findings

Semi-structured focus group interviews were conducted over 6 weeks. After each focus group interview, the researcher transcribed each audio recording verbatim. The researcher started the analysis with open coding and noted categories that emerged. The researcher maintained a deductive approach to data analysis. The data analyses were an ongoing process that included analysis conducted concurrently while conducting further interviews, making interpretations of the data and noting the researcher's understanding of the participant responses. Cross-references of themes were made using a systematic process.

To conduct the cross reference, the researcher took memo notes on each transcript for the first interview, noting significant phrases or keywords for each question response. A table was created for each interview question and separated by the participants and the question items. This system was used for each interview. The researcher considered the relationships among the categories for each of the interview questions. Individual responses were analyzed comparing the first mid-high focus group to the second mid-high focus group. The researcher followed with axial coding to combine categories. Then, both mid-high focus groups responses were compared with the high poverty focus group responses. The interconnectedness of all of the categories was analyzed to prepare a detailed

description for the selective coding process. Several themes emerged during selective coding. At the end of this process, the data revealed four themes:

1. Students in mid- high and high poverty Linked Learning Pathways express *purpose-driven* goals.
2. Students in mid-high and high poverty Linked Learning Pathways are *confident* in their ability to be successful academically and in careers
3. Students in mid-high and high poverty Linked Learning Pathways are *hopeful* for their futures
4. Students in mid-high and high poverty Linked Learning Pathways hold *altruistic* values.

Themes

Theme 1: Purpose-Driven

The *purpose-driven* theme refers to what students reported as goals related to their Linked Learning Pathway experience. The students shared the connection among pathway experiences and college and career readiness. In response to the questions (1) *What goals have you set for yourself as they relate to your pathway experience?* and (2) *What are the most important skills you will gain in your pathway experience?* Participants expressed various purposes for setting academic goals and acquiring career skills to apply to community projects.

A female, sophomore participant in a mid-high poverty setting explained the purpose of classwork:

The short term goals are presentations and class work we do in class. They help us with our long term goals out in the community. So, everything that I do in here that is a goal for me in this classroom is just meeting another goal that I can expand on outside of class.

A male, junior participant in a mid-high poverty setting explained that long-term goals are beneficial for him and the community at large:

I think acquiring speaking skills and teamwork skills that we learn in the pathway prepare us go out into our community. I know that next year we're going to be working on a big project with a local community member who bought land nearby. It will be a place to keep animals safe. I know that we're going to be going out there and we're going to build trails and bridges for the new place and that really gives back to the community. Projects like that have given so much to us. In the pathway you learn how to speak to people and how to respect people even if you're disagreeing with them. You also get to meet new people in the community which ends up being really beneficial in the future, because you meet new people that can always open doors for you.

A female freshman participant in a mid-high poverty setting expressed, "In our pathway we plan out our goals for the projects, schools, and what we want to do in life and we go for it." While a senior participant in a high poverty setting explained, "In working out in the community we are building our reputations through our projects and that will help us in the future."

The participants in both high and mid-high poverty settings articulated the purpose for meeting timelines on classwork, presenting knowledge publically, and designing projects extended to a bigger purpose of providing a service to the community through work-based projects. The participants discussed the transferable skills that would lead to positive academic futures for themselves and positive influences on the greater working community. The participants connected meeting goals in class with applying their knowledge out in the community.

Theme 2: Confident

The *confident* theme refers to what students reported as self-assurance and belief in their ability to engage in academics and work-based projects successfully in their Linked Learning Pathway experience. The students shared that they utilize systems of support and gain leadership skills that ensure the success for all

students in the pathway, in response to the following questions: (2) *What are the most important skills you will gain in your pathway experience?* (3) *How successful do you feel about your classwork/internship in your pathway program?* and (4) *How have your chances at succeeding in life been impacted by your pathway experience?*

A female, sophomore participant, from a mid-high poverty setting shared how her communication skills have improved with the support of her teacher: “For example, Mrs. S. is probably one of the best English teachers I’ve ever had. She’s really helped us with our speaking and presenting skills. Something that we have gotten a lot out of this pathway, is confidence.” A male, sophomore participant, from a mid-high poverty setting explained how internship experiences are difficult but doable: “I feel successful in my internships because I am working with real engineers and the work is challenging but it’s actually the stuff that goes into engineering.” With confidence, another male, junior participant, from a high poverty setting shared how he uses his leadership skills: “When we have guest speakers, we are not afraid to use our voice and ask questions.” A female, senior participant, from a high poverty setting noted the next steps in her future:

I feel accomplished because I never feel like you’re not going to get something done because I have students and teachers that are always there to help me out. So, I applied for a job shadowing and I’ve been working to take these classes so I have a foundation of understanding. I actually feel like I’m getting somewhere and I feel successful. I know I can do anything.

The participants’ skills, leadership abilities, and acknowledgement of support systems were clearly presented during the interviews. Their statements were strong and clear. Maturity in the use of resources was revealed. The command presence of the participants was illuminated through the carefully crafted responses. The engagement with the interviewer was authentic and natural.

Theme 3: Hopeful

The *hopeful* theme refers to what students reported as gratitude, interest in others, and maintaining a positive disposition in their Linked Learning Pathway experience. The students shared that they look forward to a future of promise in response to the following questions: (4) *How have your chances at succeeding in life been impacted by your pathway experience?* and (5) *In general, how do you feel about the opportunity to participate in a pathway program?* A male, sophomore participant from a high poverty setting, expressed, “Some of the most important skills we’ve gained in our pathway are leadership skills like organization and public speaking and being prepared for anything in life.” Echoed sentiments came from a female, senior participant, from a mid-high poverty setting:

I am able to be future ready because we have visited colleges nearby and some far away. We also have gone to conferences that help us with being future ready. Also, the community gives us feedback on our projects about what we did best and what we could work on. We meet faces from the town who might want to hire us in the future.

A male, senior participant, from a high poverty setting was forthcoming in sharing his change of heart in regards to his pursuit of career. He shared his heartfelt appreciation:

I think it’s [participating in a Linked Learning pathway] an important opportunity because the speakers help us decide if we actually want to pursue these careers. You get an opportunity to realize what you want to do or not want to do. Even though, I will no longer pursue the career for this pathway, staying in my pathway still really prepares me for college and the career I really want to pursue. It will save me so much time beyond high school.

A female, senior participant, from a high poverty setting gave a transparent glimpse into the opportunities provided in her pathway experience:

I feel grateful that I've had the chance to participate in a pathway like this because I've had opportunities to hear speakers that are in the field we are interested in and they give us a real world perspective of that work. It gives us a chance to interact and be a part of the field so we can make educated decisions about whether we want to do that work or not.

All participants conveyed a thankful demeanor towards the Linked Learning experience. They all expressed that they have gained knowledge and skills they will use currently and in the future.

Theme 4: Altruistic

The *altruistic* theme refers to what students reported willingness to share and give anything they have with classmates, school, or community. The students shared a spirit of servant leadership and inclusiveness in response to the following questions: (6) *What has been your personal experience in your Linked Learning pathway in the context of race, as either a member of the racial minority or majority?* (7) *What has your experience been in establishing and building relationships in your pathway classes and with the community?* and (8) *Is there anything else we haven't discussed yet that you think is important for me to know as we consider ways to better help high school students prepare for college or career?*

A female, sophomore participant, from a mid-high poverty setting expressed that student input when building a pathway is important to her: "I think not everything has run smoothly because we're the first class so we're kind of the guinea pigs. But, I feel like I'm helping create something sustainable. In five years it's going to be a pretty good set pathway for future students." Referring to building relationships with classmates, a male, senior participant, from a high poverty setting explained, "Working on the projects helps you to get close to people and you help them because you want to see them be successful." A female,

sophomore participant, from a mid-poverty school shared how the community appreciates the work-based projects beyond the duration of the job completion.

A male, sophomore, from a mid-high poverty indicated:

Now, I have a lot of those outside connections. I worked with a lot of community events and Relay for Life. We try to establish connections in the community. Last year we went to SPCA and we painted paw prints and so we were featured in their newsletter and, the lady there, she loved us. We would do anything for her. She would always go check on us “How are you girls doing? I’m so excited!” We were not even half way done and she’s said, “Everybody who has come in, loves them and think it’s so bright.”

A male, senior participant, from a high poverty setting shared that his interconnectedness with others has grown in the pathway experience:

One of the most important skills you gain would be learning teamwork in the real world. One person can’t design everything and do everything by themselves. In a project, people have weaknesses and strengths and you have to get along and work together with everybody.

Some participants made a point to tell the interviewer that the work-based projects help them to see what the community needs. The participants shared that they were grateful to serve the community and one another.

Summary of Quantitative and Qualitative Data

Analysis

This chapter presented the results of the quantitative and qualitative analyses that were used to address the quantitative and qualitative research questions explored for this study. The first section presented the results of the statistical analyses that were used to describe the sample and address the quantitative research questions examined for this study. No statistically significant differences were found among the three poverty levels (high, mid-high, and mid- low) with regard to *performance approach goal orientation*, *performance avoidance goal orientation*, and *academic efficacy*. Statistically

significant differences in relationships were found between the student groups in mid-high poverty and mid-low poverty in regards to *mastery goal performance* and *skepticism about school relevance for future success*. The second section presented results from the qualitative research that addressed the qualitative research questions explored for this study. Transcript data from semi-structured focus group interviews from students who participated at high and mid-high poverty schools gave insight to their positive experiences and some of the challenges. Several major themes were revealed. The major themes include the following: students have *purpose-driven* goals, students are *confident* in their college and career readiness, students are *hopeful* about their future, and students keep an *altruistic* spirit in providing service to their respective communities. Chapter 5 will present the conclusion of the study, implications of the findings, and recommendation for future research.

CHAPTER 5: DISCUSSION/SUMMARY/CONCLUSION

Recent research makes it clear that socioeconomically disadvantaged students have historically been, and are currently, underserved. Fewer students graduate from high poverty school settings. The 21st-century workplace inevitably requires a specialized set of skills that includes both post-secondary education and leadership skills. Even for entry-level job positions, communicative, collaborative, creative, and innovative candidates are chosen. Rice (2010) reported achievement increases and equity are improved when students are in learning environments with effective teachers. However, students at high poverty schools do not receive equal access to high quality teachers or effective instructional strategies (Rice, 2010).

With new expectations of high school graduates, educators must think of preparing students for both college and career. Students prepared for only one or the other are no longer equipped with the qualifications for employment that provide resources above the poverty level. Antiquated instructional delivery and student experience no longer deliver the skills necessary for graduates to be prepared for the world ahead of them.

California legislation has recognized the need for innovative instructional practices that include work-based experiences and rigorous academic expectations for all students. The Linked Learning approach aims to drastically change teaching practices while simultaneously integrating work-based projects to support the community through business partnerships. The change necessary to prepare all students for college and career readiness includes input from educators, researchers, policymakers, and students. The shift in approach means inclusion of

all students and addressing all student needs. Student voice is a critical component for this transformation (Adams, 2010).

Linked Learning is an inclusive approach to relevant learning experiences for students of diverse populations. At the core, this innovative college and career readiness approach drives to provide equitable access for all students (Guha et al., 2014). Schools using the Linked Learning approach have shown promising results for a variety of student groups. Adams's (2010) student surveys indicated that Linked Learning students felt significantly more engaged in the family atmosphere and with the teamwork support. In another study (Polk, 2015), students with disabilities in Linked Learning Pathways scored higher than their counterparts in non-Linked Learning schools and scored higher on the California High School Exit Exam (CAHSEE) in English Language Arts. Although positive preliminary results are evident, some challenges still remain for populations such as students in high poverty schools. Disparity remains in dropout rates among students from low-income, mid-income, and high income families (NCES, 2016).

Multiple factors can be considered when providing educational experiences that meet the needs for students living in high poverty. Self-efficacy is a thinking process that is shaped by experience, rewards and success, reassurance, and regulation of negative thoughts and feelings (Briones et al., 2010; Davenport & Lane, 2006). Students' belief in their abilities is foundation of high or low self-efficacy; as Bandura et al. (2001) noted, perception of self-efficacy plays a critical role in students' belief that they can achieve and master goals. Students also have confidence in that they have the necessary skills to achieve the goals (Bandura, 1992). Ford (1992) reported that adolescents are interested in and care about working towards a variety of personal goals. Ford's research indicated that motivational patters are attached to goals, social responsibility, and caring

behavior. High school graduation rates are higher in students whose goals are directly related to high school completion for the purpose securing better jobs and more positive experiences in higher education (Ford, 1992; Locke & Latham, 1990; Wigfield & Tonks, 2004).

Current Study

The purpose of this study was to explore the role of the Linked Learning approach in student motivation, including personal agency beliefs, goal setting, and emotions in low poverty, mid-low poverty, mid-high poverty, and high poverty school settings. A transformative, convergent and parallel mixed-methods approach was used to explore differences in student perceptions of pathway experiences in high, mid-high, and mid-low poverty school settings. Convergent and parallel mixed-methods complements both Bandura's self-efficacy theory and Ford's motivational systems theory, respectively, which represent the study's theoretical framework.

The target sample of the study was four high school districts in Central California, consisting of high, mid-high, and mid-low poverty schools. All of the schools were implementing and utilizing the Linked Learning approach for student college and career readiness. One 35-item student survey was used to collect quantitative data in support of the research questions. The study also included semi-structured focus group interviews of high school students from the same four school districts.

Quantitative and qualitative data were used to confirm or disconfirm findings and to deepen the understanding of student experiences in Linked Learning across high, mid-high, and mid-low poverty schools. The quantitative findings provided comparison data across high, mid-high, and mid-low poverty schools. Quantitative statistics were analyzed through descriptive analysis,

correlations, ANOVAs, and Post Hoc Tukey Honest Significant Difference. Qualitative data were analyzed using comparative analysis. The qualitative results provided insights regarding differences and similarities in student experiences between the groups through the students' perspective.

This chapter presents a summary of the findings, conclusions, implications for policy and practice, and recommendations for future research. A summary of the findings for the adaptive PALS (Midgley et al., 2000) in the areas of *performance approach goal orientation, performance avoidance goal orientation, mastery goal orientation, academic efficacy, skepticism about school relevance for future success, and emotions* will be presented. For a deep reflection of the findings, the researcher utilized a confluence of the theoretical framework of this study. The summary of the findings will be considered through a confluence of Bandura's (1977) self-efficacy theory and Ford's (1992) motivational systems theory. The summary of the findings consider self-efficacy/personal agency, performance outcome, vicarious experiences, and physiological feedback, which are combined with personal agency beliefs to include not only the belief in one's skills, but the perception of environment to support the learning of skills needed. The summary of the findings compares student personal goal setting and emotions across high, mid-high, and mid-low poverty high school students.

Summary of the Findings

Performance Approach Goal Orientation

Both quantitative and qualitative analyses illuminated similar findings across poverty levels related to *performance approach goal orientation*. The analyses helped to highlight the response for research question 3, *How do Linked Learning student goal setting practices compare across low, mid-low, mid-high,*

and high poverty programs? This study used two items from the survey: (1) I would feel successful in my pathway classes if I did better than the other students in my pathway classes, and (2) Doing better than other students in my pathway classes is important to me. According to Ford (1992), the process of setting a goal begins with the motivation to attain an intended outcome. Students from the high poverty schools responded with a mean score of 3.70 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*), as compared to students from mid-high poverty schools with a mean of 3.52, as compared to the mid-low poverty responses of 3.29.

The quantitative data showed students in all three poverty school settings generally feel neutral about performing better than other students in their Linked Learning Pathways. A deeper understanding of this data is revealed through student focus group interviews. In high and mid-high poverty school settings, the majority of students reported that goals are attained collaboratively and when all students achieve their goals, success is achieved. The quantitative correlational analyses showed no statistically significant differences between high, mid-high, or mid-low Linked Learning student responses in regards to performance goal approach. Based on survey data, it appeared that students across all three poverty levels feel neutral about this construct. Based on the focus group interview data, it appears that students in the high and mid-high poverty level schools have set goals not only for their own success, but the success of their classmates as well. Therefore, students approach goals with an inclusive mindset, rather than attaining goals better than their peers.

Performance Avoidance Goal Orientation

Both quantitative and qualitative analyses revealed similar findings across poverty levels related to performance avoidance goal orientation. The analyses

help to highlight the response for research questions 2 (*How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?*) and 3 (*How do Linked Learning student goal setting practices compare across low, mid-low, mid-high, and high poverty programs?*). This study used three items from the survey: (1) An important reason I do my pathway class work is so that I don't embarrass myself, (2) One of my main goals is to avoid looking like I can't do my work in my pathway courses, and (3) One of my goals in my pathway classes is to avoid looking like I have trouble doing the work. Bandura's self-efficacy theory explores the overarching role that a person's attitudes, skills and thinking patterns in the larger self-system (Bandura, 1977; Bandura et al., 2001; Lively, 1994). Students from the high poverty schools responded with a mean score of 2.94 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*), as compared to students from mid-high poverty schools with a mean of 2.53, as compared to the mid-low poverty responses of 2.67.

The quantitative data showed students in all three poverty school settings slightly disagree that the purpose for doing class work is to avoid embarrassment, looking like they can't do the work, or looking like they are having trouble with the work. The quantitative correlational analyses showed no statistically significant differences between high, mid-high, or mid-low Linked Learning student responses in regards to performance avoidance approach. A deeper rich description of qualitative data revealed that Linked Learning students in high and mid-high poverty school settings feel very confident and secure because they are in a family-like environment. The majority of students reported that pathway projects are completed using a teamwork model. Several participants explained that all of the work is a learning process where students uplift one another and

recognize strengths and weakness with respect. Based on the focus group interview data, it appears that students in high and mid-high poverty level schools do not do class work in such a way as to attempt to avoid embarrassment, looking like they can't do the work, or looking like they are having trouble doing the work, rather they do classwork so that as a team they can apply new learning to long-term goals that include work-based projects.

Goal Mastery Orientation

Review of both quantitative and qualitative analyses revealed statistically significant differences across poverty levels groups related to goal mastery orientation. The analyses provide some insight into research questions 2 (*How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?*) and 4 (*How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?*). This study surveyed three items: (1) An important reason why I do my pathway class work is because I like to learn new things, (2) An important reason why I do my work in my pathway class is because I want to get better at it, and (3) An important reason I do my pathway class work is because I enjoy it. Bandura's self-efficacy theory states that individuals affect action in their lives according to their belief in their ability to achieve particular results (Bandura, 2001). Ford (1992) explained that when a person works towards mastering a goal, the person feels a greater reward and a higher sense of self-efficacy. Students from the high poverty schools responded with a mean score of 4.23 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*), as compared to students from mid-high poverty schools with a mean of 3.91, as compared to the mid-low poverty responses of 4.60. Post hoc Tukey (HSD) showed a statistically significant difference between the two groups from mid-high poverty and mid-low

poverty school settings. The mean difference between mid-high poverty and mid-low poverty groups $M = -.69$ and $r = .20$. The mean difference between the high poverty group and mid-high poverty group $M = .32$ and $r = .14$. The mean difference between the high poverty and mid-low poverty groups was not significant $M = -.37$ and $r = .23$. The quantitative data suggest Linked Learning students in mid-low poverty schools agree less than students in mid-high settings that important reasons to do class work are because they like to learn new things, they want to get better at it, and because they enjoy it.

Potential reasons for the difference were revealed in qualitative data. Some students in mid-low poverty schools reported that they requested to exit a pathway because they were no longer interested; however, counselors, teachers, or administrators discouraged them from doing so. The majority of participants in mid-low poverty settings expressed that they felt they did not have sufficient input in work-based projects. Most interview participants shared that teachers were not always open to student suggestions regarding community projects and class assignments. Some participants in mid-low poverty settings reported they had changed their mind about their desired career path, but remained in the pathway of a different interest, which did not align with their desired career path. Participants who chose to stay in these pathways did so because counselors or administrators advised them to complete the pathway.

Academic Efficacy

Both quantitative and qualitative analyses observed similar findings across poverty levels related to academic efficacy. The analyses helped to highlight the response to research questions 2 (*How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?*) and 5 (*How do student perceptions of their CTE Linked*

Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?). This study surveyed five items: (1) I am certain I can master the skills taught in my pathway classes this year, (2) I'm certain I can figure out how to do the most difficult class work, (3) I can do almost all of the work in my pathway classes if I don't give up, (4) Even if the work is hard, I can learn it, and (5) I can do even the hardest work in my pathway classes if I try. In confluence of the theoretical frameworks for this study, Ford (1992) built on Bandura's self-efficacy theory (1977) and proposed the combination of capability belief and context belief (the belief that the environment is designed with supports for goal achievement because it builds on current skills) together form personal agency (Ford, 1992).

Students from the high poverty schools responded with a mean score of 4.20 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*), as compared to students from mid-high poverty schools with a mean of 4.17, as compared to the mid-low poverty responses of 4.57. The quantitative correlational analyses showed students in all three poverty school settings, on average, are certain they can master the skills taught in pathway classes this year, certain they can figure out how to do the most difficult class work, can do almost all of the work in pathway classes if they don't give up, and even if the work is hard, they can learn it, and they can do even the hardest work in pathway classes if they try. Qualitative data from participants from high and mid-high poverty reveal that most participants felt confident in the supports put in place to help them succeed at classwork. Most participants in mid-high settings shared that the teamwork approach to work-based project made the learning environment feel comfortable. All participants in the high poverty group shared that they have more than one person to seek out for help if they felt like the work was difficult. Most

participants in high and mid-poverty groups expressed a sense of commitment to themselves, classmates, and their communities. The majority of participants felt supported by their teachers when classwork was challenging. Some of the participants reported that the Linked Learning environment gave them sense of family supporting one another to be college bound. The variety of support resources provided for students in Linked Learning Pathways could be the reason for high academic efficacy for students across poverty levels.

Skepticism about School Relevance for Future

Success

Review of both quantitative and qualitative analyses revealed statistically significant differences across poverty levels groups related to *skepticism about school relevance for future success*. The analyses provide some insight into research questions 2 (*How do Linked Learning students' self-efficacy/personal agency beliefs compare across low, mid-low, mid-high, and high poverty programs?*) and 5 (*How do student perceptions of their CTE Linked Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?*). This study surveyed four items: (1) Even if I do well in school, it will not help me have the kind of life I want when I finish high school, (2) My chances of succeeding later in life don't depend on doing well in school, (3) Doing well in school doesn't improve my chances of having a good life after high school, and (4) Getting good grades in school won't guarantee that I will get a good job when I finish high school. Goals that are required by others in authority for a particular purpose that are not relevant to an individual's desired achievement negatively impact emotions (Ford, 1992; Locke & Latham, 1990). Students from the high poverty schools responded with a mean score of 2.70 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*) as

compared to students from mid-high poverty schools with a mean of 2.38, and mid-low poverty responses of 1.99. Post hoc Tukey (HSD) showed a statistically significant difference between high poverty and mid-low poverty groups, $M = .71$ and $r = .29$. The mean difference between the mid-high poverty group and mid-low poverty group was not significant $M = .38$ and $r = .25$. For high poverty and mid-high poverty groups the mean difference was also not significant $M = .33$ and $r = .17$.

Potential reasons for the difference were revealed in qualitative data from the group in the high poverty setting. Some students reported that they agreed that the pathway experience was a good opportunity for the other students, who wished to pursue the pathway's focus. These students intended to exclude themselves in the 'good opportunity' as they no longer held interest in the pathway. Some in the group expressed gratitude that the pathway was offered because it brought clarity in understanding what is expected from an employer in a targeted field of work. Further research in this area is needed to determine the scope of reasons for this occurrence.

Emotions

Both quantitative and qualitative analyses revealed similar finding across poverty levels related to emotions. The analyses help to highlight the response for research questions 4 (*How do Linked Learning student emotions compare across low, mid-low, mid-high, and high poverty programs?*) and 5 (*How do student perceptions of their CTE Linked Learning Pathway program experiences compare across low, mid-low, mid-high, and high poverty programs?*). This study used eight items from the survey: During my pathway experience, I feel annoyed (apathetic, engaged, bored, excited, discouraged, satisfied, and proud) respectively. Personal agency and self-efficacy are interconnected to students'

emotional state of being which negatively or positively impacts one's self-system and decisions making (Bandura, 2001, 2002; Bandura et al., 2001; Ford, 1992; Wigfield & Tonks, 1994).

Ford (1992) described emotions as a person's connection to the relevance of the intended outcome. Motivation will not simply occur because a person holds the ability to achieve; the person must perceive the current reality and relevance of the goal for desired future outcomes (Ford, 1992). Students from the high poverty schools responded with a mean score of 2.64 on a sliding scale from 1-5 (1 being *strongly disagree* to 5 being *strongly agree*), as compared to students from mid-high poverty schools with a mean of 2.66 and mid-low poverty responses of 2.96. There is no statistically significant difference in student emotions felt during pathway experiences. The quantitative data showed that students were on average neutral towards all of the emotions examined, meaning the groups' averages showed a neutral degree of agreement for each of the emotions. However, the qualitative data revealed themes such as confidence in leadership skills and hope for the future. Most participants in both high and mid-high poverty Linked Learning Pathways increase their capacity to be a leader because of the speaking and presenting skills they had gained by being in the pathway. Likewise, most participants identified a direct connection between hope of attending post-secondary institutions and the Linked Learning academic preparation.

Limitations

There were several limitations in this study. First, access to participants was limited due counselors' and lead pathway teachers' choices for students to survey. Some students asked to participate in the study may not have wished to do so, or parents did not wish for their student to participate. The implementation of the Linked Learning approach in pathway programs varied. Some of the schools

had used the approach for several years and others were in the first few years of implementation. Pathway programs utilizing the Linked Learning approach often function under very different models not only from district to district, even from site to site.

Another limitation was the lack of a low poverty school being represented in the data. The researcher was unable to secure access to survey or interview in low poverty schools that were using the Linked Learning approach because there were no low poverty schools using the approach in the districts. Additionally, the schools were not geographically diverse. Although the researcher was able to collect quantitative data from high, mid-high, and mid-low groups, all districts were located in the Central California region. The researcher was not able to gather qualitative, focus group data for the mid-low poverty group.

Implications for Policy and Practice

The findings in this study suggested the Linked Learning approach was meeting some of the needs of students across poverty groups. However, there is more work to be done. The purpose for education is to empower all students to be active participants in acquiring all of the skills needed to enjoy a successful future. The promise of Linked Learning is to provide equitable access to quality education for each and every student, regardless of their backgrounds or circumstances. Narrowing the disparity among students of poverty is possible, if leaders listen to what students have to say about what is relevant.

It is imperative that educators include students in the process of goal setting and determining outcomes related to pathway experiences. District administrators and teachers must recognize that students want to be provided with an opportunity to give input on establishment of goals, how goals are carried out, and how goals are measured in pathway programs. Districts would benefit from establishing

Student Advisory Boards, which should maintain recurring meetings to provide a forum for students to give input regarding goals for work-based projects. A robust Student Advisory Board that actively participates in a continued focus on goal orientation is imperative.

Results of this study indicate that some students are restricted to a single pathway, even when their personal academic and career goals have shifted. School administrators, counselors, and lead pathway teachers are held to an ethical commitment to provide relevant educational experiences. School administrators should put systems in place that provide meaningful and effective career pathway exploration experiences prior to students' enrollment in a pathway. Districts must create a conduit for students and parents to be involved in a decision making process for pathway to pathway transfer, when requested. For optimal functioning, students must feel connected to the specific pathway focus.

Results of this study indicate that pathway students are developing altruistic behaviors. The participants stated a desire to serve the community and future pathway members in sustained relationships. Collaborative pathway teachers would benefit students by facilitating community connections beyond isolated projects. Teachers should design components of projects in such a way that students have the flexibility to explore project impact and engage in reflective practices, even after project completion. Students ought to engage in ongoing, comprehensive, self-analysis of service to the community. Rubrics to measure academic, social and emotional outcomes, would support students in their journey to become effective servant leaders.

Students in high poverty settings revealed that the role of school and pathway programs may not necessarily lead to personal success. Educational leaders should work to provide a comprehensive mentorship program that

addresses the unique needs of students. A memo of understanding between pathway high schools and universities should agree to pair students with diverse mentors as role models. Mentors should have experience in culturally responsive mentorship practices and commit to maintaining authentic, positive relationships with pathway students and their families. Successful pathway alumni should be sought as mentors for pathway students.

Pathway students are finding their voice in the Linked Learning environment. Pathway experiences are making some positive differences for many students from various socio-economic backgrounds. Districts can continue to strive to narrow the disparity among students across poverty levels. Students in pathway programs across poverty levels are not only motivated to be in the programs, but are also motivated to shape equitable experiences for themselves and others.

Recommendations for Future Research

Although this study added a small amount of literature to the impact of the Linked Learning approach on student self-efficacy and motivation across high, mid-high, and mid-low poverty schools, there is a greater need for additional research with student voice. While this study included participants from four school districts in Central California, additional studies should expand across the state and nation. Additional comparison, mixed-methods studies among varying poverty groups could potentially help develop a rich understanding of student perspectives of their educational experiences, respectively. It is necessary to build capacity in students' self-efficacy/personal agency, while sustaining motivation to achieve optimal success. Therefore, additional research targeting these constructs is needed.

As mentioned in chapters 1 and 2 of this study, a minimal number of studies have been explored representing phenomenon in settings the use the Linked Learning approach. More research is needed in the areas of personal agency and motivation for racially, culturally, and linguistically diverse students across poverty levels. The Linked Learning approach aims to be a conduit for equity and access for all students. For sustainability, districts the districts using Linked Learning need research to better understand what is relevant for students now. Student voice is a critical component for future resource.

Conclusion

The purpose of this study was to explore differences in self-efficacy/personal agency and motivation in Linked Learning settings across poverty levels. A deep and rich understanding of student experiences was captured to better understand the impacts of the Linked Learning approach. Findings suggest promise in the areas of student approach to goals, goals setting, and building student academic efficacy. In respect to groups in high poverty and mid-low poverty Linked Learning Pathways, developing goal mastery and minimizing *skepticism about school relevance for future success* call for further study to ensure equitable experiences for all students.

Educational leaders have a moral imperative to provide a relevant and robust learning experience for all students. All means all, regardless of background. Each and every student must be included in the conversation so that they have the opportunity to bring their ideas to the table. The antiquated approach of adults making decisions for kids because adults know what is best, is smothering students who are screaming for the chance to be decision makers for their own futures. The students in this study called for educators not only to allow them to be a members of the Linked Learning environment, but to also be

contributors, creators, innovators, and pioneers who shape and mold educational experiences for themselves and others. The Linked Learning approach aims to prepare students for college and career readiness so that students will engage in life in a meaningful and rigorous fashion after high school. The time is now for educators to remove the shackles of student compliance and give credence to the voices of all students.

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APPENDIX A: STUDENT SURVEY

STUDENT SURVEY

PART A: *Please answer the following items based on your experiences in your Pathway classes:*

1. I would feel successful in my Pathway classes if I performed better than most other students.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

2. Performing better than other students in my Pathway classes is important to me.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

3. An important reason I complete my Pathway class work is so that I do not embarrass myself.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

4. One of my main goals is to avoid looking like I cannot do my work in my Pathway courses.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

5. One of my goals in my Pathway classes is to avoid looking like I have trouble doing the work.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

6. An important reason why I do my Pathway class work is because I like to learn new things.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

7. An important reason why I do my work in my Pathway class is because I want to get better at it.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

8. An important reason I do my Pathway class work is because I enjoy it.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

9. I do my Pathway class work because I am interested in it.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

10. I am certain I can master the skills taught in my Pathway classes this year.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

11. I am certain I can figure out how to do the most difficult class work.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

12. I can do almost all of the work in my Pathway classes if I do not give up.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

13. Even if the work is hard, I can learn it.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

14. I can do even the hardest work in my Pathway classes if I try.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

15. Even if I perform well in school, it will not help me have the kind of life I want when I finish high school.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

16. My chances of succeeding later in life do not depend on performing well in school.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

17. Performing well in school does not improve my chances of having a good life after high school

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

18. Getting good grades in school will not guarantee that I will get a good job when I finish high school.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

19. Performing well in school will not help me have a satisfying career after high school.

| | | | | |
|-------------------|---|----------------|---|----------------|
| 1 | 2 | 3 | 4 | 5 |
| STRONGLY DISAGREE | | SOMEWHAT AGREE | | STRONGLY AGREE |

20. In my Pathway classes, I often feel annoyed.

| | | |
|-------------------|----------------|----------------|
| STRONGLY DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE |
|-------------------|----------------|----------------|

21. In my Pathway classes, I often feel apathetic.

| | | |
|-------------------|----------------|----------------|
| STRONGLY DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE |
|-------------------|----------------|----------------|

22. In my Pathway classes, I often feel bored.

| | | |
|-------------------|----------------|----------------|
| STRONGLY DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE |
|-------------------|----------------|----------------|

23. In my Pathway classes, I often feel discouraged.

| | | |
|-------------------|----------------|----------------|
| STRONGLY DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE |
|-------------------|----------------|----------------|

APPENDIX B: INTERVIEW PROTOCOL

Student Individual Interview Agenda and Questions

1. Welcome
 - a. Introduction
 - b. Thank You
2. Overview of the topic
 - a. Research on what helps high school students best as they prepare for college or career.
 - b. Students' perceptions of pathway experiences.
3. Ground Rules
 - a. No right or wrong answers
 - b. Negative and positive comments welcome
 - c. Tape recording
 - d. Confidential – names will not be included in any report
4. Questions
 1. Tell me about the goals you have set for yourself as they relate to your pathway experience.
 2. What are the most important skills you will gain in your pathway experience? (
 3. How successful do you feel about your classwork/internship in your pathway program?
 4. How are your chances at succeeding in life impacted by your pathway experience?
 5. In general, how do you feel about the opportunity to participate in a Pathway program?
 6. What has been your personal experience in your Linked Learning pathway in the context of race, as either a member of the racial minority or majority?
 7. What has your experience been in establishing and building relationships in your pathway classes and with the community?
 8. Is there anything else we haven't discussed yet that you think is important for to know as we consider ways to better help high school students prepare for college or career?

APPENDIX C: PARENT ASSENT LETTER

Parent Consent Letter for Student Survey and Interview

Dear Parents/Guardians,

I am Cherie Solian, a doctoral candidate in the Doctoral Program in Educational Leadership at Fresno State. I am conducting a research study titled “Student Self-Efficacy (Personal Agency) and Motivation across Low, Mid and High Poverty Linked Learning School Settings.” The purpose of the study is to understand how Linked Learning pathway experiences influence students’ personal beliefs and motivation in a variety of school poverty contexts.

Your child is being asked to participate because your child is enrolled in a low, mid, or high poverty Linked Learning pathway. Participating in this survey is completely voluntary, and you can withdraw your child from completing the survey with no penalty. The Committee for the Protection of Human Subjects at California State University, Fresno has reviewed and approved this study. If you have questions regarding your rights as a participant, please contact the Chair, Dr. Kris Clarke, (559) 278-4468.

Procedures

If you agree for your child to be in this study, the following will occur:

1. Your child will respond to a survey about how teaching strategies and materials in my classroom. The survey has 35 questions, taking approximately 10-15 minutes.
2. Your child will be interviewed for approximately 30 minutes about what helps him or her in school and in setting and reaching their goals for the future. The interview will be taped.

The only impact on your child for participating in the study is he or she will spend approximately one hour to complete the survey and to be interviewed. All answers are confidential and no identifying information will be collected. Your child can decline to answer any question that he or she doesn't want to answer. A copy of the survey and interview questions can be provided to you upon request. Students who participate in the survey will receive an incentive (pizza, candy, or ice cream). If you have any questions or concerns about participation in the study, please talk with me, Cherie Solian, at cheriesolian@mail.fresnostate.edu or by phone (559) 567-6108.

CONSENT: Participation in this research is voluntary. I understand the procedures of the study (listed above). I give my consent for my child to participate in this study.

Student Name

Signature of Parent/Guardian of Student

Date