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Resilience And Academic Achievement In Minority Students

James A. Britton
Illinois State University, jimabritton@gmail.com

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RESILIENCE AND ACADEMIC ACHIEVEMENT IN MINORITY STUDENTS

James A. Britton

138 Pages

Students can thrive within school programs and sustain their capacity for success despite seemingly overwhelming obstacles. A model of school-based resilience can insulate students from risk and help students acknowledge challenges, embrace them, and learn as students encounter challenge and surmount it.

This study of a high school program analyzed the relationship between educational resilience and academic achievement through a direct measure of resilience. The research investigated whether a program increased resilience for minority and low-income high school students and whether stronger resilience was associated with improved academic outcomes. Students in the program produced significantly better academic outcomes, as measured by their improvement in the ACT Educational Planning and Assessment System (EPAS) and Advanced Placement course enrollment. The resilience for students in the study did not improve to a statistically significant level as measured by the Resilience and Youth Development Module. In addition, the study did not find a statistically significant relationship between resilience and the academic indicators. The study's findings contribute to the growing body of research on the complex nature of resilience for individuals and helps to hone in on resilience as an operational construct for school systems.

While this study could not tie student achievement directly to an academic resilience measure, the research laid a path for future studies. An instrument that can differentiate students

in terms of school-based resilience would aid the study of how resilience can improve student achievement. The research magnified the need for an educational resilience measure and a mixed methods approach to school-based resilience research.

KEYWORDS: resilience; achievement; academic achievement; minority students; low-income students; high school; secondary education; educational resilience; academic resilience

RESILIENCE AND ACADEMIC ACHIEVEMENT IN MINORITY STUDENTS

JAMES A. BRITTON

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RESILIENCE AND ACADEMIC ACHIEVEMENT IN MINORITY STUDENTS

JAMES A. BRITTON

COMMITTEE MEMBERS:

Adel Al-Bataineh, Chair

Ryan Brown

Miranda Lin

ACKNOWLEDGMENTS

CONTENTS

TABLES

FIGURES

CHAPTER I: INTRODUCTION TO THE STUDY

In the closing pages of his book, Samuel Betances (2013) offers these words to students like himself challenged by circumstances that hindered success, "Dare to thrive, achieve and excel in the face of dangerous distractions in hostile surroundings and against painful obstacles in your path" (Betances, 2013, p. 269). His narrative and guide to minority and disadvantaged students provides testament that strengths can fill gaps through the power of relationships and focus. Unfortunately, his account of triumph over adversity is exceptional; many students fall into the gaps of opportunity and achievement and do not claw their way out. Equity and achievement gaps continue to dominate the experience of many students on the socio-economic fringes of society. However, some school experiences do provide students with a rope to extract themselves from where they are to where they want to be. Through resilience, the students use and develop academic and social strengths; they "dare to thrive;" they "achieve and excel."

The focus of this research will not be the narrative journeys of those who make it; for, their narratives merely provide a contrast to the norm. These narrative accounts can render a depiction of an individual feat of strength as the only means for the disadvantaged to gain access to opportunities that should be afforded to all. Some students exposed to challenging environments succeed where others do not. Previous research has investigated why some "resilient" students succeed, and researchers have developed frameworks to explain individual and system characteristics that contribute to academic achievement. Many studies have examined resilience as a core concept to explain the success of minority students. Few have examined the tie between achievement and resilience, and little have examined whether a school-based program can promote resilience that translates into increased academic success. Schools may be able to adopt an approach that develops the strengths and aptitudes present in all students who

1

crave success. The research will introduce an antithesis to the deficit mindset that dominates much of educational reform today.

Overview

If operating from the premise that all students can succeed in school, schools must commit to supporting the academic and social development of every student. However, persisting gaps in opportunity and achievement among minority and socioeconomically disadvantaged students call the premise into question or point to inequities in supporting student development. For two decades, education reform efforts, based on standards-driven accountability, have met with limited success and have fallen short in ensuring that no child is left behind. The reforms have erected structures of measurement and accountability but have not built a foundation for success for all learners. Reforms based on the No Child Left Behind Act (NCLB) have turned attention to deficits but have not helped fill the achievement and opportunity gaps they have revealed. At the high school level, the gaps in achievement have emerged over the course of a child's early developmental and school experiences. Students must draw upon both individual and system strengths to bridge the gaps that have already emerged.

The mindset, promoted by NCLB and its focus on achievement test performance, emphasizes deficits. The standardization and accountability reforms, born of NCLB, have exposed the holes but have done little to address the needs that these holes have revealed. NCLB focuses attention on those who have not demonstrated achievement according to standardized tests used across the country. This deficit model focuses discussion on failure and achievement gaps. In a comparison of state reforms and the achievement gap, Braun, Chapman, Vessu (2010) conclude, "we should not pin our hopes solely on the sort of test-based accountability enshrined in NCLB – it does not appear to be up to the job" (p. 42). The answers to meeting the

2

needs of learners do not merely lie with a narrow focus on tested skills or in test preparation. To prevent failure and the fill gaps, educational practices need to focus on those concepts and skills that those who are underperforming do not possess. Deficits, in the narrow band of skills measured on standardized tests, become accentuated as a disparity that must be addressed. When those who appear to be left behind are from "disadvantaged" and" minority" backgrounds, the remedies to address academic deficits focus on the differences in their culture, family, and communities. As Welch (2011) describes,

> These approaches seem to me to take a deficit view that point to the learner and consider cultural identity to be the primary reason why certain students are not achieving in school. These approaches seem to be indicating that 'different is deficit.' (p. 39)

Merely diagnosing deficits does not lead to academic improvements, nor does a focus on difference.

In the wake of No Child Left Behind, standardization and achievement testing have come upon the shores of high schools across the country. What students need to know has been distilled to common standards of skills, demonstrated on standardized testing instruments. The exclusive focus on the cognitive domain has crowded out attempts to build students' emotional and social capacities. Yet, as asserted by Elias (2009), "The very nature of school-based learning is relational, and social and emotional skills are essential for building and sustaining learning relationships of the kind needed for academic success, citizenship, a civilized and nonviolent classroom, and effective inclusive education" (p.838). Instead of proactively planning to address the structures that breed inequity of access, many schools have focused on achievement tests and have built systems to act when students do not reach the bar set for achievement. Such

3

remediation efforts attempt to fill the deficits in knowledge and skills students possess but often do not address the underlying structures or needs that help produce the gaps.

The passage of Every Student Succeeds Act (ESSA) in 2015 may represent a shift to a model other than that embraced by NCLB (El Moussaoui, 2017). Expanding the definition of success beyond a reliance solely on standardized achievement tests, the revised envisioning of education reform may allow for approaches beyond a deficit mindset. As its stated purpose proclaims, "the purpose of this title is to provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps" (Every Student Succeeds Act, 2015, p. 8). The law provides states more latitude in defining educational progress, yet still mandates that states use math and language arts scores as a measure of accountability. Notably, however, ESSA also requires that states use non-academic indicators of school quality, such as measures of school climate (McGuinn, 2016). The potential impact of ESSA on shifting attention from deficits to providing opportunities will be determined over the next several years as the act realized implementation in the 2017-2018 school year.

Resilience as an Alternative to Deficits

The path to strengthening academic skills may be found, not through remediation but in inspiration, in discovering the factors of success for those who have overcome obstacles. An achievement-laden dialogue tends to center on what students do not know instead of the skills, competencies, and strengths the students demonstrate outside of what can be measured on achievement tests. According to Parrett and Budge (2012), "Deficit thinking reinforces the idea that there is a universal norm (usually White, middle class, male) against which all students should be assessed and to which all students should aspire" (p. 42). If schools merely focus on

deficits as revealed in high-stakes tests, achievement gaps remain and can even widen especially among low income and minority students at the high school level.

Students, teachers, and schools may benefit from the recognition of those capacities students bring to school, especially those students whose challenges seem to outweigh their advantages. As Gorski (2017) points out, "As we fixate on their deficiencies, we might fail to acknowledge the opportunity gaps experienced inside and outside schools by poor and working class families and, as a result, miss opportunities to draw on the resiliencies and community assets low-income students bring to school with them" (p. 145). Students today, in the face of a deficit-dominated dialogue, might gain from an acknowledgement of their strengths, an approach to promote resilience. Risk and resilience factors, including those culturally relevant and specific to an individual's experience, intermingle in a student's experience and can affect an ability to persevere. Through a resilience framework, students from minority and disadvantaged backgrounds can be seen for the strengths the students possess and the progress they have gained rather than for the gaps that exist in their academic achievement. Resilience breeds success, and that success can further strengthen those factors that foster resilience.

A Focus on Resilience

The success of some students in the face of seemingly insurmountable obstacles may indicate individual factors that contribute to their success, yet their success may have been promoted by a school structure that supports their academic and social development. Students, even those who came into school behind their peers, can grow and experience success if provided support and quality instruction (Waxman, Gray, & Padrón, 2003). Classroom environments and teachers that do not indict students for what the students do not know but challenge them to excel beyond can motivate and support students. Significant factors within the

student, the classroom, and school can help students experience academic success when others from similar backgrounds do not (Henderson & Milstein, 2003). These factors can sustain students through difficulty or help them gain confidence in their abilities to gain skills and knowledge that the students lack.

Empirical researchers are calling for an analysis of other factors, including resilience, which affect student performance. "In addition to content knowledge and academic skills, students must develop sets of behaviors, skills, attitudes, and strategies that are crucial to academic performance in their classes, but that may not be reflected in their scores on cognitive tests" (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012, p. 2). These skills, while not tested directly, often influence whether students can create success where the students have experienced failure in the past. Without the knowledge of what truly made a difference to minority students, schools may merely focus on filling academic gaps rather than attending to those factors beyond academic knowledge and skill that determined whether students attain their post-secondary goals (Boykin & Noguera, 2011). It may not be enough to test, remediate, and tutor. The academic and social supports can help students formulate and reach goals that may have seemed out of reach. Schools and their teachers can support student resilience that, in turn, may help them to experience more academic success.

Students can thrive within school settings and sustain their capacity for success despite seemingly overwhelming obstacles. The educational research on resilience points to the importance of establishing structures that support student development. Resiliency-building schools not only insulate students from risk but also help students acknowledge challenges, embrace them, and learn as they encounter challenge and surmount it. Starting with the seminal work of Benard (1991) and furthered by Henderson and Milstein (2003), researchers have

6

examined the common characteristics of school environments that promote resilience. Benard (1991) suggests that school settings can promote a caring and supportive community, high expectations of all, and access to involvement opportunities. Henderson and Milstein's (2003) work describes how school programs can enhance resilience, which the authors define as "the capacity to bounce back from adversity, adapt to pressures and problems encountered, and develop the competencies- social, academic, and vocational- necessary to do well in life" (p. 12). Their description of resilience extends beyond the realm of those skills tested on high-stakes exams. Their resilience framework points to ways schools can help students overcome adversity and advance beyond their projected levels of academic performance.

Definitions

Much of research examining factors that help students overcome challenges centers on "minority students." For the purpose of this study, the term "minority students" is defined as those students enrolled in high school whose linguistic, ethnic, or socio-economic status backgrounds differ from those of English-speaking, White, middle and upper income level students. Throughout the study, the students may be identified as Black, Hispanic, or Latino to indicate their ethnic and cultural diversity. When socioeconomic factors are described, the students may be referred to as students from lower socioeconomic status, or students whose family incomes met the federal poverty guidelines. For students within high school settings in Illinois where the research takes place, students who qualify for free or reduced lunch programs are identified as "low-income students."

The resilience researchers have developed multiple definitions of "resilience." Leading authors on resilience offer various definitions of resilience, and researchers acknowledge "considerable variance in our definitions of resilience" (Liddle, 1994, p. 167). Garmezy, Masten,

and Tellegan (1984) describe resilience as "manifestations of competence in children despite exposure to stressful events" (p. 97). Rutter (1987) defines resilience as a "positive role of individual differences in people's response to stress and adversity" (cited in Reis, Colbert, & Hébert, 2004, p. 111). Garmezy and Masten (1991) defined resilience as "a capacity for or the outcome of successful adaptation despite challenging and threatening circumstances" (as cited in Wang, Haertel, & Walberg, 1994, p. 45). In translating the resiliency framework for educational leaders, Benard (1993) presents resiliency as "the ability to bounce back successfully despite exposure to severe risks" (p. 44). In their discussion of resilience, Reyes and Elias (2011) state, "Resilience is a dynamic process involving an interaction among risk, vulnerability, and protective factors over time, internal and external to the individual, that acts to modify the effects of an adverse life event" (p. 725). These definitions take a systemic view of how the individual and his environment interact when confronting trauma or adverse developmental conditions. With such a view, researchers began to look at how students overcome adversity and challenge to achieve more successful school outcomes.

Some researchers began to use the term "educational resilience" to describe student resilience within school settings. Limited studies have examined the role of resilience in educational settings (Waxman et al., 2003), yet definitions of educational resilience have emerged. Those that have studied educational resilience focus on how students perform within the academic setting and what factors contribute to increased success, especially among those challenged by a disadvantaged status. Wang et al. (1994) set forth a widely used definition of educational resilience, "the heightened likelihood of success in school and in other life accomplishments, despite environmental adversities, brought about by early traits, conditions, or experiences" (p. 47). In a later work, the researchers further describe educational resilience as

emerging from a "continuous interaction" between the individual and the environment (Wang, Haertel, & Walberg, 1997, p. 1). While researchers have used different terms to describe success in school in the face of adversity, for the purpose of this study, "resilience," "academic resilience" and "educational resilience" will be used interchangeably to denote positive outcomes related to academics and school despite conditions that may present challenges for student success.

Statement of the Problem

As children enter the world, they are packaged with an amalgamation of strengths and challenges. Their developmental context, their environment and experiences, can build these strengths or exacerbate the challenges. Even before students enter classrooms, both skills and gaps in skills have emerged. In the context of the school, a new learning environment takes shape and influences student development. How the school structures support for students, especially those from minority or disadvantaged backgrounds, can determine whether the students achieve success in high school and beyond.

A volume of research demonstrates that students from minority or low socio-economic backgrounds are exposed to more environmental challenges, the risks within their developmental contexts (Arrington & Wilson, 2000; Luthar, 2006, p. 762-764). These students, too, have been shown to have less success in school. As Boykin and Noguera (2011) proclaim, "It is abundantly clear that students from certain ethnic groups, prominently African Americans and Latinos, do not fare well in U.S. schools" (p. vii). However, some students do overcome the challenges. Interventions in schools have been developed to address skill gaps, but other approaches may help students address their gaps through building upon resources within the school and within themselves. These approaches recognize that students may benefit when schools focus on more

than just the academic skills; students may capitalize upon external supports, enhance internal capacities, and develop a disposition that helps them confront challenges. These schools recognize that academic skill development occurs when both the academic and emotional domains are supported.

Instead of focusing on the disadvantages and gaps, school programs can enhance strengths and cultivate student and school capacity. Through building relationships with supportive teachers, counselors, and other students, those students from minority or disadvantaged backgrounds can strengthen resilience and, thereby, increase their academic achievement. Students from minority and disadvantaged backgrounds are subjected to conditions that predispose them to risk (Borman & Overman, 2004). Additional, comprehensive support structures, especially when students transition to high school, may be required for students from low socioeconomic or minority backgrounds (Benner & Graham, 2009; Cappella & Weinstein, 2001). Should minority students confront risk productively, they can increase their adaptability and develop strengths, leading to more success in school. In other words, The students can demonstrate their educational resilience. Such resilience can assist students in converting the academic challenges they encounter into opportunities to learn as they increase their skills and knowledge.

Research Context

Project Excel, started in 2006 in a high school district in Illinois, attempts to strengthen social, emotional, and academic capacities of select incoming freshman (Illinois High School District, 2018). Students, selected based upon the input of eighth grade teachers, have demonstrated an average level of success in junior high school; however, the students do not seem to be working at their optimal aptitude. Many of these students tend to be from minority

and disadvantaged backgrounds and have not taken advanced coursework (Constable, 2013). Without an intervention to increase their performance, these students like other minority students would not enroll in honors level or Advanced Placement courses. According to the website Palatine High School Excel (2017), the curriculum does the following:

> show students the educational resources they need to excel in AP and honors
> classes; help students schedule classes that are valued by Top-Tier Universities;
> help students prepare for the ACT, SAT, and the SAT Subject Tests with
> premium materials; help students create a personal schedule that helps them
> prioritize academics, activities, clubs, etc.; teach students how to prepare for
> advanced courses by preparing them in advance using a variety of resources.

The Project Excel program begins in summer school for six weeks in which students receive additional instruction in mathematics and reading. The instructors and counselors associated with the program also emphasize knowledge of study skills, self-advocacy, and other skills related to resilience. During the summer session, a mathematics teacher and an English teacher access academic skills and address any gaps the students possess before they enter a more rigorous course in the upcoming school year. In addition, a counselor, psychologist, or social worker address social and emotional challenges that may arise as the students transition into high school and prepare to enter more challenging courses. The students develop goals for achievement and the means to circumvent obstacles that might get in their way.

After the initial summer school program, Project Excel can differ somewhat at each of school district's five high schools. Each school provides some continuing academic and mentoring support as the student proceeds through the years of high school. The students typically continue their counseling relationship with the counselor, psychologist, or social

11

worker the students began during the summer prior to their freshman year. As students begin

their coursework, they are often scheduled together as a cohort. As described by one of the

founders of the program, "'What I was able to tap into by accident was the power of the kids

helping each other,' says Quinlan, noting the program links kids together in 'cohort' classes"

(Constable, 2013). These cohort courses help students build long-term relationships with their

peers and the adults who support the program. Project Excel and its outcomes appear promising,

yet the program has not been formally studied. The news article written in 2013 highlights that

all 32 Project Excel students at one of the high schools entered college and many earned

scholarships, including three students who earned Golden Apple Scholarships to become future

educators (Constable, 2013). The anecdotal evidence of success has been gathered, but no

formal study has been undertaken to analyze the success.

Project Excel was built upon a premise that students, especially minority and

economically disadvantaged backgrounds, may possess untapped academic potential. The

program framework asserts that through additional information and support, students can access

more rigorous curriculum and follow a course that will culminate in college enrollment. These

students not only have to strengthen their academic skills but receive guidance and support to

take on the challenge of demanding coursework.   The students need not remain average.

Previous participants have claimed that the increased opportunities and positive relationships

they developed with adults and other students were essential to their success. The students have

attributed Project Excel as the reason they were able to withstand current challenges and

overcome previous experiential and academic gaps (Constable, 2013).

12

Significance of Study

Both qualitative and quantitative research has been conducted to explain the concept of resilience, describe its characteristics, and investigate the structures that promote it. Despite the attention resilience has received in the last decade, especially within schools, few rigorous quantitative studies have been conducted. The majority of research, especially research analyzing resilience in school settings, has focused on the comparison of both resilient and non-resilient students. To understand resilience within educational settings, studies have employed descriptive, causal-comparative, or correlational research designs. Yet, more rigorous research examining resilience specifically within targeted educational programs and settings is still needed. Several qualitative studies of resilient students described their experiences and analyzed the risk and protective factors that students may encounter in school settings, yet these studies do not allow the findings to be generalized. While some programs appear to have augmented educational resilience, the empirical, qualitative, and quantitative research studying students in these programs is limited (Borman & Overman, 2004; Tudor & Spray, 2017).

Purpose of the Study

This study examines whether a program, designed to inject external supports and build internal aptitudes, can help minority students enhance their resilience and whether these gains can then lead to increased academic success. The study may illustrate the structures in schools that helped students realize the potential for their success through the analysis of student resilience and corresponding academic achievement. The purpose of this study is to link resilience to achievement and determine whether school programs can increase both resilience and academic success. The study explores whether a targeted program can enhance student strengths and help them achieve academic success when, as minority or socioeconomically

13

disadvantaged students, multiple barriers to their success may have existed. Drawing data from students exposed to Project Excel and comparing them to those who did not have this benefit may aid schools in developing a thorough framework in which these experiences can be replicated.

<h3 align="center">Research Questions</h3>

Research has yet to provide ample evidence that increases in resilience translate to positive academic outcomes across a student's high school experience, nor have sufficient studies examined whether targeted school programs can increase resilience. This research seeks to find out whether students involved in a particular program, called Project Excel, demonstrate more educational resilience than comparison groups. The study analyzes the resilience measures and academic achievement for the Class of 2016 Project Excel participants as compared to peers who were not part of the program. The research investigates if high resilience also leads to improved academic achievement, as measured through their growth in ACT's system of tests called Educational Planning and Assessment System (EPAS), as compared to other high school peers. Additionally, the study examines whether Project Excel participants have taken on more rigorous coursework through choosing more Advanced Placement courses than their like peers. Finally, the research will follow the Project Excel participants from the Class of 2019, as compared to a group of non-participants, across their experience in Project Excel during their freshman year. A measure of resilience will be taken at the beginning of a 6-week summer school session and at the end of their freshman year. By examining students in a resiliency-building program, as compared to peers not in the program, in both the classes of 2016 and 2019, the research seeks to answer:

- Is there a significant difference in academic achievement between Project Excel participants and non-participants?
- What is the relationship between resilience and academic achievement among all students in the study, among those that did participate in Project Excel, and among those that did not participate in Project Excel?
- Is there a significant difference in resilience between Project Excel participants and non-participants?

The research was guided by the null hypothesis that students in Project Excel will not demonstrate differences in educational resilience and academic achievement as compared to peers not in Project Excel. In addition, the study will examine a null hypothesis that no relationship exists between educational resilience and academic achievement for students within the program.

Summary

Discrepant performance among students from low income and minority backgrounds gave rise to calls for educational reform. The appeal for reducing gaps in student achievement was canonized in the No Child Left Behind Act. Yet, the accountability systems created under NCLB had limited impact on the achievement gap other than to expose how ill-equipped these students are for the demands of the 21st century. If no child is to be left behind, than every child must receive the supports necessary for advancement. Merely remediating the academic skill deficits do not seem to address the complex needs of diverse learners. The students require a dynamic system of supports that responds to the interplay of cultural, social, emotional, and academic factors that allow students to excel. When such gaps in opportunity and achievement exist, schools may need to do more to foster an ability to overcome, to persevere among

obstacles, and to gain advantage over circumstances. Students can draw upon resources schools avail to them, not only those that address academics, but those that strengthen the social and emotional capacities that can help them sustain their stamina and inspiration during times of challenge.

CHAPTER II: LITERATURE REVIEW

Standards-based Reform

For well over a decade, the No Child Left Behind Act of 2001 (2002) has dominated the conceptual frameworks by which high school structures and reforms have followed. The long title of the Act stated its purpose, "An act to close the achievement gap with accountability, flexibility, and choice, so that no child is left behind." The title reveals its presumptions, that a system of accountability, flexible school options, and school choice will close gaps in achievement. The first condition for accountability was defining the standards upon which student performance would be measured.

Schools promote learning. The basic motivation that undergirds all school structures is the drive to increase growth and learning in students. Yet, what is defined as learning, what needs to be learned, and how learning is measured in high schools have been determined by political and legislative influences. Standards-based reforms and accountability currently dominate the foundational philosophy of the policies and laws that dictate answers to these questions. According to W. James Popham (2001), "the 1990's brought a tremendous increase in the reliance on students' standardized achievement test scores as an indication of instructional quality" (p. 12). The trend of the 1990's became the law of the land in next century as the Elementary and Secondary School Act of 1965 was reauthorized as the No Child Left Behind Act of 2001 (NCLB). "Spurred by federal legislation, states have placed standards— statements of the content and skills all students should learn— at the center of their improvement efforts" (Rothman, 2012, p. 12). These state standards have driven the assessment systems generated by each state and communicated what learning outcomes schools should emphasize through their system of testing.

17

Standards and Accountability ≠ Equity

Once standards are set, the next step is measuring whether students meet those standards and, by extension, which teachers and schools produce better performance on these measures. Instead of enhancing the development of children as a whole, high schools under the influence of NCLB had shifted to focus on basic, routine skills that are measurable in a timed, objective assessment. What students need to know had been distilled to common standards of skills that can be demonstrated through standardized testing instruments. The exclusive focus on the cognitive domain, the need to demonstrate achievement as measured through testing, had usurped the conceptual framework of current high schools. The need for schools to build students' emotional and social capacities had been relegated to an afterthought.

Despite the increased focus on the achievement of every child, high school reforms based on standards and accountability, have not reached those of greatest need. Attention has turned to those poor and disadvantaged students whose results on achievement tests are discrepant from their peers. Yet, the remedies, thus far, do not appear to have bridged the achievement gaps. "Standards-based reform under NCLB, with its emphasis on accountability through high-stakes testing, has produced many perverse results alongside documented achievement gains" (Desimone, 2013, p. 59). While not conclusive or consistent, some evidence indicates that achievement gains have occurred since NCLB although the reforms seem to have had a limited impact on the reduction of achievement gaps among disadvantaged students (Boykin & Noguera, 2011; Braun, Chapman, & Vezzu, 2010; Dee & Jacob, 2011). Those who recognize the value of NCLB assert that a positive outcome of the NCLB accountability focus has resulted in highlighting the needs of many learners in our high schools. As Boykin and Noguera (2011) contend, "NCLB compelled schools to focus on improving the academic achievement of children

18

who have traditionally not done well in school" (p. 7). However, minimal progress has occurred. Despite decades of achievement-testing driven reform, gaps remain that serve to separate economically disadvantaged and diverse students from the opportunities within the educational system.

Many have argued against the value of standardized tests and have cited their costs. Born of an accountability mindset, the current means to measure academic success reflects the assembly line, mass-produced, and administered objective assessments. As Au (2011) asserts, "High-stakes, standardized testing, at its functional core is foundational to the view that schools are factories where teachers-as-labourers work on an… educational assembly line 'producing' students-as-commodities, and whose value as teachers, students, and schools is measured and compared vis-à-vis the tests" (p. 38). While some question whether students should be viewed as educational products, others contend that the manufacturing of student performance changes the overall qualities of the learner. Darling-Hammond and Adamson (2010) acknowledge the role of the current federal context claiming, "standardized tests that have been the linchpin of standards-based school reform, particularly the tests that states have introduced to comply with NCLB, have not focused primarily on the higher-order thinking and performance skills reformers called for" (p. 3). These tests are producing measures of learning that limit the scope and definition of what learning entails.

An Alternative to Deficit-based Reform

When students succeed, often there is a host of variables embedded within the student, home, and school that set the stage for their success. Other students, especially minority and disadvantaged students, are not so fortunate. These students are seen as somehow deficient, or ill-equipped for the rigorous demands of a standards-driven education. The deficit model of

19

education has been referenced as a destructive and disabling model for those deemed as different, especially among those receiving special education services, those from backgrounds of poverty, and those who differ linguistically and culturally from the White middle class (Bomer, Dworin, May, & Semingson, 2008; Dudley-Marling, 2007; Harry & Klingner, 2007). They struggle academically; they get labeled as an average student or less. These students perform worse on high-stakes standardized tests and become stuck in a cycle of low expectations and limited post-secondary opportunities (Williams, 2011). Applying a deficit mindset, The students may even be told that *if only* they worked harder, applied themselves, and focused on their academics, they would achieve more and maybe one day go to college. A deficit focus tells the students what is wrong with their performance and actions but lacks the systemic and individual supports to recognize their strengths and promote growth. Such a deficit-laden view appears to thwart the premise that all students can succeed.

The Challenge for Minority Students

Despite the focus on leaving no child behind, the accountability measures taken since the 1990's have done little to produce meaningful reductions in achievement gaps. Many studies have detailed the challenges that students from minority and disadvantaged students face as well as those schools that serve them (Arrington & Wilson, 2000; Borman & Overman, 2004; Luthar, 2006, p. 762-764; Parret & Budge, 2012).   These risks contribute to less success in school among many of these students. While America is increasingly diverse, students in the minority still struggle in American schools according to measures of academic performance and high school completion. Many minority students do not finish high school. The dropout rate among black and Hispanic students is double that of White students (Carpenter & Ramirez, 2007). According to the review of Kuperminc, Wilkins, Roche, and Alvarez-Jimenez (2009), "Latino

20

youth also have the highest rates of school dropout among major ethnic groups in the U.S." (p. 213). The road to drop out may start early on with disparate academic success while in grade school settings. According to the 2009 NAEP test results, the achievement gap between Hispanic and White students at grades 4 and 8 in mathematics and reading was between 21 and 26 points (Hemphill & Vanneman, 2011). For Black students, the gap from 2007 NAEP results ranged from 26 to 31 points for the grade 4 and 8 tests in mathematics and reading (Vanneman, Hamilton, Baldwin Anderson, & Rahman, 2009). The ACT test, which purports to establish college and career readiness standards, serves as an indicator of success at the high school level. For the Class of 2017, only 27% of students who took the ACT met all four college readiness benchmarks and were deemed college ready within all subjects (ACT, 2017). For those students from minority groups, only 6% of African-Americans and 14% of Hispanic students were college-ready in all four subjects while 35% of White students met the standards (ACT, 2017). In their review of recent research on the achievement gap, Boykin and Noguera (2011) conclude, "Thus, despite gains in reading and math achievement among Black and Latino students, the national achievement gap today is strikingly similar to what it was 20 (and in some cases nearly 30) years ago" (p. 13). Accountability measures alone will not close the achievement gaps that exist among students from minority status.

Overcoming the Challenges

Some students with significant barriers do overcome the challenges they encounter and make strides to improve their academics. The disposition a student develops or assumes when confronting challenge can foster improvement or hinder progress. In addition, systems of support along the way can assist students in enhancing their strengths and their ability to bounce back from adversity. Instead of focusing on the disadvantages and gaps, school programs can

enhance strengths and cultivate student and school capacity. Should minority students confront

risk productively, they can increase their adaptability and develop strengths. In other words,

Minority students can demonstrate resilience. Through forging relationships with supportive

teachers, student services staff, and their peers, minority students can build resilience and,

thereby, increase their academic achievement. The understanding of resilience has grown with

research and the meanings researchers have ascribed to resilience.

Improving High Schools: Addressing the Gaps through Resilience

Throughout educational settings in America, the words "at-risk" and "diverse" have taken

on almost synonymous connotations. Some speak of diverse high schools in almost

interchangeable terms as they do those schools with "at-risk" students. So pronounced is the

relationship that Morales and Trotman (2004) contend, "The strongly positive relationship

between minority students from low socio-economic backgrounds and low levels of academic

achievement has been one of the most consistently examined and established phenomena in the

fields of sociology, psychology, and education" (p. 4).   Unless minorities, especially those from

economically challenging circumstances, draw from strong internal reserves or robust external

supports, these students often fall into a vicious cycle of underachievement. They must draw

upon resilience as seen "when a child achieves much higher educational goals than what is the

common average (output) of his/her group" (Novotny, 2011, p. 95).

Gap-Causing Factors

Educators and researchers have pointed to many sources for the foundational causes of

the achievement gaps. The issues are complex and in many ways mirror many other societal

disparities present between the non-White and White, the affluent and impoverished. While

some indict social structures and hidden racism for the disparity, others look at factors rooted

22

within the schools themselves. A myriad of issues likely interact to produce the gap found among disadvantaged and minority students. As is the case for all students, home-based and school-based factors play a role in student success regardless of background.

Family, Community, and Social Factors

Some contend that the environment in which students develop may contribute more significantly than the school-related factors that these students experience. Grogan-Kaylor and Woolley (2010) found that the family's "socioeconomic status did most to explain the disparities in educational outcomes [among middle and high school students] on the basis of race and ethnicity" while other community factors also had an impact (p. 891). Some of the factors evident within the school setting appear to be tied to a lack of exposure to environmental conditions in which students have developed. In discussing "How poverty affects classroom engagement," Eric Jensen (2013) cites seven issues, tied to the students' developmental contexts, which may be inhibiting students from disadvantaged backgrounds: poor nutrition and health issues; smaller vocabulary; lack of optimism that hampers effort; lowered expectations about their capacities and future; cognitive problems such as high distractibility; stressed or negative relationships; and chronic distress. These factors emerge from sources outside of the school setting, often related to family and community factors that manifest in the classroom. The research of Ramirez and Carpenter (2005) indicate that family income, the number of parents in the home, the level of parental involvement, and English-language skills are "significant predictors of academic achievement for Latino students" (p. 602). Such community and family factors influence school readiness and lead to inequities.

Academic achievement gaps may also emerge as a product of the interaction between inequities and the student responses to them. Many have commented on societal conditions and

23

historical racism that have contributed to the emergence of the achievement gap. The "cultural ecological" model, espoused by John Ogbu (2004), holds that community and system forces perpetuate the ongoing patterns of discrimination and prejudice experienced by minority students, which then inhibits academic achievement. To survive within this context, minority students may engage in behaviors and ascribe to attitudes that distance them from the norms of the majority culture, those implicit rules they need to follow to ensure success in school. Some students may develop an oppositional culture to fend off the accusation by other minority peers that they are "acting White." "In such situations, minority student engagement, participation, and achievement all suffer, and any achievement gap is exacerbated" (Ramirez & Carpenter, 2005, p. 601). Gaps emerge then as response to racial inequities throughout society.

School-related Factors

School-related factors also seem to play out in the widening the divide between those who achieve and those who struggle in schools. The experience of minority students early on in their schooling helps set the foundation for future school performance and their achievement as measured by standardized tests. "Black/African American, Hispanic, and multiracial students who experience low academic achievement early in high school continue to experience this pattern throughout high school" (Bryan et al., 2012, p. 474). Even with students who may show higher achievement in the earlier grades, their achievement levels slow over time. The gap between initially high-achieving black students and their White counterparts tend to widen significantly within schools with predominant high black enrollment (Hanushek & Rivkin, 2009). Because such gaps tend to widen for minority youth throughout their school experiences, the school-related factors have received much attention.

The schools attended by minority students tend to be different from those attended by Whites. According to Balfanz (2009), "Forty percent of White students attend high schools that are 90 percent or more White, while roughly one-third of Latino and African American students attend high schools that are 90 percent or more minority" (p. 21). The schools in poor communities serve a larger number of needy students with fewer adults. While not overtly segregated, separate and unequal tends to characterize the experiences of minority students in high schools. The schools inhabited most by minority students experience daunting challenges. As described by Evans (2005), "Predominantly urban, many of these schools are, by almost any measure, less congenial to learning than others, because, proportionally, they have more teachers who are inexperienced, poorly trained, and uncertified; more textbooks that are outdated; fewer computers; larger class sizes; and buildings that are in worse repair and more marked by violence" (p. 583). These schools are repositories of challenge and manufacture inequitable experiences for minority students.

Disparate achievements levels also emerge within schools where differences between schools cannot explain the gap. Some contend that differences surface in the classroom as well. Hawley and Nieto (2010) assert, "They [race and ethnicity] affect how students respond to instruction and curriculum, and they influence teachers' assumptions about how students learn and how much students are capable of learning" (p. 66). Such biases, whether overt or unconscious, influence teachers to treat minority students differently. In Oates' (2009) review of the "prominent explanations of the black–white performance gap ('academic engagement,' 'cultural capital,' 'social capital,' 'school quality' and 'biased treatment')," school quality and biased treatment are identified as the most salient explanations in the performance gap on achievement tests (p. 415). The school quality explanations point to the insufficient resources,

25

inexperienced teachers, high teacher and administrative turnover, and increased levels of violence found in the schools attended by minority and disadvantaged students. Oates (2009) describes "biased treatment" as "race-linked signals about ability and diligence that teachers and schools communicate to students—with varying degrees of subtlety" (p. 416). Diluted expectations and implicit racism among school staff and within the school structure may be eroding the performance of minority students. These influences may result in more frequent school removals for minority students. Pointing to overrepresentation of minority students in receiving suspensions, Gregory, Skiba, and Noguera (2010) state, "The use of school exclusion as a discipline practice may contribute to the well-documented racial gaps in academic achievement" (p. 59). While much of the eroding influences within school structures may be covert, their impact is powerful nonetheless.

Gap-filling Practices for High Schools

For as many purported causes for disparity in achievement, there are potential solutions. Those who locate the foundational causes of the achievement gap to sources outside of school advocate for social change. As one educator explained, "Six hours of instruction a day for 180 days a year cannot overcome the effects of a deprived and impoverished home environment for 18 hours a day, 365 days a year" (Mathis, 2005, p. 592). While high schools cannot undo all the social ills contributing to achievement gaps, schools cannot merely abdicate their responsibility to address the gaps present in student performance. As a first step, Hawley and Nieto (2010) suggest that schools can help by "seeing assets, not deficits" (p.69). Achievement tests and reactive intervention systems that respond after failure has begun to emerge do little to address the structures that generate inequity in access and quality. High schools with concentrations of

26

low income or minority students need to develop proactive systems of support that invest in student success.

Research and educational leaders have honed in on many features of a high school that contribute to its success in closing gaps for minority and disadvantaged students. The graphic below in Figure 1 attempts to summarize and highlight much of what the literature describes.
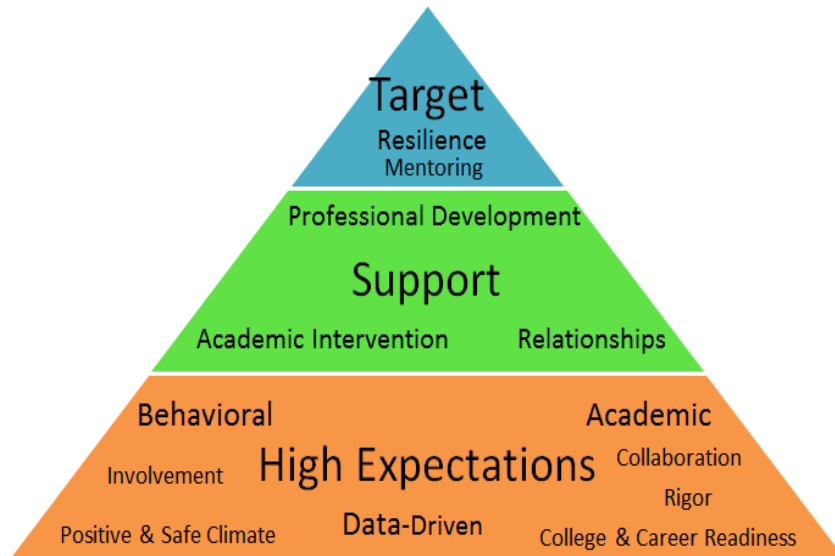
Figure 1. Model for closing achievement gaps in high schools

Foundationally, high expectations for all members of the school community help establish norms of behavior and academic achievement. From an emphasis on the rigor of curriculum and culture of involvement and engagement, a common core of positive standards is established. For example, all students are provided the message that they can and should take Advanced Placement level coursework. The fulfillment of high expectations is monitored through data-driven methods that compare performance against the goals that are set. Collaboration of teachers within professional learning communities and through classroom activities enlivens the interactions with academic content. Support structures flow from monitoring practices as well as the student-teacher relationships that these high schools foster. Students, who show signs of academic or behavioral struggles, are provided support, not just remediation and punishment.

Relationships of nurture, care, and respect are derived from interactions that support the development of a community organized to learn and grow. At another level, minority students can be targeted through school programs that seek to buttress their strengths and negate the negative messages that have bombarded them throughout their schooling. These targeted programs often develop relational resources through forging relationships with minority students and connecting students to adult mentors.

The literature on schools whose minority and disadvantaged students achieve provides direction on how schools can close achievement gaps through establishing high expectations for the school structure. Chenoweth, who has researched the characteristics and qualities of successful high poverty schools, cites the following as essential for schools: believing in the potential of all their students; prioritizing instruction over managerial aspects of their work; focusing on supporting the growth and ability of teachers and staff; and carefully evaluating success and failure (Chenoweth & Theokas, 2013). To ensure high quality secondary schools, Bob Wise (2008) suggests that high schools "align what schools expect of students with the demands of college and the workforce;" "offer a rigorous, option-rich curriculum;" "personalize learning; and provide necessary supports;" and "improve instruction by mining data and using digital technologies" (p. 10-11). In Kannapel and Clements (2005) study of high-performing, high-poverty schools in Kentucky, eight common characteristics of successful schools were identified as follows:

> school-wide ethic of high expectations for faculty, staff, and students; caring, respectful
> relationships; strong academic, instructional focus, systems for assessing individual
> students on a regular basis; collaborative decision-making led by non-authoritarian

principals, strong work ethic and high faculty morale; and recruitment, hiring, and assignment strategy for teachers (p. 14).

In their discussion of what makes high schools excellent and equitable, Darling-Hammond and Friedlaender (2008) named overall features implicit in the design and execution of the school structure: personalization; rigorous and relevant instruction; professional learning and collaboration. Rigor and high academic expectations are consistently cited as characteristics for high-performing and rapidly improving schools with high percentages of minority or economically disadvantaged students.

Attending to academic and nonacademic factors will help high schools create opportunities for students to reach their full potential, especially for those students who enter high schools already behind their peers academically. Several studies have indicated the structure of support that high schools should establish. Balfanz (2009) advocates, "Reformers must also create a system of academic and social supports for students who enter high school with inadequate academic skills and declining levels of school engagement" (p. 31). The high school structure must support a culture of high achievement paired with support. Among the schools found to narrow the achievement gap in a Department of Education report, "The school cultures featured high expectations for student achievement; learning supports, such as after school programs and tutoring, to help students meet expectations; an emphasis on accountability and assessment to determine where additional help was needed; and a collaborative and optimistic attitude among faculty and staff" (Billig, Jaime, Abrams, Fitzpatrick, & Kendrick, 2005). While expressed differently, research on high-performing, high-poverty schools reflects common themes of high expectations, systems of support for students, professional development for teachers, and an emphasis on relationships (Parrett & Budge, 2012).

The standardization and accountability that dominate high school reform need not crowd out personalization and personal responsibility. Parrett and Budge (2012) state that effective schools "provide protective factors that help build a bond between students and school" (p. 121). In describing the framework for high schools that have shown success in reaching all learners, especially those from minority and disadvantaged backgrounds, the National Association of Secondary School Principals (NASSP) has identified "personalization of the school environment" as one of the "three core areas" of school improvement (Mero & Hartzman, 2013).

> The framework describes personalization as having two distinct parts: The human element, which emphasizes strengthening relationships among people and fostering an environment conducive to learning; The learning element, which stresses the need to establish relationships between students and ideas, such as how the student interacts and directs his or her own learning (Mero & Hartzman, 2013, p. 19).

Schools must attend to both the needs of students as learners but also those as human beings. Focusing on the full scope of student needs, including that for connection to others, schools can help students sustain their efforts through difficulty. While the test results have focused our attention on the academic needs, high schools also should attend to the capacities of students beyond the classroom.

Relationships are key to student success. School programs can target minority students through augmenting interactions that build upon a foundation of high expectations and support. Within the context of relationships, adults can help minority students circumvent obstacles to their success. According to Henderson (2013), "the most powerful protective factor in schools was the caring, supportive relationships that

30

students had with all types of educators" (p. 25). Woolley (2009) found that Latino youth gain positive views of themselves and school when adults communicate high educational expectations about their goals and aspirations, provide attentive and caring support throughout their schooling, and expose them to academic press, or challenging work paired with encouragement and standards of hard work and effort. In their qualitative study of high-achieving Black high school graduates, Williams and Bryan (2013) found that all students mentioned that they felt connected to at least one caring adult at school who went beyond their role to help them. These adults contributed to their success because the adults "(a) attempted to understand the challenges students faced, (b) advocated on behalf of students' academic and nonacademic needs, (c) acted as parental figures, (d) reinforced positive academic performance and student behavior, and (e) set high yet realistic expectations" (Williams & Bryan, 2013, p. 296). When provided consistent and supportive relationships with caring adults in school, students can thrive within school settings and sustain their capacity for success in the face of seemingly intractable obstacles.

Resilience Background

Many researchers have investigated the characteristics of those students that withstand the onslaught of negative risk, develop strengths, and have successful outcomes, including educational advancements. The studies operate from the concepts of resilience as developed by those who initiated resilience research. Luthar (2006) traced the development of resilience research across five decades back to the work of pioneers, such as Norman Garmezy and Michael Rutter, who saw that some children of parents with a psychopathology were able to have healthy, positive outcomes. Instead of dismissing these children as outliers, researchers began to

31

look at the factors that seemed to separate these children from those with less desirable outcomes. Luthar's (2006) comprehensive review of the resilience literature, provides a brief history on the work related to resilience, shows how the construct has been defined and operationalized in research, and reviews the major findings on "vulnerability and protective factors" (p. 739). The review provides grounding in the resilience research with a developmental psychology perspective. Although she discusses applications to "related disciplines," including education, the research literature tends to be written from the developmental framework (Luthar, 2006, p. 751).   Waxman et al.(2003) divide the classic resilience studies into three major categories, those that studied the individual differences in ways people recover from trauma, research that examined high-risk individuals who obtain better outcomes than predicted or expected, and studies of people's ability to adapt despite stressful experiences. The authors note some complications and distinctions in arriving at a definition of resilience and document the evolution of resilience as a construct stemming initially from psychological literature.   Both of these reviews of resilience research explain how these initial studies gave rise to theoretical models of resilience.

Models for Resilience Building

The educational research on resilience points to the importance of establishing structures that support student development. The resiliency model (Figure 2) as developed by Richardson and colleagues in the early 1990's and described by Richardson (2002) more recently provides one model for understanding resilience. Stressors, adversity, and major life events interact with the protective factors that students have already established. The previous biopyschospiritual homeostasis, a time of balanced adaptation, can become disrupted when students encounter a

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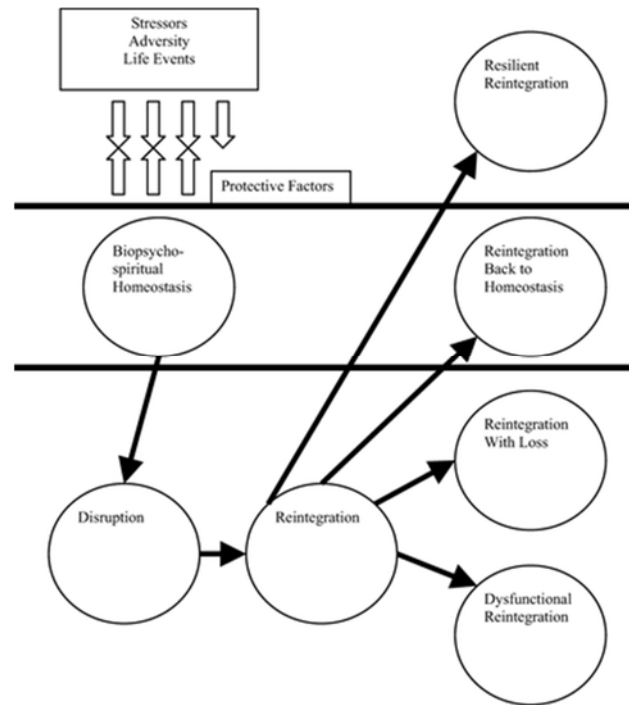
Figure 2. Resiliency model

cultural conflict within the school setting. After disruption, students can reintegrate that

experience into one of four states, dysfunctional reintegration, reintegration with loss,

reintegration with homeostasis, and resilient reintegration. Student programs should seek to

reach resilient reintegration, defined by Richardson (2002) as "the reintegrative or coping

process that results in growth, knowledge, self-understanding, and increased strength of resilient

qualities" (p. 310). From these experiences, students grow in their abilities to withstand

additional stressors. Reflection and perspective continue to enhance the ability to derive positive

outcomes from times of challenge.

To illustrate that "resiliency develops in spheres of children's lives that are susceptible to

the influence of teachers," Wolin (2004) contrasts a risk paradigm, the "Damage Model," with a

resiliency model, the "Challenge Model" (p. 196-198). The Damage Model (figure 3) presumes

that detrimental conditions in the child's developmental environment damage the child and can

lead to child pathologies, which can later transform into adolescent and adult mental health conditions. The Challenge Model (figure 4) grants that environmental factors may potentially harm the child, but the model asserts that characteristics of the child or other contexts can transform the challenge into strengths as the student develops.
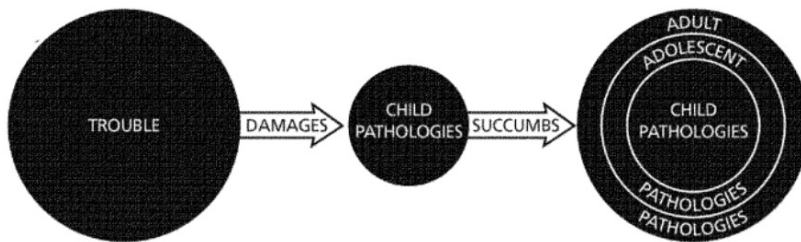
Figure 3. Damage model
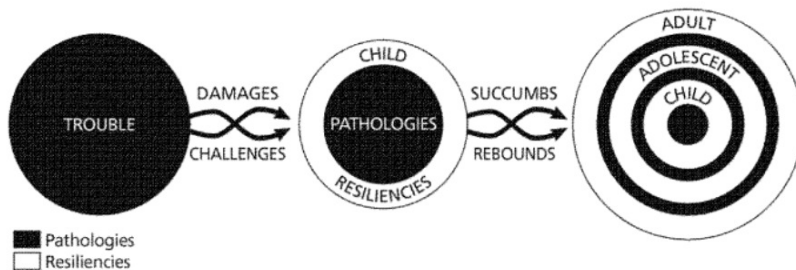
Figure 4. Challenge model

The child may not merely succumb to the challenge but meet it and rebound from it. Thereby, the child develops increased capacities to withstand further negative pressures and experiences. Such a model that looks beyond risk to building capacity leaves open the possibility that resilience-building programs can help students develop strengths and support them as the students rebound from challenge-provoking circumstances. Within an educational setting, academic demands present some of the most pressing challenges encountered by students from disadvantaged backgrounds. How the students tap into resources within themselves and the environment will influence their school success.

34

School-wide Resilience Building

Starting with the seminal work of Benard (1991) and furthered by Henderson and

Milstein (2003), researchers have examined the common characteristics of school environments

that promote resilience. Benard (1991) suggests that school environments can promote a caring

and supportive community, high expectations of all, and access to participation and involvement.

Instead of those factors that predispose those to struggle, school-wide approaches to build

resilience focus on factors that protect individuals against negative outcomes.

Henderson and Milstein's (2003) resiliency wheel (Figure 5) provides insights on how

school programs can enhance resilience.

Figure 5. Resiliency wheel

Their definition of resilience, referenced earlier as "the capacity to bounce back from adversity,

adapt to pressures and problems encountered, and develop the competencies- social, academic,

and vocational- necessary to do well in life," illustrates that adaptation and developed capacities

can allow the student to find success both within and outside the school (p.12).   Their resiliency

wheel illustrates the six factors that play a role in building resilience. Henderson and Milstein

(2003) first describe those factors that mitigate risks, increasing "prosocial bonding," setting

"clear, consistent boundaries," and teaching "life skills" (p.12). Bonding, boundaries, and life

skills help students fight off the risks the students find within the school, home, and community environments. Yet, additional factors within the resiliency wheel are essential to build resiliency into the environment, those of "caring and support," "opportunities for meaningful participation," and "high expectations" (Henderson & Milstein, 2003, p. 13-14). Schools can emphasize the development of positive relationships with adults that support students academically and socially. Schools can look for direct ways for students to participate in their education by including them in making decisions, promoting classroom discussions, and providing multiple means by which students can engage in activities, athletics, and academics. Schools and targeted programs can help mitigate risk and enhance resilience by addressing both sides of the resiliency wheel.

Resilience in School Settings

From aspects of individuals and the environments in which the students live and go to school, students can experience both risks and protective factors. Resilience plays a role in whether students can approach challenges as opportunities to adjust, change, and develop strengths. Several researchers, often operating from a qualitative research framework seek to discover what students experience as hindrances or help throughout their schooling. For example, Morales (2010) interviewed 50 academically resilient low-socioeconomic students of color and found two clusters of protective factors, skillful mentoring for future success and the drive, belief, and expectation that they will be successful. Parallel studies help establish a basis for exploring what factors promote resilience and academic achievement.

In their extended three year case study of 30 first and second generation Latino and Asian immigrant students as compared to 20 "mainstream" students, Silva and Radigan (2004) concluded that "educational resilience can be fostered through interventions that enhance student

learning, develop their talents, and provide buffers against environmental adversities" (p. 115).

The research explores and examines how children of immigrants achieve academic levels on par or above their majority peers. Through interviews, surveys, and observations, the researchers explore how these students act and react within "the prevailing socioeducational culture within the school" (Silva & Radigan, 2004, p. 112). In their qualitative study, Silva and Radigan (2004) examined how the individual students use their protective factors and their support systems in overcoming the risks the students encounter. The researchers found in their analysis that resilient students actively use and manage their resources and environment to achieve success. In their view, students are active agents of their own developing resilience.

In a study of low achieving incoming freshmen high school students, Cappella and Weinstein (2001) attempted to isolate the risk and resilience factors that relate to reading improvement. The article focuses on proximal risks, factors such as poor achievement, which more directly relate to academic outcomes. Cappella and Weinstein (2001) assert that much of the resilience research has examined distal risks, such as low socioeconomic status or ethnicity, and have not attended to more direct factors that predispose students to negative outcomes, such as those who struggle early on with academics. Using the data from National Educational Longitudinal Study of 1988, the researchers compared 1,362 students who showed academic difficulty before high school as demonstrated through reading scores at the lowest proficiency level in 8th grade. Of these students, 201 students, or 15%, achieved intermediate or advanced proficiency in reading by their last year in high school. Of these students who achieved positive academic outcomes, the researchers found being White, female, possessing an internal locus of control, and having exposure to more rigorous academic outcomes "independently predicted" an

ability to overcome their poor academic performance as incoming freshman (Cappella & Weinstein, 2001, p. 758).

Cappella and Weinstein's (2001) research provided a thorough overview of the risk and protective factors that have been identified in the resilience literature. Unlike some of these studies, their analysis started with a risk factor more directly associated with negative outcomes to identify a common group at risk. Then, The researchers looked for associated factors that pointed to outcomes that are more favorable. Their findings appear to echo other research, that those advantaged by race or academic opportunity are more equipped to overcome an initial challenge. The study also emphasized that the transition to high school represents a period of increased vulnerability for students already positioned as academically fragile.

Drawing upon the data of 2,169 of Mexican American students in three California high schools, Gonzalez and Padilla (1997) selected 133 students who received mostly A's and 81 students with mostly D's or less. Their research sought to identify those factors that distinguished the academically resilient and non-resilient. A survey of the 214 students found that the resilient students were more likely to live with both parents and have parents with higher levels of schooling than non-resilient students. Those resilient students also indicated that a supportive academic environment and a sense of belonging to school contributed to higher grades in high school. Their regression analysis on student grade point average revealed that the only significant predictor of academic resilience was a sense of belonging to school.

A study by Irvin (2012) addressed the factors that protect students from risk and promote positive outcomes among low income, Black youth from the rural South. The research centered on person-oriented risk and assembled an analysis of how risk variables cluster within an individual rather than within a group. Participants with common characteristics were then

38

grouped into categories for analysis, such as the ones used in this study *Troubled, Tough, and Disengaged*. The researcher chose to investigate behavioral and psychological engagement as the resilience-building factors among these youth. The findings suggested that merely identifying students at risk by external characteristics, such as their poverty status, can be misleading. Other factors like behavioral adjustment were more salient. The researcher also concluded that the study supports efforts to increase student engagement in the school setting as engagement leads to better outcomes.

This research conducted by Irvin (2012) can serve as a model for performing a research study within the context of resilience. Irvin (2012) claimed, "the application of a resilience framework in educational research is rare" (p. 176).   Irving also provided a simplistic overview of resilience, drawing predominantly on the work of two researchers, Masten and Luthar. To assess engagement, the researcher used the teacher reports and self-reports through the following measures, the *Extracurricular Involvement Survey*, the *Quality of School Life,* and the *Interpersonal Competence Scale-Teacher (ICS-T).* To assess outcomes, the study examined school grades and the level of aggression students demonstrated according to their peers. The singular focus on very particular research participants allowed the researcher to address relevant issues of socio-economic, regional, and racial factors in resilience research. For the most part, the research missed the opportunity to discuss findings in relation to issues of diversity that many of the students may encounter. For example, the opportunity gap in school engagement among minority, low-income youth was absent from the discussion although the research indicates that engagement is pertinent to resilience building.

In their study of thirty-five academically talented high school students from economically challenged and ethnically diverse backgrounds, Reis, Colbert, and Hébert (2004) used a

comparative case study and ethnographic methods to investigate the influence of resilience on more successful outcomes. The researchers first selected students who had been identified as academically talented before high school and then compared those who remained academically advanced in high school to those that did not. Those that remained in advanced and honors coursework with high grades differed from those that now took non-college-bound courses, had GPA's of 2.0 or less, or had simply dropped out. Their review led them to find several protective factors that enhance the development of resilience, including afterschool and summer programs, exposure to adult counselors and positive role models, more rigorous courses, gifted programs, and peer support programs. A comprehensive system of support within school itself may lead students to gain academically and build upon other protective factors. While establishing that a relationship between resilience and school achievement appears to exist, researchers also investigated the factors that seem to promote resilience.

Additional research determined that a relationship exists between resilience and academic achievement. In a longitudinal study, Scales, Benson, Roehlkepartain, Sesma, and Van Dulmen (2003) found that increases in resilience assets were significantly associated with increases in academic performance, specifically GPA. The researchers followed a sample of 370 students in the 7th-9th grades in 1998 over the course of three years. Using a 156-item survey called the *Search Institute Profiles of Student Life: Attitudes and Behaviour,* the researchers examined what they deemed as developmental assets, the positive relationships, opportunities, skills, values, and self-perceptions as these characteristics related to academic achievement, measured by actual GPA. The greater the number of developmental assets students reported in the 7th-9th grades, the higher their GPA in the 10th-12th grades. In fact, among the assets described as "connections with the community" and following "the norms of responsibility," students were

two or three times more likely to have grade point averages of a B+ or more. The research, however, admittedly "over-represented white students from highly educated and intact families" (Scales et al., 2006, p. 704). The researchers concluded that human development and relationships play an essential role in whether students experience academic success.

School-factors for Resilience

Teachers can be instrumental in fostering the development of resilience among students. The quality and extent of instructional interaction between the student and teacher helps determine whether students demonstrate signs of resilience. A caring and supportive classroom helps students remain engaged, motivated, and connected to the teacher, peers, and even the educational content (Cefai, 2008). The extensive review of research studies around educational resilience, using observational data, surveys, and achievement measures, led Waxman, Padrón, Shin, and Rivera (2008) to conclude that instructional practices and the learning environment can hold protective power for students. The researchers noted a significant gap in the research with few experimental studies done related to educational resilience. The researchers examined differences within schools to ascertain the differences in resilience among students in the same school and similar circumstances. The article summarized their research, both survey and observational data, on learning environment and classroom setting that contribute to building resilience and increased achievement. The studies showed that classroom learning environments and classroom behaviors differ significantly between resilient and non-resilient Hispanic students from predominantly low-income families. Resilient students perceive their classrooms as positive settings where they are satisfied with academic challenges. Yet, non-resilient students experience academic challenge as insurmountable difficulty. The quality and extent of instructional interaction between the student and teacher helps determine whether students

demonstrate signs of resilience. Instructional practices and learning environment can hold protective power for students.

Waxman et al. (2008) article provided a comprehensive review of the research on educational resilience and offered a thorough but concise description of the research and findings for a series of studies in which Herse Waxman was involved. The conclusions about the classroom setting hold interesting implications. The strength of instruction itself may lead students to gain academically and build upon other protective factors. The article summarized much of the literature on the academic achievement of resilient minority students. Because the study differentiated those of this group who display resilience from those that do not, it offered insights into other variables that exist beyond the minority group. The minority students did not need to be compared to the majority; disparate experiences of individuals within the minority population can be explored to discover the most significant resilience-building factors.

Positive relationships with peers and adults may buffer students in the absence of a strong parental relationship. Crosnoe and Elder (2004), using data from the National Longitudinal Study of Adolescent Health and a sample of over eleven thousand students, suggested that supportive nonparent relationships, especially teacher bonding, can help offset the propensity for academic struggle. The instruction and teacher relationships are essential in building resilience among struggling youth. The research addressed the potential association between the parent-adolescent relationship and positive academic outcomes among adolescents. The research posited that a supportive interpersonal context can serve as a protective factor for at-risk students. The results first affirmed that problems at home in particular in parental relationships coincided with academic problems. In terms of race and ethnicity, the research did find some differences. For example, Asian American and Hispanic American adolescents demonstrated

more distant relationships with their parents than Black youth. When confronting problems at home, Black adolescents' positive friendships can protect these youth; whereas, Asian American youth found close relationships with their teachers as protective factors. Relationships mediated both within and outside of school indicate the potential for student resilience.

Crosnoe and Elder (2004) demonstrated the importance of parental support and involvement in adolescence. The study also indicate that the development of a positive peer group structure may serve as a significant contribution to resilience especially in the absence of parental relationships. While other research has focused on the promotion of positive relationships with supportive adults, such as teachers, the student peer group may hold great influence in fostering academic performance and educational resilience. The research findings, especially as related to the influence of race and ethnicity, are complex and seemingly inconclusive for the researchers. While differences among ethnic groups were found, the researchers granted that the differences were difficult to interpret and, at times, counter-intuitive. The peer group relationship, developed and enhanced through the classroom and extracurricular activities, may prove to influence achievement as a strength for resilient youth.

These studies demonstrate that teacher practices and classroom environment can build educational resilience. Downey (2008) used a content analysis approach to analyze data and categorize twelve recommendations derived from the current research regarding fostering academic success while students experience adversity. Downey's research (2008) pinpointed teacher-controlled factors in four different domains: teacher-student rapport, classroom climate, instructional strategies, and student skills. "Everyday interactions in the classrooms do matter," and the teacher can foster academic resilience through their classroom context and pedagogy

43

(Downey, 2008, p. 63). The quality and extent of instructional interaction between the student and teacher help determine whether students demonstrate signs of resilience.

Classroom environment and teacher instruction also play a significant role in fostering resilience in diverse youth. The research of Bondy, Ross, Gallingane, and Hambacher (2007) demonstrated that teachers can develop resilience by establishing culturally responsive classroom management practices. Teachers in the study who developed relationships and set forth expectations were able to set up more productive settings that build student resilience. The study first reviewed the literature around culturally responsive classroom management (CRCM). Then, the researchers established the background on the resilience literature, especially that which espouses the importance of supportive and positive social settings. The researchers engaged in this qualitative study by videotaping and interviewing three teachers with less than five years of experience. The findings of their analysis of interviews and videotape pointed to the importance of developing a context of personal and caring relationships with students. These teachers too set a foundation of procedures and expectations of success while holding students accountable through strong and compassionate discipline. The teachers communicated with students through culturally responsive discourse that incorporated familiar phrases, references to popular culture, and straightforward directives. The researchers asserted that creating an environment of care, support, and understanding could both build resilience and foster an appreciation of cultural differences.

This study presented an interesting perspective in its focus on how teacher practices can promote resilience among a multicultural classroom. Research in resilience can consider student characteristics, teacher practice, and program development but should also incorporate concrete measures of what constitutes resilience. Teacher practice and the culture of the teacher were

44

incorporated in their examination of culturally responsive classroom management. The research focused more on cultural sensitivity than factors of diversity that emerged within a classroom setting.

Close and Solberg (2008), in reviewing the educational outcomes of low-income Latino youth, affirmed "the importance of promoting feelings of connections between teachers and students, as well as heightening students' sense of autonomy and self-efficacy in facilitating positive academic outcomes" (p. 40). In thir study, Close and Solberg (2008) studied 427 ethnically diverse ninth and tenth graders, most of whom performed below standards in language (82%), reading (90%), and mathematics (79%). The students in the study, comprised of 72% Latino, were administered the High School Academic Self-Efficacy Inventory, Academic Self-Regulation Questionnaire, and College Distress Inventory. The researchers also tracked the students' grades and retention in high school. Confirmatory factor analysis was used to "evaluate factors likely to influence the distress, academic achievement, and retention of predominately Latino high school students" (Close and Solberg, 2008, p. 38). The research implications suggest that school-based interventions that strengthen autonomy and self-efficacy can lead to improved academic achievement.

Educational Resilience of Minorities in School

Borman and Overman's (2004) study of minority students from low socioeconomic status backgrounds who demonstrated strong mathematics outcomes shared the common components of higher engagement in academic activities, an internal locus of control, math competency, and higher self-esteem. The researchers set out to increase the understanding of school and individual factors that distinguish resilient low-income minority students from those with less resilience. Borman and Overman drew from the data of the federal study *Prospects: The*

Congressionally Mandated Study of Educational Growth and Opportunity, which tried to examine the effects of Chapter 1, now Title I, on student achievement and other school-related educational outcomes. This research examined characteristics evident among Black, Hispanic, and White students who did and did not experience academic success. The researchers proposed four models of risk and resilience-promoting factors of schools: (a) effective schools, (b) peer group composition, (c) school resources, and (d) the supportive school community model. Although Borman and Overman (2004) noted that "no research has explored racial/ethnic group differences," they did extensively detail the research that relate to academic resilience and differences among low-socioeconomic and minority groups (p. 181).

The results of the Borman and Overman's (2004) analysis suggested that race appears to factor in risk and resilience because even low socioeconomic White students were subjected to more resilience-promoting factors and less risk factors. The presence of a supportive school community model, academic activity engagement, an internal locus of control, positive self-esteem, and a positive school attitude all influenced stronger mathematics achievement. The Borman and Overman's study provided substantial information about factors that relate to promoting positive school outcomes and considers minority status in how risk and resilience factors may differ. A strength and limitation of the study was the exclusive focus on mathematics achievement as the only indicator of academic resilience. Achievement on assessments, however, was a limited definition of what indicates whether students have demonstrated resilience. The Borman and Overman's (2004) research provided one of apparently very few research studies that incorporate issues of diversity within its analysis of resilience. The study validated that minority status renders students more susceptible to negative academic outcomes and restricted their exposure to resilience-promoting factors. In conclusion, when considering the double

impact of low socioeconomic and minority status, "We also find that school-based initiatives that actively shield disadvantaged children from the risks and adversities within their homes, schools, and communities are more likely to foster successful academic outcomes than are several other school-based efforts" (Borman & Overman, 2004, p. 193).

Reyes and Elias (2011) reviewed the factors and outcomes that indicated Latinos are subjected to a high-risk for academic struggles and proposed that schools offer a place where resilience can be fostered. The researchers reviewed the vulnerabilities of Latino students and discussed resilience in terms of the risk and protective factors as these factors relate to culture. The article suggested an ecological-transactional perspective in examining how ecological contexts, present within a culture, transmitted both vulnerabilities and protections that mediate development. The authors primarily drew upon the research of other studies to draw their conclusions. Latino risk factors were described as poverty, ethnic or racial discrimination, and acculturative stress while "familismo," "personalismo," "respeto" serve as protective factors for Latinos. In their analysis of Latino resilience in schools, the researchers suggested that schools can focus on building resources within children by promoting social and emotional learning and bolstering the coordination of social system resources available within school environments.

Waxman et al. (2003) concluded that the findings of educational resilience literature "have typically revealed that there are several factors, including learning environment, classroom instruction, and motivational aspects, that differ significantly between resilient and nonresilient students" (p. 11). Such research provided insights into the instructional variables that emerge within teacher interactions and the classroom. This piece reviewed the literature relating to educational resilience, that which equips student to achieve academically in school despite adverse conditions. While direct references to issues of diversity were not present, several of the

47

studies described include minority youth. Waxman et al. (2003) noted that although limited, current research on educational resiliency has focused predominantly on minority students from low-income families. In the final part of the report, the researchers discussed the practical implications for schools, including fostering teacher interactions with students, establishing a positive school environment, and promoting enriched and stimulating classroom instruction.

Theoretical Model: Resilience in Action

While varying frameworks of resilience exist, this research adopts a theoretical model that acknowledges the contributions of both individuals and systems as they interact to produce positive outcomes. The Youth Development Process model drew upon the extensive work of Bonnie Benard, who has applied the concept of resilience to schools since the early 1990's. As a product of the work of Benard and other researchers, a theoretical model of resilience emerged, one adapted by West Ed and incorporated into a module of its California Healthy Kids Survey (CHKS) (Hanson & Kim, 2007). In 1998, a research panel was formed to develop an assessment for resilience to be used as a supplemental module to the CHKS within the California school settings (Constantine, Benard, & Diaz, 1999). In many respects, the model reflects the components of the Henderson and Milstein's (2003) resilience wheel. Placed within a context of the developmental theory, the framework (Figure 6) asserts that environments imbued with external supports can enhance the internal characteristics that allow children to adapt proactively to challenging circumstances. When children experience "developmental supports and opportunities," "the caring relationships, high expectations, and opportunities for meaningful participation and contribution," their developmental needs for "love, belonging, respect, identity, power, mastery, challenge, and meaning" are more likely met (Benard & Slade, 2009, p. 354).

48
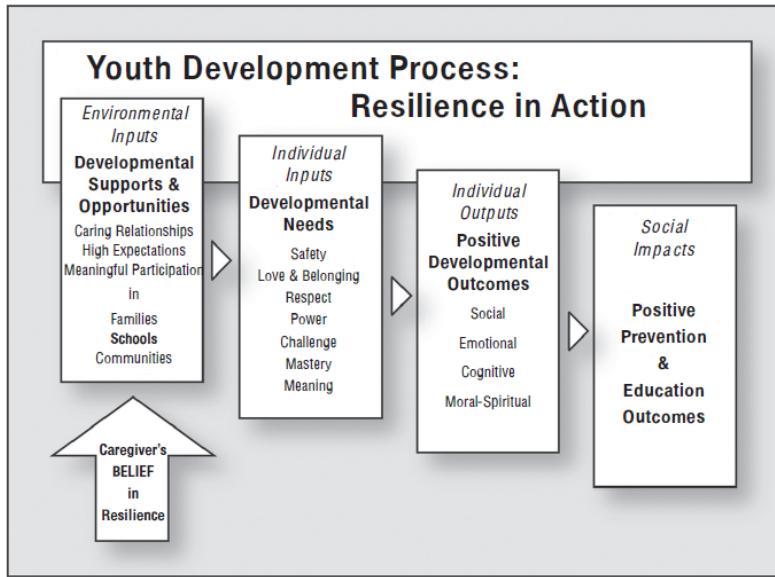
Figure 6. Youth development

The external assets, such as positive relationships and mentoring, build internal resources, like self-efficacy and self-esteem, which can then translate into an increased ability to resist developmental threats and build up skills.

As students experience benefits from external supports and augment their own internal assets, students gain compounded positive outputs. For example, as supportive relationships emerge with adult mentors, students start establishing effective relationships with classroom teachers. Trust of adults may begin to occupy the place where doubt and distance had taken root in their relationships with adults. "These external supports promote positive outcomes, discouraging risky behavior and stimulating academic success" (Hanson & Kim, 2007, p. 5). As the external assets, or protective factors in the home, community, and school, met these needs, the youth can develop the internal assets of empathy, problem solving, self-efficacy, self-awareness, cooperation and communication, and goals and aspirations (Benard & Slade, 2009; Hanson & Kim, 2007). This model recognizes that when students start internalizing the benefits of external supports, their own capacities for success gain momentum. The external assets,

combined with the developed internal assets, then lead to positive health, social, and academic outcomes for the student. The Youth Development Framework provides a theoretical model of "resilience in action" (Bernard & Slade, 2009, p. 354). By examining both the internal assets of students and the external sources that help them, the model addresses how schools and students can contribute to improved outcomes.

Measures of Educational Resilience

Studies have measured the resilience of students in schools through finding academic indicators and locating the presence of factors that resilience literature claims to protect students from risks. While measures of resilience exist, its complexity and the various definitions of resilience create challenges in determining how to assess it. Prince-Embury (2014) asked a couple pertinent questions, "How do we assess the presence or absence of resiliency? Do we need to wait and infer its presence retroactively by the presence or absence of resilience?" (p. 18). Much of the research in schools tend to take an inferred measure rather than attempt to determine resilience through a direct measure. Most of the studies reviewed in the literature tend to extrapolate educational resilience from those who experience or do not experience success in school. If the students face adverse conditions and experience positive academic outcomes, they are deemed resilient. Very few of the studies attempt to measure resilience directly and then identify whether achievement and school success relate to these measures. Few empirical measures have examined the resilience of students within schools. Von Soest, Mossige, Stefansen, & Hjemdal (2010) discuss the validity of *Resilience Scale for Adolescents (READ),* a twenty-eight item measurement that categorizes resilience into the domains of Personal Competence, Social Competence, Structured Style, Family Cohesion, and Social Resources.

Such instruments have been applied to examine the presence of resilience factors among students in schools.

Prince-Embury (2011) applied the *Resiliency Scales for Children and Adolescents*^{TM} (RSCA) to measure both the risks and strengths present within youth and their environments. According to Prince-Embury (2011), "Resiliency in children and adolescents is related to many aspects of their functioning in an educational setting, including academic achievement, school attendance, and school completion" (p. 681). Prince-Embury (2011) has argued that the RSCA, as an instrument designed to capture resiliency on the domains of a Sense of Mastery, Sense of Relatedness, and Emotional Reactivity, could be used effectively within school settings. "RSCA examines children's experiences of the personal resources that are available to them for coping with adverse events" (Prince-Embury, 2011, p. 675). The 64-item Likert-like scale questions yield scores indexed to resources and vulnerability. The researchers cite concurrent validity with other measures, including the *Beck Youth Inventory* and the *Connors Adolescent Symptom Scale*. Prince-Embury (2011) also suggests that the RSCA could be used as a universal screener and as a measure for outcome assessment. Although the instrument could be used in school settings, the instrument serves as a broad-based measure of strength and vulnerability in children and adolescents and seems most applicable in clinical settings.

Rather than using an indirect measure of resilience, an instrument measuring academics more directly may help distinguishing the attributes and experiences that serve as protective factors for students. Martin and Marsh (2006), in studying secondary students in Australia, claimed that while general resilience studies are plentiful, few studies have focused on academic resilience. They paired a new measurement instrument for academic resilience with *The Students' Motivation and Engagement Scale*, an instrument previously created by Martin. This

study set out to establish the factors within education and psychology that correlate to the concept of academic resilience. The analysis revealed five factors that predict academic resilience: self-efficacy, control, planning, low anxiety, and persistence. Martin and Marsh (2006) translated those factors into a model for academic resilience called the 5-C model, comprised of confidence, coordination, control, composure, and commitment. Further analysis also demonstrated that academic resilience predicts three educational outcomes, enjoyment of school, class participation, and general self-esteem.

This Martin and Marsh (2006) study is the foundational research for the establishment of the *Academic Resilience Scale*, used in subsequent research by both Martin and other researchers. *The Academic Resilience Scale* has been used in different contexts. Kapikiran (2012) established the validity and reliability of the academic resilience scale in a Turkish high school. The fact that the scale was used within a different cultural context, other than the United States, indicates that issues of resilience cut across cultural, ethnic, and racial boundaries. The scale, found reliable and valid within another country, established that the scale may have utility in examining non-majority groups. Martin and Marsh (2008, 2009) and Martin (2013) further expanded upon his work by examining academic buoyancy, related to more minor school-related setbacks, with academic resilience, chronic conditions that lead to major school-related consequences. Through these studies, the Academic Buoyancy Scale and Academic Risk and Resilience Scale establish a comprehensive framework for both the everyday and extraordinary obstacles that inhibit academic achievement. Although gender differences are considered in the analysis, there was no discussion of ethnically or socio-economically diverse students. This instrument is one of only a couple measures that claim to assess academic resilience directly.

The Success Highways™ package, a research-based combination of assessment, curriculum, and professional development, focuses on building critical resiliency skills that have been linked to academic success in middle and high school students. The Success Highways' resiliency inventory, a 108-item computer generated self-reporting assessment tools measures student resilience. The Success Highways™ assessments, validated with over 15,000 students, define six categories essential to school-based resilience, including goal setting/valuing the importance of education, academic confidence, strong connections with others, stress management, balanced sense of well-being, and intrinsic motivation (Gillis & Sidivy, 2008). The Revving Up and Moving On instruments, as part of the Success Highways™ assessment package, provide a comprehensive overview of resilience factors as these factors relate to the school setting (Solberg, Davis, & McLemore, 2010). The Success Highways pre- and post-assessment measure the following resiliency constructs: Importance of School, Confidence, Connections, Stress, Well-Being, and Motivation. Success Highways, the curriculum and assessments developed over the course of 15 years, have been used in multiple studies including a longitudinal study of low-income diverse youth and have demonstrated strong correlations between high resilience scores and academic success (Solberg, Davis, & McLemore, 2010). These resilience measures can indicate the role resilience plays in whether students can gain from the opportunities present in the school environment and make achievement gains.

The research around the Resilience and Youth Development Module (RYDM) in the California Healthy Kids Survey (CHKS) provides a resilience measure within a school context (Hanson & Austin, 2003; Hanson, Austin, & Lee-Bayha, 2004). In early 1998, West Ed, a nonprofit research and development agency, convened the Resilience Assessment Research Panel to find or develop an instrument that addressed a gap in the CHKS ability to designate

factors that lead to positive youth development (Constantine, Benard, & Diaz, 1999; Hanson & Kim, 2007). The panel ruled out six existing instruments as insufficient measures of resilience or inappropriate for the population (Constantine et al., 1999). The researchers then developed a survey "to serve as a tool for local and state educational agencies and researchers to use in assessing and understanding a variety of external and internal resilience factors associated with positive youth development" (Constantine et al., 1999, p. 3). The resulting Resilience and Youth Development Module, based upon the youth development conceptual model as discussed earlier, was added as a module to the CHKS. Every year in California, an average of 600,000 students answer the required questions of the RYDM based on their home, school, and community by indicating their experiences on a Likert scale. The RYDM contains 56 questions that assess 11 external assets, protective factors within the home, school, and community and 6 internal assets, those personal strengths that buffer against negative outcomes (West Ed, 2008). The instrument has evolved over several years as the psychometric properties have been reviewed through further research (Hanson & Kim, 2007). Several studies have investigated the norms, reliability, and validity of the RYDM (Constantine, et al., 1999; Hanson & Kim, 2007; Furlong, Ritchey, & O'Brennan, 2009). The Resilience and Youth Development Module, grounded in a long-standing theoretical model, was developed for use within schools, has been administered to thousands of students, and has a significant research base.

Summary

Research within schools has established a foundation for student resilience, especially as related to academic outcomes. Students can sustain academic growth while enduring stressors. Much of research has focused on minority and disadvantage youth and has tied external and internal characteristics to student success in school. The definition of academic success differs

54

in the literature from grade point average to improvement in standardized tests to simply the ability to complete school. Other measures of resilience have evolved and been used in resilience research; however, these studies are limited and still fewer represent empirical, experimental research designs. Whatever measure of success is used, resilience studies demonstrate that the struggle to success is eased when others reach out to students, encourage them, and guide them on their journey.

CHAPTER III: METHODOLOGY

The previous research on resilience has helped explain resilience as a concept and examined at-risk and protective factors present in individuals, schools, and communities. However, little empirical research has examined whether a particular program can both build educational resilience and promote increased student achievement. Resilience has been cited in studies and received full descriptions in books, yet quantitative studies of resilience within school programs were not as prevalent, likely due to the challenges of conducting such research in schools. In the study of a school-based resilience program, Worsley (2014) commented on the "many failed attempts at collecting evidence of the many interventions aimed at building resilience in high schools" (p. 247). The literature review in the previous chapter cited multiple studies that have compared resilient to non-resilient students (Garmezy et al., 1984; Irvin, 2012; Martin & Marsh, 2008; Silva & Radigan, 2004) and have described general structures that appear to contribute to school environments that promote resilience (Waxman et al., 2008; Close & Solberg, 2008; Henderson & Milstein, 2003; Elias, 2009).   However, few research studies have established a relationship with resilience and achievement, and minimal research has examined the differences in resilience attributed to a targeted program. In their search of literature on academic resilience, Tudor and Spray (2017) found close to 2852 records but only 34 of the studies used measurement scales.   Drawing upon the model of resilience, this research has applied a quantitative research approach in examining resilience and achievement specifically within a targeted educational program.

Applying a quasi-experimental approach, a nonequivalent group, post-test only research design for one group of students and a pre-test, post-test design for another set of students was used to test the hypothesis that resilience and academic achievement can be increased through a

school-based program. The categorical independent variable was participation in Project Excel, a program designed to develop academic success for targeted students. The dependent variables were resilience as measured through Resilience and Youth Development Module (RYDM) in the California Healthy Kids Survey (CHKS) and academic achievement as determined by student growth on ACT's EPAS series of standardized achievement tests and participation in Advanced Placement courses.

Rationale for Quantitative Design

The research problem and questions determined the research design, whether a qualitative, quantitative, or mixed methods approach befit the research. According to Creswell (2014), "if the problem calls for (a) the identification of factors that influence an outcome, (b) the utility of an intervention, or (c) understanding the best predictors of outcomes, the quantitative approach is best" (p. 20). Qualitative research, in which the experience is explored from the perspective of those involved, may be most appropriate when a phenomenon or concept needs to be more fully developed in order to determine the "important variables to examine" (Creswell, 2014, p. 20). A mixed methods approach blends some qualitative and quantitative approaches into a research methodology, yet as Creswell (2011) observed there remains some controversy and debate around the mixed methods research design. When deciding on the appropriateness of the mixed method design, he suggested researchers ask themselves, "Does a mixed method better address the core research question being asked in a study than either quantitative or qualitative alone?" (Creswell, 2011, p. 280). As the research questions were developed, a quantitative approach appeared best to address the purpose of the research.

Because this research sought to test a theory mathematically, the quantitative design was most appropriate. Namely, the research was concerned with whether a school program could

increase student resilience and whether increases in resilience would affect student educational outcomes. In previous research studies, resilience factors have been determined and investigated through qualitative analysis (Morales, 2010; Silva & Radigan, 2004; Williams & Bryan, 2013). At this point, the research could be focused on establishing a link between the influences of resilience on academics through school settings. This research has added to the limited quantitative research base in determining whether targeted school programs can foster resilience and whether strengthening resilience tends to increase academic performance.

However, a quantitative approach for this study did have its limitations. The quantitative research method was constrained by information that can be gathered and could over-simplify resilience to a static concept. The quantitative method did not allow for an analysis of the students' experiences with the program and a description of how the program has helped or hindered them. Some researchers have maintained that resilience may be interpreted from one's actions and experiences but cannot be measured directly (Liebenberg & Ungar, 2009). Resilience is a complex, dynamic, and "interactive concept in which the presence of resilience has to be inferred from individual variations in outcome among individuals who have experienced significant major stress or adversity" (Rutter, 2012, p. 336). Thus, qualitative research, in which the experience was explored from the perspective of those involved, meaningfully conveyed the story of student resilience. Interviews and case studies, such as one conducted by Schilling (2008), could further illustrate both the adversity and accomplishment within a resilience narrative.

If conducted as a qualitative study, the results would have provided the kind of narrative detail to the theory that empirical studies may lack. The meaning derived in how one experiences the world would best be told from those who experienced it directly. In qualitative

studies, participants told the stories of what they experienced; the qualitative researcher merely interpreted through identifying themes and patterns and provided a construct from which these experiences can be viewed. In this regard, the research took on a phenomenological approach which then helped "uncover and interpret" the meanings ascribed to what the participant experienced (Merriam, 2009, p. 24). A more developed "theoretical understanding about the phenomena being investigated" could reveal "key variables, their relationships, and their (potential) causal linkages" (Ayiro, 2012, p. 12). These variables and relationships could be further investigated through quantitative research.

The research literature on resilience has developed theoretical models and frameworks. These did not need further explication but rather verification through more quantifiable evidence. Ayiro (2012), providing a succinct description of quantitative research, stated, "Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measures, typically on instruments so that numbered data can be analyzed using statistical procedures" (p. 62). The quantitative research design of this study has helped to determine whether the resilience, specifically resilience developed within a school-based program, promoted academic achievement. The theory, as derived from resilience literature, contended that those students with more resilience perform better academically.

Little research has been conducted to study the impact of programs on student's educational resilience (Borman & Overman, 2004; Tudor & Spray, 2017). The narrative of risk and deficit have been explored in qualitative research, yet quantitative analysis of resilience-promoting programs have been limited in informing schools whether increases in resilience could build positive academic outcomes across a student's high school experience. As Waxman, Brown, and Chang (2004) observed, "There are many books and articles on how to 'foster'

resiliency or how to have resilient children, resilient schools, or resilient communities or be resilient as an adult, but what is needed is empirical evidence that these prescriptions/guidelines/programs work" (p. 266). Over a decade later, Tudor and Spray (2017) made a similar observation in finding few quantitative studies on academic resilience. Because of the need for quantitative research on resilience in school settings and that such a research design best addressed the research questions, this study was conducted through collecting numerical data on resilience as a construct and academic achievement as an outcome.

Statement of the Problem

This study investigated a high school program, called Project Excel, which targeted minority students to increase their positive academic outcomes. While resilience itself was not the intended outcome, the program developed many characteristics and opportunities that helped students endure through difficulty and circumvent barriers to success. Project Excel, as a program to accelerate students into rigorous coursework and set students on the trajectory for college, attempted to build, not only their academic skills, but also their confidence to take on challenge and become more than average, to excel. Those who experienced success in this program described how their experiences with teachers, their peers, and their curriculum helped them gain the fortitude to strive to post-secondary goals and reach them (Illinois High School District, 2013). According to those involved in the program, the students gained something more from high school than just a diploma. Their array of experiences and the support the students received appeared to have engendered resilience.

The Project Excel program, established in 2006, was developed to build the capacities of select incoming freshman enrolled in a suburban high school district in Illinois (Illinois High School District, 2018). Incoming freshman students were targeted for Project Excel based on

60

recommendations of their eighth grade teachers. These students may have performed at moderate academic levels, but their teachers believed the students might possess attributes that have yet to be fully recognized and could be capable of advanced coursework. Many of the Project Excel participants were minority students, who typically were not well represented in advanced coursework, such as Advanced Placement and honors courses. Project Excel had begun as a six-week summer school program that provided instruction in reading and mathematics while building student skills related to resilience. The students were offered one course during the school year with a Project Excel teacher and their peers during their freshman year and an additional summer program before their sophomore year. Through forging relationships with supportive teachers, student services staff, and a peer group, the program sought to inspire self-confidence by getting students to recognize their strengths and then direct their energies toward specific goals tied to achievement. Although in existence for over a decade, the program's effectiveness had not been investigated through empirical research though those involved in the program have asserted its ability to stimulate academic achievement or foster factors that support resilience.

Purpose of the Study

The purpose of this study was to examine whether minority students, exposed to a school program designed to build up external and internal strengths, developed resilience and whether resilience was related to academic success. In the era of NCLB, it had not been enough to demonstrate that programs produced social and emotional gains but that those gains translated to more successful academic outcomes for them. Even Bonnie Benard, the long-term proponent of school resilience, granted,

Given the pressure schools throughout the United States are under to address No

Child Left Behind mandates and pass statewide standardized tests, educators must

demonstrate to their respective school communities that educational practice

informed by resiliency and youth development increases student's connectedness

to schools and, thereby impacts both students' healthy development and school

and life success" (Benard & Slade, 2009, p. 357).

Research that investigated a program that could enhance both resilience and achievement would

have fulfilled the mandates of data-based accountability systems and validated resilience

building as a school improvement strategy. Providing services that appeared to provide implicit

benefits to students could not have been enough to sustain them in the current accountability

climate. As Furlong et al. (2009) observed, "Federal mandates, such as the No Child Left

Behind and Race to the Top, also raise expectations for school officials to collect and use data to

assess student needs and evaluate program implementation and outcomes" (p. 35). Analyzing

student resilience and corresponding academic achievement may have revealed the ways that

structures in the school setting influenced students to realize their potential for success.

This study examined whether minority students could build educational resilience and

increase their academic achievement through a school program that sought to forge relationships

with supportive teachers, student services staff, and a peer group while building confidence and

academic skills. School administrators, teachers, counselors, and special services staff could

have an interest in locating what factors in the school, classroom, and teacher relationship could

strengthen student capacity to endure challenges and persevere academically. The study

recognized that minority and disadvantaged students have faced multiple challenges while in

high school and sought to identify whether a school-based program could strengthen their abilities to successfully finish high school and produce positive academic outcomes.

The study examined students in two different phases of the program, as the students were introduced to the program during the summer before their freshman year and at the end of their junior year. The Class of 2019, the freshman class, had just begun their journey in developing social and emotional school-based assets while the students in the Class of 2016 were completing their third year of high school. For the incoming freshman, the research investigated whether their resilience grew after their experience with the Project Excel program during their first year of high school. For the students in their junior year, the study compared their resilience and achievement to peers in an effort to note differences between students in the program for three years and those who have not.

Research Questions

Research has not yet provided ample evidence whether a school-based program for minority students can increase educational resilience and whether higher resilience translates to positive academic outcomes across a student's high school experience. This study examined whether students involved in a particular program, called Project Excel, demonstrated improved educational resilience. The research examined whether differences in resilience could have related to improved academic achievement, as measured through their growth in ACT's system of tests called EPAS, and compared to other high school peers. The students involved in Project Excel could have shown more exposure to rigorous coursework through taking more Advanced Placement courses than their like peers. By examining students in a resiliency-building program as compared to peers not in the program, the research sought to answer:

- Is there a significant difference in academic achievement between Project Excel participants and non-participants?

- What is the relationship between resilience and academic achievement among all students in the study, among those that did participate in Project Excel, and among those that did not participate in Project Excel?

- Is there a significant difference in resilience between Project Excel participants and non-participants?

Null Hypothesis

The null hypothesis of this study posited that students in Project Excel did not demonstrate differences in resilience and academic achievement as compared to peers not in Project Excel. In addition, the research presumed there was no relationship between resilience and academic achievement for both participants and non-participants in Project Excel. In addition, the research assumed that no relationship existed between resilience and academic achievement in students within the program.

Description of the Research

Studies have indicated that students from minority and disadvantaged backgrounds are subjected to conditions that predispose them to risk (Gorski, 2017). The individual and ecological risks as well as exposure to stressful events, for which minority students are predisposed, can inhibit positive development and academic achievement (Morales & Trotman, 2004; Paschall, Gershoff, & Kuhfeld, 2018). As discussed by Borrero (2011), a "reliance on research that illuminates this 'achievement gap' serves to alienate Latinos, and other youth of color, as the culprits in an educational arena that is broken yet fearful of change" (p. 24). This research sought to illuminate the success of minority students, not the gap between those who

64

have received social and economic advantage and those that have not. By recognizing the abilities of minority students and improving targeted services for them, schools may be able to improve and build upon the strengths and capacities of minority students. In high school, many minority students can bridge academic gaps and withstand the challenges they face as they pursue acceptance into college, but only if schools build capacity rather than focusing on gaps.

Quasi-experimental Research Design

Students for Project Excel were not randomly assigned and, therefore, the study did not meet the definition of a true experiment (Creswell, 2014). The participants for Project Excel were selected based on predetermined characteristics. A quasi-experimental design, also referred to as causal-comparative, was used as both participants in Project Excel and a comparative control group was selected through a means other than random assignment. The Project Excel participants received the treatment through the administration of the program components.

A nonequivalent control group design was used to allow for a comparison between two nonequivalent groups after a treatment has occurred. The groups are "nonequivalent" because differences between the two groups might exist due to a lack of random assignment. For the Class of 2016, a post-test only design was used. In a post-test only nonequivalent control group design, only one group receives the treatment, but both groups are measured (Creswell, 2014). Such a design does not protect against assignment bias. However, the design may need to be used if measures of both groups cannot be taken before the treatment is administered. Because the students in this study were not accessible until after the students have been involved in Project Excel, the post-test only, nonequivalent control group design needed to be used. The Class of 2019 students were administered a pre-test measure of resilience before participation in

the program but after the students had been registered for the program. Thus, a control group could not be selected through random assignment.

This study examined a program called Project Excel as the "treatment." Project Excel began with a six-week summer school program that provided instruction in reading and mathematics and provided students guidance resilience-building skills. Project Excel continued throughout the freshman year with continued support with a Project Excel teachers and student services staff member, either a school counselor, school social worker, or school psychologist. Once students received the "treatment" of the program throughout their freshman year, a difference in both resilience and academic achievement would be expected from parallel students that did not participate in the program. A measure of resilience and that of academic performance from the "treated" Project Excel students and from a control group was collected. The study examined two different sets of students, those entering their freshman year as the students began Project Excel and those at the end of their junior year who have been Project Excel participants throughout high school. For each of these groups a matched comparison group of peers was selected.

This nonequivalent comparison group design estimated the effects of the treatment or intervention, the Project Excel program, "by comparing the outcomes of a treatment group and a comparison group without the benefit of random assignment" (May, 2012, p. 489). Such a research design did not protect against the potential for a difference in posttest scores between the groups to be explained by differences in the groups themselves rather than the treatment they received. However, quasi-experimental without a pre-test measure could be used under certain logistical constraints, such as when "an intervention has already been fielded before the evaluation of that intervention is designed" (Shadish, Cook, & Campbell, 2002, p. 104). The

66

nonequivalent group design did allow for comparison. The two groups, who resembled one another on key characteristics, could be expected to have similar outcomes without treatment. "Common quasi-experimental control group designs include the use of intact treatment groups (e.g. classrooms, schools) matched to control groups on demographic and other key variables" (Walser, 2014, p. 2). Yet, many other extraneous variables may have interceded to explain any observed differences in outcomes especially when the initial group selection may be biased.

A caution of this quasi-experimental model is the vulnerability to internal validity, explained by Walser (2014) as "the ability to attribute study results to the treatment and not some other source or sources" (p. 2). According to Rubin and Bellamy (2012), "The key issue in judging whether a study using this type of design achieves a credible degree of internal validity is the extent to which its authors provide a persuasive case for assuming that the groups being compared are really comparable" (p. 152). In fact, the more similar the groups are, the stronger the study is (Gay & Airasian, 2003, p. 378). Matching could be used to ensure that the control and experimental groups were as similar as possible by matching participants in each group to as many characteristics as possible before the treatment is administered (Rubin & Bellamy, 2012; Shadish, Cook, & Campbell, 2002). However, matching did not protect against all the threats to internal validity. As Walser (2014) observed, "although students, classrooms, and/or schools may be matched on certain known and observable variables, they may differ on other unknown and/or unobservable variables in ways that differentially impact results" (p. 2). To perform matching, the control group was selected based on the characteristics of the Project Excel participants.

When attempting to ascertain the impact of an existing program, it would have been unethical to change the program by imposing external selection criteria that would have allowed

for random selection. The ability to generalize findings was sacrificed to preserve the natural setting for the study. In addition, in the case of those students in their junior year, the research sought to review the impact of a program after participants had been exposed to the program components. Pre-test measures of resilience were not available; however, a measure of academic achievement, the EXPLORE which is part of ACT's EPAS series, was taken prior to their enrollment in the program. Because a screening tool was not already established as part of the program, there was no pre-test measure of resilience that could be imposed upon the program. As such, the quasi-experimental, nonequivalent post-test only design was one of the few available quantitative research designs available to indicate the impact of the program.

Participants

As previously stated, Project Excel, a high school program in the suburbs of Chicago, was designed to provide incoming freshmen high school students additional skills and resources during the summer between their middle school and high school years. The program also extended into the summer between the freshman and sophomore year as well. The relationships and capacities developed could be sustained throughout high school as the students drew upon peer and adult networks established through Project Excel. While Project Excel did not overtly seek to build resilience, the goals of the program were to develop student capacity, enhance their academic strengths, and build their confidence.

The participants for this study were drawn from two classes in two different high schools, the first was incoming freshmen, the Class of 2019, who were just beginning their experience with Project Excel and juniors, the Class of 2016, who have been involved in the Project Excel program. Many of the Project Excel participants were Black and Latino students from low-income families. Table 1 shows the number and percentages of all 184 participants in the study.

The 103 female students represented 59% of the participants, while the males accounted for 41% at 71 students. The participants were from one school at a three to one proportion with 58 students, or 33%, from one school, and 116, or 67%, from the other school in the study. Of the two classes studied, 82 students came from the Class of 2016 and 92 came from the Class of 2019, or 47% and 53% respectively. 69%, or 120 of the participants, were from low-income backgrounds while 31%, or 54 of the participants, were not from low-income families. The racial and ethnic demographics were divided into four categories: 3 White at 2%, 43 Black at 25%, 115 Latino at 66%, and 13 Other at 7%.

Table 1

Characteristics for All Participants by Number and Percentage

Gender		School		Class		SES		Racial and Ethnic Background			
Male	*Female*	*1*	*2*	*2016*	*2019*	*Low-income*	*Not low-income*	*White*	*Black*	*Latino*	*Other*
71	103	58	116	82	92	120	54	3	43	115	13
41%	59%	33%	67%	47%	53%	69%	31%	2%	25%	66%	7%

While all incoming freshmen Project Excel participants at the schools were asked to participate in the study, the junior year participants were selected based upon their enrollment in the Project Excel summer school prior to their freshman year. At the time, the Class of 2016 completed the resilience measure, the RYDM within the California Healthy Kids Survey, the students were at the end of their junior year. The Class of 2016 students had already taken the EXPLORE test when they were freshmen and the ACT in March of their junior year. The incoming freshman took the RYDM as they began the 6-week summer program and then took the survey again at the end of their freshman year.

Instrumentation

Many instruments have been used to determine resilience, yet the options become more limited for research that has focused exclusively on school settings. For some researchers, the presence of resilience was not directly measured (Waxman et al., 2003). Those minority and disadvantaged students not predicted to excel in school settings who do achieve positive outcomes were described as demonstrating resilience (Tudor & Spray, 2017). In this more common resilience research method, the experiences, attitudes, and backgrounds were then examined for characteristics that may have contributed to their success. In these studies, resilience itself was not directly measured or quantified. However, to determine what assets serve to strengthen and protect students, a direct measure, especially an instrument used to report facets of resilience within an educational setting, would allow for a more thorough analysis.

Measures of Resilience in School Settings

The construct of educational resilience provided a basis for this research. Measuring the resilience of students in schools can vary from capturing academic indicators to providing a direct assessment of factors that protect students. Yet, few measures have examined the resilience of students within schools. As previously described, there have been several resilience measures used in school-based studies. Irvin (2012) studied resilience by assessing engagement through the *Extracurricular Involvement Survey* and the *Quality of School Life*, examining school grades, and determining the level of aggression students demonstrated according to their peers. Martin developed scales that capture both academic resilience and academic buoyancy, both of which have been designed to assess student capacity to achieve in the face of transient and chronic adversity (Martin & Marsh 2006, 2008, 2009; Martin, 2013). Kapikiran (2012) used a translated version of *The Academic Resilience Scale*, developed by Martin and Marsh (2006),

70

to test the validity and reliability of the scale so it could be used in future studies as a measure of resilience. Success Highways™ assessed resilience through the categories of goal setting/valuing, the importance of education, academic confidence, strong connections with others, stress management, balanced sense of well-being, and intrinsic motivation (Gillis & Sidivy, 2008). Educational resilience played a role in whether students can gain from the opportunities present in the school environment and make achievement gains.

Resilience and Youth Development Module (RYDM)

Due to its extensive use in school settings and its research base, this study used the RYDM within the CHKS. The instrument, first developed as the *Resilience Assessment*, after a review of six existing resilience instruments, provided evidence of strong internal consistency and a solid theoretical framework (Constantine, Benard, & Diaz, 1999). Further research has narrowed the items on the instrument and established a connection between resilience as measured through the RYDM and student achievement. The research by WestEd of over 800,000 students established a connection between the Resilience and Youth Development Module within the California Healthy Kids Survey (CHKS) and the Stanford Achievement Test (SAT-9) (Hanson & Austin, 2003). In a summary of much of the research, Hanson, Austin, and Lee-Bayha (2004), establishing a relationship between resilience and achievement on test scores, conclude:

> As caring relationships at school, high expectations at school, and meaningful participation in the community increase, subsequent gains in test scores also increase. These results confirm that attention to external resilience assets in school settings show great potential for addressing the academic needs of children (p.12).

Schools in which a greater proportion of students reported experiencing resilience assets, such as caring relationships, high expectations, and meaningful opportunities to participate in schools and communities, showed higher standardized achievement test scores (Hanson et al., 2004). The Hanson et al. (2004) provided an example of research that relates a standardized achievement measure to resilience as measured through the RYDM.

The secondary school version of the RYDM, administered to 7th, 9th, and 11th grade students in California, contains 56 questions that measure the 11 external assets and 6 internal assets that serve as contributing factors for positive youth development (WestEd, 2003). According to WestEd (2003), the RYDM, both developmentally and culturally appropriate, has "demonstrated psychometric reliability and construct validity for each of its asset items and clusters of assets.by extensive field testing" (p. 4). For all questions, students selected one of the following four statements to reflect how true each statement was: *Not at All True*, *A Little True*, *Pretty Much True*, or *Very Much True*. The RYDM measures both external and internal assets that may have helped students achieve school success despite adverse conditions. Students reported on their perceptions of three primary external factors that can function as protective characteristics. These three primary external factors of caring relationships, high expectations, and meaningful participation were viewed from the contexts of the home, school, community, and peer group (WestEd, 2008b). The RYDM also measured internal assets, or individual traits, that are associated with student learning and achievement: cooperation and communication, self-efficacy, empathy, problem solving, self-awareness, and goals and aspirations (WestEd, 2008b).

Twelve items for each context of home, school, community, and peers are associated with the concept of caring relationships. At a four-item Likert scale, the maximum score for caring relationships was 48. The construct of caring relationships are defined as supportive connections

72

to others, having a person who is there for them and who listens non-judgmentally (WestEd, 2008b). Table 2 shows the how the specific items were organized around the component of caring relationships:

Table 2

RYDM: Caring Relationships

Context	Caring Relationships: Measure			
	Care/Interest	Attention	Listening	Helping
School At my school, there is a teacher or some other adult…	Who really cares about me.	Who notices when I'm not there.	Who listens to me when I have something to say.	
Home In my home, there is a parent or some other adult…		Who is interested in my school work.	Who listens to me when I have something to say.	Who talks with me about my problems.
Community Outside of my home or school there is an adult…	Who really cares about me.	Who notices when I am upset about something.		Who I trust.
Peers I have a friend about my own age…	Who really cares about me.	Who talks with me about my problems.		Who helps me when I'm having a hard time.

The construct of high expectations is defined as the consistent communication of messages that the student can and will succeed, a belief in a youth's innate resilience, and the provision of guidance that is youth-centered and strengths-focused (WestEd, 2008b). These expectations are viewed from the same contexts of school, home, community, and peers. Like the caring relationships construct, there are 12 questions with a maximum score of 48 for the high expectations construct. Table 3 illustrates the questions that make-up the high expectations construct.

73

Table 3

RYDM: High Expectations

Context	High Expectations: Measure			
	Validation	Personal Best Message	Believes in Student	Guidance
School At my school, there is a teacher or some other adult…	Who tells me when I do a good job.	Who always wants me to do my best.	Who believes that I will be a success.	
Home In my home, there is a parent or some other adult…		Who always wants me to do my best.	Who believes that I will be a success.	Who expects me to follow the rules.
Community Outside of my home or school there is an adult…	Who tells me when I do a good job.	Who always wants me to do my best.	Who believes that I will be a success.	
Peers My friends…	Try to do what is right.	Do well in school.		Get into a lot of trouble.

The construct of meaningful participation is defined as the involvement of the student in relevant, engaging and interesting activities and having the opportunities for responsibility and contribution (WestEd, 2008b). Nine questions are used to capture the construct of meaningful participation across three contexts, that of the school, home, and community. The maximum score for these nine questions is 36 for the construct of meaningful participation. Table 4 shows the questions that were asked within the meaningful participation construct.

74

Table 4

RYDM: Meaningful Participation

Context	Meaningful Participation: Measure		
	Make Decisions	Do Fun or Interesting Things	Make a Difference/ Helping
School At my school…	I help decide things like class activities or rules.	I am involved in interesting activities.	I do things that make a difference.
Home In my home…	I help make decisions with my family.	I do fun things or go fun places with my parents or other adults.	I do things that make a difference.
Community Outside of my home or school…		I participate in music, art, sports, or a hobby.	I help other people.
		I am part of clubs, sports teams, church/temple or other group activities.	

The internal assets measured by the RYDM is derived from a total of 18 questions as organized into six sub-measures of the internal assets construct. There are three items for six sub-measures for a maximum score of 12 for each sub-measure and a total of 72 for all the items. Table 5 shows the questions for the internal assets construct and the sub-measures as categorized into six components.

75

Table 5

RYDM: Internal Assets

Context	Internal Assets: Measure		
Cooperation and Communication	I can work with someone who has different opinions than mine.	I enjoy working together with other students my age.	I stand up for myself without putting others down.
Self-efficacy	I can work out my problems	I can do most things if I try.	There are many things that I do well.
Empathy	I feel bad when someone get their feelings hurt.	I try to understand what other people go through.	I try to understand what other people feel and think.
Problem-solving	When I need help I find someone to talk with.	I know where to go for help with a problem.	I try to work out problems by talking about them.
Self-awareness	There is a purpose to my life.	I understand my moods and feelings.	I understand why I do what I do.
Goals and Aspirations	I have goals and plans for the future.	I plan to graduate from high school.	I plan to go to college or some other school after high school.

The first component reflects a student's social competence, or an ability to work effectively with others, exchange information and ideas, and express feelings within the context of flexible relationships (WestEd, 2008b). The self-efficacy component references the student's belief in their own competence and power to act and control their will (WestEd, 2008b). The questions also try to capture the extent to which a student possesses empathy. According to WestEd (2008b), "Empathy, the understanding and caring about another's experiences and feelings, is considered essential to healthy development and the root of morality and mutual respect" (p. 11). The concept of problem-solving reflects the extent to which a student uses resources, plans, and thinks critically, and considers multiple perspectives when making a decision (WestEd, 2008b). Defined simply as "knowing and understanding one's self," self-awareness reflects students' abilities to evaluate their own strengths and challenges and reflect on their experiences (WestEd, 2008b, p. 12). Finally, the category of goals and

76

aspirations refers to the student's intrinsic motivation, the high expectations and hope for the future. As a whole, these six sub-categories demonstrate the internal assets the student possesses, those often supported if not built by the external assets found in the school, home, and community.

Measures of Academic Achievement

Student achievement can be captured in nationally normed exams. Research exists regarding the growth on standardized tests, such as that in the ACT Educational Planning and Assessment System (EPAS®) three testing programs tests, the EXPLORE®, PLAN®, and the ACT® (ACT, 2009). The ACT Educational Planning and Assessment System (EPAS®) consists of three testing programs: EXPLORE® for eighth and ninth grades, PLAN® for tenth grade, and the ACT® for eleventh and twelfth grades. ACT has determined the growth students are expected to gain across all three tests (ACT, 2009). For the Class of 2016 both the EXPLORE scores and ACT scores were available. Increases in scores above the expected growth could indicate the impact of an academic program.

A student's participation in Advanced Placement has been associated with stronger academic performance (Warne, 2017). Success in AP courses could lead to positive academic outcomes that persist beyond high school, including higher ACT scores, a greater likelihood in enrolling in a four-year college, and a higher GPA while in college (Warne, Larsen, Anderson, & Odasso, 2015). This study examined whether there were differences in the AP participation rates between Project Excel students as compared to those not in Project Excel.

<center>**Demographics**</center>

A demographic questionnaire was used to collect information about students, including their gender, school of attendance, race and ethnicity, and the primary language spoken in the

<center>77</center>

home. In addition, students indicated the educational level of each male or female household caregiver. Students also reported their socioeconomic status through reporting whether they received a free or reduced lunch. Where applicable, students indicated their post-secondary educational plans, average grades, and how many Advanced Placement courses they have taken.

Procedure

The research procedure first consisted of identifying those students from the Class of 2016 who had participated in the Project Excel program in each of the two high schools. Initial demographic information was collected based on their ethnicity and racial background, gender, and socioeconomic status, and the school attended. Once all students had been identified, current enrollment and the availability of EXPLORE and ACT test results were verified. All students who were currently attending school with these scores were listed along with the identifying demographic variables. This group of students was identified as the experimental group.

At the beginning of the first week of six-week summer school, students from the Class of 2019 who had been selected as Project Excel participants were asked to take the Resilience and Youth Development Module survey and consent to participate in the study. They also took the demographic and RYDM survey instruments. These students took the same survey again as they finished their freshman year.

Project Excel participants, both from the Class of 2016 and 2019, and were used to derive the matching characteristics of the comparative groups for each set of students. Table 6 shows the percentage of Project Excel students in terms of gender, socioeconomic status (SES), and racial and ethnic background.

Table 6

Project Excel Participants

Gender		SES		Racial and Ethnic Background			
Male	*Female*	*Low-income*	*Not low-income*	*White*	*Black*	*Latino*	*Other*
40%	*60%*	*65%*	*35%*	*0%*	*26%*	*67%*	*7%*

In the next phase, the comparative groups were developed through matching. For each student in the Class of 2016 experimental group at each school, a peer with parallel demographics was selected from within the school's Class of 2016 student population. While a one to one corresponding match may not be available for every experimental student, control group participants were matched on the following criteria in order: School, Ethnicity, Socioeconomic Status, Gender, and EXPLORE composite score. The same process was used for the Class of 2019 to establish a comparative group from the other freshmen in summer school.

Once the potential experimental and control groups were selected, consents to participate in the research study were sought. After consents were secured, the students were asked to complete a brief demographic survey and the RYDM. All demographic and survey information was recorded by the district-issued student identification number. The EXPLORE to ACT growth was calculated for each Class of 2016 student and recorded.

Data Analysis

Descriptive and inferential statistics were used to address the research questions. First, the research, reviewing the data related to the Class of 2016, analyzed whether relationships existed between the resilience as measured on the RYDM and the achievement data of EPAS growth and AP participation. Using SPSS 25.0, the Project Excel participants were compared to the comparative group to determine whether the differences in the resilience measures and in academic achievement indicators were significant. In examining the data for the Class of 2019,

79

differences in resilience measures between the beginning of the Project Excel summer program and the end were analyzed for significance.

EPAS Growth

A one-way ANOVA was conducted to compare the academic growth from EXPLORE to ACT for the Class of 2016 students in Project Excel versus those not involved in the program. The growth for the Class of 2019 was not be available, as these students would not have taken the ACT test yet. The analysis of the Class of 2016 determined whether significant differences exist in the scores for EPAS growth scores between Project Excel students and the rest of the comparative group with a significance set at .05. These results may suggest that the Project Excel program had an impact on student growth on the EXPLORE to ACT test in the composite score.

AP Participation

A one-way ANOVA analyzed the number of AP courses for Class of 2016 Project Excel participants and non-participants. The analysis of the Class of 2016 determined whether significant differences exist in the AP participation rate between Project Excel students and those not in the program with a significance set at .05. These results may suggest that the Project Excel program had an influence on AP participation rate.

Resilience

Resilience was measured using the Resilience and Youth Development Module (RYDM). As previously discussed, the RYDM results are not presented for each item but rather as scores for asset scales or clusters derived from multiple items. Table 7 shows the scales that were used to compare Project Excel with non-Project Excel students as organized into scales of home, peer, and internal and their related subscales:

80

Table 7

RYDM Scales

All Scales	
Home	
H-CR	Home Caring Relationships
H-HE	Home High Expectations
H-MP	Home Meaningful Participation
Peer	
P-CR	Peer Caring Relationships
P-HE	Peer High Expectations
School	
S-CR	School Caring Relationships
S-HE	School High Expectations
S-MP	School Meaningful Participation
Internal	
CC	Cooperation and Communication
E	Empathy
GA	Goals and Aspirations
PS	Problem Solving
SA	Self-awareness
SC	School Connectedness
SE	Self-efficacy

For a post-test only nonequivalent control group design, an ANOVA was used for the Class of 2016. The resilience scales and subscales of the RYDM for Project Excel participants and non-participants were used in analyzing differences in resilience between the two groups of students. The data gathered from the RYDM were analyzed with an ANOVA to establish whether the differences in resilience measures were significant. An ANOVA at a 95% confidence level was used to compare the means in resilience measure from students within the Project Excel program to the control group. The ANOVA showed whether there was a significant difference in the means between the two groups of students.

For the Class of 2019, a one-way ANOVA with repeated measures compared the measures of resilience scales. The alpha level of significance for statistical analyses of the one-way repeated ANOVA was set at .05. The assumptions for the one-way ANOVA with repeated measure were analyzed to determine whether the assumptions were violated. Scales that were not complete due to missing responses on individual items comprised in the scale were identified prior to this analysis. These scales were marked as missing and were not included in the boxplot or subsequent data analysis. For each of the scales boxplots were created to detect any outliers in the data. The maximum number of responses was 92 and the minimum number of responses for any scale was 89.

Limitations

The scope of the research and the data analysis was constricted by the methodological approach and the response rates of participants over the course of the year. In her review of the complexities of resilience research, Prince-Embury (2014) cautioned, "In the attempt to find statistical significance of change to document the effectiveness of an intervention, one should anticipate the problems with doing this; small n, sample with too much variability in resiliency, or samples with resiliency that is adequate to begin with so that any change would be small" (p. 20). The "small n" she cautioned did manifest within this study and limited the results. Each of the experimental group participants, the Project Excel students, in the Class of 2016 and Class of 2019 were preselected. A limited number of students, 50 or less from each school per class, were participants in Project Excel. While the research attempted to select randomly matched pairs in the control group, the nonparticipants in Project Excel, the response rates of complete surveys affected the matching. The students from one of the high schools did not respond to the surveys at the same rate in the other high school. Out of 174 respondents, less than one-third of

the students who responded were from one of the high schools. The ability to compare responses across schools was hampered by the lack of surveys that were completed. Originally, 40 Project Excel students from the Class of 2016 and 50 students from the Class of 2019 in one of the high schools were identified. However, of those 90 students, 20 Class of 2016 students and only 7 Class of 2019 students completed the survey from that school. Considering such a response rate and sample size, the ability to find statistical significance was more difficult.

CHAPTER IV: RESULTS

The achievement and resilience data of students who participated in a resilience-promoting program, Project Excel, was analyzed against those students who did not participate in Project Excel. The research examined whether the Project Excel program, designed to build assets among minority students and help them ward off risk factors, helped students build their resilience and achieve better academic results. Project Excel students were compared to non-Project Excel students for both the freshman, Class of 2019, and the juniors, Class of 2016. In examining student outcomes, data was collected from a measure of resilience, the Resilience and Youth Development Module (RYDM) in the California Healthy Kids Survey (CHKS). The RYDM was administered at the beginning and end of a student's freshman year of high school for one set of students and the junior year of high school for another set of students.

Data analysis presented in this chapter examined whether a relationship existed between participation in Project Excel and differences in resilience as measured through the RYDM. In addition, the analysis examined whether academic differences, as reflected in ACT's Educational Planning and Assessment System (EPAS) growth, or the growth in scores between the EXPLORE and the ACT standardized tests, exist between those who participate in Project Excel from those that did not. Furthermore, the research analyzed whether there is a relationship between EPAS growth, participation, and resilience. This chapter discussed the results of the hypothesis that a relationship between resilience and academic achievement exists and that differences between Project Excel students and non-Project Excel students would be found in their academic achievement and resilience.

The research design assumed that no differences exist between Project Excel participants and non-participants in terms of resilience and achievement. The research also presumed that no

relationship exists between resilience and academic achievement for those who participated in Project Excel and those that did not.

Demographic Characteristics

The research participants were drawn from two high schools that ran the Project Excel program. Table 8 describes the information gathered regarding the demographic characteristics of the 174 study participants. Of the participants in the study, 116 attended one school and 58 attended another. The study participants were in two different grades, 82 juniors in the Class of 2016 and 92 freshman in the Class of 2019. One hundred and twenty students were from low-income backgrounds as reported through their participation in the federal free and reduced lunch program while 54 were designated as not from low-income families. The racial and ethnic background of the students were reported as three White, 43 Black, 115 Latino, and 13 from other categories.

Table 8

Characteristics for All Participants

Gender		School		Class		SES		Racial and Ethnic Background			
Male	*Female*	*1*	*2*	*2016*	*2019*	*Low-income*	*Not low-income*	*White*	*Black*	*Latino*	*Other*
71	103	58	116	82	92	120	54	3	43	115	13

While participants were matched in the initial selection of the study participants, matched participants did not respond proportionately. Because the rates of response among the demographic groups varied, the number in each group chosen for participation differed from those who responded completely.

The Table 9 shows the demographic characteristics of the 87 Project Excel and the 87 Non-Project Excel study participants. Among the Project Excel participants, 35 were male and

52 were male. 60 were from one high school and 27 from another school, while 44 were juniors in the Class of 2016 and 43 were freshman in the Class of 2019. 64 of the students were from low-income background while 23 were not. In terms of their racial and ethnic background, none of the students were White, 23 were Black, 58 Latino, and 6 were from other backgrounds. For the non-participants in Project Excel, males numbered 36 and females 51. The students broke into two schools with 31 in one school and 56 in the other. The represented the Class of 2016 at a rate of 38 students and the Class of 2019 at 49 students. Low-income students accounted for 56 of the participants while 31 students were not from low-income backgrounds. In describing their racial and ethnic background, 3 identified as White, 20 as Black, 57 as Latino, and 7 as other.

Table 9

Demographic Characteristics by Participant Status

Gender		School		Class		SES		Racial and Ethnic Background			
Male	*Female*	*1*	*2*	*2016*	*2019*	*Low-income*	*Not low-income*	*White*	*Black*	*Latino*	*Other*
Project Excel Participants											
35	52	27	60	44	43	64	23	0	23	58	6
40%	60%	31%	69%	51%	49%	74%	26%	0%	26%	67%	7%
Non-Project Excel Participants											
36	51	31	56	38	49	56	31	3	20	57	7
41%	59%	36%	64%	44%	56%	64%	36%	3%	23%	66%	8%

Findings

After a review of each research question and the results of the data analysis, a discussion of the results was developed in relationship to the research hypothesis and purpose.

Research Question 1

Is there a significant difference in academic achievement between Project Excel participants and non-participants?

A one-way between subjects ANOVA was conducted to analyze whether the differences in EPAS growth and AP enrollment was significant for Class of 2016 Project Excel participants as compared to Class of 2016 non-participants. Table 10 lists the number of students in Project Excel and not in Project Excel, the EPAS growth mean and standard deviation for each group, and the mean and standard deviation for AP course enrollment. A one-way ANOVA showed a significant effect of the Project Excel program on EPAS at the $p<.05$ level ($F(1, 77) = 8.933$, $p = .004$). The Project Excel participants had an average EPAS growth of 1.42 points higher than those not in Project Excel, and the Project Excel participants took approximately two more Advanced Placement courses.

In addition, there was a statistically significant difference between groups for AP course enrollment as determined by one-way ANOVA ($F(1, 80) = 31.707$, $p < .001$). The Project Excel participants took an average of over three AP courses, or 3.36 courses; whereas, the non-Project Excel students took just over one AP classes, 1.21 courses.

Table 10

ANOVA of Academic Achievement by Project Excel Participation for Class of 2016

	Project Excel			Not Project Excel				
	n	Mean	SD	n	Mean	SD	*F*	*p*
EPAS Growth	41	4.29	2.18	38	2.87	2.04	8.93	.004
AP Courses	44	3.36	1.57	38	1.21	189	31.71	<.001

Students in Project Excel advanced academically as compared to their peers who were not in the Project Excel program. Students in Project Excel grew more than four points from

their EXPLORE score to their ACT score and took approximately 3 or more AP courses. These results for Project Excel participants were statistically significant and indicated a difference in the Project Excel program producing positive results for its participants.

Research Question 2

What is the relationship between resilience and academic achievement among all students in the study, among those that did participate in Project Excel, and among those that did not participate in Project Excel?

To examine the relationships between resilience and achievement, correlations were run to find any statistically significant relationships between the major scales of Home, Peer, School, and Internal with EPAS growth and AP class enrollment. Correlations were examined for all those from the Class of 2016 that participated in the study. Then, correlations were analyzed for the Project Excel and non-Project Excel students separately.

The first indicator of academic achievement is growth from the EXPLORE to the ACT, or the EPAS growth. Table 11 shows the correlational coefficients between the four main RYDM resilience scales and EPAS growth among all students as a whole and then Project Excel and non-Project Excel students separately. For all students, an increase in EPAS resulted in a small correlation with an increase in the School scale for resilience, $r(78) = .254$, $p = .025$. The other scales did not show a statistically significant relationship. For the Project Excel participants, no resilience scales were statistically significant for a relationship between the scales and EPAS growth. However, for those not involved in Project Excel, both the School and Internal scales showed a significant relationship. An increase in EPAS was moderately correlated with an increase in the School scale for resilience, $r(37) = .422$, $p = .009$. An increase in EPAS was also moderately correlated with an increase in the Internal resilience scale, $r(38) =$

.390, p = .016. For these students not in Project Excel, there is a relationship between how much

they grow academically, as measured by EPAS growth, and their resilience.

Table 11

Pearson Correlations for the Major Resilience Scales and EPAS Growth

Resilience Scales	All	Project Excel	Not Project Excel
Home	.187	.163	.267
Peer	.213	.121	.233
School	.254*	.060	.422**
Internal	.176	-.092	.390*

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed).

The number of Advanced Placement (AP) classes in which the students had enrolled was

also examine to determine a relationship between the number of AP courses and the major

resilience scales. Table 12 provides the correlations between the resilience scale and the number

of AP courses students took. For all students in the study, no resilience scales were statistically

significant with the number of AP courses. Of the students in Project Excel, only the Home

scale was moderately correlated with enrollment in AP courses, $r(42)$ = .373, p =.015. For the

students that were not in Project Excel, no resilience scales were correlated with AP enrollment

at a level of statistical significance.

Table 12

Pearson Correlations for the Major Resilience Scales and AP Courses

Resilience Scales	All	Project Excel	Not Project Excel
Home	.133	.373*	-.028
Peer	.182	.000	.274
School	.200	.054	.285
Internal	.204	.068	.265

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

In summary, there are limited correlations between the achievement indicators of EPAS growth and AP enrollment with resilience as measured on the RYDM scales. The School scale for those students not in Project Excel showed the strongest relationship at the most statistically significant level. Yet, for those students in Project Excel, the analysis did not reveal strong relationships between their resilience and EPAS growth or AP enrollment.

Research Question 3

Is there a significant difference in resilience between Project Excel participants and non-participants?

The scales on the RYDM within the CHKS were analyzed for the Class of 2019 and the Class of 2016. Because measures of resilience were taken at the beginning and at the end of the freshman year for the Class of 2019, a one-way ANOVA with repeated measures at a significance level of .05 was used to determine whether there were statistically significant differences in resilience between Project Excel participants and non-participants. Since there are multiple scales within the RYDM, the analysis was applied for each scale, the scales of Home, Peer, School, and Internal and each subscale.

Class of 2019

Before the analysis of the differences in pre-test and post-test were measured, differences in resilience prior to participation in Project Excel were examined. A one-way ANOVA tested for differences in resilience at the beginning of summer school. The one-way ANOVA analysis did not reveal significant differences between the Project Excel participants and the group of non-participants across the four primary resilience scales in the RYDM, the Home, Peer, School, and Internal scales. The Table 13 shows the means, standard deviations, *F*-value, and significance level in each subscale for participants and non-participants. While the means for

Project Excel students are slightly higher than those students who are not in Project Excel, the differences are not statistically significant, Home, $F(1, 89)= .30$, $p=.57$; Peer, $F(1, 90)= .56$, $p=.48$; School, $F(1, 90)= .28$, $p=.60$; Internal, $F(1, 90)= .56$, $p=.46$. This analysis demonstrated that the two groups were not significantly different in terms of their resilience at the beginning of their freshman year. The measure of resilience taken at the end of the freshman year was used to examine whether differences in resilience emerged between those who did and did not participate in Project Excel.

Table 13

ANOVA of Resilience Scales by Project Excel Participation for Class of 2019

	Project Excel		Not Project Excel			
	Mean	SD	Mean	SD	*F*	*p*
Home	24.33	3.31	23.90	4.10	0.30	0.57
Peer	13.14	2.21	12.78	2.444	0.56	0.46
School	26.65	5.67	26.04	5.43	0.28	0.60
Internal	70.30	8.61	68.86	9.74	0.56	0.46

N= 91

One-way repeated ANOVAs were conducted to compare the effect of Project Excel on resilience during the freshman year. The RYDM scales of Home, Peer, School, and Internal were broken into further subscales with the results of the repeated ANOVA.

Table 14 provides the means and standard deviations for the Home scale and its subscales both at the beginning of the freshman year, the pre-test, and at the end of the freshman year, the post-test for both Project Excel students and those not in the Project Excel program. The table also displays the corresponding *F*-value and significance level for the repeated ANOVA.   The Home scale of the RYDM was statistically significantly different for those in the Project Excel

versus those that were not involved, $F(1, 86) = 4.20$, $p= .04$. For those students not in Project Excel the mean went from 23.76 to 24.04 from the beginning of freshman year to the end; however, the mean for those in Project Excel decreased over their freshman year from 24.24 to 23.02. The students in the Project Excel program reported less Home-related resilience than their peers who were not in Project Excel. The difference in means appears to be most impacted by the Home- Expectations subscale as that was the only subscale which showed a statistically significant difference $F(1,86)= 5.329$, $p= .023$. The means declined from 11.38 to 10.98 for those in the Project Excel program, but means increased from 10.80 to 11.07 for those not in Project Excel.

Table 14

One-way repeated ANOVA for Home Scale in Class of 2019

| | | Project Excel | | Not Project Excel | | | |
		Mean	SD	Mean	SD	*F*	*p*
Home	Pre	24.24	3.23	23.76	4.13	4.20	0.04
	Post	23.02	4.01	24.04	4.41		
Home- Care	Pre	9.69	2.05	9.70	2.25	2.68	0.11
	Post	9.00	2.59	9.76	2.53		
Home- Expectations	Pre	11.38	1.06	10.80	1.57	5.33	0.02
	Post	10.98	1.32	11.07	1.55		
Home- Participation	Pre	3.17	0.85	3.26	0.77	0.14	0.71
	Post	3.05	0.91	3.22	0.99		

N=88

The Peer scale did not demonstrate a significant difference between Project Excel participants and non-participants, $F(1,89)=.17$, $p=.65$, and neither did the two Peer scale's subscales. Similar to the previous table, Table 15 provides the Peer scale and subscales pre-test

92

and post-test means and standard deviations for each group of students as well as the *F*-value and significance level for the repeated ANOVA. The mean for the Peer scale for Project Excel participants increased from 13.14 to 13.23, whereas the mean for the comparative group raised from 12.75 to 13.04. The lack of significant difference in the means indicates that the Project Excel program did not affect the resilience measure related to peers.

Table 15

One-way repeated ANOVA for Peer Scale in Class of 2019

		Project Excel		Not Project Excel			
		Mean	SD	Mean	SD	*F*	*p*
Peer	Pre	13.14	2.21	12.75	2.45	0.17	0.68
	Post	13.23	2.50	13.04	2.63		
Peer- Care	Pre	6.88	1.47	6.71	1.47	1.11	0.30
	Post	6.79	1.66	6.92	1.49		
Peer- Expectations	Pre	6.26	1.35	6.04	1.30	0.11	0.74
	Post	6.13	1.45	6.13	1.45		

N=91

Table 16 again displays the means and standard deviations for the Project Excel and non-Project Excel students with the F-value and significance level following the pre-test and post-test. For the School scale, the mean increased from 26.65 to 28.26 for Project Excel students while the mean for the non-Project Excel students moved from 26.04 to 26.31. While the overall School scale did not show a statistically significant difference, $F(1,90)= 1.77$, $p=.20$, the School-Participation subscale was statistically significantly different, $F(1,86)= 5.33$, $p= .02$. For the School-Participation scale, the means increased from 7.40 to 8.14 for Project Excel students but decreased from 7.55 to 7.31 for those who were not in Project Excel. The students in the

program showed improvement in their school-based resilience while not at a statistically significant level for the overall School scale.

Table 16

One-way repeated ANOVA for School Scale in Class of 2019

		Project Excel		Not Project Excel			
		Mean	SD	Mean	SD	*F*	*p*
School	Pre	26.65	5.67	26.04	5.43	1.79	0.19
	Post	28.26	5.85	26.31	5.61		
School- Care	Pre	9.12	2.04	8.80	2.22	0.65	0.43
	Post	9.86	2.22	9.18	2.04		
School- Expectations	Pre	10.14	2.04	9.69	2.18	0.00	0.99
	Post	10.26	1.90	9.82	2.23		
School- Participation	Pre	7.40	2.16	7.55	2.32	5.81	0.02
	Post	8.14	2.27	7.31	2.52		

N=92

The Internal resilience scale contains seven subscales, for which the pre-test and post-test means and standard deviations, *F*-value, and significance are provided in Table 17. The scale for internal resilience did not change significantly from the beginning to the end of freshman year, $F(1,89)=1.613$, $p=.207$. For Project Excel students, the results showed a decrease in the Internal resilience scale from 70.30 to 69.47. Those not in the program experienced an increase from a mean of 68.75 to 70.06. One of the subscales, Self-awareness, indicated a significantly higher score for non-Project Excel participants as compared to those who did participant, $F(1,89)=5.376$, $p=.023$. The means for the Self-awareness subscale declined from 10.33 to 9.70 for the Project Excel students and raised from 9.67 to 10.06 for those not in the program. This

indicates that the Project Excel students experienced a decline in their Internal resilience, especially in self-awareness during the program.

Table 17

One-way repeated ANOVA for Internal Scale in Class of 2019

		Project Excel		Not Project Excel			
		Mean	SD	Mean	SD	*F*	*p*
Internal	Pre	70.30	8.61	68.75	9.81	1.61	0.21
	Post	69.47	11.05	70.06	9.25		
Cooperation/ Communication	Pre	9.51	1.78	9.54	1.97	0.03	0.87
	Post	9.51	1.78	9.42	1.98		
Empathy	Pre	10.07	2.00	9.71	1.98	0.96	0.33
	Post	10.05	1.91	10.06	1.68		
Goals and Aspirations	Pre	11.42	1.05	11.23	1.29	0.42	0.52
	Post	11.33	1.32	11.31	1.11		
Problem-solving	Pre	11.60	2.68	12.13	2.44	0.16	0.69
	Post	11.77	2.67	12.50	2.71		
Self-awareness	Pre	10.33	1.64	9.67	2.33	5.38	0.02
	Post	9.70	2.42	10.06	2.04		
School Connectedness	Pre	20.23	3.16	19.59	3.33	0.06	0.81
	Post	20.07	4.08	19.59	3.07		
Self-efficacy	Pre	6.65	1.27	6.46	1.25	0.56	0.46
	Post	6.56	1.37	6.54	1.27		

N=91

Overall, the results of the repeated one-way ANOVA did not indicate significant differences in most scales within the RYDM within CHKS for the Class of 2019 after participating in Project Excel for one year. At times, the results indicated a decline rather than an increase in resilience for those students in Project Excel. Of the four main scales, the Home

and Internal scales, showed a decrease in resilience as measured by the mean. The Peer scale remained fairly stagnant in the mean changes. The School scale did increase for the Project Excel students, but the increase was not at a statistically significant level when compared to change in mean with the non-Project Excel students. The statistical analysis did not demonstrate that resilience increases with Project Excel participation in the freshman year.

Class of 2016

Next, resilience was analyzed for those who had participated in Project Excel throughout their high school years. For the Class of 2016, a one-way ANOVA was used to analyze differences in the resilience scales between Class of 2016 Project Excel participants versus those that had not participated in Project Excel at a significance level of .05.

As depicted in Table 18, for the four major resilience scales of Home, Peer, School, and Internal, the means scores for Peer, School, and Internal resilience were higher for Project Excel students than for those not in Project Excel. The results did not indicate a significant difference between participants and non-participants, Home, $F(1, 77)= .03$, $p=.87$; Peer, $F(1, 79)= 1.10$, $p=.30$; School, $F(1, 79)= .71$, $p=.40$; Internal, $F(1, 79)= .84$, $p=.36$. While the results showed some differences, the differences could be explained by chance because they did not meet the threshold of significance.

Table 18

ANOVA of Resilience Scales by Project Excel Participation for Class of 2016

	Project Excel		Not Project Excel			
	Mean	SD	Mean	SD	*F*	*p*
Home	22.71	4.89	22.89	4.70	0.30	0.87
Peer	14.00	2.00	13.53	2.08	1.10	0.30
School	28.98	5.04	27.97	5.66	0.71	0.40
Internal	71.84	8.18	70.03	9.64	0.84	0.36

N= 79 for Home Scale
N= 81 for other Scales

Table 19 shows the means, standard deviations, *F*-value and significance level for the two student groups, the subscales for each of the major scales also did not indicate statistically significant differences between those in Project Excel and those who were not. The Project Excel students had higher mean scores for all but three (Home-Care, Home-Participation, and Problem-Solving) of the 15 subscales. None of the differences was large enough to demonstrate a difference that could be not be explained by chance alone.

Table 19

ANOVA of Resilience Subscales by Project Excel Participation for Class of 2016

	Project Excel		Not Project Excel			
	Mean	SD	Mean	SD	*F*	*p*
Home- Care	9.17	2.88	9.54	2.30	0.40	0.53
Home- Expectations	10.62	1.70	10.41	1.77	0.30	0.59
Home- Participation	2.93	1.02	2.95	1.10	0.01	0.94
Peer- Care	7.07	1.42	6.95	1.25	0.17	0.68
Peer- Expectations	6.93	1.03	6.58	1.13	2.14	0.15
School- Care	10.07	1.81	9.86	1.90	0.24	0.62
School- Expectations	10.50	1.69	10.24	1.82	0.43	0.51
School- Participation	8.41	2.48	7.86	2.94	0.82	0.37
Cooperation/ Communication	9.95	1.88	9.47	2.11	1.17	0.28
Empathy	10.47	1.72	10.26	1.70	0.28	0.60
Goals and Aspirations	11.55	1.04	11.18	1.43	1.74	0.19
Problem-solving	12.73	2.60	13.03	2.81	0.25	0.62
Self-awareness	10.14	1.97	9.79	2.26	0.56	0.46
School Connectedness	19.80	3.36	19.21	3.42	0.61	0.44
Self-efficacy	6.93	1.00	6.55	1.29	2.25	0.14

N= 79 for Home subscales

N= 81 for other subscales

Conclusion for Resilience Analysis

Using repeated ANOVAs for the Class of 2019 and ANOVAs for the Class of 2016, the

analysis in the differences in resilience between Project Excel participants and non-participants

indicated differences but these differences, more often than not, did not meet the standard of statistical significance. The analysis of resilience for both the Class of 2019 and the Class of 2016 do not demonstrate a statistically significant difference in those who were in Project Excel and those who were not. The results for the Class of 2019 point to some declines in resilience among Project Excel students while in the Project Excel program their freshman year. For the Class of 2016, the students in the junior year, all resilience scales show higher means for those in Project Excel with the exception of the Home scale.

Summary

The demographic overview of the research participants demonstrates that the study focused on predominantly low-income, minority youth. Over 90% of the Project Excel students were from Black or Latino backgrounds and almost three-quarters of the students were from low-income families. As noted in the literature review, these students would typically experience negative academic outcomes compared to White, higher income students. However, on average the Project Excel students took three AP classes and outpaced the expected growth from the EXPLORE to the ACT.

The results of the research reflect a complicated dynamic in measuring resilience and comparing it to how resilience may affect academic achievement. As noted earlier, the research used the RYDM of the CHKS as a resilience measure because of its extensive use within school research and because its development was couched in a theoretical model for school settings. The research affirmatively answered the first research question, whether Project Excel participation produced a difference in their academic outcomes. Those students in Project Excel experienced better academic outcomes. The research demonstrated a significant difference in how much the students grew in the two academic measures used in this study, EPAS growth and

the number of AP courses students took. The EPAS growth provided a measure of educational progress and college readiness, and the AP enrollment reflected the ability of students to take on rigorous, college-level classes. Participation in Project Excel made a statistically significant difference in how students performed academically.

The answer to what helped them perform better academically was not as evident although the research explored resilience as the potential factor. The review of literature suggested that resilience may play a significant role in helping low-income, minority students succeed academically. Using the RYDM, the research sought to determine whether Project Excel students experienced increased resilience that contributed to positive academic outcomes. The findings in this study point to a relationship between resilience and achievement and indicate differences in resilience but the relationships and differences do not appear pronounced when held to correlational and statistical analysis. While the Project Excel program produced positive results for the students in the program, the analysis of resilience as a factor making a significant impact on their academic performance was not clear. The research, applying correlational analysis, explored the relationship between achievement and resilience. For EPAS growth, the analysis revealed a small but significant relationship between School-related resilience and achievement for all students and a stronger relationship for the School and Internal scales for those that were not in the Project Excel program. Because of these findings, the study cannot be used to provide conclusive evidence of a direct relationship between resilience and academic achievement indicators, at least those indicators used in this study.

After examining the relationship between achievement and resilience, the research then went on to examine whether the Project Excel program produced changes in the student resilience and whether resilience made a difference to their academic outcomes. First, it

examined whether significant differences in resilience occurred in the Project Excel participants and non-participants over the course of their freshman year. Using the pre-test and post-test data for the Class of 2019, the research did not find much in statistically significant differences between the two groups of students. While the finding lacked significance and, therefore, may not be meaningful, the students in the Project Excel program on certain measures, including Home-related and Internal resilience, experienced declines from the beginning of their freshman year to its end. The program did not produce significant differences in student resilience during the freshman year. When examining students after their third year of Project Excel, three of the four main resilience scales were higher for Project Excel students than their non-Project Excel peers. Yet, in analyzing the Project Excel students versus the non-Project Excel students in the Class of 2016, the research found little statistically significant difference in the resilience on student academic achievement.

These results provide neither conclusively affirming nor disconfirming evidence of the role of resilience in achievement among low-income, minority students. Yet, its findings contribute to the growing body of research on the complex nature of resilience for individuals and helps to hone in on resilience as an operational construct for school systems. The next chapter discusses how this research adds to the school-based resilience research and suggests additional approaches for further research.

CHAPTER V: SUMMARY AND CONCLUSIONS

The research findings enrich the literature around resilience and student achievement. As Powell (2010) observed in her dissertation, "There is a lack of research that focuses on the issues involved in school success and school failure of at-risk students as well as the impact of resilience on student outcomes" (p. 6). In a review of academic resilience internationally, Agasisti, Avvisati, Borgonovi, & Longobardi (2018) asserted that "much less is known about the specific school and system-level factors that foster students' academic resilience" (p. 6). Even as this study did not produce many statistically significant outcomes, it has built upon the limited research that has been conducted to examine whether resilience improves within a secondary school program and the even fewer studies that have examined whether higher resilience leads to stronger academic outcomes. Reflecting on the outcomes of the research could inform how to approach future investigations of resilience and achievement and provide recommendations approaches for program development.

Discussion of the Findings

The study conducted research on students in a program meant to both challenge and support students typically under-represented in honors and Advanced Placement level courses and examined the interaction between academic achievement and resilience. The research established that Project Excel produced positive academic outcomes for its students, but the means through which the students reached those outcomes was not as evident. For the group of freshman that were studied, differences in resilience emerged across the freshman year for students in the program, as compared to their peers not in the program. In examining the academic performance and resilience of students in Project Excel during their junior year, the study showed that Project Excel students have higher resilience but the differences were not to

the extent to claim statistical significance. Overall, the research did not provide statistical evidence to determine that Project Excel improved resilience or that improved resilience led to improved academic indicators. The study has provided some evidence that students in Project Excel reported stronger resilience but cannot overcome the bar of statistical significance. Assumptions regarding program quality, the nature of resilience research, and the measurement of resilience all may have impeded the research's ability to assert claims backed by statistical significance.

Project Excel and Achievement

The first research question examined whether there was a significant difference in academic achievement between Project Excel participants and non-participants. The results affirmed a statistically significant difference in academic achievement between those in Project Excel and those who were not. The findings indicated that a program that challenges historically marginalized students to succeed could produce results significant in both the statistical analysis and the promise for better outcomes for students. The students in Project Excel, provided a structure of support and high expectations, did excel more than their peers. Project Excel students took almost three times the number of Advanced Placement courses and outpaced their peers' growth on standardized tests by more than two points. The exposure to AP courses enable them to earn college credits while in high school and put them on an early trajectory to college graduation (Mattern, Marini, & Shaw, 2013). Scoring higher on the ACT can help students access colleges that are more selective and enable the students to qualify for scholarships (ACT, 2018). Such opportunities translate to tangible differences for students, especially for those ACT described as "underserved," the first generation to attend college, minority students, and those come from low-income families. Project Excel students typically have shared the same

characteristics as the "underserved." According to a news article on the program, "Many of the parents of Excel students are immigrants unfamiliar with U.S. colleges and high schools" (Constable, 2013). ACT (2017b) found that among those students that meet all three of these characteristics, 81% only meet one or none of the benchmarks to determine college-readiness. Project Excel students raised their scores compared to their peers and, thus, increased their access to opportunities. The statistical significance of these findings has strengthened the case that minority students can gain from targeted school-based programs. Providing additional services to those who are "underserved" has translated to significant, positive outcomes that increase their readiness for college. Academic rigor, paired with a supportive network and participation in a group, influenced students toward positive academic outcomes.

The persistent challenge of academic success for minority students is well documented in the achievement gap literature (Paschall, Gershoff, & Kuhfeld, 2018). Both the students and the schools that serve them encounter barriers to advance academically (Arrington & Wilson, 2000; Borman & Overman, 2004; Luthar, 2006, p. 762-764; Parret & Budge, 2012). The outcome that minority students achieved academically when provided the opportunity to access paths for achievement most often reserved for others is consistent with the literature. However, schools have taken various paths to close gaps or achievement and opportunity for minority students (Boykin & Noguera, 2011, Chenoweth, 2009; Gorski, 2017; Murphy, 2009). In his review of approaches to close gaps among high-achieving minority youth, Kotok (2017) asserts, "It is incumbent on policy makers and school leaders to ensure equitable placement of students into advanced courses and to provide support networks for minority students in White-dominated spaces" (p. 198). Project Excel has taken this approach in increasing access to higher-level courses and pairing the access with support structures. The Project Excel students' academic

success parallels the academic advances seen in other interventions with minority students (Mayer & Tucker, 2010; Parret & Budge, 2012; Williams, 2011).

Academic Achievement and Resilience

The research investigated whether these concrete academic improvements were associated with educational resilience, or the capacity of the predominantly low-income, minority students to perform better academically than their peers. First, the research examined the relationship between resilience and academic achievement. The study did not find a statistically significant relationship between resilience and the academic indicators of EPAS growth and AP course enrollment for the Project Excel participants. However, a statistically significant relationship between EPAS growth and the internal and school resilience scales was found for those not in the Project Excel program. Non-Project Excel students tended to experience more EPAS growth when their internal and school resilience scales were higher. The relationships between achievement and resilience were not strongly correlated, however.

The resilience among Project Excel students did not improve to a statistically significant level as compared to their peers. Actually, during the freshman year, resilience declined for Project Excel students in the Home and Internal scales, stagnated for the Peer scale, and increased for the School scale. Although declines were observed in the data, only the decline in the Home scale showed statistical significance, especially as related to the Home- Expectations subscale. For freshman, the results showed a result opposite of the hypothesis that the Project Excel program would increase resilience. While these results may appear counterintuitive, upon further reflection, the results could be readily explained by the challenges encountered by Project Excel freshman. For the juniors, the Class of 2016, all resilience scales showed higher means for those in Project Excel with the exception of the Home scale; however, none of these

differences were statistically significant. After dips in resilience during the freshman year, the junior Project Excel students showed stronger resilience. While the research could not statistically confirm the hypothesis that Project Excel improved resilience, the information gained produced findings that provoke further inquiry.

<div align="center">**Conclusions**</div>

School-based Resiliency Model

The resiliency model, prominently espoused by Benard (1991) and Henderson and Milstein (2003), posited that the environment in which a child develops influences their outcomes. Even within the most challenging circumstances, the care and support of a significant figure, high expectations, and meaningful and purposeful participation could enhance opportunities for further growth and development. Individuals entered an environment that, through its deficiencies, the risks within the environment, or through resources, the strengths within the environment, could constrain or release individual potential. If a school provided these elements to students through a program, then students should show stronger resilience.

The research investigated whether Project Excel would build student resilience and whether stronger resilience would be associated with improved academic outcomes. The literature has posited that students from supportive school, homes, and communities that hold high expectations for students and provides them with meaningful participation are more likely to achieve positive outcomes in school (Benard & Slade, 2009; Henderson & Milstein, 2003). The study of Project Excel students did not designate Project Excel students as significantly different in terms of resilience than those not in the program. While academically different in their outcomes, the students were not statistically different in their resilience.

The findings in this study did not provide overwhelming evidence that the Project Excel program fostered the development of resilience indicators. The Project Excel students did not build their resilience more than their peer group during the freshman year, nor were there statistically significant differences between Project Excel students during their junior year. Examining these results in the context of the resiliency model elucidated some of the deviations from what was expected.

The Freshman Year and the Resiliency Model

The decline in resilience in the freshman year among Project Excel students may have seemed inconsistent with the resiliency model; however, when reflecting on the challenges the students likely encountered, the results are understandable. While not to a statistically significant extent, on two of the scales, the home and internal scales, those not in the Project Excel program indicated stronger resilience than the students in Project Excel. The purpose of Project Excel was to move "average" students into challenging academic courses. During freshman year, the Project Excel students were exposed to more academic rigor; they were placed with peers who may have had more academic preparation and skill development than Project Excel students. Their perceptions of themselves may have been adversely impacted because their skills were stretched and the Project Excel students may not have performed as well as those students against whom they were now comparing themselves. The Project Excel students now measured themselves against a different standard, a higher expectation, and may have perceived where they fell short. At home, the students too may have felt less connected, which manifested in a decrease in the home scale. As the Project Excel students navigated the challenges of pushing themselves academically, these students may have experienced discordant messages in their homes. In his survey of 200 first generation college students, Korsmo (2014)

found zero percent pointed to "My family wanted me to go to college" as a "very important" motivating factor for them. He observed, "We need to be open to the possibility that any given student is receiving little parental support for his or her education" (p. 48). The Project Excel students may have needed more support from their home than they were receiving as the students struggled to meet the higher standards to which they were striving.

Breaking the cycle of low expectations and limited opportunities may not occur across one school year. Project Excel students' gaps in their academic preparation and opportunities were likely revealed as the Project Excel students compared themselves to others in their new classes. These gaps may be further exposed until the gaps are filled in over time by additional support structures. As quoted earlier, "Six hours of instruction a day for 180 days a year cannot overcome the effects of a deprived and impoverished home environment for 18 hours a day, 365 days a year" (Mathis, 2005, p. 592). The resiliency model recognized that when students started internalizing the benefits of external supports, their own capacities for success gained momentum. The freshman had not yet internalized the benefits present in the program and, therefore, the students experienced the friction of where they were and where they wanted to be. As the external assets, or protective factors in the home, community, and school, met these needs, the students could have developed the internal assets of empathy, problem solving, self-efficacy, self-awareness, cooperation and communication, and goals and aspirations (Benard & Slade, 2009; Hanson & Kim, 2007). Over time, the resilience measures would likely adjust as the students absorb more of the resilience-building components of the program. By their junior year, the Project Excel students may have re-established a positive perception of themselves and their growing academic capacities.

Project Excel program as an Example of the Resiliency Model

This study reviewed resilience within a school structure, basing its review on the model developed by Benard (1991, 1993) and explicated by Henderson and Milstein (2003). The study made an assumption about the environment of a particular program, Project Excel. The Project Excel program, targeting low-income, minority students, was developed to provide supportive interactions and mentoring to these students as they took rigorous coursework in high school. As described by a teacher within the program, the program helped "students of color give themselves a sense of ownership in their education through rigor and efficacy" and taught "them to be resilient, hard-working, and engaged learners" (Illinois High School District, 2013). Without involvement in the program, the students would have typically taken the average classes, ones that would not have led to the Advanced Placement level courses. The program fostered a network of support through regular teacher and student services support personnel interactions and built group cohesion through developing a Project Excel peer group. Not only did they participate in the classes, the students interacted with one another and their adult leaders as these low-income, minority students encountered the challenges of entering classes suffuse with White, higher income students. Prior to their involvement in the program, the Project Excel students may not have been provided messages throughout their schooling that they belonged in higher-level classes, that they possessed the skills and intelligence to excel, and that they were expected to succeed. These messages to accept their position in the achievement stratification may have become internalized as perceptions of their own potential. In addition, the students may not have been exposed to the opportunities and instruction that provided a strong academic foundation from which to propel them to goals beyond average. This program and their

109

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involvement in it provided them with the message that they had the capacity to excel and that they were expected to do so.

Considering the description above, the Project Excel program appeared as if it would bolster resilience. However, the research assumed that the components as described were what the students experienced. The study did not validate the assumption that the program put into place the components as described with fidelity. The research did not incorporate questions specifically about the Project Excel program. Information on whether the students valued the program would have provided insight on potentially how impactful it could have been. Several questions that would have aligned Project Excel directly with the resiliency model remain. To indicate whether the program provided more care and support for students, students could have been asked whether the Project Excel adult supports were relevant and impactful in their schooling and in their lives. In terms of high expectations, the research could have asked students to indicate whether they felt more challenged academically because of their involvement with the program. To examine their access to meaningful participation, the research could have investigated whether the students interacted with the program continuously throughout their high school experience or whether the students perceived the interactions with the program as isolated and intermittent. If the research had proposed those questions, the results could have pointed to evidence that validated the assumptions that the program did promote the care and support, the high expectations, and meaningful participation that it had espoused. The research assumed that the program delivered these components instead of validating that the program delivered a quality experience for the students involved.

Possibly, the Project Excel program did not go far enough in adhering to the model for closing achievement gaps. Programs that target those low-income, minority students susceptible

to risk may need to do even more than to "build resiliency into the environment" through support, high expectations, and meaningful participation as described in Henderson and Milstein's (2003) resiliency wheel.   The other side of the Henderson and Milstein's (2003) resiliency wheel, those components that help "mitigate the risks in the environment," could be just as important as those components that build resilience. Prosocial bonding, life skill instruction, and clear and consistent boundaries could also need to be enhanced within the Project Excel program. Without more questions about the student experiences within the program, the study could not answer to what extent a network of pro-social support emerged for all students in the program. It cannot be determined whether students developed friendships with others in the program, whether the students established a peer network that supports their academic advancement. While high expectation could be infused in the program's culture and the academic and social supports provided, Project Excel did not target students with intensive mentoring and resilience training that highlighted the skills and mindset that could have helped them endure and overcome the inevitable obstacles they would encounter. Such mentoring may help students navigate their academic and social adjustments as they experience the challenges of more rigorous academics. Such mentoring relationships might help offset implicit messages within their community and homes that may not support their goals of collegiate pursuits. While the Project Excel program incorporates aspects to build the strengths of resilience, its capacity to offset risks may require enhancements.

Instrument Limitations

The Henderson and Milstein's (2003) resiliency wheel suggested that schools could build resiliency in the environment through providing "care and support," providing "opportunities for meaningful participation," and setting and communicating "high expectations" (Henderson &

Milstein, p. 13-14). Schools could also help "mitigate risk factors in the environment" by increasing "prosocial bonding," setting "clear, consistent boundaries," and teaching "life skills" (p.12). The RYDM, the resilience measurement used in this study, reflected the extent to which students found the factors that build resilience present in the school environment. In fact, the scales within the RYDM specifically targeted support, high expectations, and meaningful participation. The scales reflected how students experience those factors within their home and school environments. RYDM did not capture the other half of the resiliency wheel, the aspects that help students mitigate risk. No data was gathered regarding the extent to which the students bond with one another socially as they go through school. In addition, the students did not provide information regarding whether boundaries were set and maintained. Importantly, the instrument did not gather information on the extent the students learned important life skills throughout their school experience. While the data reflected student perception of the resilience-building components of support, expectations, and participation, the data did not capture the extent to which the students may have built up a resistance to the risks present in their homes, communities, or schools.

Morales (2010) defines academic resilience as exceptional achievement in the face of adversity. By this standard of definition, the students in Project Excel exhibited academic resilience because the students excelled academically in comparison to their peers. However, the study of Project Excel students tied to capture resilience as an independent construct, not as a retrospectively defined by-product of achievement. "Due to the highly idiosyncratic nature of resilience, the vast majority of resilience research has been qualitative in nature" (Morales, 2008, p. 31). The research on Project Excel students hoped to extend the research by attempting to use a quantitative method and instrument in the RYDM. Considering the limitations of the RYDM,

112

Hanson and Kim (2007) suggested, "Other, longer, companion instruments should be developed to assess student-level changes" (p. 12). Yet, the development of an effective instrument that measured changes in academic resilience and risk over time could be elusive. Tudor and Spray (2017) provided an overview of literature that incorporated approaches to determine academic risk, including everyday challenges and daily stressors as well as more adverse circumstances. In concluding their review on academic resilience measures, Tudor and Spray (2017) asserted, "Academic resilience is receiving more interest in terms of policy practice; however there is not yet a valid and reliable measure to assess the concept" (p. 56). Even after a full decade or more of research on academic resilience, an effective instrument has not yet been firmly established.

The research may have faced limitations in extending the RYDM for a purpose beyond its intent. The purpose of RYDM has been to determine to what extent a school environment may build resilience in its students. The instrument was not meant to track individual progress in developing resilience. The instrument may not have been sensitive to growth over time. Furlong et al. (2009) observed that "given that the RYDM was developed as a population-based survey, there is limited evidence supporting its use and interpretation at the student level considering individual differences" (p. 35). The experience of feeling resilient may be episodic rather than tied to concepts that are more static. The RYDM may be susceptible to this vulnerability. Collectively across a school or district, the individual fluctuations in resilience may average out across the school population and accurately reflect the school environment. Using the RYDM to capture school-level data has proven valid and has allowed for comparisons among schools (Constantine, Benard, & Diaz, 1999; Hanson & Kim, 2007; Furlong et al., 2009). However, as Hanson and Kim (2007) cautioned, "Estimates of student-level changes across time are likely to be imprecise because of the instability of the resilience measures" (p. 12). For example in this

113

study, if the freshman Project Excel students had a particularly difficult exam at the end of the year, the students may have marked a less positive response. In their review of the psychometric properties of the RYDM, Hanson and Kim (2007) concluded, "This report recommends that neither the secondary school nor the elementary school resilience and youth development module be used to evaluate student-level changes over time or individual differences across students" (p. 12). The RYDM's utility as school culture instrument may have hampered the study's ability to capture the differences in resilience across Project Excel and non-Project Excel students.

<div align="center">Recommendations for Future Research</div>

This research on an approach that builds academic achievement among minority and low-income students has contributed to the literature of success in addressing the achievement gap. The students in Project Excel did realize their capacity for growth where others alike in similar challenges did not. Yet, their story of academic resilience was not completely told through this study. Other research studies would have looked at their academic achievement in spite of their minority and low-income backgrounds and deemed them academically resilient. This study attempted to engage in a deeper analysis by incorporating a direct measure of resilience, one founded in school-based resilience literature. While this study could not tie student achievement directly to an academic resilience measure, the research laid a path for future studies. Future research could avoid the obstacles of this research and better complete the narrative of achievement over challenge.

After finding a group of minority, low-income students who perform significantly better than their peers, the next step would be to use a measure of resilience to differentiate those who perform better than those who do not. An instrument shown to be able to differentiate students in terms of school-based resilience would aid the study of how resilience could grow for students

over time. Such a measure would better capture the differences between student groups. As already described, the RYDM has been used to study school culture, not individual differences. In their comprehensive review of available measures for academic resilience, Tudor and Spray conclude as recently as their article published in September 2017, "Academic resilience is receiving more interest in terms of policy practice; however there is not yet a valid and reliable measure to assess the concept" (p. 56). Despite years of research on resilience and academics, the field still lacks an established measurement that can capture individual resilience in a school setting. An instrument to differentiate those with academic resilience would assist research in identifying those factors that help students withstand the pressures of high academic achievement. The field of school-based resilience research would gain immensely from a measure that can be used across multiple settings to inform practices to benefit students.

The research within this study magnified the need to incorporate additional means to collect data in studying a program's impact on academic resilience. When using a quantitative research method in the study of a program's impact on resilience, the researcher should not simplify resilience to a static concept in isolation of the research's full context. The program itself needs to be studied as well as its effects on the participants in it. The environment and the students' experience of the environment should be incorporated into the study. Student interviews and observations of the program could aid in understanding both the risks encountered by students and the supports they find most helpful. A mixed methods approach may have provided the best insight into the study of a school-based, resilience-building program. Citing Ungar (2004), Mampane and Huddle (2017) stated, "a mixed method approach to the study of resilience is required for researchers to capture a tapestry of details pertaining to patterns of growth and survival" (p. 2). This study, without qualitative data, lacked the detail to

confirm that the program delivered the promised components and to determine what students gained. Ungar (2004) and Liebenberg and Ungar (2009) have advocated for research to frame the concept of resilience within an ecological context. Liebenberg and Ungar (2009) in the introductory chapter on their review of resilience research admitted a bias toward mixed methods and noted that the research in resilience continues to "need to use qualitative methods to inform both the development of quantitative measures and the interpretation of their results" (p. 16). In interpreting the results for a resilience-building program, a qualitative approach combined with quantitative data would provide a more complete picture of the program' effectiveness.

As current social and political structures demand accountability from our schools, narratives of success must emerge. Often what is most stirring in the American identity are those narratives of the ones who have risen to success from the most difficult of circumstances. We gravitate toward these stories of resilience as the exceptions that can inspire us and look to derive lessons about the means to aspire. This study did the same in trying to locate what made the difference for the success of those whose likelihood of achievement was less than others. The minority, low-income students in this study who succeed cannot be viewed as anomalies, outliers that need to be isolated for study. In them lies the common cause of equity in opportunity and achievement. If truly no child will be left behind but every child will succeed, success cannot be elusive, especially for those on the fringe of the social strata. In this research, I attempted to locate the cause for achievement in resilience through the narrative of quantitative data, but the narrative of success could not be found only in the pages of this data. Yet, what is written here are the lessons for the future course of study. Academic resilience and achievement research can both examine and look beyond the numbers to tell a more complete narrative, one that does not define students through limitations but broadens them through opportunity. Where those

opportunities need to be set, the research, at least this research, does not definitively tell us. However, this study and the students of Project Excel clearly have proclaimed that when given the chance, they will rise.

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APPENDIX A: DEMOGRAPHIC QUESTIONS

1. By submitting my student id number, I indicate that I understand the study and am willing to participate.
   Student ID: _____

2. What is the high school you currently attend:
   o Palatine High School
   o Hoffman Estates High School
3. What is your class in school?
   o Class of 2016
   o Class of 2019
4. What is your gender?
   o Male
   o Female
5. Are you able to get a free or reduced price lunch through the school cafeteria?
   o Yes
   o No
6. What is your racial or ethnic background?
   o White
   o Black
   o Hispanic
   o Asian
   o Other
7. Which language is spoken in your home?
   o Only English
   o English more than Spanish or other language
   o Both the same
   o Spanish or other language more than English
   o Only Spanish or other language
8. How much schooling does your mother/female guardian currently have?
   o Some grade school (up to 8th grade)
   o Some high school
   o Completed high school
   o Some community college, vocational, technical, or career training courses
   o Some college through a four-year college or university
   o Completed college
   o Some graduate school after college
   o Completed a graduate school program and earned a MA, MBA, JD, PhD, or other advanced degree
   o Do not know or does not apply
9. How much schooling does your father/male guardian currently have?
   o Some grade school (up to 8th grade)
   o Some high school
   o Completed high school
   o Some community college, vocational, technical, or career training courses
   o Some college through a four-year college or university
   o Completed college

- o Some graduate school after college
- o Completed a graduate school program and earned a MA, MBA, JD, PhD, or other advanced degree
- o Do not know or does not apply

10. Are you or have you been a participant in Project Excel?
    - o Yes
    - o No

11. What are your current educational plans?
    - o I do not plan to graduate from high school.
    - o I plan to graduate from high school and will not attend any other school or training program.
    - o I plan to graduate from high school and earn a certificate or degree at a community college or a vocational school.
    - o I plan to graduate from high school and graduate from a four-year college or university.
    - o I plan to graduate from high school, graduate from a four-year college or university, and earn a master's, doctorate, or other post-college degree.

12. What is your current average in the grades that you receive in high school?
    - o Not applicable
    - o F
    - o D
    - o C
    - o B
    - o A

13. How many AP classes have you taken in high school?
    - o Not applicable
    - o 1
    - o 2
    - o 3
    - o 4
    - o 5+

California Healthy Kids Survey

Please mark on your answer sheets how you feel about each of the following statements.

School Protective Factors

How strongly do you agree or disagree with the following statements about your school?

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. I feel close to people at this school.	A	B	C	D	E
2. I am happy to be at this school.	A	B	C	D	E
3. I feel like I am part of this school.	A	B	C	D	E
4. The teachers at this school treat students fairly.	A	B	C	D	E
5. I feel safe in my school.	A	B	C	D	E

Next, mark how **True** you feel the next statements are about your school and the things you might do there.

At my school, there is a teacher or some other adult…

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
6. who really cares about me.	A	B	C	D
7. who tells me when I do a good job.	A	B	C	D
8. who notices when I'm not there.	A	B	C	D
9. who always wants me to do my best.	A	B	C	D
10. who listens to me when I have something to say.	A	B	C	D
11. who believes that I will be a success.	A	B	C	D
12. I do interesting activities.	A	B	C	D
13. I help decide things like class activities or rules.	A	B	C	D
14. I do things that make a difference.	A	B	C	D

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
15. who really cares about me.	A	B	C	D
16. who tells me when I do a good job.	A	B	C	D
17. who notices when I am upset about something.	A	B	C	D
18. who believes that I will be a success.	A	B	C	D
19. who always wants me to do my best.	A	B	C	D
20. whom I trust.	A	B	C	D

Outside of my home and school, I do these things…

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
21. I am part of clubs, sports teams, church/ temple, or other group activities.	A	B	C	D
22. I am involved in music, art, literature, sports or a hobby.	A	B	C	D
23. I help other people.	A	B	C	D

Internal Protective Factors

How true do you feel these statements are about you personally?

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
24. I have goals and plans for the future.	A	B	C	D
25. I plan to graduate from high school.	A	B	C	D
26. I plan to go to college or some other school after high school.	A	B	C	D
27. I know where to go for help with a problem.	A	B	C	D
28. I try to work out problems by talking or writing about them.	A	B	C	D
29. I can work out my problems.	A	B	C	D
30. I can do most things if I try.	A	B	C	D
31. I can work with someone who has different opinions than mine.	A	B	C	D
32. There are many things that I do well.	A	B	C	D
33. I feel bad when someone gets their feelings hurt.	A	B	C	D

34. I try to understand what other people go through.	A	B	C	D
35. When I need help, I find someone to talk with.	A	B	C	D
36. I enjoy working together with other students my age.	A	B	C	D
37. I stand up for myself without putting others down.	A	B	C	D
38. I try to understand how other people feel and think.	A	B	C	D
39. There is a purpose to my life.	A	B	C	D
40. I understand my moods and feelings.	A	B	C	D
41. I understand why I do what I do.	A	B	C	D

Peer Protective Factors

How true are these statements about your FRIENDS?

I have a friend about my own age…

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
42. who really cares about me.	A	B	C	D
43. who talks with me about my problems.	A	B	C	D
44. who helps me when I'm having a hard time.	A	B	C	D

My friends…

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
45. get into a lot of trouble.	A	B	C	D
46. try to do what is right.	A	B	C	D
47. do well in school.	A	B	C	D

Home Protective Factors

How true are these statements about your home or the adults with whom you live?

In my home, there is a parent or some other adult…

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
48. who expects me to follow the rules.	A	B	C	D
49. who is interested in my school work.	A	B	C	D
50. who believes that I will be a success.	A	B	C	D

51. who talks with me about my problems.	A	B	C	D
52. who always wants me to do my best.	A	B	C	D
53. who listens to me when I have something to say.	A	B	C	D

	Not at All TRUE	A Little TRUE	Pretty Much TRUE	Very Much TRUE
54. I do fun things or go to fun places with my parents or other adults.	A	B	C	D
55. I do things that make a difference.	A	B	C	D
56. I help make decisions with my family.	A	B	C	D

138