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## Pipeline to Success

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# Pipeline to Success

## **Abstract**

The purpose of this research was to examine the impact of an educational pipeline on two subsets of students. The first subset entered the school pipeline in the sixth grade and was continuously enrolled through the 12th grade. The second subset of students entered the school's pipeline in the ninth grade and was continuously enrolled through the 12th grade. This study measured and compared the resiliency, academic achievement, and attendance of a total of 68 students who attended a public secondary school in a large urban city in the Northeast Region of the United States. An educational pipeline provides the necessary structures whereby a student can get the support he or she needs because the student traveled within the confines of one system as opposed to attending separate middle and high schools. The pipeline can provide the necessary resources that help cultivate student success and a supportive school environment. The results of this quantitative study showed no significant difference between students who entered the pipeline in the sixth grade and those who entered in the ninth grade across all three variables: resiliency, academic achievement, and attendance.

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Pipeline to Success

By

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Submitted in partial fulfillment  
of the requirements for the degree  
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## **Dedication**

There are a lot of people who are responsible for my growth and development as a person and a leader, but it is only appropriate that I begin by acknowledging and thanking my Lord and Savior, Jesus Christ. We had a lot of conversations during this process.

I want to thank my wife, Karyn, and my son, Chandler, for being supportive and encouraging. Thanks for the pep talks. Chandler, you are truly my inspiration. I also want to thank my aunt, Mary Jones, who encouraged (forced) me to attend college after high school and, without her persistence, my educational journey never would have happened, and I am forever grateful. I also want to thank my parents. Without the two of you, there would be no me. Thank you for always being there.

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Lastly, I want to thank Jocelyne, Melissa, and Merica. We are truly destined for greatness (D4G8ness!).

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important people out, so just know that I am thankful for having such a large and caring village.

### **Biographical Sketch**

Sean Davenport is currently a Leadership Development Coach for the New York City Department of Education. He has the distinction of having served as a principal on the elementary, middle, and high school levels. Mr. Davenport received a Bachelor of Science degree in Mass Communication in 1992 and a Master of Arts degree in Communication in 1995 from Norfolk State University in Norfolk, VA, and he received a Master of Arts degree in Education Administration from Fordham University in 2001. He began his doctoral studies at St. John Fisher College in the summer 2016 in the Ed.D. program in Executive Leadership. Mr. Davenport pursued his research on school pipelines and the resiliency of African American and Latino students under the direction of Dr. Sandye Johnson and Dr. LaTasha Hamlett-Carver and received the Ed.D. degree in the summer of 2018.

## **Abstract**

The purpose of this research was to examine the impact of an educational pipeline on two subsets of students. The first subset entered the school pipeline in the sixth grade and was continuously enrolled through the 12th grade. The second subset of students entered the school's pipeline in the ninth grade and was continuously enrolled through the 12th grade. This study measured and compared the resiliency, academic achievement, and attendance of a total of 68 students who attended a public secondary school in a large urban city in the Northeast Region of the United States. An educational pipeline provides the necessary structures whereby a student can get the support he or she needs because the student traveled within the confines of one system as opposed to attending separate middle and high schools. The pipeline can provide the necessary resources that help cultivate student success and a supportive school environment. The results of this quantitative study showed no significant difference between students who entered the pipeline in the sixth grade and those who entered in the ninth grade across all three variables: resiliency, academic achievement, and attendance.



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## Chapter 1: Introduction

The achievement gap still exists in the African American and Latino communities, as their graduation rates and state test scores continue to lag behind Caucasian and Asian students (Camera, 2016). In large urban cities, some students often attend more than one school within the same academic school year. This often contributes to low attendance and poor academic achievement. In addition, students who experience multiple transitions from elementary to high school find themselves continuously starting over as they adjust to new environments. To better support academic achievement in large urban cities, Ewell, Jones, and Kelly (2003) posited school districts that should consider creating school pipelines. Schools that can support students in an environment with limited transitions are referred to as *school pipelines*. If school pipelines could be instituted, they would limit the number of times students would transition to a new school, and they could be better supported by being in a familiar environment.

Research suggests that student connections and school engagement are predictive of decreased dropout rates and increased graduation rates among adolescents. One way this happens is by having an engaging, culturally relevant curriculum that creates connections for students to be positively engaged within the school environment, which significantly impacts their performance (Debnam, Johnson, Waasdrop, & Bradshaw, 2013; Hunt et al., 2002; Janosz, Archambault, Morizot, & Pagani, 2008). A way to support this effort is to create school pipelines. The educational pipeline is being viewed

as the avenue to increasing a state's educational capital, which has a direct impact on a state's economy and quality of life (Ewell et al., 2003). More and more, states are moving toward adopting education policies that will increase the number of students successfully progressing through the K-16 pipeline to a 4-year degree. The educational pipeline analysis conveys the importance of viewing student progress as a continuum from elementary to high school, leading into postsecondary education and through to the completion of a college degree and then entering the workforce (Ewell et al., 2003).

Stanley and Plucker (2008) suggested that students from troubled backgrounds, primarily minority students and students from low-income families, are less likely to complete high school than their peers, because they become disengaged from school and feel unchallenged. Relatedly, little attention is directed to the resilience of students of color, and consequently, little is known about the protective factors or processes that operate in their daily lives (Wyner, Bridgeland, & Dilulio, 2007). Educational experiences related to dropouts who struggled academically showed signs of disengagement from school and bad relationships with teachers and peers, which links to lower chances for graduation (Wyner et al., 2007). When an African American or Latino student decides to drop out of school, it is usually not an impulsive reaction. There are numerous factors to the process that leads them to this critical decision. When a student does reach this decision, it usually means that the student failed to form meaningful relationships with adults, became disengaged in school, and felt unchallenged (Stanley & Plucker, 2008).

Whatever risk factors students face, there is an inability for them to bounce back from that adversity and finish the process and graduate from high school (Stanley &

Plucker, 2008). Wyner et al. (2007) pointed out that when it comes to African American and Latino students, there has not been much attention around their resiliency and the challenges they face in their daily lives. Ernestus and Prelow (2015) found that African Americans and Latinos shared the same patterns of risk and protective factors. Their study further indicated that when looking at students' time in school, it is essential to look at them over a process of time rather than at one moment in time. This means that students who are in an environment that can nurture them may not show immediate progress, but they will eventually overcome their adversity over the course of their school career.

One thing is sure, educationally resilient students are more likely to have higher reports of school support, higher expectations from adults, higher academic self-esteem, and higher parental monitoring than noneducationally resilient students (Wang & Gordon, 1994). Williams and Portman's (2014) explanation of resiliency is that it is not just a personality trait that stops the negative environment from influencing children and adolescents, but some of the individuals' success includes protective factors that allow them to overcome the causes of risk factors (Williams & Portman, 2014).

It has been over 40 years since the Civil Rights Act, and African American and Latino students are still the poorest performing academic group in the United States across all age groups and subject areas (McWhorter, 2000). Understanding resilience and strength among students of color requires acknowledging and recognizing the continuing legacy of oppression and discrimination that affects their daily lives (Bailey & Dziko, 2008). Wilson (2014) stated, "The United States has become a culture of incarceration, removing from society people who present difficult problems, including conditions

caused by disability and addiction” (p. 49). This segregation of educational opportunities, which often results in the criminalization of youth of color, is referred to as the *school-to-prison-pipeline* (Wilson, 2014). Far too often, principals in urban cities encounter African American and Latino students who struggle with apathy, low self-esteem, and hopelessness. Students in the secondary education pipeline, a period spanning from Grades 7-12, often find themselves dealing with external and internal conditions that will either support or hinder their progress toward graduation and beyond (Samel, Sondergeld, Fischer, & Patterson, 2011). “The continuity of services within the academic pipeline of elementary and secondary education is critical to the students’ lifelong outcomes, including their opportunity for higher education” (Brown & Bartee, 2000, p. 162).

At-risk African American and Latino students who struggle and are assessed as failures will live up to that expectation (Hopson, Schiller, & Lawson, 2014). Darensbourg & Blake (2013) believed that school officials should quickly identify and administer early intervention programs to academically at-risk students of color to foster work-related skills to build students’ behavioral engagement and academic persistence (Darensbourg & Blake). Newman & Dantzler (2015) acknowledged that resilience research in the K-12 setting is new, but schools should practice caring and respectful relationships with their students. Service learning provides students with the opportunity for hands-on experiences in a controlled environment. Students who can successfully perform their tasks often feel accountable to an adult in the building, and they work hard, so they do not disappoint the teacher or any caring adult in the building. If more adults

were accountable to students, research shows that students will try their best to rise to the expectations set forth by the adults (Newman & Dantzler, 2015).

The K-12 education model is fostering significant discussions around the transition between high school and college in many states, coining the term *K-16* (Ewell et al., 2003). Reed (2010) believed that if colleges or universities want students who upon enrollment are ready to meet its academic standards, then working with elementary and secondary schools to support successful transitions from elementary through high school must be an institutional priority. Schools that can support students in an environment with limited transitions are referred to as school pipelines. School pipelines often refer to a series of successful transitions using available statistics from high school graduation. “Although most children in the United States attend school through the middle grades, we know that increasing numbers do not complete high school by the time they are nineteen” (Ewell et al., 2003, p. 2).

A school pipeline with grade configurations that minimizes traumatic program transitions can support students in several ways. A report conducted by Huber et al. (2015) indicated that a pipeline can offer students “safe and adequate school facilities, a college-going school culture, rigorous academic curriculum, qualified teachers, intensive academic and social support, opportunities to develop a multicultural, college-going identity, and family-neighborhood-school partnerships focused on college-going” (p. 6). For African American and Latino students, it is essential that they are educated in school environments that accommodate their diverse educational needs as they travel through a school pipeline offering a combination of services (Brown & Bartee, 2000).



## **Problem Statement**

The Education Trust (2014) report suggests that the achievement gap between African American and Latino students and their White peers exists before children enter school. Inequitable and insufficient opportunities to learn accelerates the gap and contributes to low performance. In reading, the achievement gap has improved slightly more than in math, but after a half-century, the average African American and Latino students' scores remain in the lowest percentile (Camera, 2016). In today's public schools, academic success for African American and Latino students still lags well behind their White counterparts.

The public education system has not adequately addressed the effects of an elongated history of racism, exclusion, and low expectations of African American and Latino students (Brown & Bartee, 2000). The National Center for Education Statistics (2017) reported that in the school year 2014-15, the adjusted cohort graduation rate (ACGR) for public high school students rose to 83%, indicating that more than four out of five students graduated with a regular high school diploma within 4 years of starting the ninth grade. The graduation rate for students by ethnicity were: 88% for White students, 78% for Latino students, and 75% for African American students. Although graduation rates are rising nationally, there is still a significant achievement gap between African American and Latino students when compared to their White counterparts. Lower rates of high school graduation often lead to less employment, higher rates of incarceration, ill health, and substance abuse.

## **Theoretical Rationale**

When picking the main risk factors in children's lives, there is alcoholism, poverty (one out of five children), not being able to graduate from high school, premature birth, and early turbulence in the family (Werner, 2012). The theoretical rationale behind Werner's study was Urie Bronfenbrenner's (1994) ecological systems theory. Through his theory, Bronfenbrenner stressed the importance of studying a child in the context of multiple environments, in an attempt to understand his or her individual development. Urie Bronfenbrenner (1994) believed that to understand human growth or development, the whole ecological system must be considered.

Bronfenbrenner's (1994) ecological models of human development consist of five environment systems of development, which are the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The microsystem is the first level of the theory. It revolves around the relationship students have in settings that are closest to them, which is usually a school or a home setting. The second system is the mesosystem. The mesosystem is a system of microsystems in which the microsystems do not function independently. For instance, the student's home environment has a direct impact on his or her school environment. The third system is the exosystem. The exosystem is when two or more parties are involved, and the student is indirectly influenced by a change in any of his or her settings. For example, parents losing their jobs and how they handle the changes of losing their jobs may indirectly influence a student's behavior in school. The macrosystem, which is the fourth system, is directly associated with the culture of the student. This includes the student's ethnicity, family's background, and belief systems. The chronosystem is the fifth and final system, and it focuses on how a student evolves

after a life-changing event, such as a death or a divorce of a parent or with someone within his or her microsystem (Bronfenbrenner, 1994). Many studies have focused on the challenges and adversities of African American and Latino students (Brown & Bartee, 2000).

Resilience is a process that can be developed, nurtured, and cultivated within the context of a student's school (Newman & Dantzler, 2015). It is a student's ability to bounce back from adversity that determines whether that student will have an opportunity to overcome the odds of his or her environment and reach academic or career success. There is no consensus on how resilience is conceptualized in various research contexts, but most researchers seem to examine two critical concepts in the understanding of resilience: risk factors and protective factors (Masten & Reed, 2002). There are many attributes that contribute to a student having risk factors, such as early aggressive behavior, lack of parental supervision, academic problems, undiagnosed mental health problems, peer substance use, drug availability, poverty, peer rejection, and child abuse or neglect. Many of these are risk factors associated with the increased likelihood of youth substance use and abuse. Without having experienced any significant risk, such children or adolescents can be called competent, well-adjusted, or standard, but they cannot be called resilient (Masten & Reed, 2002).

### **Statement of Purpose**

The purpose of this study was to examine the significant role that an educational pipeline played in the academic achievement and level of resiliency for African American and Latino students from middle through high school graduation.

## **Research Questions**

In order to study the relationship of resiliency and academic achievement for African American and Latino students who attended a school pipeline, the following research questions were examined:

1. Is there a difference in student resiliency scores in African American and Latino students who were continuously registered in an educational pipeline program (Grades 6-12) and African American and Latino students who entered the cohort pipeline in the ninth grade?
2. Is there a difference in the academic achievement of African American and Latino students who graduated from a school pipeline (Grades 6-12) compared to African American and Latino students who entered the cohort pipeline in the ninth grade and graduated?
3. Is there a difference in the attendance average of African American and Latino students who were in a school pipeline (Grades 6-12) compared to African American and Latino students who entered the school pipeline in the ninth grade?

## **Potential Significance of the Study**

This research study provided information as to whether an educational school pipeline or significant grade configurations can increase student achievement and foster the development of resiliency in students. The literature shows that academic performance is impacted when students transition between elementary, middle, and high school programs (Cunningham & Swanson, 2010). Resiliency was often studied scientifically regarding mental illness, but over time, research has led the studies to high-

risk children and how to better develop them to overcome their adversities (Masten, Gewirtz, & Sapienza, 2013). The specific grade configurations decreased the number of traumatic program transitions a student would experience (Reyes, 2012). This is vital because resilience is a process that can be developed, nurtured, and cultivated within the context of a student's school. Schools should be able to recognize the adversity that students, especially at-risk students, face daily. It is a student's ability to bounce back from that adversity that will determine whether that student will have an opportunity to overcome the odds of his or her environment and reach academic or career success by successfully completing a secondary education program (Masten et al., 2013).

### **Definitions of Terms**

*African American* – also referred to as Black American of African descent. For this study, African American includes all students of African origin.

*College Readiness* – the level of preparation a student needs to enroll and succeed without remediation in a credit-bearing general education course at a postsecondary institution. For this study, college readiness is defined as receiving a grade of 75% on the English state exam and a grade of 70% on the state math exam.

*Continuously Registered* – students registered from middle through high school without any breaks who were enrolled in a school pipeline program. For example, if a student relocated for a semester and returned to the school the following semester, he or she would not be considered continuously registered.

*Public school (GPA)* – calculated by adding up all accumulated final grades and dividing that figure by the number of grades earned.

*School Attendance* – whether a person attended, either full time or part time, in any accredited educational institution or program during all or part of a specified reference period. In the region where the study was conducted, 90% or better is considered as the benchmark for that state.

*School Pipeline* – student progress as a continuum leading from high school to postsecondary education and through to the completion of a college degree. For this research, the educational pipeline refers to students who were continuously registered in educational pipeline programs that had grade configurations of K-12 or 6-12.

*Latino* – a person of Latin American descent

*Resilience* – the successful adaptation to the development of competence despite high-risk status or chronic stress (Luthar, Cicchetti, & Becker, 2000). This approach emphasizes the adaptability or the skill to adapt during times of adversity and stress.

*Title I* – Part A of the Elementary and Secondary Education Act (ESEA), as amended, provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet the challenging state academic needs.

## **Chapter Summary**

National statistics show that the achievement gap in reading and mathematics for African American and Latino students is significantly lower than their White counterparts. As a result, the 4-year graduation rate for African American and Latino students is negatively impacted. Another factor impacting student success of this population is traumatic program transitions between elementary, middle school and high school.

This study examined the impact a school pipeline played in the academic achievement and development of resiliency in African American and Latino students attending an educational pipeline in a Grade K-12 or 6-12 program. Chapter 2 reviews the literature on educational pipelines, resiliency, student engagement, and academic achievement that focuses on African American and Latino students. The research design, methodology, and analysis are discussed in Chapter 3. Chapter 4 presents a detailed analysis of the results and findings, and Chapter 5 discusses the findings, implications, and recommendations for future research and practice.

## **Chapter 2: Review of the Literature**

### **Introduction and Purpose**

If schools are to be successful in closing the achievement gap for students of color, they should be prepared to provide students with supports to help them cope with the positive and negative risk factors that will either support their progress towards graduation and beyond (Samel et al., 2011). “One way to achieve this is by creating more school pipelines for students to be educated from elementary through secondary education, including an opportunity for students to enroll in higher education after completion of high school” (Brown & Bartee, 2000, p. 162). Resilience is a process and students—especially students of color who feel supported and are nurtured through the school pipeline by caring adults—can overcome risk factors and achieve academic success (Werner, 2012).

Without any doubt, the most powerful source for fostering and developing resilience in children and youth is the family. However, right after families, the next significant influence goes to the school (Kiswarday, 2012). All students, especially those at risk of school failure, can succeed in school and life (Williams & Bryan, 2013). K-12 school pipelines may not eradicate the achievement gap, but they can provide the necessary resources to promote positive factors that will help cultivate student success and a supportive school environment (Williams & Bryan, 2013).

This study examined the significant role a school pipeline played in developing and fostering resilience in students of color in a Grade 6-12 environment, by providing a



stable environment, a culturally responsive curriculum, and a caring adult who was with them from elementary school through high school, which in return, closed the achievement gap. Researching the impact of a school pipeline is significant as African American students in the secondary education pipeline deal with risk factors that may prevent their progress toward graduation and beyond. When traveling through the public school system, a student usually has two options, resilience or resistance, and the hope is that a pipeline will foster resilience (Samel et al., 2011). It is well documented that educationally resilient students are more likely to have higher reports of school support, higher expectations from adults, higher academic self-esteem, and greater parental monitoring than noneducationally resilient students (Wang & Gordon, 1994). Once a student graduates from high school, college should be a viable option. For this to happen, colleges and universities must consider working with elementary and secondary schools as an institutional priority (Reed, 2010).

This literature review summarizes research that suggests that students, who can grow within a specific school culture that supports their needs, have a higher probability of completing their secondary education program.

### **Educational Pipeline**

Having a strong school system is important not just for students at the local school level, but also at the state level for colleges and universities. It is essential for students entering the ninth grade to graduate high school in 4 years with their cohorts. The data shows that when students graduate high school in 4 years, they have a stronger chance of college enrollment and postsecondary success (Ewell et al., 2003). Strong education policy can influence the success of an educational pipeline which could lead to a more

effective K-12 pipeline, or what is now being coined as a *K-16 pipeline*, which would follow students through college (Ewell et al., 2003). Ewell et al. spoke of creating an active pipeline through an articulated system of schools. The educational pipeline traditionally viewed student progress as a continuum leading from high school to postsecondary education and through to the completion of a college degree (Ewell et al., 2003).

Samel et al. (2011) conducted a longitudinal mixed-methods resiliency study that followed students in a secondary education pipeline from seventh grade through 12<sup>th</sup> grade. Their research examined when students begin to overcome or fall victim to internal and external factors as they progress through the pipeline. The focus of their investigation was to look at the longitudinal study of students from one middle school and one high school to identify and understand urban student issues that may have been present from the beginning of the students' secondary experience. According to their study, students began dropping out long before 12th grade, based on the choices they made in the seventh, eighth, and ninth grade that played out as they exited the educational pipeline (Samel et al., 2011).

It is not just African Americans who struggle with academic success in the public school pipeline. "City public schools have a long history of failure when it comes to Puerto Rican students completing school with a high school diploma" (Reyes, 2012, p. 143). Reyes outlined the challenges that Latino students, primarily Puerto Rican students, endure in public education pipelines. The Reyes study highlights the weak academic, social, and economic barriers that contribute to high dropout rates and low college enrollment and graduation rates (Reyes, 2012).

Rodriguez and Oseguera's (2015) research showed that authentic relationships and interactions between students and adults in school might be one of the only sources of social capital that opens pathways to college and career options for Latino youth. "Within the context of Latina/o student success, relationships are a vital dimension to institutional culture particularly among Latina/o students who find themselves struggling in schools with inadequate opportunities to learn" (Rodriguez & Oseguera, 2015, p. 134).

Brown and Bartee (2000) believed that in addition to the pipeline being broken for African Americans, they had doubts that African American students would succeed in what they call the *P-16 pipeline* anytime soon. Their study outlines the struggle of African American students who are in the public school education pipeline from pre-kindergarten through college and suggests that the policies post-*Brown v. the Board of Education* has not measured up equally with White students. They further discussed that although African American students are now attending desegregated school systems, they are still performing poorly in academics, and public education is still a problem within the confines of the current education pipeline (Brown & Bartee, 2000). Their research outlined the progression of African American students through a P-16 academic pipeline where African American students are failing within a desegregated educational setting. The desegregation of schools allowed school districts more control over curriculum and fewer course offerings that represent the culture of the students (Brown & Bartee, 2000).

Reyes (2012) opened a different dialogue within the educational pipeline by indicating the need for educators and researchers to further disaggregate the data of Latino students to their specific origin. Reyes (2012) looked specifically at Puerto Rican students and their lack of success in the pipeline. He did not think it was fair to include

all Latinos together because they are all different, and they are dealing with unique needs. Reyes (2012) and Brown & Bartee (2000) had similar objectives; their research focused on the atrocities of educational pipeline and its negative impact on student success for African Americans and Puerto Ricans. Samel et al. (2011) was the only true empirical study of a school pipeline with data conducted from middle school through high school. Their research corresponded with the research conducted by other authors in this section who dealt with the educational pipeline, and research identifies that there is an ongoing and complex struggle for all public school urban youth in school life or in the larger school community (Samel et al., 2011).

A limitation of the Samel et al. (2011) study is centered around the district making policy mandates that all students in Grades 7 and 8 are promoted unless there are some extenuating circumstances that would prevent them from going up to the next grade. This commission presents a limitation because students are socially promoted regardless of their readiness to be successful in high school. This policy would consist of an internal factor that contributes to a student's failure in school. According to the research data, Massachusetts and Iowa are among the two highest performing states of ninth graders graduating from high school in 4 years, going to college and returning their second year, and completing their college degree (Ewell et al., 2003). The data indicates a need for states to adopt policies to support school systems in providing the necessary resources for student success at each transitional level (Ewell et al., 2003).

### **Resiliency**

“To study resilience, one must define and operationalize it” (Masten et al., 2013, p. 2). Resilience can be defined as the ability to bounce back, and it is taken from the

Latin word *resilire* (Masten et al., 2013). Masten et al. believed that it is important to design policies that promote a healthier development of children who face challenges and adversity at an early age. Resiliency was often studied scientifically regarding mental illness, but over time, research has led the studies to high-risk children and how to better develop them to overcome their adversities. Ernestus and Prelow's (2015) quantitative study examined the patterns of risk and resilience and how they affect African American and Latino youth. The authors believed that although you may come from a low-income family and face negative risk factors, students do not have to be victim of their environments.

Ernestus and Prelow's (2015) study used a subset of students between the ages of 10-14 who identified themselves as either African-American or Latino. Findings of the Ernestus and Prelow (2015) study showed that when students must deal with many risk factors, they are more susceptible to psychological distress than students who live in stable neighborhoods and have stronger support systems. Their research further demonstrated that African Americans and Latinos share the same patterns of risk and protective factors. The study also indicates that when looking at a student's time in school, it is important to look at it over a process of time rather than at one moment in time. This means that students who are in environments that can nurture them may not show immediate progression, but they will eventually overcome their adversity over the course of their school career (Ernestus & Prelow, 2015).

Cunningham and Swanson (2010) examined the educational resilience of African American adolescents. The study was a cross-sectional research study that took place in a large metropolitan area in South Central United States. Their study included 206

African American high school students consisting of 135 females and 71 males. The students' ages ranged from 13 to 18 years old. Students were administered a 40-item survey that looked to measure the resilience of students in a high-risk community. The students reported going through a high number of stressful events, but they did express hope in the midst of their despair (Cunningham & Swanson, 2010). The study shows that school support leads to educational resilience. Students expressed that the positive relationships that were established within their school confines were instrumental for their academic self-esteem (Cunningham & Swanson). The research also alludes to the fact that a student in a single-parent household did not have a significant effect on the student's educational resilience. Schools are a safe place for many at-risk students and focusing on a student's self-esteem is crucial to their educational success (Masten et al., 2013). The study conducted by Cunningham and Swanson (2010) is vital to understanding how African American students cope with adversity and how a school can play a major role in their social development while preparing them to cope with and overcome adversity.

Masten et al. (2013) highlighted the obvious: to develop student resiliency, it is advantageous to start at the early stages. Early childhood is the perfect time to teach children the tools they need to develop healthy relationships, which will better prepare them for success in the future. Students in the early childhood stages are usually not seen as having to deal with stress, but they often have emotional stress or issues that stem from home. "It should be noted that the presence of risk factors does not predict, or guarantee children will have academic and behavioral problems, but rather increase the probability such problems will arise" (Williams & Portman, 2014, p. 15). Williams and Portman's

(2014) study is significant because it identifies two common factors when discussing resiliency, risk factors, and protective factors. This is significant because risk factors do not determine a student's success or failures, they only recognize that the student's chances of dealing with some form of academic or behavioral issues is more likely to occur. Williams and Portman's (2014) explanation of resiliency is that it is not just a personality trait that stops the negative environment from influencing children and adolescents, but some of the individuals' successes includes protective factors that allow them to overcome the causes of risk factors.

Irvin (2012) conducted a quantitative study using the Interpersonal Competence Scale-Teacher to identify protective or promotive factors that may underpin the resilience of African American youth from low-income rural backgrounds. Results showed that disengaged girls and boys had lower achievement levels in the ninth grade (Irvin). The middle school also proved to be a crucial time for developing academic success, as middle school students exhibit many behavioral challenges (Irvin). Irvin cited many resiliency theorists because his study looked at protective and promotive factors. The study looked to identify if school activities and school bonding played a vital role and served as interventions. If schools provide a variety of activities as interventions that would interest most at-risk students, those students would then come to the school to participate in the activities, but they would also be present during the day (Irvin, 2012).

Newman and Dantzler (2015) conducted a retrospective design study to assess high-quality service-learning and community engagement projects to measure student resiliency. Participants in the study consisted of a total sample of 20 schools and 1,669 students. Many of the participants were African American and Latino students. The

resiliency items were measured on a 4-point Likert-type scale (Newman & Dantzler, 2015). Two groups of the 1,669 students were randomly selected using an independent *t*-test. The two variables were student resiliency and school-based resiliency factors. Students who attended higher performing schools posted better school-based resiliency results than the students who attended low-performing schools. The study showed that schools that had high-quality service-learning programs and held their students to higher standards within the program, and they had higher student resiliency results. The study suggests that schools that set a solid foundation where they focus on developing students' ability are to ensure that caring adults are in the schools and the lives of their students. Newman and Dantzler (2015) acknowledged that resilience research in the K-12 setting is new, but schools should practice caring and respectful relationships with their students.

Service learning provides students with the opportunity for hands-on experiences in a controlled environment. Students who can successfully perform their tasks often feel accountable to an adult in their building, and they work hard, so they do not disappoint the teacher or any caring adult in the building (Newman & Dantzler, 2015). If more adults are accountable to students, research shows that the student will try their best to rise to the expectations set forth by the adult. It is essential for the reader to understand that children are not born resilient. Resilience is a process that can be developed, nurtured, and cultivated within the context of a student's school. Schools should be able to recognize the adversity that students, especially at-risk students, face daily (Kiswarday, 2012). How students can bounce back from adversity will determine whether they will have an opportunity to overcome the odds of their environment and reach academic or career success. In measuring resiliency, qualitative research appears to be the most



popular research method. Ernestus & Prelow (2015) stated that there is something powerful when students can tell someone that they are successful because an adult played a significant influence in their life.

Urie Bronfenbrenner's (1994) ecological systems theory explains how several types of environmental systems influence human development. It comprises five types of environmental systems: microsystem, mesosystem, exosystem, macrosystem, and chronosystem, which are interrelated. Bronfenbrenner's ecological systems theory discusses how a student lives in the microsystem setting, which is the first stage of his development. Bronfenbrenner believed that students from disadvantaged backgrounds who overcome their adversity have a greater appreciation of life by their own and society's standards (Bronfenbrenner, 1994).

In studies of resilience, it is believed that there should be some uniformity across theoretically similar adjustment domains but not across those that are conceptually distinct (Luthar et al., 2000). Thus, for example, if a subset of at-risk children seems resilient based on high academic grades, then they should also reflect positive adaptation on persevering classroom behaviors as perceived by others (Luthar et al.). Luthar et al. (2000) believed that resilience remains severely constrained if studies are predominantly empirically driven as opposed to being theoretically based, with little conceptual recognition of the importance of multiple contexts in children's development. Luthar et al. further suggested that some scholars who advocate for scientific parsimony contend that the notion of resilience adds nothing to the more general term positive *adjustment* and argue that the focus on resilience not augment developmental theory. Research on

resilience must accelerate its move from a focus on a description to a focus on elucidating developmental process questions (Luthar et al., 2000).

The Luthar et al. (2000) critique of research on resilience has led to two broad conclusions. First, despite many challenges linked with studying this topic, it is viable that the research continues. There have been different meanings associated with *resilience* over the past few decades, and the continued investigation of risk and protective processes is crucial, so a school can ensure that they are providing with the right interventions. The second, in some ways, mirrors the first. There is a need for resilience researchers to enhance the scientific rigor of their work (Luthar et al., 2000). The risk factors have compounded student's ability to succeed in school, and schools must be prepared to help students cope with their adversity at an early age.

### **Attendance**

Student attendance is a significant contributor to student success, but a preschooler or a kindergarten student cannot make it to school on their own; they need their parent's involvement and engagement (Chang & Romero, 2008). Chang and Romero conducted a research report that highlights the effect that absenteeism has on a child's progress in school. Their report indicates that among poor children, chronic absence in kindergarten leads to poor academic achievement, primarily in the areas of reading and mathematics, by the time a student reaches fifth grade. This is relevant as some parents, do not view kindergarten as a vital grade for student outcomes. However, students who miss school, on average, 2 to 3 days a month, would be considered chronically absent. To be considered chronically absent, a student needs to miss nearly a month of school or more over the course of a year. While parents are responsible for

getting them to school every day, the schools have a responsibility to conduct outreach to parents and to provide the necessary supports that are needed to ensure the student is safe (Chang & Romero, 2008). Parents who are living in poverty are most likely to face barriers and challenges that may inhibit them from getting their child to school (Chang & Romero, 2008).

This extensive report on absenteeism conducted by Chang and Romero (2008) identifies the importance of school attendance in the early grades. The researchers pointed out that African American and Latino students have a higher absentee rate than White and Asian students. Various contributing factors could be the reason for a parent keeping a child out of school. Some of the factors range from parental substance abuse to mental illness, whatever the case, schools must be proactive with identifying chronic absenteeism and providing the follow-up and support needed to help the family (Chang & Romero, 2008).

### **Academic Achievement**

All at-risk students will struggle, and if they are assessed as failures, they will live up to that expectation (Hopson et al., 2014). Family relationships and parental support can also impact student engagement (Sharkey, You, & Schnoebelen, 2008). Consistent with previous studies, Sharkey et al. (2008) found that students who reported low levels of family support also had low levels of school engagement). This could suggest that schools may have more of an impact on internal resilience for youth with little family support (Sharkey et al.). Sharkey et al. stated that in schools that have caring adults, such as caring teacher relationships, there is an increase in student engagement.

The Hopson et al. (2014) quantitative study examined the importance of a favorable school climate, behavior norms, social supports, and academic success. The study was a secondary analysis of public-use data from students who completed the School Success Profile (SSP). The SSP dataset includes responses from 37,354 students from 318 schools in seven states. The students completed the data between 2001 and 2005. The dataset excluded the students from sites with fewer than 50 students and those enrolled in special intervention programs. The Hopson et al. findings indicate that students who received more social support and norms of safe, prosocial behavior in their homes, schools, and neighborhoods reported better grades and behavior. This points to the importance of protective social interactions and norms across ecological systems. Hopson et al. opined that some protective behaviors are relevant for grades or behavior, but not both. The researchers also indicated that findings from this study should be viewed while considering its methodological limitations. The data were based on a purposive sample of schools, which limits the study's generalizability to schools that are similar regarding student and school-level characteristics. Also, the sampling procedures raised the possibility that the school-level variables were not representative of the students collectively (Hopson et al., 2014). Therefore, the relationship between collective perceptions of school climate and behavior should be interpreted cautiously (Hopson et al.).

Darensbourg and Blake's (2013) quantitative study identified the increasing gap in achievement between White American and African American youth. Their study examined how behavioral engagement and achievement values influenced the academic achievement of academically at-risk African American youth through a three-time-point

longitudinal design. Participants from their study included 167 at-risk African American students. The students were determined to be at-risk based on their district-administered literacy assessment. Darensbourg and Blake found that the relationship between engagement and achievement was significant for math achievement in the elementary school grades, and reading achievement approached significance.

Based on their findings, Darensbourg and Blake (2013) believed that school officials should identify and administer early intervention programs to academically at-risk African American students to foster work-related skills to build African American students' behavioral engagement and academic persistence. Given the importance of academic values to academic performance, some researchers attribute African American youths' underachievement to their devaluing of school or academic disidentification (Darensbourg & Blake). The authors' findings led them to conclude that since self-regulation skills are an early indicator of behavioral engagement, especially in the early childhood years, school officials should identify and administer early intervention programs to at-risk African American students to build their behavioral engagement and academic persistence. Darnesbourg and Blake (2013) suggested that a correlation needs to occur with African Americans' valuing their school and to their academic success. They also stated that for those students who struggle academically, behavioral engagement is probably the most important predictor of their school success. However, one of the study's limitations was its small sample size and its lack of a diverse African American population. Students were from disadvantaged backgrounds with at least 77% of them receiving a free or a reduced-fee lunch. Also, the scale the authors used to

measure achievement values was not adequate, which was due to the lack of findings related to the study (Darensbourg & Blake, 2013).

Wiggan's (2007) conducted a mixed-methods phenomenological study on one male and six female African American students attending a public, urban university in the South. They were all recipients of the Hope Scholarship, which is awarded to students earning and maintaining a 3.0 or higher in high school or college. The student ages ranged between 17 and 19 years old. The findings of the study identified three main reasons for their academic success (Wiggan). The most crucial factor that the students identified for their success was teacher practices. The students also indicated that a curriculum that was balanced and not densely populated with European culture was appreciated, instead of introducing more culturally related courses (Wiggan). The students felt that teacher caring was instrumental to their success. They acknowledged that classes that were less teacher-centered and more student-centered contributed to their academic success. These students could succeed in the same schools that considered them to be at-risk and exposed to negative risk factors (Wiggan 2007). A phenomenological study was necessary for the students to be able to tell and share their experiences within the school confines. This Wiggan research is essential because it looked to show how students from similar backgrounds can overcome challenges and rise to expectations and achieve academic success. The critical factor continues to be good pedagogy and strong teacher support. One consistent theme, when discussing the research on high achievers, is that the population identified for the survey was female dominated.

## **African American Males and Academic Achievement**

The effects of students' attitudes are also contributors to the academic achievement of Black males and how they view themselves. Fantuzzo, LeBeouf, Rouse, and Chen (2012) conducted a quantitative study that monitored risks believed to be associated with being behind academically for an entire subpopulation of African American boys in a large urban public school district. The findings in the Fantuzzo et al. (2012) study indicate significant connects and disconnects in the academic achievement of African American boys that the researchers felt school and public service leaders must address. The results also suggested that African American boys who experienced early risks, particularly those representing disengagement at the parent-community and parent-child intersections, demonstrated lower school attendance and task management. The study further demonstrates that within a population of young African American boys in a large urban school district, school attendance and task engagement can significantly influence the relations between early risk experiences beyond poverty and early academic achievement (Fantuzzo et al., 2012).

Although the 1990s witnessed an increase in academic achievement for Black students, there was still a reduction in the progress made to closing the achievement gap (White, 2009). White's (2009) research focused on factors that contribute to the achievement gap. The author pointed out that the gap does not only exist between Black and White students, it also exists between African American males and females. African American males are more likely to attend high schools that are predominantly African American and where students come from impoverished neighborhoods. African American males' attitudes are derived from various entities and can severely impact how

they view the world around them. Some of the negative attitudes gathered by White stemmed from the oppositional bias culture ideology. African American males who attended schools where they are perceived as low achievers, rule breakers, and considered to be cool, were more likely to be respected by White students (White, 2009). Negative stereotypes are very much aligned with the views and perceptions that their White counterparts already believe about them. White, the researcher, further indicated that African American males who participated in their own failure suggested that they may resist academic support from those who seek to help them.

African American boys in the White (2009) study, who had effective teachers, saw their academic performance almost triple in comparison to students who had an ineffective teacher. Given that African American boys are more likely to attend a school where the teachers are not qualified, they are more likely to become disengaged in class and with school. The curriculum also impacts achievement (White, 2009). The curriculum and the lesson plan inform instruction. However, schools often operate with curriculums that are not culturally representative of the population that they are educating. This leads to students' lack of engagement in the classroom, especially for those students who are being referred to special education because a teacher may not understand a student's cultural reference or identity (Janosz et al., 2008).

### **Topic Analysis**

The pipeline literature highlights one common theme: more research is needed on how pipelines can promote resiliency in students of color to close the achievement gap. The pipeline traditionally represents a high school-to-college transition, but little research has been conducted to include expanding the research to elementary school transitions.



Resilience is a process that can be developed, nurtured, and cultivated within the context of a student's school. How students can bounce back from an adversity will determine whether they will have an opportunity to overcome the odds of their environment and reach academic or career success. In measuring resiliency, qualitative research appears to be the most popular research method. There is something powerful when students can say that they are successful because an adult played a significant role in their life.

The literature review emphasized the significant achievement gap between African Americans and Latino students compared to White students. An important thing to note with this study is that the Latino students never mentioned that they had any concerns with their teachers, but the African American students did not feel that they got much support from their teachers.

### **Chapter Summary**

Without any doubt, the most powerful source for fostering and developing resilience in children and youth is the family. However, right after families, the next significant influence goes to the school (Kiswarday, 2012). All students, especially those at risk of school failure, can succeed in school and life (Williams & Bryan, 2013). A K-12 school pipeline may not eradicate the achievement gap, but it can provide the necessary resources to promote positive factors that will help cultivate student success and a supportive school environment. After reviewing the literature, it is apparent that the achievement gap is a systemic problem that cannot be resolved with a quick fix. A school pipeline can provide the necessary structure whereby students can get the support they need because the students travel within the confines of one system. The literature review suggests that students who can grow within a specific school culture that supports

their needs and has caring teachers, students will rise to the occasion and meet the high expectations needed for academic success. Chapter 3 reviews the research design methodology for this study, which includes the research participants, instruments used, and data analysis.

## **Chapter 3: Research Design Methodology**

### **Introduction**

In today's public schools, academic success for African American and Latino students still lags well behind their White counterparts (Bailey & Dziko, 2008). National statistics indicate that, on average, African-American and Latino youth score significantly lower on standardized reading and mathematics tests than do White students. They also remain underrepresented among advanced placement test takers (The Education Trust, 2014). Stanley and Plucker (2008) suggested that students from troubled backgrounds, primarily minority students and students from low-income families, are less likely to complete high school than their peers.

This study used a descriptive quantitative research design to study the impact of a school pipeline on academic achievement, levels of resiliency, and attendance. A descriptive quantitative research design was used because data were collected from a survey and inferences regarding the relationship between students who entered the pipeline in the sixth grade and students who entered in the ninth grade. This study was conducted to determine whether African American and Latino students who were continuously registered at an urban secondary school consisting of Grades 6-12 were more resilient and academically successful than students entering the pipeline in ninth grade in closing the achievement gap. If schools are to be successful in helping African American and Latino students close the achievement gap, they should also be prepared to help them cope with factors that will support their progress toward graduation and

beyond (Samel et al., 2011). “One way to achieve this is by creating more educational pipelines for students to be educated, from elementary through secondary education, including an opportunity for students to enroll in higher education after completion of high school” (Brown & Bartee, 2000, p. 162). The educational pipeline provides a nurturing environment with caring adults where students develop resiliency to assist them in overcoming risk factors and achieving academic success (Werner, 2012).

One way to address this issue is to create school pipelines that provides students with the opportunity to enter a school community where an adult knows them or has access to them through each transition and can monitor and support the student’s successful progression through high school graduation and beyond (Ewell et al., 2003). One thing is sure, educationally resilient students are more likely to have higher reports of school support, higher expectations from adults, higher academic self-esteem, and greater parental monitoring than noneducationally resilient students (Wang & Gordon, 1994).

There has been limited research conducted on the academic success of African American and Latino students who attend Grade 6-12 schools in large urban cities. This study examined the role of how one educational pipeline school contributed in developing and fostering resilience and impacting student performance.

The following were research questions that led this present study were:

1. Is there a difference in student resiliency scores in African American and Latino students who were continuously registered in an educational pipeline program (Grades 6-12) and African American and Latino students who entered the cohort pipeline in the ninth grade?

2. Is there a difference in the academic achievement of African American and Latino students who graduated from a school pipeline (Grades 6-12) compared to African American and Latino students who entered the cohort pipeline in the ninth grade and graduated?
3. Is there a difference in the attendance average of African American and Latino students who were in a school pipeline (Grades 6-12) compared to African American and Latino students who entered the school pipeline in the ninth grade?

### **Research Context**

This study was conducted in an urban secondary public school in the Northeast Region of the United States in a predominantly African American neighborhood. The neighborhood demographic showed a median income of \$39,821 with a poverty level of 28.5% (U.S. Census Bureau, 2017). The student population consisted of 68% African American, 20% Latino, 1% Asian or Native Hawaiian or Pacific Islander, and 2% other. At the time of the study, the school had 72% of its student population identified as Title 1, which identifies the students' eligibility for a free lunch, and 19% of the student body received special education services. The school offered honors classes, advanced placement courses, and a College Now program where students could attend college classes at a local university and earn college credit. The 4-year graduation rate was 81% in the 2016-2017 school year. The school had a guidance counselor, but it did not have a standalone college advisor.

## **Research Participants**

The research participants for the study consisted of students who were designated to graduate in June 2018. The 2018 cohort was divided into two entry levels, those who entered in middle school and those who entered in high school. There were 40 students who entered the pipeline in middle school, and 28 who entered in the ninth grade, making a total of 68 students. The gender makeup consisted of 22 males (32%) and 46 females (68%). The ethnic makeup of the participants consisted of 78% African American or Black and 22% Latino ranging from 17 to 19 years old, with the average age of the students at 18 years.

## **Instruments Used in Data Collection**

A secondary school, serving Grades 6-12, was identified for this study. Students attending this school were divided into two groups. Group A were students who were continuously registered in the school pipeline from Grades 6-12. Group B were students who were continuously registered from Grades 9-12. Each student participating in the study completed a survey and submitted a signed permission slip (Appendix A) from a parent or guardian. If a student did not submit a permission slip, his or her survey information was not included in the study.

Archival data relating to GPA, attendance, and college readiness, as determined by examination scores, were retrieved from the school's data sorter during the spring 2018 semester. College readiness is defined as receiving a 75% score on the English state exam and a 70% score on the state math exam. The data sorter is a central database that houses student information on all aspects of their academic record. The sorter gives information based on cohort, attendance, examination scores, Title 1 status, etc.

In addition to reviewing archival data, students were administered the Connor-Davidson Resiliency Scale (CD-RISC). The CD-RISC (Appendix B) was initially developed in various cohorts of adults, but there have been many studies in which the scale was given to children and adolescents from ages 10 to 18 years. The survey consisted of 25 items and scored using a Likert-type scale. Total raw scores range from 0-100; the higher the score on the survey, the higher the resiliency rating. The survey was administered and scored by a school administrator who did not provide direct services to the students. Hard copies of the surveys were distributed in the school's media center during an assigned class period. The surveys were anonymous and identified by cohorts with an *m* on the upper left-hand corner for students entering in the sixth grade and an *h* for students entering in the ninth grade. Students who completed the surveys cannot be identified. Students were given a class period to complete the survey. Two sample statements from the survey were; *I believe I can achieve my goals, even if there are obstacles* and *During times of stress/crisis, I know where to turn for help*. It was thus expected that the scale would be understood by those with a fifth-grade level of education (Davidson & Conner, 2017).

The five-factor CD-RISC has been used and validated across a variety of groups, including South African and Chinese adolescents, Korean students, firefighters, nurses, and Indian students (Jorgensen & Seedat, 2008). Structural equation modeling was used to test the structural integrity of the survey across different populations. Findings support a five-factor model with unidimensional integrity. The survey can be completed in 10 to 15 minutes, but the students were given a class period for completion.

## **Procedures for Data Collection and Analysis**

Student information regarding attendance, GPA, and exam scores were collected using the school's database. The data was separated into two categories. Group A reflected students who entered the pipeline in the sixth grade and Group B reflected students who entered in the ninth grade.

Descriptive statistics was used to analyze the data using the Statistical Package for the Social Sciences (SPSS). The following variables were analyzed:

1. Attendance rates
2. Academic achievement (GPA)
3. State-required examination scores for college readiness for math and English,  
and
4. Resiliency levels for students in the educational pipelines for Grades 6-12 and  
Grades 9-12.

Table 3.1 displays the variables likened to each question and the associated planned analysis for the referenced question. Identification of variable scaling was also displayed to ensure fidelity with the planned analysis.



Table 3.1

*Independent and Dependent Variables by Specified Hypotheses and Associated Planned Analysis*

Research Question	IV*	IV Scale	DV**	DV Scale	Analysis
1	Pipeline Cohort Group	Nominal	Resiliency	Interval	Analysis of Variance
2	Pipeline Cohort Group	Nominal	GPA and Math and English Readiness	Interval	Multivariate Analysis of Variance
3	Pipeline Cohort Group	Nominal	Attendance Average	Ratio	Analysis of Variance

*Note.* \*IV – Independent Variable; \*\* DV – Dependent Variable

**Research question 1.** Analysis of variance (ANOVA) was used to determine if there was no difference in student resiliency between cohort group types (no pipeline; pipeline). The dependent variable, resiliency, was scaled at the interval level meaning that there was a perceived equal mathematical relationship between response options. The independent variable was considered ex post facto meaning that the condition of group membership had been predefined by environmental courses rather than by manipulation from the researcher. The IV was scaled at the nominal level meaning that there is no perceived mathematical relationship between response options.

**Research question 2.** A multivariate analysis of variance (MANOVA) was used to determine if there was a significant mean difference in the dependent variables as a result of the independent variables. Specifically, this research determined if a difference exists among the dependent variables, public school, math, and English readiness between levels of the independent variables, cohort groups (no pipeline, pipeline). Similar to ANOVA, the mean differences were tested to determine if differences existed

between the levels of the IV. However, measures of effect were accounted for by approximate  $F$  (as defined by Wilks Lambda) rather than the ANOVA  $F$  statistic.

**Research question 3.** A one-way ANOVA was used to determine if there was a difference in the attendance average of students who were continuously registered in a Grade 6-12 educational pipeline program and students who entered the cohort in the ninth grade. The analytic procedures were conducted using the SPSS software program. Results are presented in Chapter 4 and include a complete breakdown of the analysis conducted by research questions, including an evaluation of the appropriate assumptions and final inferential results. In addition, histograms are offered, as well as  $z$ -scores and Normal  $Q-Q$  plots to support assumptions of normality if necessary.

### **Summary**

The purpose of the present study was to determine the impact of a school pipeline on students' attendance, academic achievement, and resiliency level. The literature shows that students who are continuously registered in an educational pipeline develop a level a resiliency that helps them overcome risk factors and obstacles that can prevent them from graduating high school.

This study was conducted in an urban secondary school in the Northeast Region of the United States. The research participants for the study consisted of students who were designated to graduate in June 2018. The research participants were divided into two groups; those who entered the pipeline in the sixth grade and those who entered in the ninth grade. The participants archival data was collected regarding attendance, GPA, and exam scores. Each student participating had to complete the CD- RISC. Chapter 4 presents the results and analysis of each research question.

## **Chapter 4: Results**

### **Research Questions**

The purpose of this study was to examine a school pipeline to determine if it had an impact on closing the achievement gap for African Americans and Latino students in the areas of academic achievement, attendance, and resilience. The study compared students who entered the pipeline in middle school and continued with the school through high school graduation against students who entered the pipeline school in the ninth grade. A pipeline provides students with the opportunity to enter a school community where an adult knows them or has access to them through each transition, and the adult can monitor and support the student's successful progression through high school graduation and beyond (Ewell et al., 2003). This study focused on students living in a large urban population and the following research questions were reviewed:

1. Is there a difference in student resiliency scores in African American and Latino students who were continuously registered in an educational pipeline program (Grades 6-12) and African American and Latino students who entered the cohort pipeline in the ninth grade?
2. Is there a difference in academic achievement of African American and Latino students who graduated from a school pipeline (Grades 6-12) compared to African American and Latino students who entered the cohort pipeline in the ninth grade and graduated?

3. Is there a difference in the attendance average of African American and Latino students who were in a school pipeline (Grades 6-12) compared to African American and Latino students who entered the school pipeline in the ninth grade?

### **Data Analysis and Findings**

Inferential statistics were used to draw conclusions from the sample tested. The SPSS was used to code and tabulate the scores collected from the surveys and provide summarized values, where applicable, including the mean, standard deviation, and central tendencies. ANOVA and MANOVA analyses were used to evaluate the three questions.

### **Demographics**

The research participants for this study consisted of 68 students who were expected to graduate in June 2018. The 2018 cohort was divided into two entry levels, those who entered in middle school and those who entered in high school. There are 40 students who entered the pipeline in middle school, and 28 who entered the pipeline in the ninth grade. The gender makeup consisted of 22 males (32%) and 46 females (68%). The ethnic makeup of the total cohort population consisted of 78% African American or Black and 22% Latino. The students' ages range from 17 to 19 years old, with the average age being 18 years old.

### **Analysis of Research Question 1**

Prior to analyzing the research questions, data cleaning and data screening were undertaken to ensure the variables of interest met the appropriate statistical assumptions. Thus, the following analyses were assessed using an analytic strategy so that the variables were first evaluated for missing data, univariate outliers, normality, linearity, and

homogeneity of variance. Displayed in Table 4.1 is a summary of the variables and analyses used to evaluate Research Question 1.

Table 4.1

*Descriptive Statistics for Resiliency by Cohort Group*

Group (1 = 6-12, 2= 9-12)	N	Min	Max	Mean	Std. Dev	Skew	Kurtosis
Pipeline (CD-RS)	33	49	98	71.879	11.238	0.235	0.276
No Pipeline Resiliency (CD-RS)	16	43	91	71.813	14.432	-0.367	-0.880

**Data cleaning.** Before the research questions were evaluated, the data were screened for missing values and univariate outliers. Missing data were evaluated using frequency counts, and no cases were found to have missing values. The data were screened for univariate outliers by transforming raw scores to *z*-scores and comparing *z*-scores to a critical value of  $\pm 3.29$ ,  $p < .001$  (Tabachnick & Fidell, 2007). *Z*-scores that exceed this critical value are more than three standard deviations away from the mean and thus represent possible outliers. The distributions were evaluated, and no cases with univariate outliers were found. Thus, data were collected from a sample of 49 students ( $N = 49$ ).

**Normality.** Before the research questions were analyzed, basic parametric assumptions were assessed. That is, for the dependent variable (resilience) and independent variable (no pipeline; pipeline) assumptions of normality, linearity, and homogeneity of variance were tested. Linearity and homogeneity of variance were evaluated using residual scatterplots and Levene’s test, and no violations were observed; Levene’s test  $F = 2.977$ ,  $p = .091$ . To further test if the distributions were normally

distributed, the skew and kurtosis coefficients were divided by the skew/kurtosis standard errors, resulting in  $z$ -skew/ $z$ -kurtosis coefficients. This technique was recommended by Tabachnick and Fidell (2007). Specifically,  $z$ -skew/ $z$ -kurtosis coefficients exceeding the critical range between  $-3.29$  and  $+3.29$  ( $p < .001$ ) may indicate nonnormality. Thus, based on the evaluation of the residual scatterplots, Levene's test and  $z$ -skew/ $z$ -kurtosis coefficients, all assumptions were assumed.

Results from using SPSS was evaluated using ANOVA analysis to determine if there was no significant difference in student resilience between the no pipeline and pipeline groups. Results indicated that a nonsignificant effect was observed; that is, there was no difference in student resilience between groups,  $F(1,47) = .000$ ,  $R^2 = .021$ ,  $p = 0.986$ . That is, less than 0.2% ( $R^2 < .020$ ) of the variance observed in the participants' resilience was due to group status. Table 4.2 provides an inferential statistical breakdown of resilience for each group.

Table 4.2

*Inferential Statistics for Resilience by Group Status*

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.	Partial Eta Squared	Observed Power
Corrected Model	0.047a	1	0.047	0.000	0.986	0.000	0.05
Intercept	222484.000	1	222484.000	1459.226	0.000	0.969	1.00
Group	0.047	1	0.047	0.000	0.986	0.000	0.05
Error	7165.953	47	152.467				
Total	260175.000	49					
Corrected Total	7166.000	48					

*Note.* R Squared = .000 (Adjusted R Squared = -.021); Computed Using Alpha = .05

## **Analysis of Research Question 2**

For Research Question 2, there was no difference in GPA and readiness (Math, English) between the cohort groups (no pipeline, pipeline), a MANOVA was used to test the question. The DVs were both scaled at the continuous level and the IV was scaled at the nominal level. The MANOVA was appropriate given that multiple dependent variables were specified in the equation and a nominal IV was specified as the between-groups factor.

Prior to analyzing the research questions, data cleaning and data screening were undertaken to ensure the variables of interest met the appropriate statistical assumptions. Thus, the following analyses were assessed using an analytic strategy so that the variables were first evaluated for missing data, univariate outliers, normality, linearity, and homogeneity of variance. Displayed in Table 4.3 is a summary of the variables and analyses used to evaluate Research Question 1.

**Data cleaning.** Before the research questions were evaluated, the data were screened for missing values and univariate outliers. Missing data were evaluated using frequency counts, and no cases were found to have missing values. The data were screened for univariate outliers by transforming raw scores to  $z$ -scores and comparing  $z$ -scores to a critical value of  $\pm 3.29$ ,  $p < .001$  (Tabachnick & Fidell, 2007).  $Z$ -scores that exceeded this critical value were more than three standard deviations away from the mean and thus represented possible outliers. The distributions were evaluated and no cases with univariate outliers were found. Thus, data were collected from a sample of 68 students ( $N = 68$ ).

Table 4.3

*Descriptive Statistics for GPA, ELA, Algebra, and Readiness by Cohort Group*

Group	DV	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Pipeline	GPA	40	66.25	94.40	80.159	6.528	-0.109	-0.372
	ELA	40	65.00	92.00	80.900	7.715	-0.800	-0.352
	Algebra	40	64.00	80.00	69.525	3.595	1.078	1.448
	Readiness	40	1.00	2.00	1.450	0.504	0.209	-2.062
No Pipeline	GPA	28	66.94	92.29	79.109	7.049	0.310	-0.869
	ELA	28	57.00	99.00	78.964	10.557	-0.568	-0.276
	Algebra	28	50.00	80.00	68.286	6.103	-0.776	2.231
	Readiness	28	1.00	2.00	1.357	0.488	0.631	-1.732



**Test of normality.** Before the question was analyzed, basic parametric assumptions were assessed. That is, for the dependent variable (GPA, English, and math) and independent variable (no pipeline, pipeline) assumptions of normality, linearity, and homogeneity of variance were tested. Linearity and homogeneity of variance were evaluated using residual scatterplots and Boxes' M test. Boxes' M test was significant; Boxes' M Test  $F = 3.713, p = .001$ . To further test if the distributions were normally distributed, the skew and kurtosis coefficients were divided by the skew/kurtosis standard errors, resulting in  $z$ -skew/ $z$ -kurtosis coefficients. This technique was recommended by Tabachnick and Fidell (2007). Specifically,  $z$ -skew/ $z$ -kurtosis coefficients exceeding the critical range between  $-3.29$  and  $+3.29$  ( $p < .001$ ) could indicate nonnormality. Thus, based on the evaluation of the residual scatterplots, Boxes' M Test, and  $z$ -skew/ $z$ -kurtosis coefficients, assumptions were met.

Results using SPSS for Research Question 2 were evaluated using MANOVA analysis to determine if there was no significant difference in student GPA, English, and Math between the no pipeline and pipeline groups. Results indicated that a nonsignificant effect was observed; that is, there was no difference in student GPA, English, and math scores between the two groups,  $F(3,64) = .453, p = 0.716$ . Less than 0.2% ( $Partial\ Eta^2 = .021$ ) of the variance observed in the participants' combined test scores was due to group status.

A Mann-Whitney U test was also conducted to answer the question: There is no difference in readiness scores between the no pipeline and pipeline groups. Results revealed that the null question was supported; Mann-Whitney U = 508.00,  $p = .447$ .

### **Analysis of Research Question 3**

What is the difference in the attendance average of the students who were continuously registered in a (Grade 6-12) educational pipeline program and the students who entered the cohort in the ninth grade? A one-way ANOVA was used. Prior to analyzing the research questions, data cleaning and data screening were undertaken to ensure the variables of interest met the appropriate statistical assumptions. Thus, the following analyses were assessed by evaluating missing data, univariate outliers, normality, linearity, and homogeneity of variance.

**Data cleaning.** Before the research questions were evaluated, the data were screened for missing values and univariate outliers. Missing data were evaluated using frequency counts, and no cases were found to have missing values. The data were screened for univariate outliers by transforming raw scores to  $z$ -scores and comparing  $z$ -scores to a critical value of  $\pm 3.29$ ,  $p < .001$  (Tabachnick & Fidell, 2007).  $Z$ -scores that exceeded this critical value were more than three standard deviations away from the mean and thus represented possible outliers. The distributions were evaluated, and no cases with univariate outliers were found. Thus, data were collected from a sample of 68 students ( $N = 68$ ); 40 ( $n = 40$ ) in the Grade 6-12 cohort and 28 ( $n = 28$ ) in the Grade 9-12 cohort.

Table 4.4

*Descriptive Statistics for Attendance by Cohort Group*

Group	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Grade 6-12 Attendance	40	71.6	100.0	93.845	5.639	-1.993	5.846
Grade 9-12 Attendance	28	60.1	99.3	91.875	9.896	-1.316	0.597

*Note.* Skew standard error = .441, .374, respectively; Kurtosis standard error = .858, .733, respectively.

**Test of normality.** Before the research questions were analyzed, basic parametric assumptions were assessed. That is, for the dependent variable (resilience) and independent variable (no pipeline, pipeline) assumptions of normality, linearity, and homogeneity of variance were tested. Linearity and homogeneity of variance were evaluated using residual scatterplots and Levene's test and violations were observed; Levene's test  $F = 4.577$ ,  $p < .036$ . To further test if the distributions were normally distributed, the skew and kurtosis coefficients were divided by the skew/kurtosis standard errors, resulting in  $z$ -skew/ $z$ -kurtosis coefficients. This technique was recommended by Tabachnick and Fidell (2007). Specifically,  $z$ -skew and  $z$ -kurtosis coefficients exceeding the critical range between  $-3.29$  and  $+3.29$  ( $p < .001$ ) could indicate nonnormality. Thus, based on the evaluation of the residual scatterplots, Levene's test and the  $z$ -skew/ $z$ -kurtosis coefficients, assumptions were assumed to have not been met. To mitigate this problem, the attendance variable was transposed using a log10 function to yield a more normal distribution. After transformation, Levene's test ( $F = 0.083$ ,  $p < .774$ ) resulted in the error variance of the two groups were equal. Accordingly, the log10 transformation was used to normalize the attendance distribution.

Results using SPSS Research Question 3 was evaluated using an ANOVA to determine if there was a significant difference in student attendance between the no pipeline and pipeline groups. Results indicated that a nonsignificant effect was observed; that is, there was no difference in log10 attendance between the groups,  $F(1,66) = .340$ ,  $R^2 = .005$ ,  $p = 0.562$ . That is, less than 0.1% ( $R^2 < .005$ ) of the variance observed in participants' log10 attendance was due to group status.

### **Summary of Results**

The purpose of this study was to identify if African American and Latino students, who entered an urban secondary school pipeline in the sixth grade were more resilient and academically successful in closing the achievement gap when entering high school in comparison to African American and Latino students who entered the school pipeline in the ninth grade. Sixty-eight students who were expected to graduate in June 2018 participated in the study. The cohort was operationally divided into two groups: (a) 40 who entered in middle school and (b) 28 who entered in high school.

For Research Question 1, an ANOVA was used to determine the difference in student resiliency between cohort group types (no pipeline; pipeline). Findings revealed no difference between the groups.

For Research Question 2, a MANOVA was used to test the hypothesis. Findings revealed no difference in GPA, math, and English test scores between cohort groups (no pipeline; pipeline).

For Research Question 3, an ANOVA was used to test the difference in student attendance average between cohort groups. Findings revealed no difference between the

groups. Chapter 5 provides an overview of the results identifying limitations and recommendations for future study.

## **Chapter 5: Discussion**

### **Introduction**

This study was conducted to examine a school pipeline and its impact on African American and Latino students in the areas of academic achievement, resiliency, and attendance. African American and Latino students are slowly narrowing the achievement gap with their White and Asian counterparts, but they are still significantly behind. The study of a school pipeline is significant because it improves the probability of academic success by decreasing the amount of school program transitions. In large urban cities, African American and Latino students attending the public school system are subjected to risk factors that may prevent their progress toward graduation and beyond. There are several internal and external factors that contribute to the achievement gap. The internal factors are often found within the school environment and can be identified as large class sizes, low expectations for student achievement, a lack of a diverse curriculum, little to no family participation, and apathetic students. The external factors are identified as the economic gap, inadequate resources, nutrition, and state and federal funding (National Education Association, 2017).

When students are subjected to a variety of risk factors, they are more susceptible to psychological distress than students who live in stable neighborhoods and have stronger support systems. Traveling through the public school system, a student usually has two options, resilience or resistance, and the hope is that school pipelines would provide the necessary structures so that students would be resilient rather than resistant

(Samel et al., 2011). Resiliency was often studied scientifically regarding mental illness, but over time, research has led the studies to high-risk children and how to better develop them to overcome their adversities (Masten et al., 2013). Based on these factors, this study examined two sets of pipeline students, African American and Latino students who entered the pipeline in the sixth grade and those who entered in the ninth grade. “It should be noted that the presence of risk factors does not predict, or guarantee, children will have academic and behavioral problems, but rather increase the probability such problems will arise” (Williams & Portman, 2014, p. 15). For this study, the Connor Davidson Resiliency Scale (CD- RISC) was administered to measure and compare the resiliency levels of both subsets of students. The study was conducted based on the following research questions:

1. Is there a difference in student resiliency scores in African American and Latino students who were continually registered in an educational pipeline program (Grades 6-12) and African American and Latino students who entered the cohort pipeline in the ninth grade?
2. Is there a difference in academic achievement of African American and Latino students who graduated from a school pipeline (Grades 6-12) compared to African American and Latino students who entered the cohort pipeline in the ninth grade and graduated?
3. Is there a difference in the attendance average of African American and Latino students who were in a school pipeline (Grades 6-12) compared to African American and Latino students who entered the school pipeline in the ninth grade?

As discussed in Chapter 4, inferential statistics were used to draw conclusions from the sample tested. The SPSS was used to code and tabulate scores collected from the survey and provide summarized values, where applicable, including the mean, standard deviation, and central tendencies. ANOVA and MANOVA analyses were used to evaluate the research questions. The results of the research questions showed no significant difference in resiliency, academic achievement, and attendance between students entering the school pipeline in the sixth grade and those entering in the ninth grade.

### **Implications of Findings**

African Americans and Latino students share the same patterns of risk and protective factors. Observing students' time in school, it is important to look at them over a process of time rather than in the one particular moment. This means that students who are in an environment that can nurture them may not show immediate progression, but they will eventually overcome their adversity over the course of their school career (Ernestus & Prelow, 2015). Resiliency is not just a personality trait that stops the negative environment from influencing children and adolescents, but some of the individuals' successes include protective factors that allow individuals to overcome the causes of the risk factors (Williams & Portman, 2014). The significance of a school pipeline in large urban cities is to provide the student and the family the opportunity to be educated in an environment where the student and the family can experience limited transitions from middle school through high school. The structure of pipelines provide student supports that increase the probability of on-time graduation (Rodriguez & Oseguera, 2015).



A successful school pipeline provides opportunities for relationships to cultivate where a student can feel loved and appreciated, which is explained in the research of Urie Bronfenbrenner's (1994) ecological systems theory, which is also the theoretical rationale for this study. This study focuses on two of Bronfenbrenner's systems, the microsystem and the macrosystem. The microsystem evolves around the relationship students have in settings that are closest to them, which is usually a school or a home setting, while the mesosystem is basically a system of the microsystems in which the microsystems do not function independently. For instance, the student's home environment has a direct impact on his school environment. When these two systems work together, a student has a greater chance of becoming academically resilient (Bronfenbrenner, 1994).

The findings for Research Question 1 indicate that there was no significant difference in the resiliency scores of African American and Latino students who entered the school pipeline school in the sixth grade, compared to African American and Latino students who entered the pipeline in the ninth grade. It is interesting to note that a no-pipeline student recorded the lowest resiliency score (43) and a pipeline student recorded the highest resiliency score (98). As an educator, the researcher witnessed how a school pipeline impacted African American and Latino students in academic achievement and resiliency. Students and staff members formed relationships with students early in their school pipeline career and the adults were supportive and provided mentorship and a family environment (Bronfenbrenner, 1994). The findings also indicate that a student, who enters the pipeline in the ninth grade, benefits from the school structures that have already been established to support students who entered the pipeline in the sixth grade.

The results for Research Question 2 showed no significant difference in academic achievement between African American and Latino students who entered the pipeline in the sixth grade compared to African Americans and Latinos who entered the pipeline in the ninth grade. Although pipeline students recorded a higher GPA, the difference in overall averages were minimal.

This was also the case for Research Question 3, which compared attendance averages between the two cohorts. The findings suggest that students who are given the same opportunities for academic success will succeed in a pipeline setting whether they enter in the sixth grade or the ninth grade.

### **Limitations**

This was a quantitative study that compared anonymous data of African American and Latino students who entered a school pipeline in the sixth grade and measured their resiliency, academic achievement, and school attendance and compared them to African American and Latino students who entered the pipeline in the ninth grade. Therefore, both cohorts of students entered the ninth grade during same academic school year in 2014-2015 with a cohort of 86 students. This included students who were not considered seniors due to a shortage of credits or who were slated to be discharged because they were no longer attending school and were identified as *no shows*. This left 81 potential graduates at the beginning of the school year. By excluding nongraduates, significant data was excluded that may have altered the results of each research question.

Due to the timing of the study, when it came time to retrieving the archival data and administer the CD-RISC, the number of potential graduates was reduced to 68 eligible students. The number of potential graduates decreased due to insufficient credits

after the first semester, students transferring to alternative settings, and students who decided to drop out of school. This would prove to be crucial to the study because 71% of the students who did not graduate entered the pipeline in the ninth grade. Therefore, nongraduates' archival data and the CD-RISC were not included and may have produced different results for all three research questions.

The CD-RISC was used to measure the students' resiliency levels. There was a total of 49 students who returned the informed consent form to complete the CD-RISC survey and 33 of the students were from the sixth-grade cohort. The study showed that both cohorts had a resiliency mean score of 71, which is two points below the average mean score of high school graduates in the United States who participated in the CD-RISC (Davidson & Conner, 2017). The survey would have been more informing if it included a breakdown as to how each cohort responded to different questions in the survey.

### **Recommendations**

It is important for students who are entering the ninth grade to graduate high school within 4 years with their cohort. The data shows that when students graduate high school in 4 years, they have a stronger chance of college enrollment and postsecondary success (Ewell et al., 2003). The research on school pipelines should continue because of the limited literature on their impact in closing the achievement gap for African American and Latino students. Although there was limited research available, the few studies that were conducted were qualitative and they included student and staff interviews. This study may have offered more insight as a mixed-methods study to allow for student voice and the impact a pipeline may have played in their school career.

A second recommendation to consider is studying several secondary schools to provide a broader scope that is being conducted in pipeline schools. The results of pipeline schools could then be compared and analyzed with non-pipeline schools with similar student enrollment and ethnic populations. This information could provide evidence that additional school pipelines should be considered to better support the academic success of African American and Latino students. It is also recommended that an entire cohort be included in the study regardless of graduation status. To strengthen the findings of the study, future research should address the viewpoints of students, families, and school personnel.

### **Conclusion**

This study showed that African American and Latino students can achieve and excel if given the opportunity and the necessary resources. Students who entered the pipeline in the ninth grade were beneficiaries of a culture and an environment that was nurturing and supportive of pipeline students. Non-pipeline students were offered the same opportunities academically and socially, and they were able to succeed in the pipeline almost as well as the pipeline students.

The students who attended this pipeline school received a quality education, but they also received something more important and valuable, a second family. Due to extended relationships within a school pipeline, it is not uncommon for adults to be supportive of students outside of the school environment. The supports could extend to attending a student's extracurricular activities when a parent or family member could not be present or by providing emotional support in the absence of a parent. Although an

individual may come from a low-income family and face negative risk factors, students do not have to be a victim of their environment (Ernestus & Prelow, 2015).

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## Appendix A

### Informed Consent

**Title of Study:** Pipeline to Success

**Name of Researcher:** Sean L. Davenport

**Faculty Supervisor:** Dr. Sandye P. Johnson;  
Phone for further information: 646-734-1157

**Purpose of Study:** The purpose of this study is to determine the impact of an educational pipeline on student attendance, academic achievement and resiliency.

**Study Procedures:** Students attending Frederick Douglass Academy II and who are in the 2014- 2015 cohort will be asked to complete a 10-minute Connor-Davidson Resiliency Survey. The survey will at all times maintain pupil confidentiality and. At the time of the study, any student can freely opt out of completing the questionnaire. If the student chooses to participate, all completed questionnaires will be distributed and collected by a trained researcher in the St. John's Fisher College Doctoral Program and approved by the school's principal.

**Risks and Benefits:** There are minimal risks of participating in this study. Benefits to completing this survey will inform school and district level personnel whether a student who enrolls in a 6-12 school in middle school are more resilient than students who begin high school in a new unfamiliar environment.

**Method of Compensation, if any:** There will be no compensation for participating in this study.

**Method for Protecting Confidentiality/Privacy:** Students will not be required to identify themselves by name or ID number to complete the survey to maintain pupil confidentiality. At no time during the survey will the researcher be in direct contact with any pupil. The surveys will be color coded, red for students entering the pipeline in middle school and white for students entering the cohort in high school.

**Your Rights:**

As the parent/guardian of a research participant, you have the right to:

1. Have the purpose of the study, and the expected risks and benefits fully explained to you before you choose to allow your minor child to participate.
2. Withdraw from participation at any time without penalty.
3. Refuse to answer a particular question without penalty.
4. Be informed of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to you or your minor child.
5. Be informed of the results of the study.

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Parent/Guardian  
Print Name

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Pipeline to Success  
Signature/Date

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Student  
Print Name

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Pipeline to Success  
Signature/Date

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Principal Investigator (Sean Davenport)  
Print Name

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Pipeline to Success  
Signature/Date

## Appendix B

### Connor-Davidson Resilience Scale 25 (CD-RISC-25) ©

*For each item, please mark an "x" in the box below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.*

		not true at all (0)	rarely true (1)	sometimes true (2)	often true (3)	true nearly all the time (4)
1.	I am able to adapt when changes occur.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I have at least one close and secure relationship that helps me when I am stressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	When there are no clear solutions to my problems, sometimes fate or God can help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	I can deal with whatever comes my way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Past successes give me confidence in dealing with new challenges and difficulties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	I try to see the humorous side of things when I am faced with problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Having to cope with stress can make me stronger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	I tend to bounce back after illness, injury, or other hardships.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Good or bad, I believe that most things happen for a reason.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	I give my best effort no matter what the outcome may be.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	I believe I can achieve my goals, even if there are obstacles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Even when things look hopeless, I don't give up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	During times of stress/crisis, I know where to turn for help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Under pressure, I stay focused and think clearly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	I prefer to take the lead in solving problems rather than letting others make all the decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	I am not easily discouraged by failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	I think of myself as a strong person when dealing with life's challenges and difficulties.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	I can make unpopular or difficult decisions that affect other people, if it is necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	I have a strong sense of purpose in life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	I feel in control of my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	I like challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	I work to attain my goals no matter what roadblocks I encounter along the way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	I take pride in my achievements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Add up your score for each column**      0 + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

**Add each of the column totals to obtain CD-RISC score**      = \_\_\_\_\_

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